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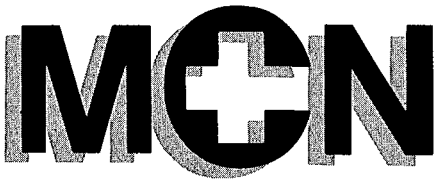
A Compendium of Clinical Supplements from the Migrant Health Newsline 1985-1987



Migrant Clinicians Network

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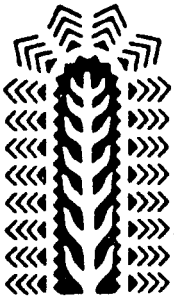
Centers for Disease Control, "Tuberculosis Among Migrant Farm Workers—Virginia," *Morbidity Mortality Weekly Report* 35 (25 July 1986): 467-469.

Children's Defense Fund, "The New Immigration Law and Public Benefits," *CDF Reports* 9.2 (July 1987): 3-4.

Coye, Molly J., "What Physicians Don't Know About Occupational Exposure to Pesticides," *Northwest Coalition Against Pesticides: News* (Spring, 1985): 5-6.

Ungar, Beth, et al., "Intestinal Parasites in a Migrant Farmworker Population," *Archives of Internal Medicine* 143.3 (March 1986): 513-515.



MIGRANT HEALTH

clinical supplement

FORWARD

The Migrant Clinicians Network was established to identify and address issues which impact on the health status of migrant and seasonal farmworkers and, where necessary, to assess and modify the current health care delivery system to better meet the needs of this population. The Network serves as a national clinical forum for migrant and seasonal farmworkers' health issues. MCN functions as a resource for clinics, migrant health centers, allied public and private agencies, and the Migrant Health Program.

The Clinical Supplement to the *Migrant Health Newsline* was designed as a modality to focus upon and address unique health issues relating to migrant and seasonal farmworkers. These Supplements review current knowledge, expand the networking capabilities of health care providers, and develop credibility in the medical field for this unique and heterogeneous population.

The demand for involved clinicians in migrant health care requires strong, informed health leadership and management in the clinics, as well as new skills and information relating to health outcome, health status, financing issues, and new and old disease entities such as AIDS and amebiasis. *Newsline's* Clinical Supplements help develop these capabilities and foster a health care delivery system which is comprehensive, continuous and accountable to the patient's health status.

Rockville, Maryland
March, 1988

David R. Smith, M.D.

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Clinical Report:

HAEMOPHILUS INFLUENZA TYPE B VACCINE

Prepared By:
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The Centers for Disease Control have recently recommended the use of the Haemophilus influenza type b (Hib) vaccine in children 24 months to 6 years of age, and in 18 to 23 month-old children in high-risk settings (such as day care centers), although the vaccine appears to be less efficacious in this age group.

Haemophilus Influenza Type B Disease

Hib is the most common cause of bacterial meningitis, as well as a leading cause of serious systemic bacterical illnesses such as pneumonia and osteomyelitis. Children between the ages of 2 months and 5 years appear to be the group at greatest risk.

The risk of a child developing systemic Hib disease within the first five (5) years of life is about 1:200. For a child intimately exposed to another with Hib disease, the risk is approximately 400 times greater. In the United States, studies have revealed a 35-40% occurrence rate of Hib disease in children 18 months or older, and 45% in those 2 years of age or older.

Approximately 60% of children who develop severe Hib disease have meningitis. Hib disease can also manifest as overwhelming sepsis, purpura fulminans, cellulitis (often facial), septic arthritis, osteomyelitis, epiglottitis, pneumonia, and pericarditis. Of those cases presenting as meningitis, 80% occurred in children less than 2 years of age.

Several subgroups of children have been identified as being at higher risk for developing Hib disease. These include Eskimos, American Indians, asplenic children, and children with certain immune deficiencies. Recent studies conducted during outbreaks of Hib disease in day care settings indicate that day care attendance significantly increases the risk of developing systemic Hib disease. Lower socioeconomic status is also associated with an increased incidence of invasive Hib disease.

Although Hib disease can be successfully treated with antibiotics, the mortality rate approaches 5%, with 19-45% of survivors of Hib meningitis developing serious long-term neurologic sequelae. Of equal concern is the apparent increase in ampicillin resistant Hib strains up to 20% reported in some studies, and reports of resistance to chloramphenicol and other antibiotics. Additional concerns have been reported in the literature concerning the eradication of Hib in the meninges by certain second generation cephalosporins due to poor CSf penetration.

Prevention of Hib Disease

Prevention of Hib disease is a complex issue. Rifampin prophylaxis for the eradication of the nasal-pharyngeal carrier state in invasive Hib has been shown to be successful; however, the indications for its use in large group exposures such as day care centers is less certain, with recommendations indicating its use after the first index case and others suggesting that prophylaxis should be withheld until the second index case. The logistics of large group prophylaxis may also make the task more difficult. The currently marketed Hib vaccine appears to be successful in preventing Hib disease in children older than 18 months, but neglects a large proportion of the younger children and infants in the at-risk population. Recent studies of a vaccine for use in younger children appear to be promising, and it is likely that such a vaccine will be available in the near future.

HIB Type B Vaccine *(continued)*

Vaccine Efficacy

The precise protective level of antibody has not been established for Hib. Selecting a level of >1 ug/ml (which is felt to be protective) in controlled field trials, 75% of children 18-23 months achieved this level of antibody response. In children 24-29 months, 85-95% achieved the level, and an even higher percentage of older children developed this degree of antibody response.

In a double blind controlled trial in Finland, 98,000 children 3 months to 5 years of age who had received a single dose of the Hib vaccine were followed for 4 years. In the children 18 months to 5 years, a single dose of the vaccine reduced the overall attack rate of bacteremic Hib disease by 90%. In the 18-23 month-old group, the number of children who developed Hib disease were too small to assess vaccine efficacy. No change in invasive Hib disease was found in the 3 to 17 month-old age group following vaccination.

Adverse Reactions

Side effects (which include local induration, erythema, and fever) tend to be minor and last 24 hours or less. Of 267 children receiving the vaccine marketed in the U.S., two had a temperature of 101° F or more, four had an objective finding of localized swelling, and four had localized erythema. Higher numbers have been reported in the Finland field trials, with 51% developing local side effects. One child in the Finland study developed a probable anaphylactoid reaction but recovered with complications.

Usage

Children 24 months to 6 years of age probably need only a single vaccination. Because children 18-23 months of age have a lower rate of seroconversion, they may need revaccination. Currently there are ongoing studies attempting to determine the need for and timing of revaccination. The vaccine will not protect against other type of Haemophilus influenza. Vaccine administration should be delayed in the presence of febrile illness or active infection.

Recommendations

1. Recommended for all children at 24 months of age.
2. Consider immunization in children 18 months or older if patients are in one of the following "high-risk" groups: Eskimos, American Indians, Black, lower socioeconomic group, immunodeficient, or day care centers.
3. There is no data for children older than 6 years of age and adults.
4. Not recommended for children less than 18 months of age due to the low rate of seroconversion.
5. Simultaneous administration with DPT and Hib can be accomplished, but should be given in different sites.

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HIB Vaccine Information Card:

Existe una nueva vacuna que ayuda a proteger a los niños pequeños contra las enfermedades bacterlales mas comúnes y peligrosas. Esta nueva vacuna inmuniza contra las infecciónes causadas por la bacteria llamada comúnmente "HIB."

Las enfermedades de HIB afectan a un niño en 200 antes de la edad de 5 años. Enfermedades causadas por HIB, que incluyen meningitis, son serias. Muchas resultan en hospitalización y hasta un 10% pueden ser fatales. En estudios clínicos la vacuna fue efectiva en un 90% entre los niños de 2 a 6 años de edad.

El Dpto. de Salubridad de los Estados Unidos recomienda esta nueva vacuna para todos los niños al cumplir los 24 meses de edad. Debido a su alto grado de riesgo, los niños de 18 a 23 meses que están en guarderías infantiles durante el día deben ser considerados como candidatos para la vacunación áunque la vacuna tiene menos probabilidad de ser efectiva en esta edad.

Favor de llamar a esta oficina para hacer una cita o para pedir mayores informes.

What Physicians Don't Know About Occupational Exposure to Pesticides

by Molly Joel Coye, MD, MPH

"Why hasn't my physician told me more about the pesticide hazards I am facing?"

"Why is s/he reluctant to diagnose my illness as pesticide-related when it seems at least an obvious possibility?"

These are questions frequently asked by workers when they first learn about the possible hazards they face from exposure to pesticides on their job. One answer is that their physician may not have been *trained* to investigate occupational exposure as a cause of illness.

In a 1979 survey of U.S. medical schools, 70% of the responding schools indicated they required *no* formal instruction in occupational or environmental medicine. Among the 30% that did require such instruction, the median time required was four hours during the four years of medical education. In a repeat survey conducted in 1984, 54% of the schools included such instruction, but the median time required was still four hours (Levy 1985).

Acute, Severe Poisoning

What most physicians know about pesticide toxicity is limited to the specific signs of acute, severe poisonings. Some chemicals produce characteristic physiologic changes which make diagnosis easier, but almost all of these signs and symptoms occur only after a substantial exposure. In cases of direct exposure to large amounts of a pesticide (e.g. following a spill, accidental ingestion, or direct spray by a helicopter), some effects will be so specific that they suggest the diagnosis of pesticide poisoning.

Not very many categories of pesticides have specific "signs," however, and even these signals may be misinterpreted if the link to pesticide exposure is not made. For example, a sign of moderately severe organophosphate or carbamate poisoning is miosis, or pin-point pupils. If pesticide exposure is not mentioned by the patient or by the person who brings the patient to the emergency room or clinic, most physicians would initially suspect narcotics abuse because it is the most common reason for this finding in a patient. When pesticide exposure *is* mentioned, and the symptoms are severe, many nurses and physicians will recognize the presenting symptoms as signs of pesticide poisoning or will make use of a poison control center and other resources to investigate the possibility of pesticide poisoning.

Chronic, Low-level Poisoning

Acute severe poisonings are relatively rare, however, in comparison with low-level pesticide exposures at work or in home and garden use. The effects of low-level exposure are much more difficult to diagnose, for a number of reasons:

Molly Coye has served the last five years as Medical Investigative Officer for the National Institute of Occupational Safety and Health (NIOSH) in San Francisco. This month she has begun a new job as Public Health Advisor to New Jersey's Governor Kean.

1) *The symptoms are almost always non-specific,* meaning that they could be caused by many different chemicals, by an influenza or cold, by physical exhaustion or even psychological stress. Mild organophosphate exposure may only produce headache, fatigue, weakness, nausea and sweating, all those being classic signs of a beginning bout of flu. Dermatitis caused by a pesticide could easily be diagnosed as a reaction to a soap or plant at home rather than a pesticide in the workplace. Medical students learn to "look for the zebras" (i.e. think of exotic explanations for common findings) while they are in school, but everyday practice in the real world teaches most physicians that "if it looks like a horse, it probably is not a zebra." In other words, if there is a logical, common explanation for a set of symptoms, why try to dig up another explanation?

2) *In most cases it will not be easy for the physician to "prove" the diagnosis.* Making a diagnosis means both a) demonstrating the probability that a certain agent (e.g. a pesticide) caused the illness, and b) ruling out other causes (e.g. demonstrating that the patient doesn't have the flu or a cold). Since many illnesses like a cold or flu can't be conclusively ruled out in most situations, diagnosis depends upon making a strong case for the probability that pesticides caused the illness.

Biological testing for pesticides in the blood or urine is relatively difficult and very expensive (the usual method is gas chromatography and it may cost several hundred dollars per test), and not very helpful in low-level exposures. Exposure to organophosphate or carbamate compounds is measured by the activity of the enzyme cholinesterase in blood. The interpretation of this test is difficult in mild or moderate exposures, however, because there is a wide range of variation in enzyme activity between individuals. A mild effect in one person is almost impossible to detect without a baseline measurement for that person prior to the exposure for comparison. As a result, a physician who says "I think this patient has a headache and nausea because she worked on a railcar that was shipping pesticides" has no way of demonstrating why that patient didn't just have a mild case of flu.

3) *In some cases the exposure occurred a long time before the onset of symptoms, or the symptoms have existed for a while before the patient realizes that a past exposure might have caused them.* Again, unless there is some symptom or finding which clearly demonstrates the link with the pesticide exposure in the past (for example, a peripheral neuropathy developing several weeks after exposure to certain organophosphates), this is difficult to diagnose. Even the most sympathetic physician, one very interested in pursuing occupational etiologies (causes), has a tough time defending a diagnosis in cases like this.

4) *Very little research has been done on the clinical toxicology of pesticides, and even less is published in medical journals and texts.* When a physician is puzzled by a clinical situation, she or he turns first to textbooks in the office. If a case is very unusual

or interesting, the physician may ask for a literature search of medical journals. If neither of these turns up any suggestion that the patient's symptoms may be related to pesticides, most physicians will be quite reluctant to make a diagnosis of pesticide-related illness, particularly because a disproportionately high number of such cases wind up in compensation or tort suits in which the physician may have to defend this diagnosis.

5) *In many parts of the country, the library resources in occupational and environmental medicine are extremely limited and there are only about 800 board-certified specialists in occupational medicine in the U.S.* As a result, the physician may not have a local source to consult in this field.

All of these factors make physicians understandably reluctant to pursue diagnoses of pesticide-related illness. Unless the signs and symptoms and history of exposure are relatively clear-cut, the physician often feels that trying to make the diagnosis will be frustrating, unrewarding and may even expose her or him to the risk of professional ridicule or the risk of lawsuits.

I realize that this long list of problems may be discouraging to patients and workers in search of help. It may seem to suggest that physicians should not be expected to learn about pesticide health effects or to make these diagnoses. I do not mean to imply that. All general practitioners, including internists, family medicine physicians, pediatricians, obstetricians and gynecologists, nurse practitioners and physician's assistants, as well as toxicologists, clinical pharmacologists and emergency room nurses and physicians should be acquainted with the range of symptoms and illnesses which may be associated with pesticide exposure. But it is important to recognize the barriers faced by health providers who are sympathetic and interested in learning about pesticides, and the reasons why health professionals may be hesitant to get involved or may grow discouraged.

Steps Toward Diagnosis

Physicians who *are* interested in occupational and environmental medicine must 1) gather comprehensive occupational histories; 2) provide for appropriate biological testing; and 3) offer worker education. Elements of the occupational history gathered from a worker should include job title, type of industry or farm, name of employer, period of employment, job duties, protective equipment provided and/or used, additional job-related hazards (machinery, noise, sun, etc.), information on whether other workers have symptoms, prior work history, history of work-related illnesses, accidents and compensation, home pesticide use or exposure, other chemical exposures on the job or at home (e.g., solvents used in hobbies), and most importantly (if the worker knows this), the compounds to which he or she is exposed. If the worker does not know this, it may be possible to approximate an answer. If a farmworker only knows, for example, that she is working in tomatoes, the physician should be able to learn from the county health office or agricultural commissioner what is typically being applied to tomatoes during that time period. If the worker knows that symptoms developed after fighting a fire in a particular warehouse, it may be possible to find out what was in the warehouse from the fire department records.

No medical examination of a worker should be conducted without appropriate education of the worker about the potential hazards of their job and the means to reduce the associated risks. Simple instruction about such topics as field sanitation, protection during mixing, loading, and transportation of pesticides, proper storage of pesticides, and the early symptoms of poisoning may prevent serious damage. Pamphlets, one-page posters, information sheets, and even short slide programs have been prepared for patient/worker education on pesticide health hazards.

Because of the inadequate training which most health providers have received in occupational medicine, continuing education programs on pesticide-related health hazards are particularly important. Pesticide reform groups have been successful in some states in sponsoring continuing medical and nursing education programs, or in arranging for county or state health departments to sponsor them. Support for research in occupational and environmental medicine is also important, not just in order to learn more about the health effects of pesticides, but in order to get more of this into the scientific literature so that clinicians in the field have more to refer to when evaluating pesticide illnesses.

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Farmworker Occupational Health and Field Sanitation

The theme of this year's annual migrant health conference (April 17-20, 1986, Minneapolis, Minnesota) is "Migrant Health: America's Third World." Nowhere is this statement more strikingly true than in the area of sanitation-related diseases, where the risks to farmworkers of a variety of diseases range from two to 300 times that of the general U.S. population or other occupational groups.[1,2] Health care providers may not readily identify farmworker health problems resulting from poor sanitation as occupational illnesses. However, there are definite work-related aspects to these diseases.

In this article we present some migrant health center data on sanitation-related diseases and discuss five categories of health problems resulting from or exacerbated by the lack of toilets, drinking water, and handwashing facilities in the fields. These include communicable diseases, heat stress, urinary tract and kidney infections, pesticide-related illness, and dermatitis. Additionally, proposed federal legislation and regulations and existing state statutes on field sanitation are presented.

Working Conditions

Farmworkers are the only occupational group in the United States who are denied the *federal* legal right to have sanitary facilities and drinking water provided at the worksite. In a 1984 analysis, it was estimated that only *22-45% of hand-labor-intensive farmwork nationwide (as measured in person-years) is performed at sites where management provides sanitary facilities and drinking water.*[3] Fourteen states have enacted their own field sanitation standards, with varying protections for farmworker health and varying degrees of enforcement (see Table 3).

Migrant farmworkers are also especially at risk of diseases of poor sanitation because too often their housing is overcrowded, unsanitary, or without basic amenities such as running water or screens. Even unsanitary housing may be considered an occupational hazard since many of the labor camps for migrant farmworkers are provided by the employer and/or are located adjacent to the fields where pesticides are sprayed. In addition, some migrant farmworkers are forced to live out in the open (e.g., in the orchards where they work). In these situations, the working and living environments, and thus the workers' exposures to pesticides and other hazards, are one and the same.

Farmworker Health Problems Related to the Lack of Field Sanitation

In the fields, the absence of sanitary facilities and clean drinking water can contribute to the spread of communicable diseases as well as to the incidence of skin rashes, heat disorders, urinary tract and kidney infections, and pesticide-related illness. In addition, some accidents such as falls from ladders or eye injuries may be related to the lack of sanitary facilities—a worker might lose consciousness due to heat stroke from dehydration and fall off a ladder, or may suffer eye injury from dust or pesticides because water was not available to flush the eyes. Some of these problems—such as heat stroke—are life-threatening.

Communicable Diseases—These diseases include those spread via fecal-oral contamination such as typhoid fever, amebic dysentery, shigellosis, pathogens causing nonspecific or viral diarrheas, such as campylobacteriosis, salmonellosis, yersiniosis, infectious hepatitis (hepatitis A), *Escherichia coli* diarrhea, and giardiasis; zoonotic diseases such as leptospirosis and salmonellosis; skin infections such as scabies; and infectious diseases spread by discharges from the mouth, nose, throat, or lungs of infected persons, including rhinoviruses, measles, influenza, streptococcal sore throat, and tuberculosis. The practice of a farmworker crew sharing the same drinking cup promotes the spread of these latter diseases.

Data submitted to the Occupational Safety and Health Administration (OSHA) in 1984 showed that migrant farmworkers were at 20 times higher risk of getting a parasitic infection than was the general U.S. population. Their risk of contracting gastroenteritis and infectious diarrhea was 11 times greater, and they were 300 times more likely to develop infectious hepatitis.[2]

Heat stress—Farmworkers are at highest risk of developing a heat disorder on the job as compared to all other workers, including miners and construction workers. Heat-related problems range from prickly heat rash to heat stroke (for which mortality rates of 25-75% have been reported).[4]

The National Institute for Occupational Safety and Health (NIOSH) recommends that workers be encouraged to drink cool (palatable) water at least once per hour (preferably every 15 to 20 minutes), and that the water supply be located as close as possible to the worksite, but never farther than 200 feet away.[5]

Urinary Tract and Kidney Infections—Farmworkers are at least three to five times more likely to contract a urinary tract infection (UTI) than is the general population.[2] The lack of toilets and drinking water in the fields contributes significantly to this increased risk.

