
Hepatitis Control Report

Fall 1999

VOLUME 4, NUMBER 3

A quarterly publication devoted to news on the control of viral hepatitis

Provided to public health and infectious disease professionals through educational grants from SmithKline Beecham Pharmaceuticals and Merck & Co., Inc.

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U.S. hepatitis A rate drops: Did vaccination do it?

(Atlanta) The rate of hepatitis A in the U.S. has fallen to its lowest level in over 30 years, according to data supplied to CDC's National Notifiable Diseases Surveillance System (NNDSS). For the first half of this year, 7,729 cases were reported to NNDSS (preliminary data), compared to 13,854 and 11,282 for the same periods in 1997 and 1998, respectively. The incidence rate for the first half of 1999 was 5.8 per 100,000 person-years, roughly half the average annual incidence rate reported in recent years (*see figure on page 3*).

Even considering reporting lag and other artifacts, the drop in reported cases is substantial and seems to reflect a true reduction in national disease incidence. The most obvious cause of the drop is a dramatic reduction in the number of communitywide outbreaks affecting the nation this year. The big communitywide outbreaks that produced thousands of cases in the mid-1990s (Tennessee, Ohio, Iowa, Idaho, Utah, Nevada, Washington, Oregon, Oklahoma, Missouri, Arkansas, and north/central California) have largely disappeared.

Additionally, in many areas of the U.S. that experience cyclical high-rate epidemics of hepatitis A, such as American Indian reservations in the Dakotas and Native American villages in Alaska, large-scale vaccination programs have blocked viral transmission (*see MMWR 1997;46:600-603*). These areas no longer report a large number of cases.

Rates have dropped sharply this year in California and Texas, which together report over 30% of U.S. hepatitis A cases. California reported 1,585 cases in the first six months of 1999 (9.8 per 100,000 person-years), compared to 3,345 for the same period in 1997 and 2,188 in 1998. Texas reported 1,072 cases for the same period (11.0 per 100,000 person-years), compared to 1,750 for 1997 and 1,618 in 1998.

In June, health officials in Utah reported a "rapid retreat" of hepatitis A. Just three years ago, Utah had an incidence rate nearly five times the national average. But the rate fell 80% between 1995 and 1998. The state reported only 25 cases to CDC in the first six months of 1999. Debbie Miller, a nurse with the Davis County Health Department's communicable disease program, said hepatitis A vaccine was mainly responsible for the decline (*Hepatitis Weekly*, June 28 & July 5, 1999 issue). Likewise, in San Antonio, Texas, Dr. Fernando A. Guerra, director of the Metropolitan Health District (and an editorial advisor to this publication) attributes a gradual decline in hepatitis A cases this year to the city's vaccination program, which has targeted preschoolers in high-incidence census tracts since 1997.

New Mexico

New Mexico has seen an especially sharp fall in hepatitis A cases this year. The state is considered both an endemic and epidemic area for the disease, with historical annual rates of 30 to 60 per 100,000 person-years. For the first six months of 1999, the state reported only 29 cases, for an annualized rate of less than 4 per 100,000.

Dr. David W. Keller, III, director of infectious disease epidemiology at the New Mexico Department of Health, says the falling rate is “really phenomenal” and attributes most of it to the state’s vaccination effort. “We think most of the reduction in cases is due to our targeted vaccination campaigns,” he said in an interview. “We have been impressed how avidly people have sought out the vaccine on American Indian reservations in the northwest part of the state.”

In New Mexico, the hepatitis A rate has fallen sharply this year. Dr. David W. Keller, III, director of infectious disease epidemiology at the New Mexico Department of Health, attributes most of the decline to the state’s vaccination effort.

Keller said that in McKinley County, located in northwestern New Mexico, the drop in hepatitis A cases has been particularly striking. In recent years, the county has reported up to 500 cases per year, but in the first half of 1999 it reported just three. Keller believes that much of the drop in McKinley County represents an inter-epidemic period. However, because of the state’s strong effort to vaccinate American Indian children on the county’s reservations, he does not expect a resurgence of disease.

