Study of Haitian Boat People Shows Prevalence of HBV and HIV Markers

Of the nearly 100,000 Haitians who have come to the United States since 1978, about 15,000 landed as boat people on the coast of south Florida in 1980 and 1981. Half of these were men aged 18 to 29; about 20 percent were women 30 to 40; and about a quarter were women, almost all 18 to 35 years old (1).

We report the results of a seroprevalence study to measure the frequency of hepatitis B virus (HBV) and human immunodeficiency virus (HIV) infection in a population of 171 Haitian men. The subjects were detained by the U.S. Immigration and Naturalization Service during the second quarter of 1981 prior to exclusion hearings. Their mean age was 27.7 years, ranging from 17 to 52. Forty-five (26 percent) reported having been employed prior to leaving Haiti; of these, 29 had been working as farmers, and 16 in nonagricultural work.

A complete health assessment was performed during their detainment. Limited infectious disease surveillance was carried out, and some findings have been reported (2). A sample of blood was collected from each person by venipuncture and the serum stored at −70 degrees C until tested in 1988. Sera were identified only by date of birth.

HBV markers were tested for using radioimmunoassays (4) for the hepatitis B surface antigen (HBsAg), the hepatitis B e antigen (HBeAg), antibodies to the hepatitis B surface antigen (anti-HBs), antibodies to the hepatitis B core antigen (anti-HBc), and antibodies to the hepatitis B e antigen (anti-HBe). All positive results for anti-HBs and anti-HBc were confirmed using enzyme immunoassay kits (8). A positive RIA test was one having a S to N ratio greater than 10.

Antibodies to HIV were assayed using two commercial ELISA procedures (C). Samples yielding borderline or repeatedly positive reactions, as determined by instructions of the manufacturers, were further tested by a Western blot technique enhanced by the use of an avidin-biotin system (3).

A Western blot was read as positive if bands were detected in either the p24 or gp41 regions, according to established Centers for Disease Control criteria.

Results

Of the 171 subjects, 21 were positive for the hepatitis B surface antigen, a prevalence rate of 12 percent; 95 (56 percent) had antibodies to the surface antigen; and 115 (67 percent) had at least one detectable HBV marker. Of the 21 presumed chronic carriers, only 6 (29 percent) had detectable HBeAg levels. The age distribution of those seropositive for HBsAg or anti-HBs did not differ from that of those testing negative.

Twelve subjects (7 percent) were seropositive for HIV antibodies by both ELISA screening and Western blot confirmatory testing. The mean age of those testing seropositive was 30.4, ranging from 19 to 52 years. The mean age of those testing seronegative for HIV antibodies was 23.6. Eight of the 12 seropositive subjects (67 percent) had a Western blot pattern positive for both the p24 and gp41 bands as well as other viral proteins. Tests of three subjects reacted to p24 only, and one reacted to gp41 only, although all four of these had p15 and p55 bands present.

Table 1 compiles the findings of surveys for the prevalence of HBV serologic markers that have been conducted in Haiti as well as in Haitian populations in the United States. Table 2 depicts similar data for HIV.

### Table 1. Surveys of Haitian populations for Hepatitis B markers, with seroprevalence rates in percentages

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>HBeAg</th>
<th>Any HBV marker</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAHO (6)</td>
<td>National estimate</td>
<td>2.7</td>
<td>61</td>
</tr>
<tr>
<td>Olle-Goig (7)</td>
<td>19 adults, undiagnosed liver disease, 68 percent female</td>
<td>31.0</td>
<td>95</td>
</tr>
<tr>
<td></td>
<td>39 adult controls, 69 percent female</td>
<td>5.1</td>
<td>72</td>
</tr>
<tr>
<td>Malison, et al. (8)</td>
<td>51 immigrant women</td>
<td>4.0</td>
<td>55</td>
</tr>
<tr>
<td></td>
<td>72 children, aged 10</td>
<td>...</td>
<td>10</td>
</tr>
<tr>
<td>State of Florida (9)</td>
<td>122 immigrants, 88 percent male</td>
<td>14</td>
<td>84</td>
</tr>
<tr>
<td>CDC*</td>
<td>77 pregnant immigrants</td>
<td>7</td>
<td>62</td>
</tr>
<tr>
<td>Lange, et al.</td>
<td>171 male boat persons</td>
<td>12</td>
<td>67</td>
</tr>
</tbody>
</table>