Chronic urine retention encourages bacterial growth in the urinary tract, stretches and weakens the bladder walls, and increases the susceptibility to bladder infection. Chronic UTI may lead to acute or chronic pyelonephritis or even renal failure;[3] it has also been associated with bladder cancer.[6] In addition, maternal urinary infections during pregnancy have been associated with increased rates of miscarriages, fetal and neonatal deaths, as well as premature delivery with its attendant risks.[7,8]

Pesticide-related illness—Farmworker exposure to pesticides occurs in various ways, including direct spray or drift from aerial or ground application; contact with pesticide residues on plant leaves and then eating, smoking, urinating, or defecating without being able to wash the hands; use of pesticide-contaminated leaves or twigs as a substitute for toilet paper; and the use of hollowed-out cucumbers, bell peppers, apples etc., which have been sprayed with pesiticides, as drinking cups. Provision of handwashing facilities as well as disposable drinking cups would help to reduce the amount of pesticides absorbed by farmworkers, and in turn, reduce their risk of acute systemic poisoning, skin and eye injuries, and possible chronic effects such as cancer, birth defects, or neurological damage.

Dermatitis—This is the foremost occupational health problem in agriculture as well as in all industries.[9] Occupational skin rashes among farmworkers are caused by exposure to chemicals or plants.

A large number of pesticides in common use have been reported to cause sensitization as well as direct irritant dermatitis. In these cases, the farmworker may have to permanently abandon working on a certain crop or range of crops on which that pesticide is used. In California in 1977, 26% of the pesticide-related dermatoses necessitated disability leave. The economic as well as

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By Valerie A. Wilk, M.S., consultant with the Farmworker Justice Fund, Inc., Washington, D.C. Her report, *The Occupational Health of Migrant and Seasonal Farmworkers in the United States*, will be published by the National Rural Health Care Association, 2220 Holmes, Kansas City, Missouri 64108 (816-421-3075) in early April, 1986.

the health consequences of pesticide-related dermatitis are therefore significant for farmworker families.[9]

Migrant Health Center Data

Olsen et al.[10] conducted a chart review study of four migrant health centers and an urban clinic in Utah to compare the rates of sanitation-related diseases among migrant farmworkers to those among poor urban patients with access to sanitation facilities (see Table 1).

Diarrhea occurred 20 times as often among migrants as among the urban poor. Nausea and vomiting were 13 times as frequent, and gastroenteritis, abdominal or intestinal pain, and bloody stools six to 26 times as frequent among the farmworker population. Fevers of unknown origin occurred 120 times as frequently in the migrants; it is not known how many of these cases accompanied diarrheal or other infectious diseases. Tuberculosis was 24 times as frequent in the migrants, and helminthic infestations 35 times as frequent. All of these indicate that the general sanitation and hygiene level among the migrant farmworkers was far below that of the urban poor comparison group. Urinary tract infections occurred three times as frequently in the migrants as in the urban poor, which is notable given the fact that, in this study, a higher percentage of the urban population was female (64% versus 49%).

The actual size of the disparity between the migrants and urban poor for symptoms occurring at low frequencies (e.g., bloody stools) or diseases infrequently diagnosed (e.g., tuberculosis) is debatable. What is obvious, however, is that the migrant patients consistently presented at the clinics more often with symptoms or diseases that could be attributed to poor sanitation, inadequate hygiene, or impure drinking water.

A review of the 1983 patient records of Indiana Health Centers, Inc. showed that the migrant farmworker patient population suffered higher rates of occupational health and sanitation-related diseases when compared to the local residents (see Table 2).

- — Eye problems occurred seven times as frequently as in nonmigrants;
- — Urinary tract infections were almost three times as frequent among the migrants;
- — Dermatitis or skin inflammation occurred 4½ times as frequently as in the nonmigrants; and
- — Gastroenteritis was diagnosed six times as frequently among migrant farmworkers.

Proposed OSHA Field Sanitation Standard and Federal Legislation

On March 1, 1984, OSHA published a proposed field sanitation standard for agricultural workers (*Federal Register*, Vol. 49, No. 42, pp. 7589-7605). This standard required that agricultural employers of eleven or more farmworkers provide them, without charge, potable drinking water dispensed in single-use drinking cups or by fountains and one toilet and one handwashing facility for each 20 employees or fraction thereof, within ¼ mile of the employee's work area in the field.

OSHA held five hearings on the proposed standard during 1984, but despite unanimous medical and public health testimony supporting the standard, on April 16, 1985, the Department of Labor refused to issue the standard (*Federal Register*, Vol. 50, No. 73, pp. 15086-15092). On May 7, Secretary of Labor William Brock received a petition from 29 labor, health, and religious groups for a reversal of this decision.

On October 21, 1985, the Department of Labor announced that it was reopening the rulemaking record on field sanitation, and that the Secretary had decided that further regulation was required to deal with farmworkers' health problems (*Federal Register*, Vol. 50, No. 203, pp. 42660-42663). The notice stated that OSHA would issue a federal field sanitation standard within 24 months "in the event the states do not take the necessary action within the next 18 months." The Department of Labor did not specify, however, how many states must fail to promulgate standards in order to trigger federal action by April 1987.

Legislative efforts to provide field sanitation to farmworkers in 1985 included a field sanitation bill introduced by Congressman Barney Frank (D-MA) and an amendment to the farm bill by Congressman George Miller (D-CA) to bar federal benefits to farmers with more than ten employees who failed to provide sanitation facilities. The Miller amendment passed on a voice vote but was defeated 199-127 in a roll call vote.

On January 22, 1986, U.S. Congressman Joseph Gaydos (D-PA) introduced H.R. 4029 (which incorporated much of the Frank bill) to establish a field sanitation standard for farm employees engaged in hand-labor operations. The bill covers all agricultural employers with more than five employees. It requires sufficient drinking water and one toilet and one handwashing facility per 20 farmworkers at a maximum distance of ¼-mile or a five-minute walk. The bill was referred to the House Committee on Education and Labor, and its Subcommittee on Health and Safety has held its first hearing, at which farmworker representatives testified. The bill has no Senate sponsor as yet.

In 1986, U.S. farmworkers still suffer unacceptably high rates of preventable, sanitation-related diseases. The public health risks they face are similar to those in developing nations, where sanitation-related diseases cause high rates of morbidity and mortality. Provision, maintenance, and use of sanitation facilities in the fields would help to reduce these health risks among U.S. farmworkers. If you would like more information on current field sanitation standards, contact: Valerie A. Wilk, Farmworker Justice Fund, Inc., 2001 S Street, NW, Suite 312, Washington, D.C. 20009.

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TABLE 1

EPISODES PER 1000 PATIENTS OF SANITATION- AND WATER-RELATED SYMPTOMS AND DISEASES IN UTAH MIGRANTS AND URBAN POOR***

SYMPTOMS/DISEASES	MIGRANTS*	URBAN POOR**
Non-specific diarrhea	153	8
Abdominal/intestinal pain including shigellosis and giardiasis	66	10
Nausea and/or vomiting	51	4
Non-specific gastritis/gastroenteritis	26	0
Bloody stools	9	1
Fever of unknown origin	37	0.3
Urinary tract infection	41	14
Tuberculosis	19	0.8
Helminthic infestation	28	0.8

* Data from Brigham City, Midvale, Provo and Beryl Junction Clinics, Utah Migrant Health Project. N=936.

** Data from the Urban Health Initiative Clinics, Salt Lake City, UT. N=8,968.

*** Olsen, D.M., Weidner, B.L. and Brett, M.A.: Water and Sanitation-related Disease and Field Sanitation Practices in Utah: Additional Comments and Preliminary Findings Submitted in Support of the OSHA Field Sanitation Standard. July 27, 1984. Submitted to the OSHA field sanitation record, Docket No. H-308. Available from Dr. Donna Olsen Arbab, Utah Rural Development Corporation, 12 East Center Street, Midvale, UT 84047 (phone: 801-566-1638).

TABLE 2

COMPARISON OF DIAGNOSES, MIGRANT VERSUS NONMIGRANT INDIANA HEALTH CENTERS, INC. 1983*

DIAGNOSIS	NO. MIGRANTS (N=2570)	NO. NON-MIGRANTS (N=4617)	TOTAL	% TOTAL	INCIDENCE (PER 100)
Eye problems (conjunctivitis, conjunctival hemorrhage, stye, swelling, unspecified)	97	25	122	79.51M 20.49N	3.77M 0.54N
Urinary tract infection	107	66	173	61.85M 38.15N	4.16M 1.43N
Dermatitis, unspecified	117	47	164	71.34M 28.66N	4.55M 1.02N
Gastroenteritis	88	25	113	77.88M 22.12N	3.42M 0.54N

* Based on data of July 2, 1984 entitled "1983 Incidence of Selected Diagnoses, Migrant and Community Clients." Contact: Ms. Lynn Clothier, Executive Director, Indiana Health Centers, Inc., 21 North Pennsylvania, 4th Floor, Indianapolis, IN 46204 (phone: 317-632-1231).

TABLE 3*

A COMPARISON OF STATE FIELD SANITATION REGULATIONS

State	Toilet Facilities		Handwashing Facilities		Maximum Time/Distance to Facilities	Drinking Water Required	Minimum Numbers of Workers for Coverage
	Required	Ratio Facility/Number of Workers	Required	Moist Towelettes Allowed as Substitute for Water			
Arizona**	Yes	1/40	Yes	No	Within ¼ mile	Yes	5
California (Food)	Yes	1/40	Yes	No	Within 5 min. walk or closest vehicular access.	Yes	5
(Nonfood crops)	Yes	Various ratios	No	N/A[a]	Within 200 ft. (61m.)	Yes	1
Connecticut	Yes	1/20 male 1/10 female	Yes	No	"Readily Accessible"	Yes	1
Florida	Yes	1/40	Yes	Yes	If <10 workers "available", if >9 workers "at location"	Yes	1 (water); 10 (other facilities)
Idaho	Yes	1/40	No	N/A	Within ¼ mile (402m.) or closest vehicular access.	No	8
Illinois	Yes	1/35	Yes	Yes	Within 1/6 mile (268m.); if <10 workers, ½ mile (805m.) or 5 min.	Yes	10
Maine[b]	Yes	Sufficient number	Yes	Yes	"Reasonably Accessible"	Yes	11
Minnesota[c]	No		No	N/A		Yes	
New Jersey	Yes	Suitable number	Yes	Yes	Not more than 5 min. walk	Yes	6
New York	No	N/A	No	N/A	"Reasonably Accessible"	Yes	5
North Carolina	No	N/A	Yes	Yes	For drinking water, 200 yds. (183m.); for handwashing (if requested) at point of customarily used access "Readily Accessible"	Yes	11
Oregon	Yes	1/40, 1/25 if 5 or more hrs. worked/day	Yes	Yes	"Readily Accessible"	Yes	No minimum
Pennsylvania	Yes	Various ratios	Yes	Yes	"Reasonable distance"	Yes	No minimum
Texas	Yes	1/30	Yes	No[d]	Within unimpeded walk of 440yds., or 400m., or ¼ mile	Yes	7

[a]Not applicable. [b]Blueberry workers only. [c]Corn detasselers only. [d]Except on temporary basis.

**Approved 1/20/86. Effective 4/30/86 pending final action by Attorney General.

*Adapted from *Federal Register* Vol. 49, No. 42, p. 7597, March 1, 1984.

A Preliminary Report of the Incidence of Gestational Diabetes in a Hispanic Migrant Population

The detection and management of gestational diabetes mellitus, as with most health problems, presents a particular problem among the migrant farm worker population. Unfortunately, the current medical literature contains very little research dealing with this population. This paper will present a brief discussion of the problem, along with preliminary results of an ongoing study at Indiana Health Centers in Kokomo of the incidence of gestational diabetes in a Hispanic migrant population.

Gestational diabetes has been defined as an abnormal glucose tolerance which develops during pregnancy and remits after the conclusion of the pregnancy.[1] This may be further categorized to diet controlled diabetes and insulin dependent diabetes. It is estimated that this condition appears in approximately 2% to 3% of all pregnancies.[2] Maternal diabetes has long been associated with increased neonatal morbidity and mortality including macrosomia, hypoglycemia, hypocalcemia, hyperbilirubinemia, respiratory distress syndrome and stillbirths. Later in infancy and early childhood, delayed intellectual and motor development have been noted. Pettit observed in his study of the Pima Indian population that women with gestational diabetes had 10 times the risk of developing overt diabetes later in life than did women with normal pregnancies.[3] Pettit, in a separate study, also observed that the offspring of diabetic pregnancies had three times the incidence of obesity than the offspring of nondiabetic pregnancies.[4]

It has been common practice to screen women for gestational diabetes when certain risk factors are present. The traditional risk factors have included delivery of an infant weighing more than four kilograms (nine pounds), history of fetal loss or neonatal death, previous history of an excessive weight gain, or glucosuria during pregnancy. Screening based on monitoring glucosuria has proved notoriously unreliable.[5] Similarly, screening utilizing glycosylated hemoglobins has not proved to be sensitive enough to detect most cases of gestational diabetes.[6,7]

In 1973, O'Sullivan et al[2] screened 752 women between their 24th and 28th week of gestation using a one-hour, nonfasting, 50 gram glucose screening test. He also did a formal three-hour glucose tolerance test (GTT) on all 752 women, along with a thorough medical and obstetrical history. O'Sullivan documented that use of traditional risk factors detected less than half the cases of gestational diabetes, while the one-hour screen uncovered 80% of the cases of gestational diabetes. The false negative rate was approximately 1%. Serum glucose values greater than 150 mg/dl on the screening test were considered abnormal. The GTT consisted of a fasting blood sugar, followed by the administration of a 100 gm glucose load, all after a 12 hour fast. Serum glucose determinations were then done at one, two and three hours after the loading dose. The upper limits of normal were: fasting - 105 mg/dl; one hour - 190 mg/dl; two hour - 165 mg/dl; and three hour - 145 mg/dl. Two or more values equal to or greater than these limits were required to make the diagnosis of gestational diabetes. See table 1.

The cost of doing formal three-hour glucose tolerance tests on all prenatal patients would prove prohibitive to most migrant health centers (average cost $20-$30 per test), more so now given the present funding cutbacks. At Indiana Health Centers - Kokomo, we elected to screen all community and migrant prenatal patients using the one-hour, 50 gram glucose screen (average cost $9-$12 per test). From March 1985 until March 1986, a total of 99 women were screened, 54 from our community population and 45 from our migrant population. The migrant population screened in the study was 100% Hispanic women. In each population 6 women were found to have abnormal screening tests. Of these 12 total women, 2 migrant women had positive GTT's (4% of the total screened), while there was only 1 community woman with a positive GTT (2% of the total screened). See table 2.

Table 1. Comparison of Glucose Screening Test Outcome and Presence of Gestational Diabetes[2]

Screening Blood Sugar	Number	Gestational Diabetes Present	Gestational Diabetes Absent
Positive	109	15	94
Negative	643	4	639

Table 2. Preliminary Results of Glucose Screening at Indiana Health Centers

Screening Blood Sugar	Number	# Abnormal	# Abnormal GTT
Migrant	45	6 (13%)	2 (4%)
Community	54	6 (11%)	1 (2%)
Total	99	12 (12%)	3 (3%)

The 2% of women with gestational diabetes uncovered in our community population compares favorably to the 2% uncovered by O'Sullivan et al in the 1973 study.[2] The 4% uncovered in our migrant population would seem to reinforce a generally-held view of most migrant health center clinicians that diabetes mellitus is slightly more frequent in the Hispanic migrant farm worker population. Unfortunately, the sample size used for screening in both of our populations was relatively small, and until we are able to gather more data, can not be considered to be statistically significant.

This past year, the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the American Diabetes Association sponsored the Second International Workshop-Conference on Gestational Diabetes.[8] A unanimous recommendation from the conference was that all pregnant women be screened for glucose intolerance by serum glucose measurement between the 24th and 28th week of pregnancy. It was recommended that the nonfasting 50gm glucose load with a serum glucose determination one hour later be used as the standard screen. It was also recommended that a serum value of 140 mg/dl or greater be considered abnormal to increase the sensitivity of the screen.

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The management of women with gestational diabetes remains a controversial issue. All experts agree that tight metabolic control and frequent follow-up must be observed. As a general guideline, fasting blood sugars should be maintained between 60-100 mg/dl, and one-hour postprandial levels no higher than 140 mg/dl.[9] Weight gain during pregnancy should be limited to approximately 25 lbs., the same as the nondiabetic pregnancy. The caloric intake should be limited to 30-35 kcal/kg/day, composed of 18-20% protein, 45% carbohydrates and the balance as fats.[9] The obese gestational nonketotic diabetic can usually be controlled safely with a reduction in calories to 25kcal/kg/day, in the same proportion of protein, carbohydrates and fats.[10] To encourage compliance among the migrant population this diet should be presented with culturally appropriate foods. (Refer to Appendix for a Resource List.)

Follow-up visits at Indiana Health Center for women with gestational diabetes are scheduled every 2 weeks until 28 weeks, weekly until 36 weeks, then semiweekly thereafter. Ideally, every gestational diabetic should be taught home glucose monitoring but in practicality this is not possible. Alternatively, fasting and one hour post-prandial values should be checked at least every two weeks.[11] If adequate serum glucose levels are not obtained after two weeks of appropriate diet therapy, insulin therapy should be strongly considered. Because of the risk of antibody formation, only highly purified non-beef insulin or human insulin should be used. Oral hypoglycemic agents are contraindicated during pregnancy. There have been several studies, notably Coustan and Imarah[11], which suggest that prophylactic insulin treatment of *all* gestational diabetics significantly decreases the rate of Caesarean sections and macrosomia associated birth trauma.

At each visit a urine dipstick for protein, glucose and nitrites should be done, along with monthly urine cultures. This is especially important among women in the migrant population, who have a higher documented incidence of urinary tract infections. Fetal monitoring, utilizing nonstress tests (NST) should be done at least weekly after 30 weeks gestation.[5] Golde et al[12] suggest that even more frequent monitoring may be necessary to assure fetal well-being in insulin-dependent diabetics. Their recommendation is that nonstress tests be done on a semiweekly schedule. All nonreactive NST's need to be followed up by a contraction stress test (CST). A NST is considered reactive if there are at least two accelerations of the fetal heart rate of 15 bpm, lasting for 15 seconds, within a 20-minute time period. A CST was considered negative if three consecutive contractions in a 10-minute period were unassociated with late decelerations of the fetal heart rate.[12] If no spontaneous contractions are evident, a sufficient amount of oxytocin is infused to stimulate contractions. A positive CST necessitates delivery of the infant. Ultrasound examinations, when accessible, are helpful earlier in pregnancy to rule out congenital defects, and later in pregnancy to date gestations and to assess possible polyhydramnios. Women with diet-controlled diabetes should be delivered by 42 weeks gestation, while women with insulin-dependent diabetes should be delivered by 40 weeks.

When possible, it is advisable to have a pediatrician or neonatologist present at birth. All infants should be carefully examined for evidence of macrosomia and congenital defects, and a gestational age determination performed. All infants should have a hematocrit, glucose and calcium drawn shortly after birth. Early feedings (½ hour to one hour) should be encouraged for any infant with a glucose less than 40 mg/dl. Infants who remain hypoglycemic despite early, frequent feedings may need intravenous glucose until the glucose level stabilizes. All infants need to be monitored carefully for signs of hyperbilirubinemia.

Summary

Gestational diabetes mellitus is a serious complication of pregnancy which requires early detection. The increased morbidity and mortality in diabetic pregnancies is well documented. Traditional risk factors have proven to be poor predictors of gestational diabetes. The 50 gram one-hour glucose screen as described by O'Sullivan et al has been shown to be an economical and effective screen for gestational diabetes.