“The demographics of the disease have changed,” Keller said. “New Mexico usually has a preponderance of cases among young American Indian children or Hispanic children along the Mexican border. Recently, the few cases that have been reported are in older, white adults, many of whom admit to the use of illegal drugs.”

Did vaccination do it?

Dr. Beth Bell, a senior epidemiologist at CDC’s Hepatitis Branch, says it is too early to say whether the decline in cases this year portends a long-term downshift in national incidence. “I think we need another year of data to be able to say whether the 1999 decline in cases is a truly meaningful,” she said.

The big question, of course, is how much hepatitis A vaccination has contributed to the drop in the national rate. In the recently revised ACIP recommendations for the prevention of hepatitis A (published October 1 in *MMWR*), the agency reported that, as of December 1998, over 6.5 million doses of hepatitis A vaccine had been distributed in the United States since the vaccine first became available in 1995. Over 2.3 million of those doses were pediatric.

Vaccination has clearly blocked cyclical outbreaks in some high-rate areas like American Indian reservations, said Dr. Beth Bell, a CDC hepatitis A expert. But it is difficult to ascribe dropping rates in other areas to vaccination.

That is a lot of vaccine. But Bell is cautious about attributing the reduction in incidence to vaccination. Vaccination has clearly blocked cyclical outbreaks in some high-rate areas like American Indian reservations, she said, but it is difficult to ascribe dropping rates in other areas to vaccination. For example, vaccination had little to do with the resolution of the largest communitywide outbreaks in the mid-1990s, she said. Those outbreaks were made up mostly of cases in young adults, a group in which relatively little vaccination has occurred (see stories in the *Hepatitis Control Report*, Winter 1997-98 and Spring 1999 issues).

“At the moment, we do not have enough information about how much vaccination has been carried out in areas where we’ve seen reductions in hepatitis A cases, and we can’t be sure that the low rate this year isn’t at least partially just the reflection of an inter-epidemic period,” Bell said. “We’ll know more in a year or two.” ■

The *Hepatitis Control Report* is an editorially independent newsletter devoted to news on the control of viral hepatitis. The *Report* is not affiliated with its sponsors or any other public or private entity.

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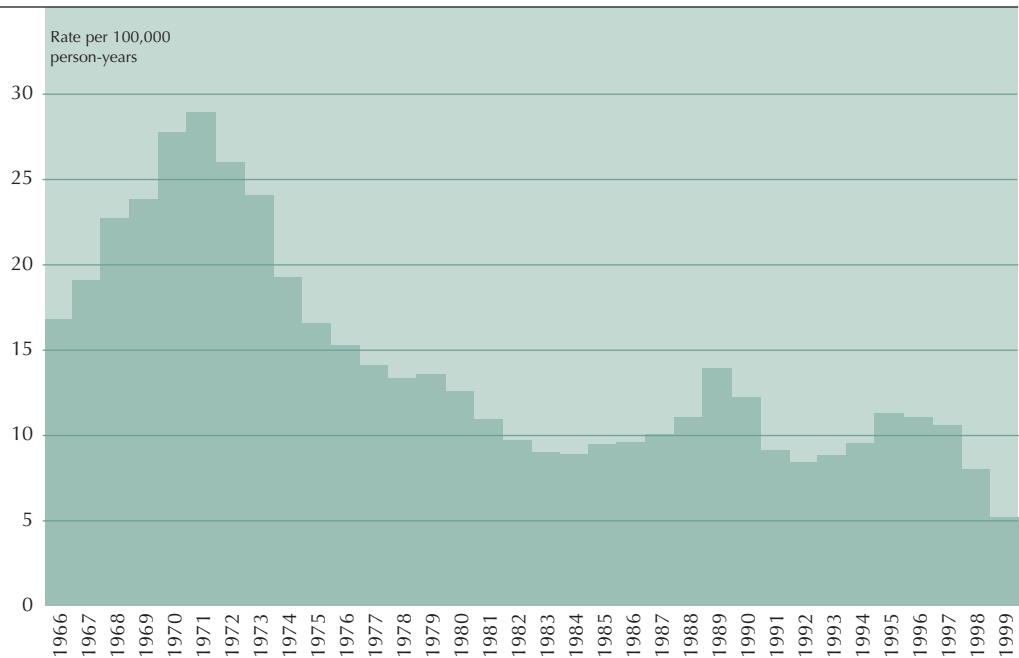
Publisher

Vasil J. Pappas, Jr.
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ISSN: 1091-8930

Reported hepatitis A incidence rate in the United States by year 1966–June 1999

Source:
CDC Hepatitis Branch
and NNDSS.