### Table 2. Surveys of Haitian populations for human immunodeficiency virus markers, with seropositive rates in percentages

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Number</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDC (10)</td>
<td>Immigrants, New York City</td>
<td>97</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Immigrants, Miami</td>
<td>129</td>
<td>8</td>
</tr>
<tr>
<td>Pitchenik, et al. (11)</td>
<td>Native, outpatients</td>
<td>68</td>
<td>2.9</td>
</tr>
<tr>
<td></td>
<td>Native, hospital workers</td>
<td>28</td>
<td>3.7</td>
</tr>
<tr>
<td>Gazzolo, et al. (12)</td>
<td>Immigrants, French Guiana</td>
<td>211</td>
<td>2.8</td>
</tr>
<tr>
<td>Lange, et al.</td>
<td>Haitian boat people</td>
<td>171</td>
<td>7</td>
</tr>
</tbody>
</table>
There was some concordance between HIV infection and HBV infection; 10 (83 percent) of those with HIV antibodies were seropositive for at least one HBV serologic marker. However, in this study, the association between HBV and HIV was not statistically significant; 10 of the 12 HIV positives were HBV-marker positive, while 10 of 159 HIV negatives were also HBV-marker positive \( P = 0.1829 \), Fisher's exact test.

**Discussion**

This study corroborated and extended earlier studies that demonstrated that HBV infection was prevalent in Haitians and Haitian emigrants. Since hepatitis B surface antigen was only assayed once, those testing positive can only be presumed to be chronic carriers. The observation that only 29 percent of the HBsAg carriers had serologic evidence of HBsAg carrier is consistent with HBV infection early in life, as seen in developing regions (4). This implies that those who were HBsAg-positive were indeed chronic carriers. The other survey of asymptomatic Haitians which demonstrated a carrier rate of this magnitude was that conducted by the State of Florida (9) during the same period. That study suggested that the HBsAg carrier rate may be higher in refugee populations from Haiti than in the Haitian population as a whole.

While AIDS is distributed throughout the Caribbean, Haiti has reported the greatest number of cases. When reported cases for the region are standardized by population, Haiti does not emerge as a uniquely high-risk region (5). However, despite the fact that detailed and comprehensive HIV antibody seroprevalence data for the area is lacking, our study indicates that Haitian emigrants exhibited substantial exposure to HIV in 1981. We conclude that both HBV and HIV were important infections in Haitian boat people, and that the HBsAg carrier rate was higher in this segment of the Haitian population than in Haitians in general.

**References**


**Supplies**

A. Abbott Laboratories, North Chicago, IL.
B. Abbott Laboratories, North Chicago, IL, Auszyme and Cozyme.
C. Abbott Laboratories, North Chicago, IL, and DuPont Co., Wilmington, DE.

**Labor, HHS Urge Health Care Employers to Protect Workers Against Hepatitis B and AIDS**

The Secretaries of Labor and Health and Human Services have launched a nation wide campaign to reduce the risk of on-the-job exposure to viruses that cause hepatitis B and AIDS among health care workers. A letter signed by Labor Secretary William E. Brock and HHS Secretary Otis R. Bowen and an information package were published in the October 30, 1987, Federal Register and were mailed to an estimated 500,000 health care employers beginning last November.

The joint letter urges hospitals, blood banks, hospices, laboratories, and other health care employers to adhere to Federal guidelines designed to protect employees from accidental exposure to the viruses. The guidelines were developed by HHS's Centers for Disease Control.

The two departments developed a joint advisory notice for the campaign which explains to employers how to implement the protective guidelines. The advisory recommends "imposing barriers in the form of engineering controls, work practices, and protective equipment" to safeguard health care workers who may be exposed to blood, body fluids, and tissues.

The notice officially spells out for the first time that employers can be held accountable for failure to implement the guidelines, which have been considered voluntary. "It is the legal responsibility of employers to provide appropriate safeguards for health care workers who may be exposed to these dangerous viruses," the notice says. The mail campaign is the initial step in a joint effort by the two departments to increase awareness among health care employers and employees of the risk associated with exposure to the hepatitis B virus (HBV) and the human immunodeficiency virus (HIV), which causes acquired immunodeficiency syndrome or AIDS.

