

HAS THE HEPATITIS A VACCINE AFFECTED DISEASE RATES IN LOS ANGELES COUNTY?

BACKGROUND

In 1995, the Food and Drug Administration (FDA) approved the first of two formulations of hepatitis A vaccine (HAV) to be used in persons two years of age or over. Initially, the Advisory Committee on Immunization Practices (ACIP) recommended the vaccine for persons at increased risk for contracting hepatitis A and for children living in areas with the highest rate of disease [1]. Persons at increased risk included travelers, men who have sex with men, injecting drug users, persons who have an occupational risk, and persons with clotting-factor disorders. In 1999, ACIP recommended routine vaccination for children living in areas having hepatitis A rates greater than 20 cases per 100,000. California was one of the 11 states that fit into this category.

As a result of the 1999 recommendations, the Vaccines for Children (VFC) Program began providing HAV in August 1999. The VFC Program is federally funded and, through state and local health departments, provides free vaccines to participating health care providers. These providers administer vaccines to children who are eligible for Medi-Cal and the Child Health and Disability Prevention (CHDP) Program, are American Indian or Alaskan Native, or do not have health insurance. Additionally, children whose health insurance does not cover vaccinations may go to federally qualified health centers and rural health clinics to receive vaccine provided by the VFC Program.

The number of acute hepatitis A cases in Los Angeles County (LAC) has decreased from 1998 to 2001. However, it is unclear whether this decrease is due to HAV administration. The objective of this study was to assess the relationship between HAV administration and hepatitis A incidence in LAC in persons 18 years of age and younger.

METHODS

Data Sources:

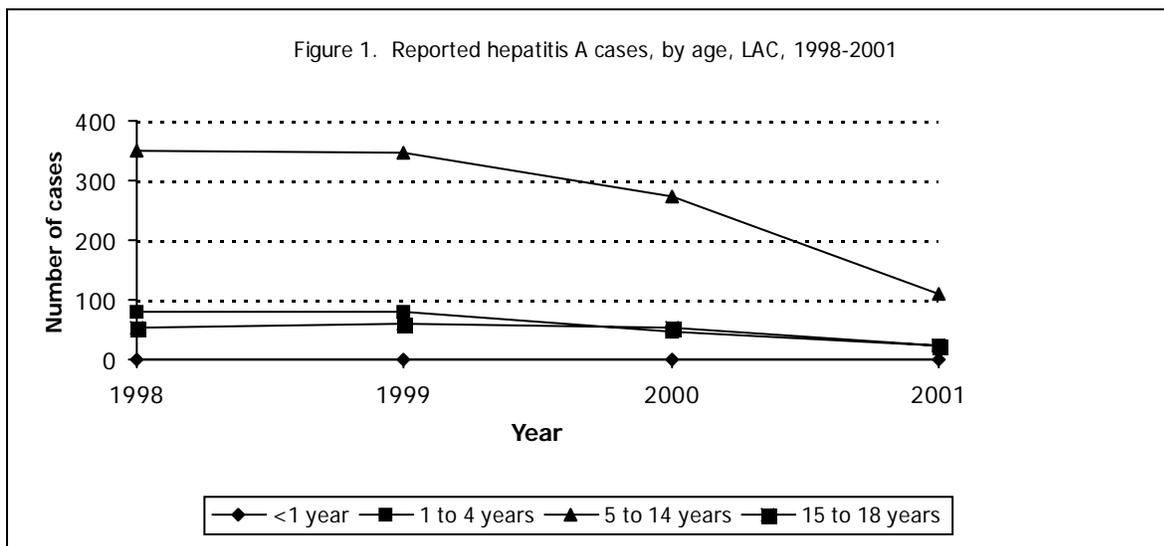
- Hepatitis A cases reported to the LAC Department of Health Services between 1998 and 2001.
- Daily Immunization Reports (DIRs) submitted by public health centers that provide VFC Program vaccines. These providers are required to report usage of publicly funded vaccine, by age of vaccine recipient, on the DIRs.
- The Medically Indigent Care Reporting System (MICRS) and American Insurance Administrators (AIA) data to obtain demographic information on persons using Public Health Clinics from 2000 to 2001. The MICRS collects information on indigent health care services provided by 26 California counties, including LAC [2].