Vaccine wars: House chairman seeks personnel records of federal immunization staff

(Washington) Congressman Dan Burton (R-Ind.), chairman of the House Committee on Government Reform, has requested detailed personnel and financial records on “every staff employee within [the Department of Health and Human Services (DHHS)] who is involved with vaccines at any level.” His request came in a sharply worded letter to DHHS Secretary Donna E. Shalala on October 1. Burton initially requested the records in August, but he was dissatisfied with the department’s response. His October 1 letter gave Shalala just one week to either produce the records or face a subpoena.

A source at the committee said Burton has become increasingly concerned about the relationship between federal immunization staff and vaccine manufacturers. Burton “wants to make sure that people are making decisions about vaccines based on science and not on influence from the pharmaceutical industry,” the source said. Burton’s committee has oversight jurisdiction over all DHHS agencies.

Burton’s request struck heavily at CDC, where scores of staff members work on vaccine matters. The agency gathered “a four-foot pile of boxes full of records,” a CDC official said, and sent them to Washington, where they were screened by DHHS lawyers and forwarded to Burton’s committee in mid-October. Included in the request were e-mail records, correspondence, resumés, confidential financial disclosure forms (required to be filed by CDC professional staff), records of outside activities, and travel documents, all for the previous three years. FDA, NIH, and HRSA officials, plus the members of CDC’s Advisory Committee on Immunization Practices (ACIP), were also required to supply the information.

Burton’s request has produced what one CDC official called an “unsettling effect.” Many staffers are concerned that information supplied by them to CDC on a confidential basis, such as personal financial information, may find its way through Burton’s committee to vaccination protest groups. DHHS lawyers stripped some identifiers from the records, such as social security numbers and home telephone numbers, before forwarding them to the committee, but other identifiers remained.

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Outbreak Watch	Type of outbreak	Approximate onset date	Incidence
Arizona	Hepatitis A – communitywide	Mid-1995	Arizona's rate has dropped significantly in 1999, although it continues to have the highest statewide rate in the United States. The state reported 454 cases in the first six months of 1999, down significantly from past years. The 1999 cases were still primarily concentrated in Maricopa and Pima Counties, with a smaller number of cases (but with rates over 10 per 100,000 person-years) in Cochise, Coconino, Pinal, Santa Cruz and Yavapai Counties.
California	Hepatitis A – communitywide	Ongoing	The rate of hepatitis A in California has declined dramatically — over 25% — in the first six months of 1999. For this period, the state rate actually dipped below 10 per 100,000, the traditional U.S. average rate. The state reported 1,585 cases in the first six months of 1999, compared to 3,345 for 1997 and 2,188 for 1998. The highest rates were reported in Solano, Kern, Lassen, San Francisco, Merced and Madera Counties, which all had rates above 20 per 100,000 person-years. Rates in California's southern counties, where hepatitis A is endemic, have generally remained high.
Georgia, metro Atlanta area	Hepatitis A – communitywide	January 1996	The rate of hepatitis A in the metro Atlanta area (DeKalb, Fulton, Gwinnett, Clayton and Cobb Counties) was 15.7 per 100,000 person-years for the first six months of 1999.
Florida, Orange County	Hepatitis A – communitywide	1998	The county is experiencing a moderate communitywide outbreak based in gay men (rate 19.6 per 100,000 person-years). A total of 62 cases were reported in the county in the first 6 months of 1999.
Idaho	Hepatitis A – communitywide	November 1997	The outbreak has almost completely disappeared in all Idaho districts except District 1 (the upper northwest). In the first six months of 1999, the rate in District 1 remained high, 16.0 per 100,000 person-years.
Maryland, Baltimore City	Hepatitis A – communitywide	Early 1998	The outbreak in Baltimore City continued into 1999, although the incidence rate declined. At the end of the first half of 1999, Baltimore City had reported 40 cases with a rate 12.2 per 100,000 person-years.
Michigan, southeastern (Detroit)	Hepatitis A – communitywide	Mid 1997	The aggressive communitywide outbreak in the Detroit area is continuing, although the rate declined in the first half of 1999. Detroit City reported 513 cases and a rate of 85.6 per 100,000 person-years in the first seven months of 1999, making it one of the highest-rate areas in the United States.
Nevada, Clark County (Las Vegas)	Hepatitis A – communitywide	1994-95	In the first half of 1999, the incidence rate declined dramatically to 12.4 per 100,000 person-years (69 cases).
Oklahoma	Hepatitis A – communitywide	Late 1994	The huge communitywide outbreak in Oklahoma is slowly resolving. In the first six months of 1999, the state reported 258 cases (15.6 per 100,000 person-years), down from 845 cases in 1997 and 290 in 1998 for the same period.
Texas	Hepatitis A – communitywide	Ongoing	The rate of hepatitis A in Texas has dropped significantly in 1999. The state reported 1,072 cases in the first six months of 1999, compared to 1,750 and 1,618 for the same period in 1997 and 1998, respectively. Seventy-five percent of the 1999 cases were reported by just 37 of Texas's 254 counties.