The preliminary study in progress at Indiana Health Centers suggests that the rate of gestational diabetes may be higher among Hispanic migrants than in the general population. Further results will be published when available. We recommend that all pregnant women receiving care at migrant and community health centers be screened for gestational diabetes between the 24th and 28th week of pregnancy, utilizing the nonfasting 50gm, one-hour glucose screen. All serum glucose values greater than or equal to 140 mg/dl require a three-hour glucose tolerance test. All women indentified by the GTT as having gestational diabetes require frequent office visits with tight metabolic and dietary control, with deference to cultural dietary differences. Finally, appropriate arrangements should be considered to insure continuity of care by providing copies of obstetric medical records to the patient.

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Appendix: Selected Resources

Comer Bien Para Vivir Mejor (Eat Well to Live Better: Skills Oriented Nutrition Counseling for Mexican-American Type II Diabetic Patients), 1985. Spanish/English educational package. For information contact: Teri Hall, Diabetes Control Program, Department of Health Services, 714 P Street, Room 499, Sacramento, CA 95814, (916) 324-7760.

Exchange Lists for Meal Planning, 1976. Contact: American Diabetes Association, 1660 Duke Street, Alexandria, VA 22313, 1-800-232-3472.

Planification de Comidas Para Personas con Diabetes (Meal Planning for People with Diabetes), 1985. Spanish/English. Contact: National Migrant Referral Project, Inc., 2512 South IH-35, Suite 220, Austin, TX 78704, 1-800-531-5120 (in U.S.), 1-800-252-9446 (in Texas).

Intestinal Parasites in a Migrant Farmworker Population

• Three hundred thirty-nine migrant worker women and children were screened by single stool examination for intestinal parasites. Infection occurred in 34.2%. *Giardia lamblia* and *Trichuris trichiura* were the most common pathogens; *Entamoeba coli* and *Endolimax nana* were the most common commensals. Infants under 1 year of age were free of infection. Children between 2 and 5 years old and women between 25 and 35 years old had the highest prevalence. Significantly more Haitians were infected than Mexican-Americans or American blacks. Of ten symptoms, only abdominal pain and gas correlated significantly with infection. This migrant population has a greater prevalence of intestinal parasites than the general American public. Screening by stool examination may be beneficial to diminish the reservoir of infection.

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Each year 8,000 to 10,000 migrant farmworkers spend from May to November on the Delmarva Peninsula, the parts of Delaware, Maryland, and Virginia separated from the US mainland by the Chesapeake Bay. They are typically poor, live and work in crowded and frequently unsanitary conditions, and have inadequate diets. Although limited, data show a greater prevalence of intestinal parasites in such migrant populations than in the general American public[1] (J. R. Seed, PhD, written communication, March 3, 1983, and oral communication, Aug 13, 1984). Two preliminary unpublished studies of migrant workers on the Delmarva Peninsula showed 30% of 160 and 59% of 173 workers had intestinal parasites identified by examination of a single stool specimen. These studies were limited mainly to Haitian male migrant workers.

The present study is a survey of Haitian, Mexican-American, and American black migrant farmworker women and children in two work sites on the Delmarva Peninsula to determine the prevalence of intestinal parasites in this population. The study also attempts to correlate selected sociodemographic factors and clinical symptoms with parasitic infection.

SUBJECTS AND METHODS

The study population included women over 18 years old and children under 18 years old (predominantly under 5 years old) surveyed during the 1983 growing season. The sample was a convenience sample based on the subject's ability to contribute the necessary information and stool specimen. Adult subjects, children over 5 years old, and 20% of children under 5 years of age were contacted at home (multifamily campsites or houses). For adults, a bilingual health worker explained the study, obtained informed consent, and gathered sociodemographic and clinical information in the subject's preferred language. When possible, stool samples were collected immediately; otherwise, women were instructed to save morning specimens from themselves or their children; these specimens were picked up by the health worker, stored on ice, and processed within four hours of passage. Eighty percent of children under 5 years of age were surveyed in day-care centers. Sociodemographic information was assembled by health workers from teacher comment and school files. Diaper or potty-chair stool specimens were collected in plastic bags and refrigerated until processing on the same day. A single stool sample was obtained from each participant.

Stool specimens were processed by preservation in polyvinyl alcohol and in 3.7% formaldehyde solution. The former were examined microscopically following trichrome staining; the latter were concentrated by formaldehyde-ether technique and examined microscopically.[2] A single parasitologist at The Johns Hopkins Hospital, Baltimore, examined all samples. Sixty-three randomly chosen specimens were split and preserved as above as well as being kept unpreserved on ice for microscopic examination within six to eight hours of stool passage. Fourteen of the 63 specimens were positive for parasites and 49 of the 63 were negative for parasites, with results consistent using all three techniques. Subsequently, samples were examined only after preservation in polyvinyl alcohol and in formaldehyde. Follow-up and treatment of infected individuals were provided by Delmarva Rural Ministries.

Sociodemographic information, clinical information, and results from the stool examinations were analyzed by cross-tabulation and one-way analysis of variance (University of Maryland Computer Science Center, College Park).

RESULTS

Three hundred thirty-nine individuals were surveyed. Of these, 116 (34.2%) were infected with at least one intestinal parasite (17.7% with pathogens only, 9.7% with nonpathogens only, and 6.8% with a mixture). *Giardia lamblia*, *Trichuris trichiura*, and hookworm species were the most frequently noted pathogens; *Entamoeba coli* and *Endolimax nana* were the most frequently noted nonpathogens. The following tabulation gives the number of positive specimens for different parasites with the percentage of the total number of specimens (339) given in parentheses.

Parasites	No. (%)
Pathogens	
G lamblia	45 (13.3)
Entamoeba histolytica	3 (0.9)
Dientamoeba fragilis	1 (0.3)
Hookworm species	7 (2.1)
Ascaris lumbricoides	3 (0.9)
Strongyloides stercoralis	2 (0.6)
T trichiura	33 (9.7)
Hymenolepsis nana	2 (0.6)
Nonpathogens	
Entamoeba hartmanni	1 (0.3)
E coli	34 (10.0)
E nana	23 (6.8)
Iodamoeba bütschlii	1 (0.3)

(Some specimens contained more than one parasite; 223 specimens contained no parasites.) Of 83 persons infected with a pathogenic parasite, 73 harbored a single pathogen, eight had two, and one each had three or four pathogenic parasites. Twenty-three of this group were also infected with at least one nonpathogen. Thirty-three others had only nonpathogenic parasites. Differences in work site or type of housing did not affect rate of infection significantly.

The frequency of parasites in the various age categories is summarized in Table 1. Prevalence of parasites was significantly greater for ages 2 to 5 years than for 0 to 2 years ($P<.001$); of note, no parasites were identified in infants less than 1 year of age. There was no significant difference in infection rate for male vs female children. Of the 124 children enrolled in six different day-care centers, 43 (35%) were infected. Thirty-two were infected with *G lamblia;* 14 of these were from one day-care center and seven from another.

Women between ages 18 and 35 years were infected more often than women over age 35 years. *Trichuris trichiura* and nonpathogenic protozoa were most prevalent. More than half the women in the younger age group were Haitian, the ethnic group with most infections. Of the total of 53 infected women, 43.4% (23/53) were both field hands and mothers, 30.2% (16/53) field hands without children, 22.6% (12/53) mothers with jobs out of the field, and 3.8% (2/53)

other women. There was no statistically significant correlation between these job groupings and infection with either protozoa or helminths. Women who had children living with them at home had a similar frequency of parasitic infection as those who did not. Five (27.8%) of 18 pregnant women and two (40%) of five nursing mothers carried intestinal parasites.

The prevalence of parasites according to ethnic background showed that more Haitians were infected than Mexican-Americans or American blacks ($P<.005$) (Table 2). The sample included 167 persons born in the United States to non-Haitian parents, 29 born in the United States to Haitian parents, 79 born in Haiti, 17 born in Mexico, and the rest born elsewhere or with no identified country of origin. There were 82 adults who had been in the United States for four years or less and 74 of these were from Haiti. The prevalence of parasites in persons born in Haiti (44/79, 56%) was significantly greater than the prevalence among persons born in the United States to non-Haitian parents (39/167, 23%). This difference was significant ($P<.005$) for the prevalence of both pathogens and nonpathogens. There was also a significant increase in the prevalence of parasites among persons born in the United States to Haitian parents compared with those born in the United States to non-Haitian parents ($P<.005$).

One hundred forty-seven adult subjects were able to answer clinical questions. Abdominal pain ($P<.001$) and gas ($P<.002$) were the only symptoms that correlated with infection. Persons complaining of abdominal pain were infected with *G lamblia* (two), *E histolytica* (two), hookworm species (six), *A lumbricoides* (one), *T trichiura* (12), *E coli* (eight), and *E nana* (13); persons complaining of gas were infected with *T trichiura* (18), *E nana* (13), *E coli* (13), hookworm species (four), *G lamblia* (two), *E histolytica* (one), and *A lumbricoides* (one). Other clinical symptoms whose presence did not correlate with infection were nausea, vomiting, diarrhea with or without urgency, constipation, abdominal bloating, rectal bleeding, discharge, and itching.

Table 1.—Frequency of Intestinal Parasites by Age

Group*	Age, yr	At Least 1 Intestinal Parasite		At Least 1 Nonpathogen		At Least 1 Pathogen	
		No.†	%	No.	%	No.	%
A (0-5 yr)	0-1	0/33	0.0	0/33	0.0	0/33	0.0
	1-2	9/40	22.5	1/40	2.5	9/40	22.5
	2-3	17/39	43.6	2/39	5.1	16/39	41.0
	3-4	8/17	47.1	3/17	17.7	6/17	35.3
	4-5	11/27	40.7	3/27	11.1	9/27	33.3
B (6-17 yr)	6-10	15/36	41.7	10/36	27.8	9/36	25.0
	10-17	3/10	30.0	2/10	20.0	2/10	20.0
C (18-60 yr)	18-25	15/49	30.6	10/49	20.4	11/49	22.5
	25-35	29/56	51.8	19/56	33.9	16/56	28.6
	35-60	9/32	28.1	6/32	18.7	5/32	15.6

*Group A represents 156 children, of whom 45 (28.9%) were infected; group B, 46 persons, of whom 18 (39.1%) were infected; and group C, 137 persons, of whom 53 (39.4%) were infected.

†Expressed as number of individuals per total number of individuals in age group.

Table 2.—Frequency of Intestinal Parasites by Ethnic Group

Ethnic Group	At Least 1 Intestinal Parasite		At Least 1 Nonpathogen		At Least 1 Pathogen	
	No.*	%	No.	%	No.	%
American black	13/56	23.2	8/56	14.3	6/56	10.7
American white	0/0	0.0	0/10	0.0	0/10	0.0
Haitian	61/135	45.2	29/135	21.5	48/135	35.6
Mexican-American	39/130	30.0	18/130	13.9	27/130	20.8
Oriental	0/0	0.0	0/1	0.0	0/1	0.0
Puerto Rican	2/7	28.6	1/7	14.3	2/7	28.6

*Expressed as number of individuals per total number of individuals in ethnic group.

COMMENT

The overall prevalence for intestinal parasites in this study was 34.2%, including a 24.5% prevalence for pathogenic parasites. The results are similar to those reported by Ortiz,[1] who found a prevalence of 35% in 1980 among Puerto Rican farmworkers living in western Massachusetts. Furthermore, an unpublished study from the University of North Carolina, Chapel Hill, in 1982 showed a prevalence of 34.2% among migrant farmworker children in that area (J. R. Seed, personal communications). Additional data on intestinal parasites in migrant farmworkers in the United States are scant, although numerous investigators have noted a relatively high prevalence for intestinal parasites among other populations such as nonmigrant worker immigrants,[3,4] Puerto Rican residents of Chicago,[5] Southeast Asian refugees,[6-8] and recent Haitian entrants.[9] For comparison purposes, a survey of 414,820 stool specimens submitted to state public health laboratories in 1976 from unselected persons residing in the United States and potentially from groups at high risk of parasitic infection nevertheless showed that only 15.6% contained pathogenic or nonpathogenic parasites.[10]

Giardia lamblia and *T trichiura* were among the three most prevalent parasites identified in all studies of migrant farmworkers. These agents were recovered in 13.3% and 9.7%, respectively, of the Delmarva specimens. Again, for comparison purposes, fewer than 2% of more than 38,000 stool specimens submitted to state public health laboratories in Maryland and Virginia in 1976 were positive for *G lamblia* or *T trichiura*,[10] and fewer than 1% of more than 30,000 specimens were positive for these same agents in 1978.[11] In the latter survey, approximately 4% of specimens contained nonpathogenic protozoa, compared with 17.4% of the Delmarva specimens.

In the 2- to 5-year age group, prevalence of *G lamblia* was greater than in other age groups. Fecal-oral transmission presumably accounts for the well-recognized increased prevalence of *G lamblia* in day-care centers.[12,13] *Giardia lamblia* was the most prevalent parasite in children under 6 years old in one crowded Los Angeles semicommunal group.[14] Many of the migrant children are not only in day-care centers but also live in camps that do not facilitate hygienic living. Absence of parasites in children under 1 year old who are likely still in diapers, less mobile, and perhaps breast-fed has been noted by others[14] (J. R. Seed, personal communications).

Women under 35 years old had more infections than women over 35 years old. This does not appear to be due to contact with young infected children since there was no significant difference in frequency of infection between mothers and women who had no direct child-care responsibilities. It is possible that increased exposure to poor sanitary conditions in agricultural fields or increased numbers of recent immigrants from Haiti in the younger group of women explains the difference in infection between this group and older women.

Prevalences of 45% (61/135) among Haitian-born immigrants and their US-born children likely represent imported parasites comparable with those found in socioeconomically parallel populations in Haiti. This is also suggested by the finding that 72% of 97 male Haitians harbored intestinal parasites when they entered the United

States in 1980 and 1981.[9] Haitians composed the majority of the study population living exclusively in the United States less than four years, a group with a high parasite prevalence in this and other studies.[3-5]

Fewer than a third of the Hispanics and fewer than a fourth of the American blacks were infected, prevalences that are nevertheless considerably higher than those of the general American public.[10,11] These rates are similar to those in the North Carolina study of migrant worker children in which 34.3% (58/169) of the Mexican-Americans and 21% (16/76) of the American blacks harbored pathogenic parasites (J. R. Seed, personal communications). These two ethnic groups are largely born in the United States and rarely travel beyond their Florida home base when they are not working, suggesting that their life-style is more contributory to increased parasite burden than exposure to infectious agents outside the United States. Close and frequently unhygienic living quarters in campsites of every size, regardless of location, inadequate bathroom facilities, and the sporadic use of complete foot coverings promotes person-to-person fecal-oral and soil-mediated transmission of parasites to all populations living and working in this setting and potentially to others who interact with these populations.

The presence of clinical symptoms proved to be a relatively poor indicator of infection in this survey, as also noted by Winsberg et al.[5] This may reflect that most adults were infected with parasites unlikely to cause noteworthy symptoms. For those with symptoms but no documented parasites, it might reflect the methodologic limitation that only one stool specimen was examined for each individual, and that, despite unremarkable preliminary testing, some protozoan infections would have been missed by not examining an unpreserved portion of every stool.

Migrant farmworker women and children on the Delmarva Peninsula have a higher prevalence of intestinal parasites than the general American public. The more recently arrived Haitians have more infections, suggesting that newer immigrants from endemic areas might benefit from routine stool examinations. Additional screening on a population basis, such as the 1- to 5-year age group, may detect reservoirs of infection maintained by life-style that can lead to reinfection of treated individuals and potential transmission to others.

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MIGRANT HEALTH newsline

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Is There A Case For Inderal-LA?

Editor's note: Newsline *is pleased to present the following article and counterpoint discussion which present two views on the use of the drug Inderal-LA. Both authors are pharmacists who have worked with the migrant population. We hope this article stimulates additional discussion on the issue of patient compliance in comparison to cost and other factors in determining a treatment regimen.*

POINT:

by Janice L. Parry, Pharm.D., Apex, North Carolina

Is there a place for Inderal-LA in the management of hypertension, angina, or migraine headaches in the migrant population? (These indications were approved for Inderal-LA[1].) To answer this question, this article will look at several factors to determine the uniqueness of Inderal-LA: (1) its pharmacology; (2) its pharmacokinetics; (3) its dosage form; and (4) comparative cost to an other available, equivalent therapy.

In 1985, propranolol became available generically. During 1985, Inderal-LA was also extensively marketed, with samples provided by drug sales representatives. Physicians were told of plans where they could obtain VCR's for starting their patients on Inderal-LA or by converting from tablets. This indicates some concern by the manufacturer (Ayerst) about potential loss in sales to generic equivalents.

Inderal-LA is not unique in its pharmacology (therapeutic affect) in comparison with propranolol or any other non-selective beta-adrenergic blocking agent. In pharmacokinetics, however, Inderal-LA does differ from propranolol tablet forms.

The extent of a clinically-significant difference in the pharmacokinetic profiles of Inderal-LA and propranolol tablets is difficult to establish. Inderal-LA is less bioavailable than tablets, providing 60-65% of the equivalent daily dose of propranolol tablets[1]. Blood levels of patients remain constant for 12 hours after an Inderal-LA dose and then begin to decrease[1]. This compares to levels in the "therapeutic" ranges for about 6 hours for propranolol tablets. During long-term therapy (greater than one week), the accumulation of the active metabolite of propranolol provides adrenergic blockade at least twice as long as the propranolol duration[2]. This metabolite effect provides Inderal-LA with 24-hour efficacy in hypertension and angina[1]. It also provides propranolol tablets with at least 12-hour efficacy, if not longer[2]. Propranolol tablets have been shown to be effective in hypertension when given in a single daily dose[3]. It has also been reported that beta blockade from propranolol is dependent on total daily dose, not dosage frequency.

The dosage form of Inderal-LA is a capsule, which differs from Inderal and generic propranolol in tablet form. The capsule form results in a larger inventory of dosage strengths as they cannot be split.

The greatest difference between Inderal-LA and other forms of propranolol, however, is cost.

For example, a commonly-required regimen is 80 mg. of propranolol taken twice daily. This regimen would cost $11.85 per month with generic propranolol, and $21.85 per month with Inderal tablets. The equivalent daily dose of Inderal-LA 160 mg. (which would provide 60-65% of the beta-blockade of the tablet regimen) would cost $19.85 per month[5]. Titration to a higher dose could be expected, however, based on product literature.

Is there a case for Inderal-LA? One could argue patient convenience with once-a-day dosing versus twice-a-day for the tablets. Compliance with the regimen is unlikely to be substantially better with once-a-day dosing. When one considers the increased cost of an Inderal-LA regimen, the case becomes much harder to argue. After review of factors to determine the possible uniqueness of Inderal-LA, it is my belief that generic propranolol tablets are the non-selective beta-adrenergic blocking agent of choice.

COUNTERPOINT:

by Marsha Alvarez, R.Ph., Director of Pharmacy, Brownsville Community Health Center

After working in a community health center with a substantial migrant population for nine years, I have to defend the inclusion of Inderal-LA capsules in a formulary. Too many patients cannot be relied upon to take a hypertensive medication even two times a day, especially

when they are on a multiple drug regimen. When questioned about their compliance, they admit to remembering to take their medication only once a day. Many ask why they need to take their drug at night when "they are only going to sleep." Experience with migrant patients has proven time and again—give them the easiest regimen possible, even if it means paying more for the drug. Migrant health clinics that have pharmacies should be able to make a contract with Ayerst Laboratories to lower the cost of the LA capsules. Even if a patient is on 160 mg. of Inderal-LA, it only costs our clinic $15.60 for a month compared to $11.85 per month of 80 mg. generic propranolol tablets taken twice a day. (Please note, that I have taken into account the difference in equivalent doses).