The departments worked closely with the American Nursing Association, American Hospital Association, American Medical and Dental Associations, and other private and governmental agencies to assure the most comprehensive mailing possible.

According to the CDC, as many as 18,000 health care workers per year may be infected by the HBV virus. Nearly 10 percent of those who became infected become long-term carriers of the virus and may have to give up their profession. Several hundred health care workers will become acutely ill or jaundiced from HBV, and as many as 300 annually may die as a result of HBV infections or complications.

Infection with HIV virus in the workplace represents a smaller but very real hazard to health care workers, according to the notice. CDC expects that with 1.5 million persons now believed to be infected by HIV, the number of AIDS cases may grow to as many as 270,000 by 1991 from the 40,000 which had been reported by August 1987.
U.S. Fertility Rate
Lowest Ever While Births Increase for the Unmarried

An estimated 3,731,000 babies were born in the United States during 1986. The number was slightly fewer than the 3,749,000 reported for 1985, according to provisional statistics released by the National Center for Health Statistics. The birth rate was 15.5 live births per 1,000 total population, down 1 percent from 1985.

The fertility rate of 64.9 live births per 1,000 women aged 15 to 44 was the lowest observed in this country, 2 percent lower than for 1985. The number of births declined because the 1-percent increase in the number of women of childbearing age was not enough to compensate for the 2-percent decline in the fertility rate.

Births to unmarried women totaled 828,174 in 1985, accounting for 22 percent for all live births. This is an 8-percent increase in the number of births to unmarried women over that for 1984, and a 24-percent increase over that for 1980. Thirty percent of the births to unmarried women in 1985 occurred to mothers 25 or older, compared with 24 percent in 1980. The birth rate for unmarried women was 32.8 live births per 1,000 unmarried women, an increase of 6 percent over that for 1984. The rate for white women increased 8 percent compared with a 3-percent increase for black women.

Death Rate at All-time High

During 1986 an estimated 2,099,000 deaths occurred in the country, the greatest number ever recorded. However, because the population increased at an even greater rate than the number of deaths, the provisional death rate for 1986 of 870.8 per 100,000 population was about 1 percent lower than the provisional rate for 1985. The record number of deaths in 1986 is consistent with a general increase in the size of the population, especially for ages 65 and older. As a result of the continued decline in death rates for many age groups, especially 45 to 54 years and older, the provisional age-adjusted death rate declined from 545.9 in 1985 to 540.2 in 1986, the lowest age-adjusted death rate ever recorded in the United States.

Age-adjusted death rates control for changes and variations in the age composition of the population; they are better indicators than crude death rates for showing changes in mortality risk over time and for showing differences between race-sex groups within the population.

Life Expectancy High

The expectation of life at birth in 1986 reached a new high of 74.9 years. Provisional data showed that among whites, life expectancy at birth for both females and males increased by 0.2 years from 1985 to 1986. Among blacks, life expectancy at birth increased by 0.2 years for men but declined by 0.1 years for women.

Infant Mortality Rate Down

The infant mortality rate for 1986 was 10.4 per 1,000 live births, 2 percent lower than the rate of 10.6 for 1985. For 1986 the estimated infant mortality rate for infants under 28 days was 6.7 deaths per 1,000 live births; for infants 28 days to 11 months of age, the rate was 3.7 deaths per 1,000 live births. Between 1985 and 1986 the changes in mortality rates for infants younger than 28 days, and for infants 28 days to 11 months in age, were not greater than would be expected because of sampling variation, and are not statistically significant. Individually, none of the causes of infant mortality changed significantly between 1985 and 1986.


New York State Assesses Spread of HIV

The New York State Department of Health has begun testing 100,000 blood specimens to try to determine the extent of human immunodeficiency virus (HIV) infection within the State’s population. The testing is the largest effort undertaken by a public health agency to assess the spread of the AIDS virus.

The double-blind study is using blood specimens collected routinely for other purposes by hospitals and treatment clinics throughout the State. All patient identification was removed from the samples before they were sent for testing to the State laboratory. Samples are identified only by site of collection, geographic code, age, sex, and ethnic code. The study design to ensure anonymity precludes identification or notification of individuals whose samples test positive for exposure to the virus.