Age/risk profile

Comments

The age distribution of cases remains bimodal, with the highest peak in the 5-9 age range.

The state has a history of outbreaks every 8-10 years. The Arizona Department of Health Services now requires that all children 2 to 5 years of age in out-of-home care in Maricopa County be vaccinated against hepatitis A.

The epidemiology of hepatitis A in California is complex, owing to the state's tremendously diverse demographics. In southern California, Hispanic children under age 15 have the highest attack rate. In central and northern California, the rate is highest in older non-Hispanic children and adults. Some counties have a mixed pattern.

The ongoing outbreak in San Francisco County based in younger gay men moderated in the first six months of 1999. The outbreak in Kern County that began in mid-1998 is continuing. Cases have increased recently in Solano County.

The outbreak continues to be based in the male homosexual population, especially in the 20-39 age group.

Vaccination efforts have had little apparent effect on the course of the outbreak.

Homosexual men.

The state health department has attempted a hepatitis A vaccination program similar to the program in Atlanta, Georgia.

Many cases have occurred in areas of low socio-economic status, and a small proportion has been seen in illegal drug users.

This epidemic may have been related to the communitywide epidemic in Spokane, Washington. The Spokane outbreak ended in late 1998.

In the state as a whole, 70% of the cases were found in males, and there was an association with illicit drug use.

The age distribution of cases in Detroit demonstrates a mixed child/adult outbreak, with peaks at 5-9 and 20-49 age ranges. Males made up 54% of cases in the first seven months of 1999.

Because there is very little information available on the cases, the outbreak remains mostly uncharacterized.

Young adults in the 25 to 35 age range, non-Hispanic whites, and males are the most affected populations.

Beginning in August 1999, all persons seeking a foodhandling permit in the county (Las Vegas) must be vaccinated against hepatitis A.

As in previous years, white adults were the most affected.

Oklahoma requires children to be vaccinated against hepatitis A before entering day care centers, kindergarten, and 7th grade.

The epidemiology of hepatitis A in Texas is complex, in part owing to the state's large size and diverse demographics. In some areas, mostly in south Texas near the US-Mexico border, Hispanic children under age 15 make up most of the cases. In some northern counties, adults predominate, and cases are often related to illicit drug use. Other counties have a mixed pattern.

Several counties have begun vaccinations for high-risk children and adults. State law requires children to be vaccinated before entering school and day care centers in the 32 counties closest to the U.S.-Mexico border.

But a member of Burton's committee staff said the chairman gave assurances to DHHS that the records would be strictly protected. "The documents will be maintained under lock and key and no person outside the committee will have access to them," the staff member said, adding that the records will be available to both Republican and Democratic members.