I agree that when a patient can be trusted to comply with the physicians order, the generic propranolol should be used, but flexibility in a formulary is important, and I would certainly suggest that the long-acting Inderal be included in the formulary.

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Be Aware!

By Marsha Alvarez, R.Ph, Brownsville Community Health Center, Brownsville, Texas

Theophylline/Erythromycin Drug Interaction

Erythromycin and theophylline are metabolized by the same liver enzymes. Because of this, people on theophylline will have blood levels increased when placed on erythromycin. Therefore, it is not recommended that erythromycin be the antibiotic of choice if a patient is taking theophylline.

It is very important to check blood levels of theophylline if a regimen of erythromycin must be given. If erythromycin is given, the patient must be alerted to symptoms of toxicity due to theophylline.

Nifedipine

Nifedipine, a calcium channel blocker, has been used very successfully to lower blood pressure by giving the capsules sublingually in hypertensive emergencies. For best results a hole should be made in the capsule prior to having the patient bite down on it. Optimum lowering of blood pressure is usually seen in 20-30 minutes. A reduction of 20-40 mm Hg is usually seen, and the dose can be repeated after about 30 minutes if needed.

Assessing A Drug Product For Formulary Inclusion

By Janice L. Parry, Pharm.D., Apex, North Carolina.

How does one decide whether or not a drug should be included in a formulary or designated the drug of first choice for a clinic? There is a systematic way of thinking about formulary decisions that may help clinicians involved in choosing drug products.

In addition to considering existing agents on a formulary, a decision for formulary inclusion should also include assessment of: (1) pharmacology, including side effect profile; (2) pharmacokinetics; (3) patient population; (4) dosage forms; and (5) cost for a given regimen.

Pharmacology

Pharmacology is the science describing how a drug affects animals or humans. It is necessary to look at the pharmacology of a drug because that determines the agent's therapeutic uniqueness. For example, all of the beta-adrenergic blockers such as propranolol and atenolol have similar pharmacology in that they block beta-adrenergic receptors and work the same way to lower blood pressure, or prevent angina pectoris. These two agents, however, have different pharmacology in that propranolol blocks beta receptors of both vascular and bronchial smooth muscle, while atenolol is more selective for cardiac beta receptors. One can avoid duplication of therapeutic entities by studying their pharmacology.

Pharmacology also contributes to the side effect profile of a drug. Within given therapeutic class, agents may vary in side effect profile. This is more often seen between agents with different pharmacology.

Dosage Forms

A drug available in a variety of dosage forms is useful. It is more important to be certain that within a therapeutic class, one has all the dosage forms needed. For example, beta-2 agonists such as metaproterenol or albuterol are necessary for intermittent asthma. These are available both in tablets and as inhalers for people old enough to use them. However, a syrup form of one product should also be available for smaller children.

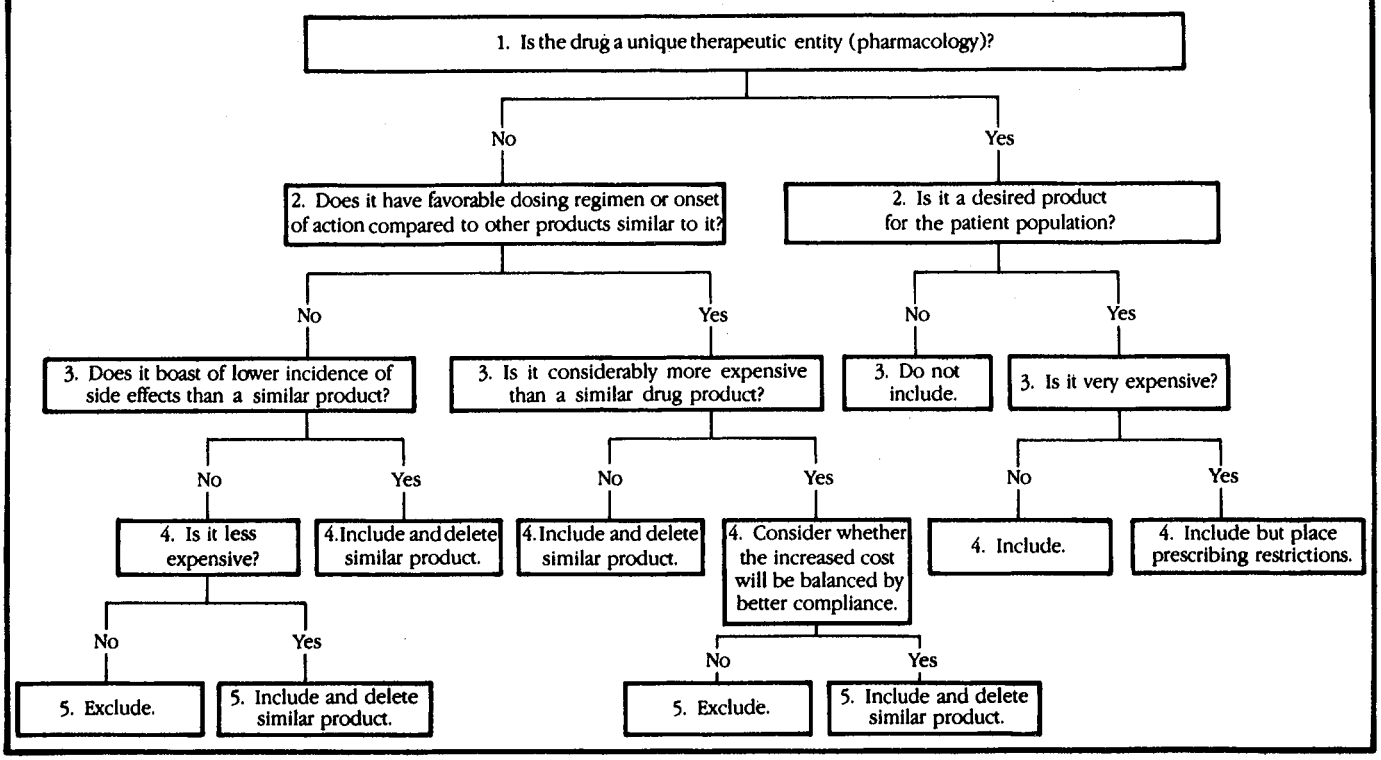
Drugs available only in capsule form should be approved at the lowest strength likely to be needed since capsules cannot be broken. Scored tablets should be acquired at a higher strength. It is usually not necessary to have all strengths of a drug product, as this contributes to higher acquisition costs. Duplication of agents within a therapeutic class should be avoided. By assessing an agent's pharmacology, pharmacokinetics, side effects, and dosage forms objectively, one can avoid duplication.

For example, propranolol may cause more bronchospasm in a susceptible individual than atenolol. Some antihistimines may cause more sedation than others. An antibiotic may have a lower incidence of allergenicity than one with a similar microbiologic profile.

Pharmacokinetics

Pharmacokinetics is the study of how the body affects the fate of drugs. One looks at pharmacokinetics because agents may vary in

Algorithm for Formulary Decision Making



the number of doses per day, or how quickly one could expect a therapeutic response. For example, in the treatment of an acute asthma attack or for a patient who wheezes only during field work, one would choose an inhaled selective beta-2 agonist such as metaproterenol or albuterol because of fast onset of action. For a patient who suffers chronically from asthma or bronchitis, one would choose a slow-release theophylline product. These products can often be given twice a day, but take longer for the desired bronchodilation. A patient, however, would benefit from the long-lasting effect and a convenient dosing schedule. The number of doses per day impacts patient compliance and may also effect the cost of the regimen.

Patient Population

The patient population impacts on drug selection in a variety of ways. Individuals who are working may have difficulty with a 3- or 4-time per day dosing regimen. Individuals without refrigeration in the home or who are traveling will be unable to store some antibiotic suspensions, such as amoxicillin. Health centers seeing a population with a wide variety of parasitic infections will need a broad selection of antihelmintics. Certain populations respond better to certain therapeutic classes than others. An example is the growing evidence that Black hypertensive patients respond uniformly well to diuretic therapy and often less well to beta-adrenergic blockers.

Cost for a Given Regimen

In general, for cost containment, a generic equivalent should be used except where bioavailability is a known problem. (For this information, use the U.S. Food and Drug Administration, *Approved Drug Products with Therapeutic Equivalents Evaluations,* not a pharmaceutical sales representative's word.) Combination drug products may at first appear advantageous, but invariably are more expensive than separate entities as these are usually available generically. Combination products also make individual adjustment of the various components difficult.

Multiple daily dosing is often more expensive than one-a-day doses. Total cost for a month of a chronic medication should always be calculated and compared to an existing agent, if there is one. Remember that product literature often bases comparable cost on a **starting** regimen, and that actual patient requirements may be considerably higher.

By choosing unique therapeutic agents in response to the needs of a unique patient population, clinicians serving migrant farmworkers can optimize patient care, contribute to rational drug use, and practice cost-effective medicine. A descriptive algorithm of the decision-making process follows.

Folk Medicines and Drug Interactions

By Robert T. Trotter II, Anthropology Department, Northern Arizona University, Flagstaff, Arizona.

In the distant past, medicines were derived from medicinal plants, or from earth or animal sources. As modern medicine grew up, chemical analysis of plants that were known to be effective provided a source and a model for many modern pharmaceuticals. In the recent past, pharmaceuticals have been derived more and more from chemical synthesis, and the ethnomedical roots of modern chemistry and pharmacology have been forgotten.

Forgetting the past is hazardous, especially when the past and the future so often mix in modern society. In a society as diverse as the United States, there will always be pockets where the future and the past co-exist. Migrant farm labor is one of these pockets. Within the same family, and for the same person, there is evidence that people simultaneously use modern medical services and folk medicines at the same time (Trotter and Chavira 1981).

This article explores the consequences of mixing modern medicine with ethnomedicine. It shows that home remedies are a hidden source of serious drug interactions. The following example points out the potential seriousness of the modern medicine/ethnomedicine interface.

Three years ago a woman in El Paso was diagnosed as having cardiac problems that would respond to digitalis therapy. Her dosage was carefully titrated, and she was sent home with her medication. About two weeks later she was brought into the emergency room and hospitalized for a digitalis overdose. Her medication level was lowered, and she was sent home with her medication. In a couple of weeks she was back in the hospital with an overdose. Her medication level again was lowered, and she was sent home. The third time she arrived at the emergency room with an overdose. Her medication level was again lowered, and she was sent home. The third time she arrived at the emergency room with correct dose and in the prescribed manner. The woman also had a maid from Mexico who cared very much for her and, knowing that she had a heart problem, faithfully assured that she drank three cups of medicinal tea each day — a tea the maid knew was good for the heart. The medicinal tea was foxglove tea, the earliest natural source of digitalis. With the combination of her prescribed medication and a heavy daily dose of foxglove tea, it was no wonder that the woman had overdosed three times.

The examples of drug interactions in this paper will come from Mexican American folk medicine. This was chosen because Mexican Americans are not only the largest single cultural group in the three U.S. migrant streams, but also are the heaviest users of medicinal teas. (Trotter 1981a, 1981b, 1982, 1983, 1985a, 1985b). They are not the only users of herbal remedies. With the increasing movement toward self help and the increased use of natural products, especially herbal teas, the problems identified in this article could be found for other served by migrant or community health centers. At present, more is known about Mexican American ethnopharmacology, than ethnomedicine for other cultural groups.

Drug interactions can be defined as the alteration of the diagnostic, preventative or therapeutic action of a drug by another exogenous interactant chemical (American Pharmaceutical Association 1976). The current risk of drug interactions is eight percent, or eight in every 100 prescriptions (Martin 1978).

There are eight basic mechanisms of drug interaction:

1. An exogenous chemical can have a direct effect on the medication prescribed, altering its basic chemistry;
2. An exogenous chemical may modify gastrointestinal absorption, causing the normal dosage estimate to be incorrect because the medication is absorbed either much more slowly or more rapidly than under normal circumstances;
3. An interacting chemical may modify dermatomucosal absorption;
4. An interacting chemical may alter the distribution of the medication within the patient;
5. An exogenous chemical may modify or interfere with the medication's action at the receptor site;

6. The modification of the biotransformation of the medication is a related type of drug interaction;

7. A common drug interaction is for the interfering chemical to alter normal excretion rates for the medication; and,

8. The chemical can disturb the water and/or electrolyte balance of the patient, again interfering with the predicted action of the drug (cf. Goth 1984; Martin 1978).

About three years ago I began to suspect that *remedios caseros* (home remedies) used in Mexican American households might have a more substantial biochemistry than assumed by many health practitioners. A colleague and I began to search for an empirical basis for the use of medicinal teas. We found (Trotter and Logan 1986) that the most commonly used home remedies all had significant biochemical components. Ten examples of the most common remedies are shown in Table 1.

All drug interactions between the estimated 500 home remedies used in Mexican American communities and the hundreds of prescription drugs that are available are not known. Table 1 helps point out some of the potential problems that may exist as a hidden menace.

An example of direct interference on the action of a drug from this commonly-used group is *nopal. Nopal* is frequently used for individuals who have diabetes. According to Ibañez (1979), the *nopal* leaf has been shown to contain glucose-6-phosphate isomerase, which effectively lowers blood sugar levels in vivo. Therefore, it may produce drug interactions by interfering with the predicted action of prescribed anti-diabetic drugs administered to diabetic patients. Clinics might consider this as one reason behind some of the complications encountered with diabetic patients.

Modification of gastrointestinal absorption is one of the most commonly encountered problems of drug interaction. It can be caused by alteration of: motility in the gastrointestinal tract, bacterial flora, the gastrointestinal physical environment (alteration of pH, complexation, dissolution, diffusion, osmotic pressure, salt formation, or sequestration), the mucosa, or of the transport mechanisms across the columnar cells.

Drugs that alter gastrointestinal absorption include: acidifying agents, antacids, antidiarrheal medications, cathartics, citric acid, fats and oils, purgatives, bismuth salts, and sodium bicarbonate. Since over-the-counter (OTC) drugs are used as folk medicines along with plant remedies, numerous interactions may occur because of home medication, yet these are frequently overlooked as a source of drug interaction (Lamy 1982). OTC remedies commonly used in migrant households are aspirin, Rolaids, Tums, Alka-Seltzer, and *bismuto* (a bismuth compound purchased in Mexico). All of these can change absorption. In addition, the anti-diarrheal actions of several of the plants, such as *manzanilla* may affect absorption.

At present, there is very little evidence that folk medicines effect dermatomucosal absorption. However, some topical medications may effect systemic medications, so this type of interaction is possible. For example, marijuana is a remedy for arthritis in parts of the southwest. The plant is steeped in rubbing alcohol for several days. When the alcohol turns green from the chlorophyl, the plant is thrown away and the medication is applied topically to the joints. Since the active ingredient in marijuana (THC) is absorbed through the skin, this has the potential for causing drug interactions, as does the application of liniments and other compounds to alleviate aches and pains (Lamy 1982).

Alteration in the distribution of drugs usually comes about by either an alteration in the normal drug transport mechanisms or by a change in the drug binding at plasma protein binding sites. Some drugs that displace other drugs from plasma protein binding sites include aspirin, barbiturates, oral hypoglycemics, and tranquilizers (D'Arcy et. al. 1982). So even aspirin used as a folk medicine is definitely a problem unless its use is known. It is possible that *golondrina*, as a central nervous system depressant, has an effect, as well as *albacar*, which acts as a sedative. More work is needed to determine whether or not these remedies have such an effect, but it could be helpful to inquire if they are being taken.

Two mechanisms for potential drug interaction cannot be explored adequately, because of a lack of necessary information.

TABLE 1

CHEMICAL CONSTITUENTS AND KNOWN BIOACTIVITY OF 10 MEXICAN AMERICAN HOME REMEDIES

Remedy	Chemistry	Known Bioactivity
Ajo (garlic)	Allyl Disulfide, Allyl Propyl Disulfide, Allicin, Allicetoin 1 and 2, Allinase	Antibacterial, Fungistatic, Hypoglycemic, Hypocholesterolemic, Anthelmintic, Expectorant
Albacar (Sweet Basil)	Estragol, Lineol, Linalool, Eugenol, Tannins, Basil Camphor, D-a-pinene, Cineole, Methylchavicol	Sedative, Stomachic, Antispasmodic, Carminative, Galactagogue
Borraja (Borrage)	Mucilage, Tannins, Volatile Oils, Mineral Acids	Emollient, Demuclent, Diuretic, Sudorific
Comino (Cumin)	Demaldehyde, Terpenes, Cuminaldehyde, Cuminic Alcohol, Pinenes A and B, Pentosan, P-cymene	Stimulant, Abortifacient, Carminative
Golondrina (Swallow Wort)	Germanicol, B-amyrin, Pulcherrol, Kaempferol	CNS Depressant, Hypotensive, Antimicrobial, Antiseptic
Manzanilla (Chamomille)	Volatile Oil, Inositol Bitter Glycoside, Anthemic Acid	Antiseptic, Sedative, Anti-inflammatory, Antispasmodic, Carminative
Hojas de Mesquite (Mesquite Leaves)	Serotonin, Luteolin, Guercetin, Tryptamine, Prosopine	Diuretic, Laxative, Antimicrobial
Miel y Limón (Honey and Lemon)	Ascorbic Acid, Pectin Hesperidin, Citral, Citronellal, D-limonene, Phellandrene Sesquiterpine, Inhibine, Galangine	Diuretic, Carminative Antiseptic, Bacteriostatic
Nopal (Prickly Pear Cactus)	Glucose-6-phosphate Isomerase	Hypoglycemic
Ruda (Rue)	Ketones, Tannins, Rutin, Rhammo Glycoside Coumarin, Bergaptin, Xantotoxin, Alkaloids, Ascorbic Acid, Furocoumarins	Emmenagogue, Abortifacient, Anthelmintic, Diaphoretic, Antiseptic, Stomachic

These are the interactions that are due to modifications of drug action at receptor sites and modification of the biotransformation of the drug (enzyme induction or inhibition).

The mechanism for drug interaction that may be the most seriously affected by folk remedies is the alteration of excretion. The urinary excretion of other drugs may be altered by alcohol, ascorbic acid, diuretics, fatty acids, fruit juices, and sodium bicarbonate. A very high proportion of remedies studied so far either have an effect on urinary excretion or on fecal excretion. Several remedies listed in Table 1 are diuretics, such as *borraja, hojas de mesquite,* and *miel y limón.* Others are laxatives, such as *hojas de mesquite,* or another common remedy, *rosa de castilla* (rose petals). Alka-Seltzer and regular sodium bicarbonate are used to settle the stomach (one of the most common home-treated illnesses for migrants), and the action of both may effect excretion rates for pharmaceuticals. Another type of excretion is sweating. Excessive sweating brought on by the use of *ruda* or another common remedy, *toronjil* (balm), both of which are diaphoretics, may cause a problem.

As seen in Table 1, several of the folk remedies contain special alcohols. Alcohol is also frequently used as a recreational drug. It is not known if these folk remedies have a high enough concentration of alcohol to cause drug interactions altering excretion. The concentration level may be so low that they are not a problem. Nevertheless, it is probably useful to ask if these remedies, e.g. *albacar* or *comino,* are being taken at home.

The disturbance of water and electrolyte balance in the patient is the final type of chemical reaction that may affect other drugs. One of the common causes for this type of problem is an alteration of pH, where an acidic or basic drug is prevented from passing across cell membranes. At this time, it is impossible to determine with any level of confidence whether or not this type of drug interaction could be caused by home remedies, but it appears that it could be possible, given the chemistry of some of the remedies listed in Table 1.