Samples in the HIV seroprevalence study include specimens collected routinely from clients at family planning clinics, sexually transmitted disease clinics, TB clinics, and drug treatment programs; blood samples used in screening newborns for hereditary disorders; and blood collected from inmates as part of State prison admission physical examinations.

Results of the study are expected after about 6 months. They will provide information about the rate of HIV infection among those considered at risk, such as IV drug users, prison inmates, and those being treated for sexually transmitted disease. Samples from newborns and family planning clinic sites will provide a prevalence rate among women of child-bearing age and their offspring. The State will use the information to assess current and future policies, services, and prevention efforts to combat the spread of the infection. New York provides free HIV antibody testing and counseling to any resident seeking the service. More than 55,000 persons have been tested under that program.


HRSA Contract Continues National Organ Procurement Transplantation Network

A $1.1 million contract was awarded by the Health Resources and Services Administration (HRSA) of the Public Health Service to the United Network for Organ Sharing (UNOS) of Richmond, VA. The contract enables
UNOS to continue to develop and operate a single national organ donation, procurement, and transplantation network to serve people with end-stage organ failure.

Established under a prior HRSA contract awarded to UNOS in September 1986, the network aids organ procurement organizations, tissue typing laboratories, and hospitals that perform kidney, heart, liver, heart-lung, pancreas, and bone marrow transplants to match donor organs with recipients. If a local or regional match cannot be made, the network, which is organized into 10 geographic service areas, makes the organs available to programs in the other service areas.

Under the new contract, the network will continue to operate the national computerized patient waiting list, a system for matching patients with donor organs, and a 24-hour telephone access system. Additionally, it will implement a system for compiling national data on procurements and transplants, continue to assist organ procurement organizations to conduct professional education on organ procurement, and continue a study begun last year to improve access to organs for highly sensitized patients who might otherwise have difficulty finding a match.

The contract provides funds for the first year of a planned 3-year project.

—Ellen R. Rawlings, Health Resources and Services Administration

Nutrition and Counseling Publications Offered

Two recent publications of the Public Health Service (PHS) concern nutrition issues of interest to health professionals, educators, and counselors. "Nutrition and Adolescent Pregnancy: A Selected Annotated Bibliography" provides technical assistance in improving the health of teenage mothers and their babies. The first section of this 98-page publication contains key technical references to help health care providers update their knowledge. The second section contains references to nutrition education materials appropriate for use in working with pregnant adolescents. This is one in a series of publications developed jointly through a coordinated public and private sector effort.

Coposponding organizations are the Health Resources and Services Administration's Division of Maternal and Child Health, PHS; the U.S. Department of Agriculture’s National Agricultural Library, Food and Nutrition Information Center; and the March of Dimes Birth Defects Foundation, which contributed to the topic of adolescent pregnancy. Other materials in the series are "Working with the Pregnant Teenager," a guide for nutrition educators, and "Food for the Teenager During and After Pregnancy," a booklet for adolescents.

"Cross-Cultural Counseling: A Guide for Nutrition and Health Counselors," a reference for those who provide counseling for people of various cultures, including Asian and Pacific Islanders, blacks, Hispanics, and Native Americans. The 35-page report was jointly sponsored by the Department of Agriculture’s Food and Nutrition Service and the Health Resources and Services Administration’s Division of Maternal and Child Health. The publication was produced through the agencies' joint Nutrition Education Committee for Maternal and Child Nutrition Publications.


VIIth International Pneumoconioses Conference Scheduled for Pittsburgh

The VIIth International Pneumoconioses Conference, the first in 5 years, will be held at Pittsburgh, PA, August 23–26, 1988.

Organizing sponsors are the National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control, Public Health Service; and the International Labour Office (ILO), a specialized agency of the United Nations.

Sponsoring agencies are the Mine Safety and Health Administration and the Occupational Safety and Health Administration, Department of Labor; and the Bureau of Mines, Department of the Interior.

Themes of the conference will be (a) evaluation, sampling, and measurement of respiratory hazards in the working environment through environmental, epidemiologic, and medical surveys; (b) progress in pathogenesis of respiratory disorders due to occupational exposures; (c) progress in prevention, early diagnosis, and medical control of occupational lung diseases; and (d) progress in inhaled particles control and suppression technologies for mining and industry. The call for papers and poster sessions on the themes, with instructions for authors, was distributed in November 1987, with a suggested deadline of March 20, 1988.