Analysis plan:

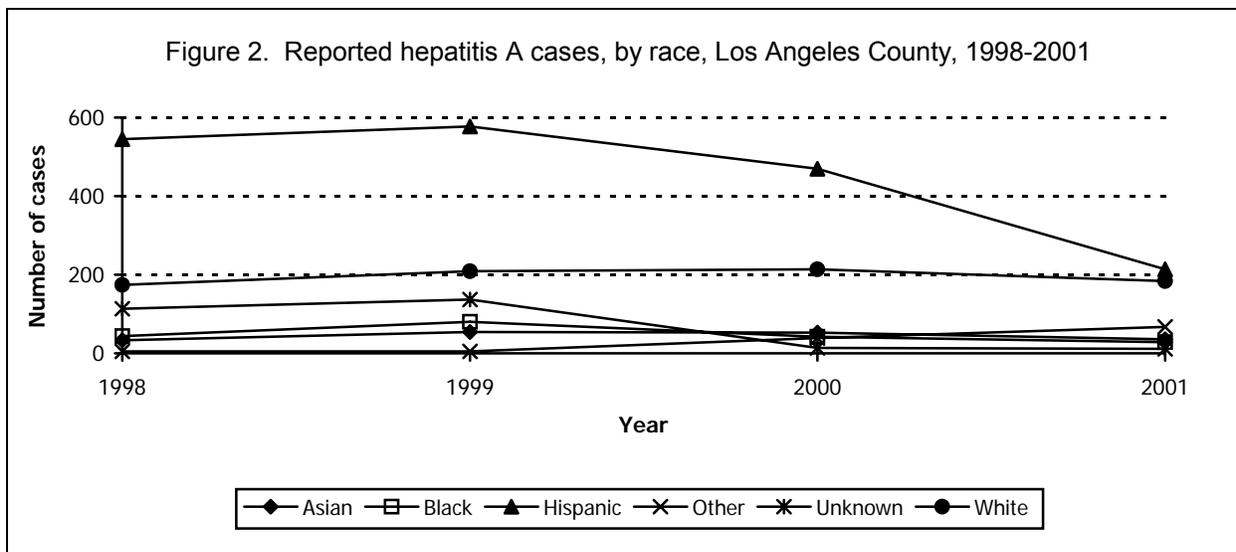
- The surveillance data was used to assess age and race case differences for 1998 through 2001.
- Hepatitis A vaccine data administered to recipients aged 18 and under were included in the analysis. Only the first dose of hepatitis A was considered in the analysis as it leads to greater than 97% seropositivity in children and few children get the second dose of the vaccine.
- The MICRS and AIA data were used to determine the age and ethnic distributions of persons utilizing LAC Public Health clinics. Because the DIRs only contain information on the age distribution of persons receiving vaccine in Public Health clinics, information from MICRS and AIA were compared to the DIR information in an attempt to determine the ethnic distribution of vaccine recipients.

RESULTS

The number of acute hepatitis A cases decreased by 43% from 1998 to 2001. The largest decrease (71%) was in children aged 1 to 4 years (Figure 1). In 1998 there were 79 cases of hepatitis A in this age group and only 23 cases in 2001. The 5 to 14 year olds also experienced a large decrease in the number of reported hepatitis A cases. In 1998 there were 351 cases and 110 cases in 2001, a 69% decrease.

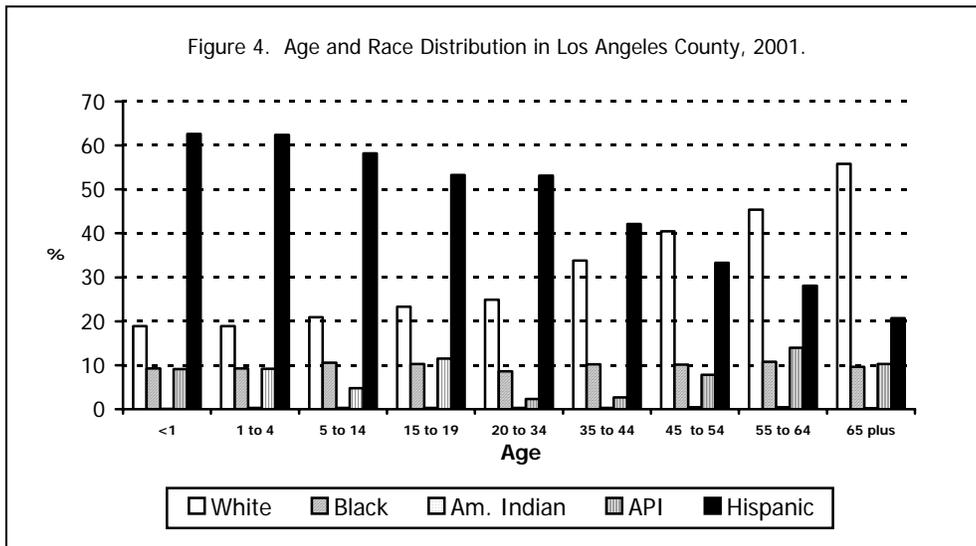
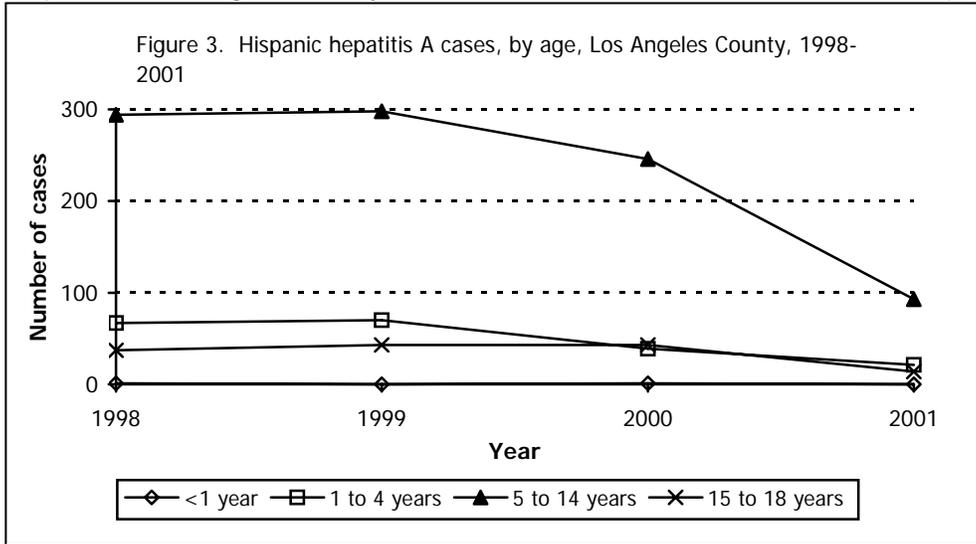