This preliminary exploration of a very new field shows that all of the available evidence points to the probability that home remedies cause some, and possibly all, of the common types of drug interactions found among prescription and over-the-counter medications.

When a new medication is prescribed for an individual who comes from a cultural background where medicinal teas are frequently used, some exploration of this use should be made for that particular individual. Ask the patient if they are taking any teas or other remedies. If you ask what medications they are taking, usually they will reply with only the types of prescription medications they take. If you ask if they use folk medicine, you will probably receive a negative response even if they take folk remedies. (This is due to the negative responses about folk medicine some health professionals have expressed in the past.) Asking about teas seems to be neutral, especially if you seem to know about teas. You could ask, "Are you taking *te de manzanilla* or *te de yerbabuena* (spearmint), or any other teas?" This is a reasonably non-threatening way to begin to explore the use of folk medicines.

Even though it is not necessary to ask about herbal teas on all occasions, there are some circumstances when the question should definitely be asked. As a general guideline, you should become suspicious when you see the classical signs of drug interactions. Some of the indicators are: an inappropriate drug level for the dosage prescribed, an inappropriate time interval between predicted drug levels and clinical manifestations, and unexpected side effects for a particular drug level. At first it is important to: have a good working knowledge of drugs frequently prescribed in your clinic and their common interactions, have very good documentation of the patient's current medications and medical history, and develop the suspicion that the problem is not caused by interactions between the drugs that the patient is using and their medical condition. At that point, it would be a good procedure to begin exploring the patient's use of common or uncommon herbal teas and remedies.

If you have either examples of home-remedy-based drug interactions, or come across them in the future, it would be very useful if you would send these examples to the author or to the National Migrant Referral Project, Austin, Texas. We hope that in the future this area can be thoroughly explored so that migrant health centers can be provided additional material that will allow them to identify or to avoid possible drug interactions with home remedies.

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Tuberculosis Among Migrant Farm Workers—Virginia

THE COMMONWEALTH of Virginia annually experiences an influx of migrant farm workers to its eastern shore and northwestern regions. Tuberculosis is an important health problem among these migrant workers, but organized efforts to detect, treat, and prevent disease in this group are difficult to establish and maintain. Workers start arriving in early May, peak in number in mid-July, and move on to other states or return to their winter quarters (usually Florida or Texas) by late October or early November. The transient nature of their occupation and the long duration of tuberculosis treatment make it difficult for state and local health departments to assure patient compliance with screening programs, preventive therapy, and chemotherapy for disease.

The absence of an interstate tracking system and the difficulties associated with ascertaining workers' itineraries in advance further complicate the attempts of migrant crews, migrant organizations, and public health workers to ensure appropriate follow-up.

To address these problems, health-care providers in eastern and northwestern Virginia collaborated in a project to identify migrant farm workers who (1) have tuberculosis and need treatment, (2) are infected and need evaluation for preventive treatment, or (3) have been exposed to an infectious person and need to be examined for infection and disease. In addition, the program was designed to unify and intensify follow-up efforts.

During the summers of 1984 and 1985, tuberculin-testing clinics were established in migrant camps throughout the eastern shore and, in 1985, northwestern Virginia. Services were provided during nonwork hours. Participation was voluntary, and considerable effort was made to obtain reliable follow-up information (travel itineraries, winter addresses, relatives' addresses). Clinics were staffed by physicians, field epidemiologists, and x-ray technicians from the Virginia Department of Health Tuberculosis Control Program and by local public health nurses. Local and state migrant-advocacy groups supplied some transportation and interpretive services. Participants received a Mantoux tuberculin skin test, which was interpreted after 48 hours. On the night of the reading, workers with significant reactions (10-mm induration or greater) were given a chest radiograph and examined by a clinician. If indicated, a bacteriologic specimen was also obtained.

On the eastern shore, 496 (13%) of the estimated 3962 migrant farm workers were screened in 1984, and 632 (21%) of the estimated 3000 workers were screened in 1985. Twelve persons with culture-proven tuberculosis were identified and had treatment initiated in the two years of this program, compared with nine cases in the previous two years. None of the 12 patients had come to the clinics seeking medical care.

In addition to the 12 verified cases, 486 other workers had reactive tuberculin tests. The prevalence of tuberculous infection was highest among Haitian workers and lowest among non-Hispanic whites (Table on page 981). An analysis of age-specific infection rates for the two-year period revealed a prevalence of infection of 2% for the 204 children under 15 years old, 49% for the 517 workers 15 to 34 years old, and 59% for the 408 persons 35 years of age or older.

The screening program in northwestern Virginia in 1985 reached 135 (5%) of the estimated 3000 migrant farm workers and yielded no cases of tuberculosis. It did, however, reveal a similar rate of infection (41%). Approximately 400 of the 555 tuberculin reactors identified in the two screening programs were started on preventive therapy with isoniazid. The results of tuberculin testing and treatment schedules were recorded on the individual worker's health card. Similiar information was forwarded to local health departments of the areas on the worker's itinerary at his/her winter quarters to assure completion of treatment. Workers were urged to report to any state health clinic, show the health card, and request follow-up evaluation and/or additional medication.

This program is being expanded in 1986 in an attempt to serve larger numbers of persons in this high-risk population.

Reported by CF Wingo, MD, Tuberculosis Control Program, B Borgstrom, Eastern Shore Health District, GB Miller, Jr, MD, State Epidemiologist, Virginia State Dept of Health; Div of Tuberculosis Control, Center for Prevention Svcs, CDC.

Reprinted with permission. "Leads from the MMWR," *JAMA*, August 22/29, 1986; 256:977-981; from Centers for Disease Control, *MMWR*, July 25, 1986; 35:467-469.

CDC Editorial Note: The national prevalence of tuberculosis and tuberculous infection of migrant farm workers is not known, and additional surveys should be conducted in other areas. In the Virginia screening program, Hispanics, persons from Haiti, and other blacks accounted for 83% of the migrant farm workers, and these population groups are known to have high rates of tuberculosis nationally. For example, in 1980, the case rate per 100 000 population for non-Hispanic blacks was 32.3, and for Hispanics, 22.7, compared with 7.8 for non-Hispanic whites.[1] A survey among persons of Haitian origin in Florida in 1980 and 1981 revealed a prevalence rate of 650/100 000 population.[2]

Table.—Results of tuberculin skin testing among migrant farm workers, by race/ethnic group—eastern shore, Virginia, 1984-1985

Race/ethnic group	1984			1985		
	No. tested and read	Tuberculin reactors (%)	Verified cases	No. tested and read	Tuberculin reactors (%)	Verified cases
Black, non-Hispanic/ non-Haitian	222	93 (41.9)	6	265	117 (44.2)	2
Haitian	107	74 (69.2)	2	242	157 (64.9)	1
Hispanic	101	25 (24.8)	0	113	29 (25.7)	0
White non-Hispanic	66	1 (1.5)	0	13	2 (15.4)	1
Total	**496**	**193 (38.9)**	**8**	**633**	**305 (48.2)**	**4**

Foreign-born persons in this screening program were primarily from Haiti. Previous recommendations have emphasized the importance of screening persons from all countries with high rates of tuberculosis.[3]

The 12 cases of tuberculosis identified on the eastern shore in the small group that was screened represented a prevalence rate of 202/100 000 population for 1984 and 133/100 000 population for 1985. These rates were calculated with the use of the estimated migrant population as the denominator and assume that all cases of tuberculosis in this target group were discovered through the screening program. The actual rates of disease may, in fact, have been higher. Although the numerators are small, prevalence rates among these workers are ten to 20 times greater than the national incidence rate of 9.4/100 000 for 1985.[4] (The incidence and prevalence of tuberculosis are approximately equivalent in the United States.)

The prevalence of tuberculous infection indicated by significant skin-test reactions is remarkably higher among these migrant farm workers than among other groups known to have a very high risk of acquiring tuberculous infection. Among close contacts of infectious persons with tuberculosis in the United States, the infection rate for 1984 was 25%; in a screening program of 11 746 Southeast Asian refugees who were tuberculin skin-tested between 1979 and 1982, the prevalence of significant reactions was 35%.[5] The occurrence of tuberculous infection among migrant children under 15 years of age indicates that transmission is continuing to occur in the community. The much higher prevalence of infection among adults suggests the possibility that transmission may be associated with the crowded living conditions shared only by the adult migrant farm workers.

The results of this screening program demonstrate the value of identifying high-risk populations that may benefit from tuberculin screening. Moreover, it illustrates two purposes of screening persons with the Mantoux tuberculin skin test. The first is to identify patients with tuberculosis who are potentially infectious and require multiple-drug therapy. However, because of the possibility of false-negative skin tests in persons with extensive disease, further tests, such as a sputum smear and culture and a chest radiograph, should be performed on any person in whom pulmonary tuberculosis is suspected. The second purpose is to identify asymptomatic persons who are infected with the tubercule bacillus. Such persons constitute a reservoir of persons at high risk of developing clinical disease and should be evaluated for preventive therapy. The main purpose of identifying persons with significant skin-test reactions who are not yet clinically ill is to evaluate such persons for preventive therapy. Previous recommendations have suggested that migrant farm workers should be screened and placed on preventive therapy only in areas where follow-up can be assured.[6]

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Newsline Update:

In June, 1985, the National Migrant Referral Project, Inc., published an article, *Tuberculosis and Migrant Farm Workers,* prepared by the Division of Tuberculosis Control, Centers for Disease Control, in collaboration with the Migrant Health Program, Bureau of Health Care Delivery and Assistance.

The article presents 1984 recommendations for migrant health providers on: screening, continuity of treatment and therapy, preventive therapy, agency coordination, and treatment regimens. In addition, the article contains information on: tuberculosis transmission and infection, diagnosis, monitoring treatment response, monitoring drug toxicity, monitoring compliance, preventive therapy, and BCG vaccine.

If you would like a copy of *Tuberculosis and Migrant Farm Workers,* contact: National Migrant Referral Project, Inc., 2512 South IH-35, Suite 220, Austin, TX, 78704.

Hospitalization Access for Patients of Migrant Health Centers and Combined Migrant/Community Health Centers

Migrant and seasonal farmworkers represent a heterogeneous cross-section of this country, including significant percentages of Hispanics, Blacks, and Haitians. With the large numbers living at or below 100% of the federal poverty level, this population adequately depicts an indigent subculture.

Farmworkers are a population at risk for health care problems. Despite being employed, they remain at a work site at varying intervals, which may be only 2-3 weeks. They receive payment for their work on a piece-rate basis. Migrants are faced with disincentives for not obtaining preventive or maintenance health care services. Benefits do not usually exist, and a migrant may be fired for seeking health care during the day.[1] The frequent lack of sanitary facilities appears to increase this population's exposure and incidence of infectious diseases.[2]

The health care needs of 15-20% of this population[3] are served by the Migrant Health Program (Bureau of Health Care Delivery and Assistance), through funding of migrant health centers. There are approximately 120 centers which exist in 40 states and Puerto Rico. These migrant health centers provide primary health care to approximately 500,000 farmworkers each year.

As ambulatory facilities, the issue of hospital access for admission remains a critical problem for both the patients and health care providers of these centers. This issue prompted our study as an effort to depict barriers to hospital access which exist for an indigent population such as those seen in migrant and migrant/community health centers.

Barriers to Access of Hospital Care

In the U.S. today, there are 6,000 acute care hospitals. Of these, 3,300 are nonprofit, 1,700 are public, 700 are for-profit, and 270 are military or veteran.[4] Within the health care industry, an ever more frequent reorganization and redirection in hospital ownership and management may result in the creation of barriers for indigent patients requiring hospitalization. Hospitals and their administrations are turning to the corporate model with a resultant increase in the number and percentage of private, for-profit hospitals.[5] In general, according to the American Hosptial Association in the next five years there will be fewer and larger health care corporations. By 1990, it is projected that only 2,000 corporations will be responsible for the nation's health care, as compared to 5,000 identified in 1980.[5] In some areas of the country, community and other nonprofit hospitals are being absorbed into the "for-profit" pattern, seeking primarily insured patients or closing their doors due to the increased percentage of non-reimbursed (uncompensated) care that they are forced to deliver.[6]

The private, for-profit hospital corporations, as well as some public facilities, are indicating that due to such regulations as DRG's (diagnosis-related groups), they are unable to "cost-shift" the burden placed upon them by providing indigent health care. Many of these institutions, however, confuse the terms "bad debt" and "indigent care" and lump them into a category of "uncompensated care." From 1978-1982, indigent care (charity care) was actually only a portion (26-30%) of uncompensated care; the remaining being bad debt.[7] The expiration of many Hill-Burton obligations has further diminished the number of hospitals willing to participate in the care of indigent patients. Nationwide, the number of people without a third party payment source for health care has increased to 35 million.[8]

Another factor which serves as a barrier to the indigent patient is a phenomenon labelled the "fear factor."[9] Despite programs such as several state indigent health acts which provide some monies for hospital access, "fear" prevents numerous patients from seeking or following through on needed hospital care. When an impoverished patient is confronted by a billing office which requires a deposit of several hundred to several thousand dollars up front prior to the initiation of care, the patient will leave the hospital because of the fear of incurring a large debt. Therefore, preventable morbidity and mortality subsequently occurs.

Purpose of Study

With the change in hospital economic philosophy, and the burgeoning population of Americans without health insurance, a study of a specific sector of the health care delivery system was selected. Migrant health centers and combined migrant/community health centers, primarily Federally-funded through the Public Health Services Act, were chosen. These centers have directed much of their efforts toward preventive health care, patient education, health care maintenance programs, and outreach services. To provide good, comprehensive health care, timely hospital admissions are also necessary. The purpose of the study was to evaluate the ability of these centers to access hospital care and identify any existing barriers.

During September-November 1985, a questionnaire was distributed to 116 migrant health centers (of which 68% are combined migrant/community health centers) in 40 states and Puerto Rico. The majority of these health centers provide services at one or more satellite clinics, and the questionnaire was designed to sample data from their 378 satellite clinics. The questionnaire was addressed to the medical or health services director of each health center.

Results

Table 1 lists the percentages of questionnaires completed, satellite clinics represented by responding centers, and states responding. Using 1978 DHHS migrant and seasonal farmworker population estimates, these states represent approximately 86% of the Migrant Health Program target population![10]

Table 1
Study and Responses Received

Centers Surveyed, n=116	States Surveyed, n=40
Centers Responding, n=54 (47%)	States Responding, n=21 (52.5%)
Satellite Clinics Represented, n=378	
Representatitve Clinic Response, n=265 (70%)	

Table 2 indicates that the majority of center physicians have admitting privileges to admit health center patients in local hospitals. Most of these physicians also have active staff privileges. Those centers currently not admitting their own patients are generally small sites with either no physician on contract, or one to two physician providers. These centers provide for the in-service care of their patients by referrals to other private physicians in the community. Although 67% managed obstetrical cases, only 9 centers had a maternity center for on-site deliveries. The remainder require hospitalization for the provision of comprehensive obstetrical care.

The practice of patient "dumping," or the transferring of a patient from one hospital to another because of the inability to receive financial reimbursement for the care of that individual, was identified in 10 of the 21 states responding. Of the medical directors responding, 43% stated that "dumping" occurred in their area.

In order to assess the need for in-patient services by these health centers, medical directors were asked to report the approximate number of total monthly admissions by their clinics. For centers responding (n=51), admissions equaled 2,200 patients/month. Assuming similar admission patterns throughout the year (which may not be the case for some small northern migrant centers), extrapolating this monthly rate to a yearly figure represents over 26,000 admissions a year for the 51 centers responding.

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Table 2 (n=54)

	Yes	No	Uncertain
Centers which employ or contract with physicians who admit to local hospitals	40 (74%)	14 (26%)	
Centers' physicians who admit to local hospitals on active staff (n=40)	31 (78%)	9 (22%)	
Centers managing obstetrical cases	36 (67%)	18 (33%)	
Centers with maternity centers	9 (17%)	45 (83%)	
Centers identifying the practice of patient "dumping" within local hospitals	23 (43%)	21 (39%)	10 (18%)

Medical directors were asked to indicate by number the type of hospitals available for patient admissions, even if the facility was not utilized by the health center physicians or patients. The categories for type of hospital were: private (for-profit); non-profit (excluding state or university supported non-profit hospitals); state owned or supported; and university supported or affiliated. Responses are shown in Table 3. When asked which of the hospitals available were utilized to admit health center patients, there was a variation between the availability and utilization of hospitals. Despite availability, private hospitals are utilized by health centers at a substantially lower percentage than non-profit, state supported, or university affiliated hospitals.

Table 3
Number and Types of Hospitals Available for Center Patients and Those Utilized for Patient Admissions

Type of Hospital	Hospitals Available	Hospitals Utilized	% Utilized in Comparison to Number Available
Private, For-Profit	35 (33%)	16 (20%)	46%
Non-Profit	44 (41%)	42 (52%)	95%
State Owned or Supported	13 (12%)	11 (14%)	85%
University Affiliated	15 (14%)	11 (14%)	73%
	107 (100%)	80 (100%)	

All hospitals available were said to accept Medicare and Medicaid. When asked if deposits were required prior to admission for uninsured patients, 55% of all hospitals were identified by respondents as requiring deposits. Table 4 shows the response by type of hospital. The size of deposits varied greatly depending upon state, type of hospital, diagnosis at the time of admission, and ranged from $150 to $3,500 for some obstetrical cases. In many cases respondents indicated that deposits are requested prior to the delivery of emergency services.

Table 4
Deposits Required Prior to Admission for Uninsured Patients

	Yes	No	Uncertain
Private, For-Profit	27 (77%)	4 (11%)	4 (11%)
Non-Profit	20 (45%)	17 (39%)	7 (16%)
State Owned or Supported	7 (54%)	6 (46%)	0
University Affiliated	5 (33%)	7 (47%)	3 (20%)
All Hospitals	59 (55%)	34 (32%)	14 (13%)

Center medical directors were asked if they perceived a difference in service between the care of patients with a form of third-party reimbursement and the care delivered for uninsured or indigent patients. As shown in Table 5, the respondents' subjective view indicated that in approximately 18% of available hospitals differentiation of care existed. Private, for-profit hospitals were the most frequently identified. One example cited was the practice of keeping indigent patients in emergency departments while in labor for prolonged periods of time, often delivering them in that setting and discharging them home. Under those circumstances, the delivery would be performed by the emergency room physician and not by an obstetrician.

To identify the proximity of tertiary care centers to health centers, medical directors provided an average distance to the nearest accessible tertiary care facility. There was a large variation in the distances reported, but on the average the distance was 80 miles (± 57 miles). The range in distances were from less than 5 miles to almost 400 miles.

To aid in identifying the population represented in the study, the respondents were asked to give a patient profile of their center by indicating the percentage of patients with a form of third-party reimbursement, such as Medicaid, Medicare, or insurance. The results demonstrated that approximately 53% of all patients receiving care at the centers had no form of third-party reimbursement coverage. Again, the responses showed a considerable range, partly due to differences in state Medicaid and Medicare eligibility. Tabulations from all responses are shown in Table 6.

Table 5
Perceived Occurrence of Differentiation in Service for Uninsured or Indigent Versus Patients with Third Party Reimbursement

	Yes	No	Uncertain
Private, For-Profit	11 (31%)	17 (49%)	7 (20%)
Non-Profit	6 (14%)	27 (61%)	11 (25%)
State Owned or Supported	1 (8%)	10 (77%)	2 (15%)
University Affiliated	1 (7%)	9 (60%)	5 (33%)
All Hospitals	19 (18%)	63 (59%)	25 (23%)

Table 6

Percentage of Center Patients with:		
Private Insurance	9.8% ± 8.9%	(Range: 0 to 50%)
Medicare	11.6% ± 9.3%	(Range: 0 to 65%)
Medicaid	26% ± 21%	(Range: 0 to 90%)
Uninsured	52.6% ± 12%	(Range: 10 to 97%)

Summary

Hospitalization for those who cannot pay is becoming exceedingly more difficult to access as more hospitals are purchased by private corporations and assume a for-profit status.