Working groups of select panel presentations and general discussions will be held on (a) the ILO International Classification of Radiographs of Pneumoconioses, 1980; (b) pathology standards for the pneumoconioses; (c) occupational carcinogenesis and risk assessment at low exposure levels; (d) nonmalignant respiratory disorders: asbestos, asbestos-substitutes, and man-made fibers; and (e) standardization of measures of exposures.

A demonstration of teaching techniques used to train physicians in the use of the ILO radiograph classification system will be conducted by faculty of the American College of Radiology's task force on pneumoconioses. A seminar at the end of the conference will be held on the ILO classification system, after which the NIOSH proficiency examinations for certification and recertification of B readers will be offered. Technical visits will be scheduled to occupational health laboratories and industrial plants in the area. Conference sessions will be conducted in Spanish, French, and English. Publication of the proceedings is planned.

Information on the conference may be obtained from Robert E. Glenn, Conference Chairman, NIOSH, 94 Chestnut Ridge Rd., Morgantown, WV 26505–2888 (tel. 304:291–4474, telex 54971 CDC ATL).

Report Surveys State Laws and Regulations for Health Professions

The status of licensure laws for 43 health occupations and professions is described in a newly available 208-page report. "State Regulation of the
Public Forums Explain New York's Quest for Radioactive Waste Site

New York State's legislated process to establish a disposal facility for low-level radioactive waste by 1993 is characterized by a broad public information effort at the grass roots level.

The State's department of health recently held a series of seven public information forums in different cities to explain health and safety aspects of low-level radioactive waste management and alternative disposal methods.

Before any site can be chosen, the New York State Department of Environmental Conservation will hold hearings on draft environmental impact statements, which must be filed at the time of site selection. Hearings also must be held when an application for a license is filed to permit operation of the facility. A list of about 12 possible sites is expected to be issued in the spring of 1988. Draft criteria for site and waste management method selection came out in September 1987. Excluded were sites with geological problems, such as potential groundwater contamination, and State and Federal forest preserves.

The disposal of low-level radioactive waste is considered to be one of the most important public health problems today. The waste typically results from the use of radioactive materials, as in medical diagnosis and therapy, manufacturing, research, and nuclear power production, but does not include high level waste, such as spent fuel from nuclear power generation. Low-level waste generally consists of contaminated dry trash, paper, plastics, glass, clothing, discarded equipment and tools, and sludges and liquids. These materials are contaminated with low, but potentially hazardous, concentrations or quantities of radioactive elements. Such waste at present is shipped to three sites located in South Carolina, Nevada, and Washington. The U.S. Congress has required that each State take responsibility for its own low-level waste.

Information about the State Department of Health's regional forums and copies of materials about health and safety aspects are available from the New York State Department of Health, Low-level Radioactive Waste Information Program, 2 University Plaza, Albany, NY 12237 (tel. 1-800: 458-1158).

Primary Care Federal Grant Support Influences Career Choices, Study Shows

A national study which was designed to assess the impact of Federal grant support on primary care residency training in internal medicine and pediatrics between 1977 and 1987 found that a majority of graduates of the federally funded programs chose careers in primary care rather than in subspecialties. They were also more likely to become board certified in internal medicine or pediatrics than those not in such programs.

Using data on primary care residents whose names appeared both on the AMA Physician Masterfile and the National Residency Matching Program, the study showed that 73 percent of the 16,470 graduates of federally funded internal medicine programs chose primary care careers. Eighty-eight percent of the 4,726 graduates of federally funded pediatric programs also chose primary care careers.

Additionally, the study showed that a somewhat larger number of graduates of federally funded primary care programs chose to set up practice in medically underserved areas than did graduates of traditional programs, suggesting that the federally funded programs may have a positive influence on location selection.

The study, "Assessment of the Development and Support of Primary Care Residency Training in General Internal Medicine and General Pediatrics," was completed in September 1987. It was conducted under a contract awarded by the Health Resources and Services Administration of the Public Health Service to the Boston University School of Medicine.

—Ellen R. Rawlings, Health Resources and Services Administration.

Governors Asked by Bowen To Share AIDS Information

Health and Human Services Secretary Otis R. Bowen, MD, has asked the nation's Governors to share information on the issues of confidentiality, discrimination, and public health protections relating to acquired immuno deficiency syndrome (AIDS).