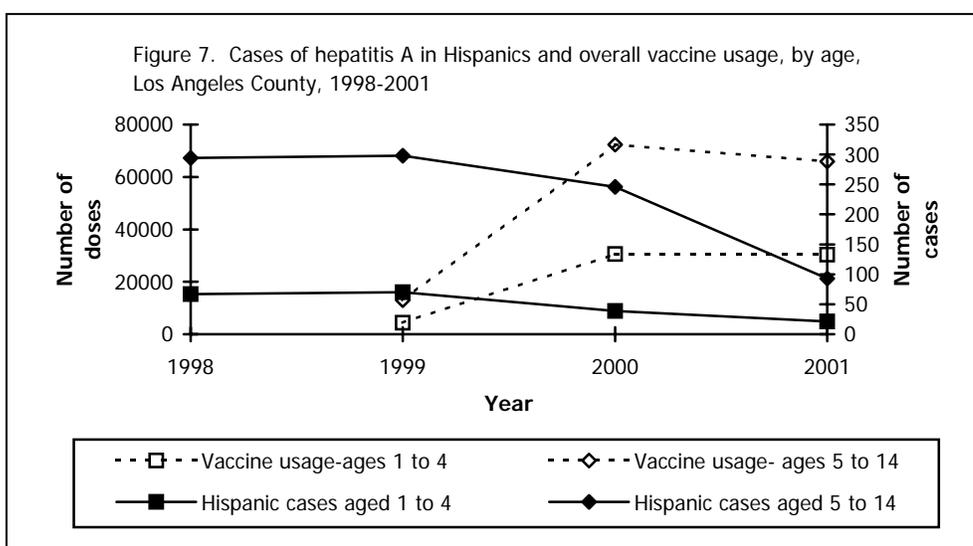
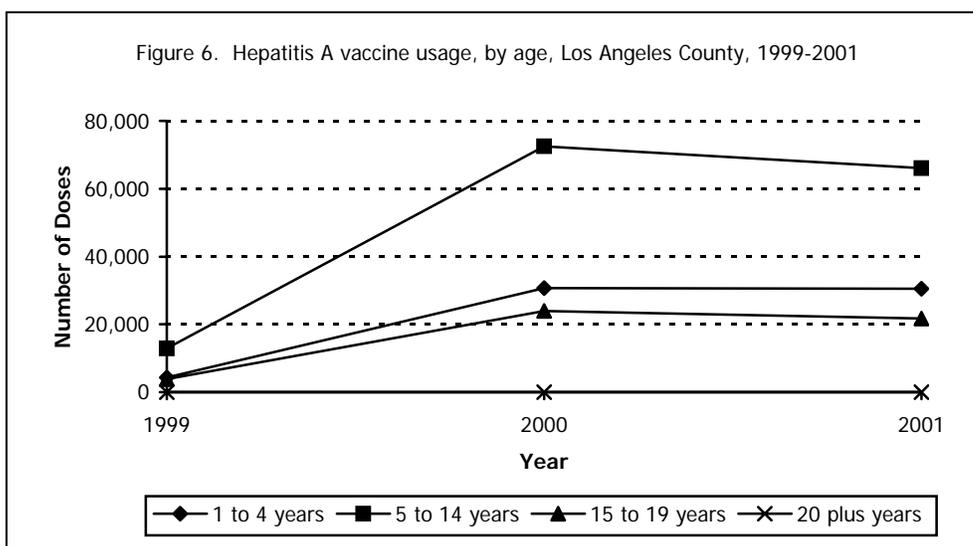
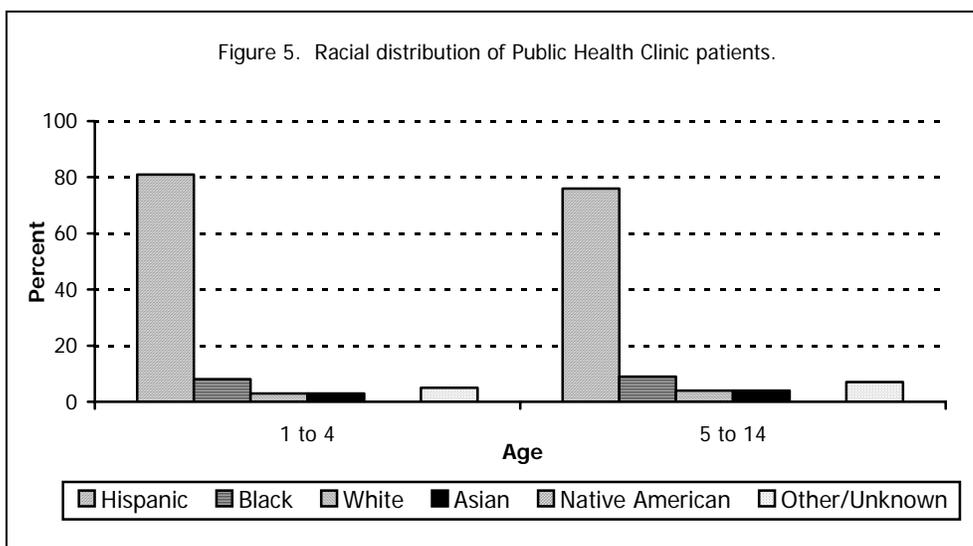
When taking ethnicity into consideration, Hispanics experienced the largest decrease (61%) in reported hepatitis A cases (Figure 2). Five hundred seventy-seven cases were reported in 1999 and only 214 in 2001. Children aged 5 to 14 made up the majority of the Hispanic hepatitis A cases for both years (51% and 43%, respectively), and experienced a decrease of 69% from 1999 to 2001 (Figure 3). Hispanic children aged 1 to 4 experienced a 70% decrease in hepatitis A cases, with 70 cases in 1999 and 21 cases in 2001.