This study identified several trends in the provision of hospital care for the patients of migrant and migrant/community health centers. In-patient physician care is facilitated by all the health centers responding, generally by center physicians on-site or, as in small centers, by contracting with private physicians. From the data accumulated, it appears that physicians at the health centers tend to avoid admitting patients to for-profit institutions. More than half of all hospitals were identified as requiring preadmission deposits. For-profit institutions had the highest percentage of required pre-admission deposits (77%), which indicates a high rate of refusal of indigent patients. Although the study called for a subjective response, the practice of differentiation in care for the uninsured versus the insured was identified to occur in almost 1 in every 5 hospitals within proximity of these centers. For-profit hospitals were identified as most frequently differentiating care between the uninsured/indigent patient and the insured patient. Because this study represents responses from only one point in time, it is difficult to draw any conclusions on trends of the patient health care delivery system.

This study would seem to indicate that for this group of health centers, specific barriers to hospital access are in place for the patients they serve. Despite the size constraints of this study, barriers to care for indigent patients, and specifically populations such as the migrant farmworker, were identified. Further evaluation of the magnitude of this problem is indicated, as well as cooperative efforts between the public and private sectors of medicine. The study reinforces the concern of many public and private health officials that the ability of the indigent to access hospital care is in jeopardy, and that without this preventive care the ultimate "cost" of their health care will increase as the indigent is forced to wait until their health condition is an emergency.

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Activities and Progress of the Migrant Clinicians Network

The Migrant Clinicians Network is a national group of health providers who work to improve health care delivery to migrant and seasonal farmworkers and their families. After three years of informal discussions to define the clinical needs of the migrant population, as well as the needs of migrant clinicians to organize as a group to offer mutual support to one another, the Migrant Clinicians Network was formed in 1985 at the National Association of Community Health Center's Eighth Annual Migrant Health Conference in Seattle, Washington.

Members of this multidisciplinary group work in migrant health centers funded under the Public Health Services Act. The Network is comprised of physicians, nurses, dentists, pharmacists, nutritionists, and others concerned with health care delivery and education.

Initially, six individuals were identified to represent clinicians in the three migrant streams: eastern, midwestern, and western. Since that time, the Network's coordinating body has been reorganized and expanded to 14 members. Seven Stream Coordinators and a five-member Executive Committee coordinate planning of the Network tasks. In addition to medical, nursing and geographic stream representation, a dental services coordinator and a pharmacy resource group were added. A formalized organizational structure was presented and approved by Network members at the annual NACHC Migrant Health Conference in Minneapolis, Minnesota in 1986.

David Smith, M.D., Medical Director of the Brownsville Community Health Center, Texas, serves as Chairperson of the Network. Nationwide representation is insured by the nomination and election of Stream Coordinators. Committees were established to address specific issues and to work directly in the development and follow-up of Network tasks.

In the fall of 1985, the Network was awarded a grant from the Migrant Health Program. The grant enabled Stream Coordinators and the Executive Committee to attend planning meetings and provided for a part-time Network staff person. The Network's coordinating body has met four times since its inception. Discussion on preliminary ideas for tasks were to:

—Develop guidelines to enhance stream continuity and preventive practices for common disease entities;
—Develop dental preventive guidelines;
—Develop uniform formularies, medical records, standard clinical procedures, and other items which might improve health care services to migrant patients;
—Develop a national clinical strategy for migrant and seasonal farmworkers;
—Establish and maintain a clinical forum and network for referrals, questions and concerns, and continuity of care;
—Conduct periodic national meetings with Migrant Clinicians Network members;
—Facilitate both public and private interagency linkages for the enhancement of migrant health;
—Develop quality assurance criteria unique to migrant health centers;
—Disseminate information on the Migrant Clinicians Network to migrant health centers;
—Evaluate medical information being referred among migrant health providers;
—Interact with the National Migrant Referral Project for clinical trend analysis and the development of a clinical section for *Migrant Health Newsline;*
—Interface with the Bureau of Health Care Delivery and Assistance's Migrant Health Program; and
—Provide clinical direction for the annual migrant health conference.

A summary of selected tasks undertaken by the Migrant Clinicians Network during its first year of funding follows.

UNIFORM FORMULARY

Continuity of care for the migrant and seasonal farmworker remains one of the primary concerns of migrant clinical providers. Although preventive medicine continues to be the most effective means to prevent disease and promote good health, diagnostic evaluation and the treatment of disease comprise a large proportion of the care delivered in migrant health centers. Because of low income, the purchase of even daily maintenance medications is impossible for many farmworkers. Therefore, the provision of medications through a clinic

pharmacy is a critical component of the treatment plan, and serves to improve patient compliance.

The issue becomes more complicated with the migrant population because their health care is divided between several health centers. In addition to the transfer of patient information between health centers, the assurance of compliance with medications is often threatened due to the variability between centers' formularies.

The Network has developed a draft formulary of commonly prescribed drugs used in chronic care. It was developed in response to the problem of changes in drug regimens for migrant patients. The draft uniform formulary contains the following therapeutic categories: 1) Analgesic/Antiarthritics; 2) Anticonvulsants; 3) Bronchodilators; 4) Cardiovascular; 5) Gastrointestinal; 6) Hormones; 7) Hypoglycemics, and 8) Vitamins, including fluoride drops and tablets.

CONTINUITY OF HEALTH CARE

The transfer of medical information is imperative to insure the proper care and management of migrant and seasonal farmworkers. Due to the migratory nature of this population, health care can easily become fragmentary, and workers may not appear at the same upstream clinic each year. To insure the provision of quality health care to this heterogeneous population, a mechanism of transferral for medical records is mandatory. The mechanism employed should be convenient, inexpensive, and effective.

A data transfer card that documents key clinical conditions, patient indentification, and the referring clinic's address was developed by Brownsville Community Health Center, Brownsville, Texas. The Migrant Clinicians Network agreed to conduct a pilot test on the use of the cards. Bilingual prescription labels are placed on the back of the cards.

The Network has also reviewed other hand-held mechanisms for patient data transmittal. A portable prenatal card is being developed by the Network. In addition, the Network supports the referral systems of the National Migrant Referral Project, including: personal health cards, MSRTS linkage, and Medical Alert System.

CHRONIC CARE GUIDELINES

At first called protocols, the Network is working to develop chronic care guidelines on hypertension, adult onset diabetes, and pediatric otitis media. In addition, preventive dental care guidelines are being developed.

Recommended components for each chronic care guideline are:

- Screening for health problems
- Development of treatment plan
- Provision of patient education
- Follow-up plan considerations
- Guideline evaluation and update

A standardized model will be used, with a migrant-specific focus added to each guideline.

Dental care guidelines will follow a "Life Cycles" format:

- Prenatal (Mother and Fetus)
- Pediatrics (Birth - 14)
- Adolescents (15 - 19)
- Adults (20 - 62)
- Geriatrics (63 and over)
- Community fluoride
- Community dental health education
- Schedule of systemic supplemental fluoride drops/tablets

Two dental models will be developed: one for use by onsite dental professionals, and the other for use by medical practitioners. A migrant-specific focus will also be incorporated with each dental care guideline.

CONSORTIA DEVELOPMENT

Since its inception, the Migrant Clinicians Network has established both formal and informal associations with: National Association of Community Health Centers, Bureau of Health Care Delivery and Assistance through the Migrant Health Program, National Migrant Referral Project, Farmworkers Justice Fund, Northern Arizona University, East Coast Migrant Health Project, the University of Pennsylvania, and the National Rural Health Care Association.

The Network has also worked to establish linkages between medical, dental and nursing schools and migrant health centers. Models will be developed based on current efforts with the American Association of Dental Schools and the Frontier Nursing Service.

MIGRANT HEALTH CONFERENCE PLANNING

A goal of the Migrant Clinicians Network is to integrate migrant health concerns and identify resources in the clinical community which are able to participate in NACHC's national migrant health conference. In addition, efforts to include sessions which will meet the needs of both clinicians and administrators are made. As a long-range goal, the Network will strive to establish a research component for the annual migrant health conference to include poster sessions, presentations of abstracts, and other academic projects.

Other issues reviewed by the Network include: BHDCA's perinatal initiative and the nutrition strategy, provider recruitment, orientation and retention, morbidity reporting on the most common health problems of migrant farmworkers, and the *Clinical Supplement* to *Migrant Health Newsline*.

An organizational chart is available which outlines the Network's structure, and lists Executive Committee, Stream Coordinators and resource group members, as well as other appropriate persons. For additional information about the Migrant Clinicians Network, contact:

Linda Morrison, MCN Coordinator
National Migrant Referral Project
2512 South IH 35, Suite 220
Austin, TX 78704

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Targeting Migrant Farmworkers in Systems of Managed Care:

Development of a Guideline for Chronic Care Management

Management of a chronic illness requires a consistent and uniform strategy of care. The mobility of migrant farmworkers compounds the challenge to maintain continuity in a treatment strategy. Migrants are seen by many providers and varied types of providers, who follow their own center's philosophy of care. A migrant patient's medication or treatment plan may change from one center to another. The need for follow-up and return visits in treatment of chronic conditions is vital for an adequate system of managed care. In some instances, farmworkers experience a language barrier with the provider serving them. These are areas of consideration to be given in designing a plan of care for farmworkers. Other areas include the cultural, environmental, and educational aspects which impact both the delivery of care and a patient's compliance with a treatment plan.

The Migrant Clinicians Network (MCN), through its Chronic Care Guideline Subcommittee, has developed a prototype guideline that addresses the issues of continuity in the management of adult onset diabetes, a chronic condition frequently found in migrant farmworkers.

Efforts of the Migrant Clinicians Network

The MCN Subcommittee's goal is to develop guidelines to achieve continuity in treatment strategies for patients with chronic health conditions who are seen in migrant health centers. The rationale in developing chronic care guidelines is three-fold. First, the intent of the Subcommittee is to make prototype guidelines available to centers to encourage consistency in plans of care. If a physician or other provider spells out a plan of care and the patient does not understand it, he/she will not follow it. If the plan keeps changing, then it is much harder for the patient to understand his/her health problem and how it can be managed.

Second, the guidelines will provide centers that have physicians who are hired on a temporary basis or who do not usually treat chronic conditions, with current guidelines of acceptable practice. Third, the guidelines can serve as an agreed-upon treatment strategy for physicians, mid-level practioners, and nurses. This can be very beneficial in upstream migrant health centers, where nurses play a central role in the management of patient care from initial patient screening to routine follow-up.

The Subcommittee's intent was to establish a guideline for individual migrant health centers to use or adapt with their own diabetes or other chronic care protocols. Initial focus has been targeted to adult onset diabetes. Other chronic care guidelines under development target hypertension and purulent otitis media. In addition to chronic care, guidelines focusing on preventive dental care for migrants are nearing completion.

Migrant-Specific Aspects of Care

For its adult onset diabetes guideline, Subcommittee members adapted an existing protocol format that is updated periodically and added migrant-specific factors of care to customize it for use in migrant health centers. The guideline follows a "SOAP" format (Subjective, Objective, Assessment, and Plan). Within each component of the SOAP format, "trigger statements" that target specific problem areas for providers who work with migrant patients are noted. These statements are designed to "trigger" a response from a provider to question the appropriate method of care needed for a migrant patient. These migrant-specific statements follow four primary areas where consideration in serving migrant farmworkers or in designing a plan of care should be given.

The acronym "CLEF" was developed to identify these four areas:

- **C** - Culture of migrant patients
- **L** - Language factors for consideration
- **E** - Environmental/Educational factors
- **F** - Follow-up care for a mobile population

Although the Subcommittee focused on the development of "CLEF" statements for adult onset diabetes for use in the guideline, the same statements can prompt similar questions for providers to give to other chronic illnesses in migrant farmworkers. A summary of the migrant-specific "CLEF" statements in the SOAP format used in the prototype guideline follows.

Subjective "CLEF" Statements

(For medical history and current problem information as provided by patient)

Cultural factors:

— Because of the high mobility of migrant patients, they may not be able to communicate a meaningful medical history, and may have no hand-carried record or health record at all.
— A patient's perception of illness may differ from a provider's, e.g., of not being ill until symptoms interfere with a daily routine.
— A patient's perception of what symptoms relate to an illness may not be accurate.
— A "negative answer" may reflect a patient's lack of self-awareness, not absence of disease.
— Ask the patient to show the medication he/she takes; medications that have duplicate or conflicting actions may have been received from multiple providers.
— Use of home, folk or herbal remedies may occur simultaneously with a medical treatment plan and may cause drug interactions.

Language factors:

— History-taker needs to be familiar with appropriate language of patient, slang used, and use terms understandable to the patient for pertinent review of body systems.

Environmental/Educational factors:

— Need to know patient's living situation: housing, refrigeration, who plans and shops for food, type of store available (corner quick-stops vs. supermarket), who prepares the meals (patient or someone else), who they live with.
— What is the patient's daily schedule while working? While not working?
— What is the length of time worked and where; i.e., what is a patient's seasonal pattern in migration (if any)?
— What is in current diet? What ethnic foods are usually consumed? What type of food is purchased? Or, is diet significantly impacted by current crop being picked?
— What crop is patient's family picking?
— Financial resources available and implications for diet compliance.
— Can they read? In what language?
— What do they already know about diabetes; any cultural misconceptions about the disease?

Follow-up factors:

— What was date of last follow-up visit?
— How is patient monitoring his/her disease?

Objective "CLEF" Statements

(For physical findings, laboratory data)

Cultural factors:

— Some cultural groups fear having blood drawn.
— Modesty is an increased issue with women in some ethnic groups.

Language factors:

— Be familiar with patient's use of language and understanding of body parts/systems.

Environmental/Educational factors:

— With a migrant, a provider may not always be able to obtain a fasting blood sugar level; repeated FBS's may be unrealistic.
— A baseline physical exam may not be realistically undertaken in all upstream settings.
— Is objective data obtainable? From how long ago? Who at your center asked if the patient was carrying a health record?
— Reassess when last test was done.
— Inform patient of importance of diagnostic test and why it's done. Explain tests are tests, not treatment.

Assessment "CLEF" Statements

(For diagnosis or logical objective evaluation)

Cultural factors:

— What is patient's perspective on the disease? Is there a culturally-based fear of diabetes?

Language factors:

— Repeat assessment in terms understandable to the patient.

Educational factors:

— Appropriate explanation of patient's condition. Assure comprehension by asking for patient feedback.

Plan "CLEF" Statements

(For treatment, patient education, medications, follow-up care)

Cultural factors:

— Be culturally realistic in patient's diet planning. Consider familiar ethnic foods, who cooks for patient, cooking habits, weight.
— Determine if patient has misconceptions about purpose of medication.
— Patient or family members may view use of needles as a punitive action.

Language factors:

— For label on the medication, consider patient's language and literacy skills. Are pictures more appropriate?

Environmental/Educational factors:

— How is insulin to be stored?
— Considering a migrant's work and housing conditions, is urine testing practical?
— Lack of housing with a tub/shower may increase risk of infections and foot problems. Lack of potable drinking water and toilets may increase UTI complications.
— Explain how medicine works in treating the illness.
— Patient needs to be aware of the role of hydration and its importance with polyuria.
— Patient able to demonstrate they know:
  — Diabetes can be controlled not cured
  — Medicine by function and dosage
  — Role of diet in control of diabetes
  — Need for foot and leg care
  — Need for plan for follow-up

Follow-up factors:

— Determine length of time patient will be in present location, where they will go next, and how long it will be before they return to their home base.
— Determine where follow-up may occur and how to facilitate transfer of patient information. This may be via patient verbalizing information and issuance of a health record.
— Provide patient with information on other clinic locations for treatment, follow-up, monitoring, and refills of medications.

The guideline is available to centers as a resource offered by the Subcommittee in response to an identified issue of continuity and managed care. For information on how to obtain a copy of the MCN "Adult Onset Diabetes Guidelines," write:

Migrant Clinicians Network
2512 South IH-35, Suite 220
Austin, Texas 78704

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UNIFORM FORMULARY ON CHRONIC MEDICATIONS For Migrant Health Projects

This **Uniform Formulary** was developed by the Migrant Clinicians Network as a part of their objective to achieve continuity in the management of chronic disease among migrant and seasonal farmworkers. This formulary will be most effective if it is embraced by all centers receiving migrant health (Section 329) funding. Your voluntary participation in a program of prescribing within this formulary will help patient compliance and improve the health of migrant and seasonal farmworkers.

A range of price information is provided for comparative purposes. Column 1 is an example of a group purchasing price obtained by a state primary care association. Column 2 is average wholesale price.

The Migrant Clinicians Network realizes that formularies and drug regimens are in a constant state of change. This formulary will undergo annual review and update in order to stay current with new therapeutic developments.