Letters to the Governors said that educational, testing, and counseling efforts are already being expanded to help prevent the spread of AIDS, but that additional efforts by the States in certain areas may be needed. Those areas include confidentiality and nondiscrimination, as well as testing, counseling, and other measures to protect the public and control the epidemic.

"Because these are all areas in which States have traditionally had major responsibilities, I am seeking your help in examining ways in which your State has explored reforms," wrote Dr. Bowen. "Because there are unique circumstances in each State and each State may reach different conclusions as to reforms which are needed, we can all benefit from sharing information and proposals."

Secretary Bowen also encouraged States to consider new model legislation on the handling of medical tests. The "Uniform Health Care Information Act" was drafted by the National Conference of Commissioners on Uniform State Laws.

The model legislation, which States can amend to reflect their circumstances, covers all persons and medical records, not just those that are related to AIDS.
AAPHD Calls for Papers
For 1988 Annual Meeting

Papers on a broad range of dental public health subjects have been requested for the 51st annual meeting of the American Association of Public Health Dentistry (AAPHD). The meeting will be held October 5-7 in Washington, DC, in conjunction with the Fifth Annual International Conference of Chief Dental Officers.

AAPHD is especially seeking papers on international health topics.

Key topics are trends in oral diseases, innovative preventive and educational measures, national dental programs, dental care delivery systems, dental care delivery systems, infection control, and health promotion. In addition, papers on U.S., State, and local public health are welcome.

Acceptance of the abstract requires that it be presented at the meeting; authors who fail to present their papers after acceptance may forfeit their privilege to present papers at future meetings. Papers should be submitted with the understanding that the same paper will not be presented at another meeting.

Three copies of the abstract and a self-addressed, stamped envelope must be received by April 1, 1988. Authors will be notified of acceptance by July 1.

A review process will be used to select abstracts, which will be rated on originality, significance, and quality of supporting data. Both oral and poster presentations are likely. Authors should indicate their preference and if they are willing to make both types of presentations.

Abstracts should be submitted to Dr. R. Gary Rozier, Department of Health Policy and Administration, CB # 8140, Kron Bldg., University of North Carolina, Chapel Hill, NC 27599-8140 (919) 966-2247.

Pew Doctoral Program
In Health Policy
Recruits Its Third Class

The University of Michigan's nonresidential doctoral degree program in health policy is now recruiting for its third class, scheduled to begin in fall 1988.

Supported by the Pew Memorial Trust, the Pew Doctoral Program was established for employed health policy professionals interested in doctoral education but unable to return to campus full time. The program is designed for successful practitioners working in the health care field who already have prior graduate education and who wish to prepare themselves for positions of substantial influence in health care policy or delivery.

In the curriculum are doctoral level courses in biostatistics, epidemiology, research and evaluation methods, health economics, health politics, organizational behavior, medical care organization, legal issues, and case-oriented seminars that apply interdisciplinary perspectives.

Students in the program remain employed full time while pursuing doctoral degrees. The third year is devoted to dissertations. Pew fellowships are available to successful candidates.

For additional information, contact David Perlman, MPH, Program Manager, M3031 School of Public Health II, the University of Michigan, Ann Arbor, MI 48109-2029.

Indian Health Service
To be Seventh PHS Agency

The Indian Health Service (IHS) is being elevated to become the seventh agency of the Public Health Service. "Raising the status of the Indian Health Service from a bureau to an agency signals our commitment to improving the health of American Indians and Alaska Natives," declared Otis R. Bowen, MD, Secretary of the Department of Health and Human Services. "By allowing a higher level of tribal involvement in health care issues, we are carrying out President Reagan's 1983 Indian Policy Statement."

The Indian Health Service provides care to about 1 million American Indians and Alaska Natives in 34 States. Until the reorganization becomes effective, the IHS remains part of the Health Resources and Services Administration.

The IHS comprehensive delivery system consists of programs managed and operated by IHS and various tribes. IHS has more than 11,000 employees and operates 45 hospitals, 72 health centers, and more than 250 smaller stations and satellite clinics. The annual budget for IHS is approximately $1 billion. The tribal system, operated through contractual arrangements with IHS, includes 6 hospitals, 69 health centers, and more than 250 smaller stations and satellite clinics.