Forty-four percent of LAC's population is Hispanic. Hispanics are also the largest ethnic group in the younger age categories (Figure 4). LAC public and non-profit clinics serve a predominately Hispanic population (Figure 5). In addition, the largest proportion of the LAC clinic clientele is 1 to 14 years old.

Since the inclusion of HAV in the VFC Program, vaccine administration increased from 21,102 doses in 1999 to 126,962 doses in 2000. HAV use in public and non-profit clinics increased in children under age 5 from 4,319 doses to 30,631 doses from 1999 to 2000 (Figure 6). HAV use in children aged 5-14 increased from 12,945 doses to 72,406 doses from 1999 to 2000. The decrease in the number of hepatitis A cases in Hispanic children aged 1 to 14 years coincides with the increase in vaccine use (Figure 7).





CONCLUSION

The introduction of HAV appears to be contributing to significant reductions in reported hepatitis A cases in LAC, particularly in Hispanic children. However, because information on race is not collected on persons receiving publicly funded vaccine, there is a possibility that the increase in HAV use is not occurring in the Hispanic population. Additionally, if the reported cases of hepatitis A in LAC were not reported by the Public Health clinics, the decrease in hepatitis A cases in the Hispanic population could be due to fewer Hispanics seeking care at non-Public Health clinics (and not getting reported) rather than there being an actual decrease. Additional studies are needed to confirm the link between vaccine usage with the decrease of disease in Hispanic children.

REFERENCES

1. CDC. Prevention of Hepatitis A Through Active or Passive Immunization: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 1999; 48; RR-12.
2. California Department of Health Services. Medically Indigent Care Reporting System. Website: www.dhs.cahwnet.gov/hisp/ochs/micrs/index.htm Last updated 06/04/2003.