Uniform Formulary on Chronic Medications

			GROUP PURCHASING[1]	AWP[2]
I. Analgesic/Antiarthritics				
• Acetominophen	Tabs	325mg	$ 4.67/m	$ 8.50/M
	Drops	80mg	.87	1.56
	Elixir	160mg	.66/4oz	1.30
	Supp.	120mg	1.90/12	3.10/12
• Aspirin	Tabs	325mg	3.05/M	5.30/M
	Enteric coated	650mg	.99/C	1.87/C
		975mg	—	—
• NSAID				
Ibuprofen	Tabs	400mg	20.90/D	36.85
		600mg	26.90/D	52.00
Indomethacin	Caps	25mg	17.00/D	9.25/C
		50mg	26.00/D	78.25/D
Sulindac	Tabs	150mg	—	44.87/C
		200mg	—	55.15/C
• Narcotic Analgesics				
Acetominophen with Codeine		30mg	28.00/M	52.20/M
Acetominophen with Codeine Elixir			4.30/pt	7.28/pt
• Miscellaneous				
Allopurinol		100mg	28.90/M	52.50/M

			GROUP PURCHASING[1]	AWP[2]
II. Anticonvulsants				
• Carbamazepine		100mg	—	12.15/C
		200mg	115.00/M	233.95/M
• Phenobarbital	Tabs	30mg	2.00/M	3.48/M
		60mg	3.35/M	4.80/M
	Elixir		1.89/pt	2.20/pt
• Phenytoin		100mg	—	49.95/M
• Valproic Acid	Tabs	250mg	13.27/C	20.88/C
	Elixir		10.93/pt	26/68/pt
III. Bronchodilators				
• Albuterol	Tabs	2mg	8.97/C	13.90/C
		4mg	13.44/C	20.75/C
	Elixir		12.67/pt	12.92/pt
	Inhaler		5.95	8.75
• Metaproterenol	Tabs	10mg	5.95/C	12.72/C
		20mg	—	16.50/C
	Elixir		5.99/pt	12.78/pt
	Inhaler		2.97	9.36
• Theophylline	Caps	50mg	19.50/M	7.05/C
		100mg	23.50/M	8.49/C
		200mg	32.00/M	12.80/C
		300mg	41.00/M	15.25/C
	Elixir	80mg/15cc	—	12.37/pt
	Sprinkles	75mg	—	10.01/C
		125mg	—	11.41/C

[1] Example Group Purchasing Price
[2] AWP=Average Wholesale Price

			GROUP PURCHASING[1]	AWP[2]
IV. Cardiovascular				
• Diuretics				
Hydrochlorothiazide	Tabs	25mg	2.70/M	5.25/M
		50mg	3.20/M	7.00/M
Furosemide		20mg	6.40/M	20.25/M
		40mg	8.50/M	21.45/M
		80mg	—	48.50/D
Triamterene/HCTZ		75/50	110.87/D	135.13
• Beta-adrenergic Blockers				
Atenolol	Tabs	50mg	36.25/C	43.54
		100mg	54.35/C	65.27
Propranolol	Tabs	20mg	27.10/M	77.75
		40mg	37.95/M	103.00
		80mg	32.25/D	85.80/D
• Central Adrenergic Inhibitors				
Clonidine	Tabs	0.1mg	224.00/M	82.80
		0.2mg	28.00/M	120.00
		0.3mg	50.00/M	142.00
Methyldopa		250mg	64.50/M	134.12/M
		500mg	64.00/D	127.30/D
• Peripheral Sympatholytic				
Reserpine		0.1mg	—	4.25/M
		0.25mg	—	5.20/M
• Alpha-adrenergic Blockers				
Hydralazine	Tabs	10mg	5.36/M	10.10/M
		25mg	7.50/M	10.40/M
		50mg	9.90/M	15.95/M
IV. Cardiovascular (Cont'd.)				
• Cardiac Drugs				
Digoxin		0.125mg	—	$ 45.54/M
		0.25mg	—	8.13/M
Nitroglycerin-SL		0.4mg	—	2.49/C
Nitroglycerin-SR		2.5mg	$ 1.39/C	4.75/C
		6.5mg	1.59/C	5.35/C
Procainamide		250mg	18.75/M	33.15/M
		375mg	29.95/M	5.05/C
		500mg	32.70/M	53.15/M
• Ace Inihibitors				
Enalapril		5ml	0	45.90/C
		10ml	0	48.20/C
		20ml	0	68.56/C
Quinidine	Tabs	200mg	36.00/M	49.25/M
Nifedipine	Caps	10mg	—	23.60/300
Verapamil		80mg	130.28/M	133.15/D
		120ml	175.17/M	180.16/D
• Potassium Supplement		10mEq	12.50/M	89.48/M

			GROUP PURCHASING[1]	AWP[2]
V. Gastrointestinal				
• Sucralfate	Tabs	1Gm	28.75/C	
• Aluminum hydroxide	liq		1.76/12oz	2.20
• Aluminum/Magnesium hydroxide			1.63/12oz	2.20
• Psyllium powder			2.05/14oz	3.65
• Docusate Calcium or (DOSS)		50mg	—	1.91/C
		100mg	10.25/M	10.72/D
		240mg	19.64/M	5.92/C
• Cimetidine		200mg	—	40.55/C
		300mg	—	41.25/C
VI. Hormones				
• Conjugated estrogens	Tabs	0.3mg	—	7.61/C
		0.625mg	36.25/M	78.38/M
		1.25mg	49.25/M	110.69/M
• Levothyroxine		0.05mg	—	61.20/M
		0.1mg	3.53/M	15.38/M
		0.2mg	4.31/M	21.68/M
• Medroxyprogesterone		10mg	14.50/250	45.00/250
• Prednisone		5mg	16.70/M	13.25/M
		10mg	18.10/M	31.55/M
• Contraceptives (28 day)				
O/N, Norinyl	1/35		.46/pck	—
	1/50		.46/pck	—
Nordette				
O/N 777			.38/pck	—
Miscellaneous				
Spermacidal cream				4.97
Jelly			1.08	4.97
Suppositories				
Condoms				
Diaphragm kits			3.60	
VII. Hypoglycemics				
• Glyburide	Tabs	25mg	9.13/C	13.81/C
		5mg	77.89/D	135.25/D
• Tolazamide		100mg	4.33/C	11.70/C
		250mg	76.10/M	121.00/M
• Tolbutamide		500mg	12.00/M	26.80/D
• Insulins All			5.49/	12.08 huma
VIII. Vitamins				
• Prenatal	1+1		2.50/C	5.65
• Ferrous Sulfate	Tabs		.68/C	1.05
	drops		—	2.31
• Children's Chewable			1.12/C	1.70
with Fe chews			.75/C	2.45
drops			1.19	1.98
• Fluoride	Tabs	0.5ml	0	3.25/M
		1.0ml	0	3.25/M
• Fluoride drops			—	1.50
• Adult multivitamins with Fe			1.74/C	
• Folic Acid		1mg	1.98/M	
• Calcium Carbonate		500mg	9.00/M	
• Children's with Fe drops			1.30	2.11

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CAIDA DE MOLLERA: A Newborn and Early Infancy Health Risk

By Robert T. Trotter, II

This article illustrates why a patient label of the illness, *caída de mollera,* should be respected within modern medical systems. By respecting this patient label, health professionals can establish long-range rapport with patients of different cultures and raise the overall quality of patient care. In multicultural health care environments, respect of cultural differences is vital, but cultural respect and rapport are not the only reasons to pay attention to folk illnesses. *Caída de mollera* (the fallen fontanelle syndrome) in Hispanic cultures is an excellent counter example of the way a folk-labeled illness can be an important screening device for serious biomedical, not cultural, problems.

Virtually all societies recognize that newborns are at risk and vulnerable to disease. The health problems that infants encounter are given special attention by both the folk medical system and by modern medicine. *Caída de mollera* (sometimes called *mollera caída)* is an example of such a folk-labeled problem. It is a condition which occurs when an infant's anterior fontanelle is either visibly depressed or is assumed to have recently been depressed. Thus, it is in a "fallen" condition.

The folk explanatory model for the onset of *caída de mollera* is that the infant recently experienced some form of trauma. This trauma could have been caused by playfully tossing a child in the air and catching him or her, an accidental fall to the floor, a bump on the head, any kind of rough handling, or even suddenly withdrawing the nipple from the infant's mouth during nursing. These actions are thought to cause the fontanelle to be depressed. The folk model goes on to suggest that the depressed fontanelle "pushes on the brain," causing the cluster of symptoms that surround the identification of *caída de mollera* as an illness.

The folk diagnosis of *caída de mollera* is not based solely on the presence or absence of a depressed fontanelle. The infant must also exhibit a set of accompanying symptoms which include excessive crying, a reduced desire or ability to feed, diarrhea, vomiting, restlessness, and irritability. These symptoms typically persist for several days. Any diagnosis of *caída de mollera* is treated seriously, since the illness is generally thought to be fatal if not treated properly and in time.

As in all healing systems, the folk model explaining the cause of the illness contains the primary seeds for its treatment. Since *caída de mollera* is thought to be caused by a physical displacement of a body part, folk "cures" focus on removing the "causal" condition, rather than simply treating the symptoms. One common cure is to gently hold the infant upside down and then push up on the soft palate with the thumb. This is sometimes accompanied by dipping the soft spot in water, or patting the soles of the child's feet. A raw egg (or just the yolk) may be placed in the fontanelle in combination with these cures, with the idea that as the egg dries it will lift the *mollera* back into place. A variation of this is to place softened bath soap in the fontanelle. Another common cure is one in which "healers" will fill their own mouth with water, put their mouth over the child's fontanelle, and suck on the fontanelle to "pull it back up."

The above information illustrates culturally related beliefs and practices which health providers are exposed to in modern multicultural health care settings. Many, if not most, providers would consider this interesting for rapport and useless for clinical practice. For example, some Mexican-American physicians who are sensitive to cultural issues, told me they thought the illness was just an old wive's tale they had heard about in their childhood, nothing to be taken seriously when a patient mentioned it to them. Yet the patients of those same physicians felt the illness was potentially fatal.

To compare the two varying viewpoints, I began to gather more specific data on how people recognize *caída de mollera* and how to treat it. A panel of 80 women who had treated *caída de mollera* in their households within the previous 12 months were selected as a group of folk experts. Each was asked to describe the symptoms they used to recognize the illness, to describe all of their treatments, how serious they felt the illness was, and whether or not they ever took an infant with the illness to a physician or told physicians about the illness.

Informants mentioned from one to eight symptoms. The most commonly stated symptoms are shown below.

Diarrhea	53.7%
Excessive crying	43.7%
Fever	36.2%
Loss of appetite	30.0%
Restlessness or irritability	25.0%
Watery eyes	22.0%
Inability to nurse	20.0%
Vomiting	20.0%

A total of 17 other symptoms were mentioned. Most of the informants grouped the symptoms into clusters ranging from two to eight, with the mode being three symptoms. A depressed fontanelle was rarely mentioned as a symptom. Positive diagnosis resulted from the presence of one symptom cluster and the recollection of a recent trauma affecting the infant.

Out of this information I created three symptom clusters that appeared to have all of the basic elements of *caída de mollera* and represented the significant differences in the clusters as presented by the women. The symptom clusters were labeled Patient-1,

Patient-2, and Patient-3 and were presented as case histories to a group of bilingual/bicultural physicians. The physicians were asked to look at the patient case histories in the same way as if a mother had called them and said that her infant had one of the symptom clusters. They were also asked what they would tell the mother, and what their preliminary diagnosis would be if they actually saw these symptom clusters based on their knowledge of the common problems in their geographical area.

The symptom clusters were as follows:

Patient 1: diarrhea, loss of appetite, fever, restless/irritable, excessive crying, occasional vomiting.

Patient 2: mucousy or watery eyes, inability to grip nipple, changed sound of nursing, excessive crying, restless/irritable.

Patient 3: sunken eyes, diarrhea, inability to nurse, changed sound of nursing.

The physicians agreed in their responses, and stated that Patients 1 and 3 probably had some form of gastroenteritis, possibly accompanied by mild to severe dehydration. They stated that Patient 2 appeared to have some kind of general systemic infection, which could possibly be as serious as encephalitis. Their advice to the mythical mothers of the the three patients was to bring the infants into the clinic as soon as possible, due to the seriousness of dehydration and other potential complications. They felt the situations were potentially life threatening for the infants.

Earlier, this same group of physicians had been asked what they would do if a mother called and said her child had *caída de mollera.* They all stated (in varying degrees of kind and not-so-kind language) that they would tell the mother not to believe in that kind of "superstitious nonsense." The physicians' reactions agreed with the women folk experts, in that the women said they would almost never mention *caída de mollera* to a physician, because doctors did not believe in the illness and would respond negatively. So both groups tend to avoid the use of the term.

This is unfortunate, because the findings of my studies make a very strong case that *caída de mollera* is a folk label for severe dehydration, with possibly as much as a 10 percent loss of body weight, which is certainly life threatening for an infant. The critical issue is that this condition is rarely presented to physicians at an early stage when it is first diagnosed as *mollera caída,* because of the fear of ridicule. It is also a problem because it illustrates one case in which the folk treatments for the illness do not address its true cause.

A consequence is that people who use modern health care facilities for other illnesses are staying away from appropriate medical care because of their perception that their beliefs in *caída de mollera* will be ridiculed. This article is presented to migrant health providers as a health advisory to encourage patients to use the term *caída de mollera.* A few patients do use the term, and for those who do, it is a significant indicator that the child should be brought in immediately for a clinical examination. For those people who do not use the term, but treat the illness through folk remedies, the use of the term should be encouraged so that health professionals do not lose a good screening device for problems in seriously at-risk infants. Migrant health projects with outreach programs may also want to apply this information in their triage mechanisms for appropriate referral to the clinic.

CAIDA DE MOLLERA

El remedio casero que consiste en "levantar la mollera" no hace provecho y puede hacer daño al niño.

La caída de mollera no tiene nada que ver con la posición de los sesos.

LA CAIDA DE LA MOLLERA ES UNA SENA DE LA DESHIDRATACION, es decir que el niño está perdiendo más líquido del que está tomando. Esto muchas veces se debe a la diarrea, o a la diarrea con basca (vómitos).*

Si su bebé tiene la mollera caída siga dándole bastante líquidos (leche, jugos, té o agua de arroz con azucar) y LLEVELO A LA CLINICA INMEDIATAMENTE POR TRATAMIENTO MEDICO.

*Excerpts and artwork from: Werner, David. *Donde no Hay Doctor.* Argentina, Mexico: Editorial Pax-México, 1975, p. 10.

MIGRANT HEALTH

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IMMIGRATION REFORM AND CONTROL ACT

Passage of the recent *Immigration Reform and Control Act* (IRCA) presents a challenge for migrant and community health centers. This challenge is to become knowledgeable about provisions in the law so as to provide the first opportunity for many people to access health care services in the U.S. In addition to this overview, this *Clinical Supplement* provides: a summary of a center's findings from IRCA-required tuberculosis screenings, an article on public assistance in relation to IRCA, frequently-used acronyms, and sources for more comprehensive information. *Newsline* will provide updated information gained on the effects of IRCA.

Many centers, by being designated as civil surgeons, are serving an increased number of patients because of the IRCA-required medical examination. This includes reaching a large number of males, a population which frequently does not seek health care. Patients are also requesting centers' help in obtaining medical documentation as proof of residence.

The opportunities initiated by IRCA will end for many people seeking legal status on May 4, 1988. Others may apply for temporary residence status as special agricultural workers (SAWs) only until November 30, 1988. It is estimated that from 1.3 to 3.3 million people who may be eligible for legalization under IRCA have not yet applied. As of September 4, 1987, 637,949 applications had been received nationwide, including 97,172 from SAWs. In addition, 17,657 approvals and 983 denials had been sent out from the Immigration and Naturalization Service (INS).

Centers are eligible and encouraged to apply for designation as civil surgeons (CSs). A person desiring legal status under IRCA, must have a complete physical examination performed by a CS, and must pay for the exam's cost. IRCA regulations specify a fee schedule for this examination. Centers may apply their sliding fee scale, or may opt to track IRCA exams separately as a distinct activity and follow the IRCA fee schedule. By contacting their INS representative, CSs may also determine the extent to which providers other than physicians (physician's assistants, nurse practitioners) may participate or perform examinations, as physician designees.

Centers should note that the cost of physical examinations will increase on December 1, 1987, at which time serologic testing to identify HIV infection will be required for all applicants 15 or more years of age (see **Federal Register**, August 28, 1987). Prior to December 1, applicants must be tested for AIDS if clinical signs or symptoms are identified.

GLOSSARY OF ACRONYMS

Immigration Reform and Control Act

CS: **Civil Surgeon**, physicians designated by INS district directors to perform medical examinations of aliens in the U.S.

INA: **Immigration and Nationality Act**, enacted in 1952.

INS: **Immigration and Naturalization Service**, U.S. Department of Justice.

IRCA: **Immigration Reform and Control Act of 1986**, Public Law 99-603, also known as the Simpson/Rodino bill, which amended the INA.

QDE: **Qualified Designated Entity**, designated by INS to assist aliens in legalization applications.

RAW: **Replenishment Agricultural Worker**, new under IRCA.

SAVE: **System of Alien Verification of Entitlement**, fraud prevention program required of states.

SAW: **Seasonal Agricultural Worker**; new under IRCA.

SLIAG: **State Legalization Impact Assistance Grants**, a program providing grants to states to help offset costs of certain assistance to legalized aliens. (See proposed rules, *Federal Register*, August 13, 1987)

Sources of Information on IRCA:

Health-related information:
Dan Cardenas
National Association of Community Health Centers
1330 New Hampshire Ave., N.W.
Washington, D.C. 20036
(202) 659-8008

Legislative updates/IRCA Clearinghouse:
National Immigration, Refugee and Citizenship Forum
227 Massachusetts Ave., N.E., Suite 120
Washington, D.C. 20002
(202) 544-0004

Public aid to aliens:
National Center for Immigration Rights
1636 West 8th St., Suite 215
Los Angeles, CA 90017
(213) 487-2531

Public benefits affecting children:
Health Division
Children's Defense Fund
122 C Street, N.W.
Washington, D.C. 20001
(202) 628-8787

The new immigration law and public benefits: Questions and answers*

Undocumented immigrants always have faced special barriers to seeking public benefits such as Aid to Families with Dependent Children (AFDC), food stamps, and other federal, state, and local public health and welfare programs. Their eligibility for these programs always has been a gray area of both law and policy, with some generally agreed broad guidelines but with specific practices varying from state to state and sometimes even county to county.

The passage of the 1986 Immigration Reform and Control Act (IRCA), which took effect May 5, 1987, has further muddied the waters. The law offers residency to large groups of undocumented aliens while denying some of those groups access to certain important public benefits for five years. Further, many undocumented aliens are hesitant to apply for any benefits for fear that it may hurt their chances of winning permanent residency.

A range of groups and individuals, from service providers to state officials to immigrants themselves, are attempting to sort out which groups of immigrants will be legally eligible for which public benefits. It is an urgent matter because, despite the generally high rate of employment in this group, many are poor or near-poor and many have children. This article attempts to answer the most basic questions. For more detailed information on all aspects of public aid to aliens, contact the National Center for Immigration Rights, 1636 W. 8th Street, Suite 215, Los Angeles, CA 90017, (213) 487-2531. For information on public benefits issues affecting children and IRCA, contact the Health Division at CDF.

Q: What is the general U.S. policy regarding immigrants and public benefits?

A: In general, citizens, lawful residents, or persons "permanently residing under color of law" (PRUCOL) are eligible for AFDC, Medicaid, or food stamps. The PRUCOL category includes refugees and persons seeking asylum, conditional entrants and aliens "paroled" into the United States for humanitarian reasons, aliens granted suspension of deportation, Cuban or Haitian entrants, and registry aliens (those who have lived in the U.S. continuously since 1972). Federal guidelines issued by the U.S. Department of Health and Human Services in August 1986 provide a detailed definition of PRUCOL. They are available from either the National Center for Immigration Rights or CDF.

Many other federal and state assistance programs provide services to the needy without any specific requirement that the recipient show evidence of lawful presence in the United States. These include the School Lunch Act, the Special Supplemental Food Program for Women, Infants, and Children (WIC), the Vocational Education Act, the Public Health Service Act (including community health centers and family planning programs), state health programs, and others.

States and localities provide many types of services as well, such as child care services, local health clinics, medical programs, and general assistance. Whether these programs have a legal alienage test depends on the individual state or locality.

Q: What does the new Act do to this policy?

A: The new Act punches a hole in this policy. It creates a large new group of lawful residents (i.e., the aliens who have been granted amnesty) but denies most of them many important health and welfare benefits for five years, beginning on the date they are granted temporary resident status. Under the Act, states also may bar legalized aliens from their own programs of financial assistance.

Q: Who gets "amnesty" under the Act?

A: A huge number of undocumented aliens—estimated at several hundred thousand to 1.4 million—are expected to qualify first for temporary, then permanent, residence. Three major groups are involved:

- "General" undocumented aliens who have resided continuously in the United States since January 1, 1982.
- Special agricultural workers (SAWs) who have worked at least 90 days in American agriculture during the May 1, 1985 to May 1, 1986 period.
- "Replenishment" agricultural workers who replace SAWs.

Q: Which benefits are available or not available?

A: During the initial five-year period, none of the groups seeking legalization under the Act may receive AFDC. All who are poor and aged, blind, or disabled can qualify for Supplemental Security Income (SSI). With regard to Medicaid, all otherwise eligible SAWs may qualify, but general aliens and replenishment workers can only claim benefits if they are aged, blind, disabled, children younger than 18, or pregnant women. While general aliens may not receive food stamps, SAWs and replenishment workers may (see diagram below).

Continued on page 4

Amnesty Groups and Public Benefits

	AFDC	Medicaid	Food Stamps	SSI
General Aliens	No	Limited to aged, blind, disabled, pregnant women, and children younger than age 18	No	Yes
SAWs (special agricultural workers)	No	Yes	Yes	Yes
Replenishment workers	No	Limited to aged, blind, disabled, pregnant women, and children younger than age 18	Yes	Yes

*Reprinted from *CDF Reports*, Vol. 9, No. 2, July, 1987, with permission of the Children's Defense Fund, Washington, D.C.

THE NEW IMMIGRATION LAW AND PUBLIC BENEFITS
Continued from page 3

Q: What about cases of medical emergency?
A: A subsequent 1986 law, the Sixth Omnibus Budget Reconciliation Act, known as SOBRA, loosened the restrictions a little by allowing all undocumented aliens who meet the other eligibility requirements to claim Medicaid in cases of medical emergencies, including labor and delivery services provided to pregnant women.