Earlier this year, Burton's committee held a series of hearings that questioned the safety of childhood vaccines and the adequacy of the federal compensation program for vaccine-related injuries. At a hearing in August, Burton said the increasing number of vaccines administered to U.S. children might be "a good intention gone too far."

Burton has said publicly that he believes his own granddaughter was injured and hospitalized as a result of hepatitis B vaccination. He also believes a grandson's autism is related to vaccination. At each committee hearing, officials from CDC and FDA, plus experts from professional organizations like the American Academy of Pediatrics, have testified that vaccines are safe and necessary to protect children from serious childhood infectious diseases like *H. influenzae* type B, pertussis, and hepatitis B, among others. Burton, however, remains unsatisfied. At the August hearing, he said, "We are going to be beating on this issue as long as I am chairman of this committee." ■

ACIP rules out a preference for thimerosal-free vaccines

(Atlanta) At its meeting on October 20, the federal Advisory Committee on Immunization Practices (ACIP) voted against issuing a statement of preference for vaccines that are free of thimerosal. In effect, the ACIP's action ratified earlier CDC statements on thimerosal and maintained the split between the current CDC and American Academy of Pediatrics policies on the issue.

Thimerosal, a little-known vaccine preservative that contains 49.6% mercury by weight, burst into the public spotlight in June when FDA scientists discovered that the amount of mercury given to infants in the U.S. recommended immunization schedule exceeded a federal safety limit. The FDA study had been ordered by Congress in 1997 (for a detailed review of the thimerosal controversy, see the *Hepatitis Control Report*, Summer 1999 issue).

In mid-July, the American Academy of Pediatrics (AAP) recommended reducing infants' exposure to mercury by delaying the first dose of single-antigen, thimerosal-containing hepatitis B vaccine until six months of age for children born to hepatitis B surface antigen (HBsAg)-seronegative mothers (recommendations were not changed for children of HBsAg-seropositive mothers). But a statement issued by CDC differed from AAP's, saying that clinicians and parents should continue vaccinating no later than two months of age — within the existing ACIP recommendations. A few weeks later, a CDC survey of 977 birthing hospitals showed that 9% of the hospitals had erroneously changed their hepatitis B vaccination policy for **all** infants, not just for infants of HBsAg-seronegative mothers. As a result, some infants born to HBsAg-seropositive or HBsAg-unknown mothers may not have received proper immunoprophylaxis. Children of HBsAg-seropositive mothers who do not receive proper immunoprophylaxis have a high chance of infection, progression to the carrier state, and chronic liver disease.

On August 27, Merck received a license from FDA to manufacture a thimerosal-free single-antigen hepatitis B vaccine. The vaccine became available in September and has been rationed to newborn infants and children less than six months old.

A CDC survey of 977 birthing hospitals showed that 9% of the hospitals had erroneously changed their hepatitis B vaccination policy for all infants, not just for infants of HBsAg-seronegative mothers. As a result, some infants born to HBsAg-seropositive or HBsAg-unknown mothers may not have received proper immunoprophylaxis.

The committee voted not to issue a recommendation stating a preference for thimerosal-free vaccines.

SmithKline Beecham's thimerosal-free pediatric hepatitis B vaccine is under consideration at FDA. Before August 27, the only U.S. hepatitis B vaccine preparation that did not contain thimerosal was COMVAX, Merck's hepatitis B-Hib combination.

At the ACIP meeting, several speakers from CDC, the Agency for Toxic Substances and Disease Registry (ATSDR), and FDA gave presentations on mercury metabolism, toxicity, and risk. Dr. Neal A. Halsey, Director of the Johns Hopkins Institute for Vaccine Safety and AAP's lead advocate for restricting the use of thimerosal-containing vaccines, appealed to the committee to state a preference for thimerosal-free vaccines. Halsey also urged the committee to adopt a recommendation restricting the number of thimerosal-containing doses that a child less than six months old could receive at any single provider visit.

In the ensuing discussion, some committee members said they felt the issue had been handled hastily during the summer. Others emphasized the confusion that the policy changes had caused among pediatricians and hospitals. As the session closed, the committee voted not to express a preference for thimerosal-free vaccines (beyond the policy on hepatitis B vaccination issued in July). In a statement capsulizing the day's deliberations, the committee said,

The risk, if any, to infants from exposure to thimerosal is believed to be slight. The demonstrated risks for not vaccinating children far outweigh the theoretical risk for exposure to thimerosal-containing vaccines during the first 6 months of life. Given the availability of vaccines that do not contain thimerosal as a preservative, the progress in developing such additional vaccines, and the absence of any recognized harm from exposure to thimerosal in vaccines, hepatitis B, DTaP, and Hib vaccines that contain thimerosal as a preservative can continue to be used in the routine infant schedule beginning at age 2 months along with monovalent or combination vaccines that do not contain thimerosal as a preservative (*MMWR* 1999;48:996-98).

ACIP's October 20 meeting was the first time the committee had addressed the thimerosal issue.

ACIP's October 20 meeting was the first time the committee had addressed the thimerosal issue. Dr. John F. Modlin, ACIP chairman, said the committee could not meet legally without advance notice published in the Federal Register, and this had prevented an urgent meeting on the thimerosal issue last summer. ■

Top abstracts from the NIC

The annual National Immunization Conference was held in Dallas, Texas on June 22-25. Here are the top hepatitis abstracts:

Hepatitis A vaccination of adolescents in high-risk states is cost-effective, say researchers

Vaccinating 15 year-old residents of the ten highest-rate U.S. states against hepatitis A would be cost-effective by generally accepted standards, according to researchers at Capitol Outcomes Research, Inc. The cost of vaccination would be \$39.7 million, but the program would reduce the lifetime risk of symptomatic infection from 3.3% to 0.7%, saving \$21.8 million in treatment costs and \$28.6 million in indirect costs. The overall savings to society would be \$10.7 million. The net cost to the health care system would be \$17.8 million, or \$12,388 per year of life saved. The study was conducted under a research grant from SmithKline Beecham (Jacobs RJ, Meyerhoff AS. Cost effectiveness of adolescent hepatitis A vaccination in states with highest disease rates).

83% coverage for hepatitis B vaccination in U.S. children reported

Researchers at CDC and ABT Associates, Inc. reported that 83% of children aged 19-35 months queried through the National Immunization Survey (July 1996-June 1997) had received three doses of hepatitis B vaccine. In a univariate analysis, the risk factors significantly associated with undervaccination were race/ethnicity of the child, family size, number of children residing in the household, whether the child was first born, whether the child resided in a state with a hepatitis B vaccination day care entry requirement, rural vs. urban residence, poverty, age of mother, and education level of the mother. In a multivariate analysis, the risk factors independently associated with undervaccination were being of African-American race and residing in an inner-city area. The researchers concluded that day care entry requirements help raise coverage rates and that vaccination strategies should be focused on inner city, low income, and African American children (Yusuf H, Rosewald L, Averhoff F, Klevens M, Hoaglin D. Risk factors for lacking coverage with three doses of hepatitis B vaccine among U.S. children, 1996-97).

New hepatitis B cases are vanishing in Alaska

In 1983, a joint Indian Health Service-State of Alaska hepatitis B immunization program was instituted to eliminate new hepatitis B cases in Alaska. The program first vaccinated seronegative high-risk persons and all Alaskan Native infants at birth, and then, in 1994, began routinely vaccinating all infants born in Alaska. The incidence of acute hepatitis B in Alaskan Natives fell from 53 per 100,000 in 1982 to less than 5 per 100,000 in 1993. A serosurvey conducted in 1994 was unable to find a single Native Alaskan hepatitis B carrier under age ten. Statewide reports of acute hepatitis B in persons of all races under age 20 have declined from 6.7 per 100,000 in 1973 to 0.7 per 100,000 in 1994-98 (McMahon B, Singleton R, Williams J, Fox-Leyva L, Mandsager R, Middaugh J, Wood L, Funk B. Control of acute hepatitis B in Alaska through progressive statewide infant immunization: 1983-1998). ■

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