Q: Which forms of public help can harm an alien's chances of achieving permanent lawful residency?
A: An alien's legalization application may be denied if an applicant is likely to become a public charge. To avoid this roadblock, an applicant must have a history of employment in the United States that shows that he or she has been self-supporting without the help of public cash assistance.

The government defines AFDC, SSI, and state cash assistance received by the alien or his or her family members as public cash assistance.

Rules promulgated by the Justice Department in early May make it clear that if an alien's children receive such [public cash] assistance, the parent may be treated as having received it.

Q: Which benefits can citizen children of alien parents receive?
A: More than 50 percent of undocumented aliens live in households with U.S. citizens, often their children. Citizen children of parents granted temporary residence are eligible to receive all public benefits, including AFDC and SSI, as long as they meet other eligibility requirements and the parents' needs are not included in calculating the grant. However, the children's receipt of certain benefits could well jeopardize permanent residency for the parent.

Rules promulgated by the Justice Department in early May make it clear that if an alien's children receive such assistance, the parent may be treated as having received it. In the May 1, 1987 *Federal Register*, the Justice Department stated that "if the dependents, including U.S. citizens, of an applicant qualify for public cash assistance based on the applicant's inability to adequately provide for their support, and if the assistance received by these persons is required for the maintenance of the applicant's household or subsistence of its members, the [Immigration and Naturalization] Service may regard receipt of such assistance as constituting reliance on public cash assistance on the applicant's part dependent on the amount of assistance received and/or the length of the period of time over which it is received."

Experts consulted by *CDF Reports* could not make a flat statement as to whether receipt of Medicaid or food stamps would hurt an applicant's chances. Because of the legal complexity of this issue, the ambiguous wording of some of the relevant regulations, and the crucial importance that aliens gain access to needed services without harming their application process, interested readers should contact the National Center for Immigration Rights for more detailed information on this point.

Q: What federal help is available to states to provide needed assistance to legalized aliens who are ineligible for key federal assistance programs?
A: The Act sets up the State Legalization Impact Assistance Grant (SLIAG) program, a special four-year program administered by the Office of Family Assistance in the U.S. Department of Health and Human Services. Congress has authorized SLIAG expenditures of up to $1 billion per year between FY 1988 and FY 1991 to help states offset the costs of providing permitted forms of public assistance, public health assistance, and education assistance to legalized aliens. SLIAG funds are allocated to states on the basis of the number of aliens within their borders that have been granted lawful temporary resident status, and the resulting costs to the state. ■

BCG VACCINATION AND PPD REACTIVITY

By Richard V. Guzzetta, M.D., Melodia Eliazo, M.D., Robert P. Hansen, M.D., Eugene Tapia, M.D., Sequoia Community Health Foundation, Inc., Fresno, California

INTRODUCTION

Over the years, clinicians who have worked with migrant field workers, e.g. predominantly those from Mexico, have had to face the question of how to interpret a reactive Purified Protein Derivative (PPD) skin test in a person with a Bacillus Calmette-Guerin (BCG) immunization scar. The BCG consists of a live attenuated strain of bovine tubercle bacilli and is used to help protect persons that live in countries with relatively high rates of tuberculosis (TB). There is a question of its efficacy to prevent primary TB, but it may help reduce the seriousness of an infection.

The American Tuberculosis Society and the Centers for Disease Control state that BCG status should be ignored while reading a PPD reaction. They recommend that if the "reactor" is under the age of 35 and has a normal chest X-ray (CXR), he/she should receive isoniazid prophylaxis for nine months. For those over the age of 35, chemoprophylaxis is recommended if the reactor has: 1) converted within the past two years, 2) CXR changes consistent with old untreated TB, 3) medical conditions or illness compromising host defenses (e.g., diabetes, mellitus, post gastroectomy state, silicosis, Hodgkin's Disease, AIDS, etc.), or 4) chronic therapy with steroids or other immunosupression.

It is a common observation that people with a BCG scar are more likely to have a positive PPD than those who do not. We contacted our local health department regarding this phenomenon, and they were unable to provide us with any specific statistics on the different rates of reaction. When our heath center started performing physical examinations for the Immigration and Naturalization Service for the adjustment status of aliens, it became clear that there was an opportunity to monitor the relative frequency of PPD reactions in those with and without a previous BCG vaccination.

PATIENTS AND METHODS

During a period of several weeks, every one of the patients who were undergoing a physical examination for the adjustment of their immigration status were evaluated for the study. More than 90% of the people were from Mexico. Of these, 748 met the following criteria: 1) they were greater than 14 years of age, 2) there was no past history of a positive PPD, 3) they had a PPD placed at the time of their exam, and 4) we were able to ascertain whether they did or did not have a BCG scar. Tuberculin Purified Protein Derivative (mantoux) manufactured by Connaught was used. Five U.S. TU units in 0.1 ml were injected intracutaneously on the volar aspect of the right forearm at a site prepared with cleansing by an alcohol swab. The site was inspected within 48 and 72 hours later. An area of induration $\geq$ 10 mm was read as positive.

The 748 clients were divided into two groups: those with evidence of having had a BCG vaccine and those with no sign of BCG. The BCG was identified by the typical irregularly shaped and raised scar measuring from 2-3 mm up to 3 cm or more in size. It was usually located on the right shoulder, but was sometimes found on the opposite shoulder or buttock area. If there was a doubt of the identity of the scar, it was confirmed by the client. The groups were broken down further into sets according to age.

RESULTS AND DISCUSSION

The results confirmed our clinical experience that persons with a BCG vaccination are more likely to have a reactive PPD result. The difference in rates is more impressive in the younger ages (see Table 1). Persons between the ages of 15 and 25 years have an 80% increased chance of having a positive skin test if they have had a BCG vaccination. All age groups combined show nearly a one-third increased rate of reactivity in those with a BCG over those without. Although the sample sizes are small, in the older age groups there appears to be an increased rate of reactivity to a PPD with advancing age. This is probably due to the greater number of years of being exposed to TB. A reaction rate of 34% was found of all ages combined irregardless of BCG status (see Table 2).

TABLE 1

	BCG PRESENT			BCG ABSENT		
AGE	TOTAL	POSITIVE PPD	% POSITIVE	TOTAL	POSITIVE PPD	% POSITIVE
15-24	168	61	36%	85	17	20%
25-34	177	66	37%	119	31	26%
35-44	24	11	46%	98	34	35%
45-54	13	8	62%	55	19	35%
55-64	2	1	50%	7	4	57%
All Ages	384	147	38%	364	105	29%

TABLE 2

TOTAL POSITIVE PPD	TOTAL PATIENTS	AVERAGE COMBINED REACTOR RATES
252	748	34%

This data may be useful to centers planning to perform or now performing physical examinations as civil surgeons for the adjustment of status of aliens. While screening for communicable TB, a normal CXR or negative PPD will suffice for an otherwise healthy person. Most persons over 35 years will not be candidates for isoniazid prophylaxis. For those individuals (depending on the cost of a PPD and/or CXR), the difficulty with transportation, the loss of work to return for a PPD reading, etc., it may be more convenient and cost effective to have a CXR. This approach can become more pragmatic if the client has a higher chance of having a positive PPD (i.e., one with a previous BCG vaccine who is advanced in age).

For persons younger than 35 years, a PPD should be placed first. If there is a positive reaction, then a CXR should be obtained. In our experience, most x-ray's have been normal and the individual was then placed on isoniazid for nine months. This was done without regard for the presence of a BCG vaccination because reactors secondary to vaccination cannot be distinguished from those secondary to dormant TB. From a public health viewpoint, by identifying and chemoprophylaxing clients who have a potential for reactivation and by identifying convertors in future years, there may be a reduction in the number of active TB cases in the future.

IN RESPONSE:

By Paul Monahan, M.D., Yakima Valley Farmworkers Clinic, Toppenish, Washington

This report from Drs. Guzzetta, Eliazo, Hansen and Tapia from Fresno provides extremely useful information for clinicians caring for Hispanic patients. Comparably high PPD reactivity rates have been documented on more than 1,000 immigration examinations in the Yakima Valley, Washington. Several additional thoughts come to mind:

Repeat PPD testing at two to four year intervals is recommended for nonreactors, since there is a 75% increase in reactivity among non-BCG persons between the 15-24 to 35-44 age groups (an increase from 20%- to 35% overall).

While a screening CXR at one point in time may pragmatically be substituted for PPD testing in immigration candidates over 35 years of age (non-INH candidates), the long-range health value of defining PPD status should not be overlooked. In recent years, the clinical value of the PPD status has been recognized in the elderly population because of outbreaks of active TB among previous non-reactors in nursing home populations. The premise that active disease in older patients is equated with reactivation of dormant disease is often incorrect.

It is important to include effective health education to PPD screening. Many patients who have been previously tested often have no understanding of what test has been done, much less what it means, whether positive or negative, etc.

It is unfortunate that so many individuals who have lived in the U.S. for many years, receiving sporadic or ongoing medical care, have not previously been tested for TB.

The high incidence of reactivity shown in the Fresno study illustrates the importance of PPD screening on other clinic patients, many of whom have similar life backgrounds to immigration candidates. For a preventative strategy to be effective, it is necessary to identify the candidates by an effective screening process.

Be Aware!

COMMON CULTURAL PRACTICES AND AIDS

Migrant health providers should be aware of the following common cultural practices which are widely-used by Hispanics and have serious health implications:

Purchase of Medications from Mexico: In U.S./Mexico border areas, many classified medications are readily available and purchased without a physician's advice. This practice includes the purchase of injectable vitamins (e.g., B-12) and antibiotics (e.g., penicillin). Use of injectable vitamin B-12 is extremely wide spread. Many believe that B-12 will "make you feel better" (whether or not you know what is making you feel bad) or "keep you from getting sick."

Home Treatment: Before bearing the cost to go to a doctor, a common practice is to self-prescribe and self-administer medications and/or injections. Many mothers administer injections to their children. Injections are very popular because they are thought to "work quicker and make you get better faster."

Shared Medications: The practice of sharing medications between family members is common. It is also not uncommon for a disposable syringe or needle to be used more than one time.

These cultural practices could present a worst-case scenario when combined with the current national problem of AIDS. To prevent potential health problems, education to Hispanic migrant patients is needed on:

—Safe use of disposable syringes, including the dangers of reusing a disposable needle;
—Appropriate use of injectable vitamins and medications; and
—AIDS transmission.

If your project has developed good Spanish-language educational brochures related to the above, please send a copy to *Newsline*. We will identify appropriate educational materials and distribute them upon request.

For information, contact: *Newsline*, National Migrant Referral Project, 2512 South IH-35, Suite 220, Austin, TX 78704, 1-800-531-5120.

MIGRANT HEALTH

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An Overview of Past, Present, and Future Approaches

Migrant Farmworker Health Records Transfer and Referral Systems

One of the greatest challenges in migrant health care delivery has been effective communication of health data within migratory streams and at the national level. When a migrating agricultural worker moves from his/her home base location to an upstream location, the probability of finding a health care provider familiar with his/her historical and current health condition significantly decreases.

This paper will outline some of the historical and current objectives, challenges, and approaches to transferring health records and providing health referral services in the migrant and seasonal farmworker population. Summaries of data requirements supporting referral and continuity of care, and current or emerging technology supporting Migrant Health Program objectives are also presented.

Historical and present efforts to provide migrant farmworker health records transfer, referral systems, and migrant health status trend analysis have sought to support three primary objectives:

- Continuity of care;
- Responsiveness to emerging health problems; and
- Effective management of the migrant health care network.

Historically, several challenges have faced the Migrant Health Program in pursuing these objectives. Recording patient history and health records data requires considerable time and effort on the part of both the care provider, clinic staff, and the patients themselves. Patients sometimes forget or lose their personal health records or cards. Greater burden is placed on home-based clinics to initiate the portable health record. A diversity of portable health records have been produced, each focusing on varying health conditions. Lack of consistency among these approaches has resulted in limited utilization.

Increasingly, migrant health clinics are automating practice management functions with computer systems that either do not address medical records or that lack compatibility with other existing systems in the migrant stream. Past attempts to use automated centralized networks supporting referral and continuity of care have proven expensive and ineffective. Designing and implementing a system that serves the medical records and referral needs of the clinician, that does not interrupt patient flow in labor-intensive clinical data processing, that is cost-effective, that is universally accepted in its data content, and that supports health status trends analysis at the national level has proven difficult.

CONTINUITY OF CARE

In order to provide continuity in the care initiated by a home base or upstream clinic, many clinicians use some referral mechanism or personal health record hand-carried by the patient. Both approaches seek to provide a transfer of important health information from one health care provider to another in order to avoid unnecessary repetition of services and to coordinate the efforts of both to ensure the continued maintenance and improvement of the patient's health.

Several local, state, and national organizations have initiated projects supporting continuity of care in the migrant farmworker streams. Summaries of each of these approaches follow.

Portable health records: The portable *personal health card* and migrant farmworker *identification card* are two examples that personally involve the migrant farmworker in the continuity of care process. Many migrant health clinics currently issue patient identification and/or medical information cards specific to their own administrative needs.

The National Migrant Referral Project (NMRP) first introduced adult and child personal health cards in 1973. Other projects in Texas, Colorado and Florida have tested variations of a migrant personal health card. Some projects have focused this approach on obstetrical, prenatal, perinatal, and pediatric immunization care and tracking. Other projects simply provide the migrant patient with a photostatic copy of his/her medical record for transport to the next destination.

National automated networks: For several years, NMRP has operated a toll-free telephone service and online access to the *Migrant Student Record Transfer System* (MSRTS) as a centralized telephone referral service. Although MSRTS accommodates immunization and health status data and is extensively used by selected states, its focus is continuity in the educational records of migrant students.

In the late 1970's, the Office of Migrant Health and NMRP investigated a computerized approach to continuity of care. From 1978-1982, national clinical task forces convened to examine the issues associated with health record data transfer in the migrant health community. A paper facsimile of a medical record as the mechanism for data transfer was recommended. A National Integrated Medical Service System was designed for a minicomputer system which would require minimal programmer intervention. A data center was planned at NMRP that would support automated continuity of care and referral services. Due to an incomplete software system, costs associated with equipment maintenance and telecommunications, and lack of extensive local commercial support for the software utilized, a national automated referral network was never realized.

Stream-wide health project staff: A stream-wide service is typified by the East Coast Migrant Council. This approach mobilizes health care providers and support personnel who travel along with the migrating patient population.

Abstracted from a presentation by: J. Carter Crafford, Jr., MITRE Corporation, to the Migrant Clinicians Network Board Meeting, November, 1987.

RESPONSIVENESS TO EMERGING HEALTH PROBLEMS

The Migrant Health Program must also respond effectively to ever-changing demographics, acute medical alert conditions, and the health status of the migrant agricultural population. State, regional, and national migrant health, labor, and educational agencies collect demographic statistics and conduct directed studies to determine the annual shifts in patient demographics and health conditions in order to adjust their programs to meet the changing needs in the population. NMRP issues medical alerts in response to identified outbreaks of disease or acute conditions that potentially threaten the migrant population.

EFFECTIVE MANAGEMENT OF THE MIGRANT HEALTH CARE NETWORK

At the national level, the Office of Migrant Health (OMH) is held accountable by the U.S. Congress for effective management of the migrant health program. OMH requires accurate statistics on the health status of the population and trends in that status in order to develop proactive programs and initiatives ensuring the public health.

During the 1987 growing season, NMRP initiated a morbidity reporting system demonstration project with a statistically selected group of migrant health centers in the Midwestern stream. Concurrently, the MITRE Corporation is conducting a project to identify automated migrant patient data bases in each of the three migrant streams and to extract samples of selected data bases to determine migrant health status profiles. Both efforts utilize the kind of information typically recorded on a migrant clinic's medical patient encounter form: patient birth date, sex, marital status, race, diagnostic codes, service procedures codes, migrant status, and service delivery site. Some patient confidentiality issues exist associated with using patient names and/or patient identification numbers in tracking movement of individuals in migrant streams.

While morbidity profiles can be obtained by rank ordering the frequencies of diagnoses and procedures, true epidemiological and mortality studies cannot be conducted apart from health outcome data that is not typically recorded on a patient's clinical encounter form. The Computer Stored Ambulatory Record (COSTAR) system currently used in two large migrant health projects maintains this kind of health outcome data and offers an opportunity to address the results of various migrant health program initiatives.

CONSIDERATIONS IN DEVELOPING DATA TRANSFER TOOLS

Although several approaches have been undertaken and are currently in use throughout segregated regions of the country, the opportunity to develop a tool that will be universally accepted and utilized throughout the migrant health community still exists. Whatever mechanism is employed, it should be simple for everyone to use—migrant patient, clinician, clinic front desk staff, or administrator. Several levels of data requirements exist depending on the objectives to be served by the tool.

For continuity of care, a migrant patient identification card including basic patient demographic information and a certification of his/her eligibility status for migrant health and other public health program services (e.g., Medicaid, Medicare) could save clinic patient registration staff valuable time and effort. By identifying the clinic and physician last visited in the patient's migration, as well as the name and telephone number of the clinic issuing the card, the card could also provide the key information needed for telephone communication between attending clinicians.

At the next level of detail and complexity, data denoting high-risk conditions and/or active problems and medications could be included. For pediatric patients, immunization data would be included. For adults, results of health screening items, such as chest X-ray, EKG, audiometric, ocular pressure, and urinalysis, could be included. Beyond this level of detail, unless the medium focuses on a specific category of medical condition, the tool becomes more difficult to bound. Summarized specific medical histories, summarized general medical histories, and total medical record approaches argue for some miniaturization or automation technique.

OPTIONS FOR FUTURE DATA TRANSFER MECHANISMS

There are several options utilizing both existing and emerging technologies with which to address these issues in the near future. For continuity of care, both a national migrant identification card and a national migrant personal health card could be defined and produced for extensive distribution during the 1988 growing season. Since some years of field experience exist with cards of these kinds, the issues associated with their use are well known, can be addressed, and a cost-effective implementation realized in a short-time frame.

Beyond these mechanisms, several technology-based approaches exist that could be investigated as small scale tests. One of these approaches is a paper card which uses *Soft Strip* technology, a process where information is encoded as compressed bar codes. This approach offers the advantages of transferring large amounts of data on a non-magnetic, automated medium and statistical data analysis to track both migrant patient movement and analyze health status indicators. An alternative is the 3.5 inch *floppy diskette* used in portable microcomputers which can store over a million characters of information. This magnetic media, however, must be kept away from magnetic sources, dirt and heat to avoid damage.

Facsimile telecommunication (FAX) would transfer most printed material between two sites. For effective use with the migrant population, however, the previous or target clinic location must be known. Another transportable, somewhat inexpensive mechanism for transferring sizeable amounts of information is *Microfiche*, although adding data to a record would require time and equipment.

With the advent of microcomputer technology, the cost effectiveness of a *centralized automated referral system* is more a reality than ever before. Increasing numbers of migrant health clinics are acquiring automated practice management systems that could possibly interface with a centralized system supporting referral. Finally, medical and insurance communities are currently investigating *smart*, *laser*, and *unified cards* that can record, store, and transfer millions of characters of information. These computer technology cards will become widely utilized in the consumer market during the next five years.

Clearly, the goals of effective migrant health care referral, health records transfer, and national migrant health status trend analysis are achievable if the mechanisms supporting these goals are clearly bounded, focused on specific health conditions in the migrant population, and enthusiastically supported by clinicians, administrators, and clinic front desk staff that will use them.

The selected tool or tools must save time, effort, money, and bring primary benefit to the migrant farmworker patient. If the selected tool can also provide essential morbidity/mortality data for national migrant health status evaluation, it can enhance the ability of the OMH to initiate proactive programs of health care and to respond more effectively to congressional inquiries into the health status of the migrant farmworker population.