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GAO

United States
General Accounting Office
Washington, D.C. 20548

Human Resources Division

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February 8, 1993

The Honorable John D. Dingell
Chairman, Committee on Energy and Commerce
House of Representatives



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Dear Mr. Chairman:

This letter responds to your request for information on (1) the federal government's efforts to collect and analyze data on immunization rates during the 1980s and its current efforts, (2) the reasons for any changes in federal policy to collect childhood immunization data, and (3) the effects of such changes.

BACKGROUND

Immunizing children against a variety of communicable diseases is one of the nation's highest public health priorities. The Centers for Disease Control (CDC) is the primary federal agency responsible for childhood disease prevention services. CDC, an agency of the Department of Health and Human Services (HHS), provides grants to all state and some local health departments to purchase vaccines and to support their immunization programs.

With the widespread use of vaccines, the incidence of vaccine-preventable childhood diseases has been reduced by more than 90 percent. Moreover, as a result of school immunization laws, about 98 percent of children enter school vaccinated against vaccine-preventable childhood diseases. While virtually all children are vaccinated at the time they enter school, major measles outbreaks in 1989 and 1990 demonstrated that immunizing children when they reach school age is too late to prevent major childhood disease outbreaks. Children should be immunized in early childhood, preferably before age 2.

In 1979, HHS's Public Health Service established broad national health goals for 1990. One of the goals was to immunize 90 percent of all U.S. children with the basic

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immunization series by age 2.¹ Because that goal has not been reached, it is now the goal for 2000. HHS estimates that the national immunization level in 1989 was 70 to 80 percent, and reported that for certain pockets of the population, immunization levels were less than 50 percent.²

To conduct our review, we met with CDC officials in the Division of Immunization, Center for Prevention Services, to determine the availability of immunization data, the changes in data collection activities, and the impact those changes had on CDC's ability to develop effective immunization strategies. We also obtained and reviewed documentation from CDC and published information that addressed the types of national immunization rate data available since 1980.

We did not obtain written agency comments on this letter, but we discussed its contents with CDC officials and incorporated their comments as appropriate. We conducted this review between May and November 1992, in accordance with generally accepted government auditing standards.

RESULTS IN BRIEF

As part of its childhood disease prevention activities, CDC is responsible for collecting national estimates of immunization coverage and assessing national immunization trends and the effectiveness of national immunization strategies. To make such estimates and assessments, CDC must track and collect national data on the status of childhood immunizations, particularly for 2-year-old children. For 23 years, from 1962 through 1985, CDC published national immunization data obtained through its annual United States Immunization Survey. Although this survey provided the only national immunization data for broad age groups, including 2-year-old children, CDC

¹For the 1990 goal, immunization guidelines recommended that by 18 months of age, children should have received four doses of diphtheria, tetanus, and pertussis (DTP) vaccine; three doses of oral polio vaccine; and one dose of measles, mumps, and rubella vaccine. For the 2000 goal, the basic series was changed by adding three doses of Hepatitis B vaccine and either a 3-shot or 4-shot series for Haemophilus influenzae type b.

²Department of Health and Human Services, Healthy People 2000: National Health Promotion and Disease Prevention Objectives, September 1990.

discontinued the survey in 1986, primarily for budgetary reasons.

When CDC discontinued the United States Immunization Survey, it expected that state evaluations of preschool immunization levels and an annual national health survey would provide these data. Most states, however, did not collect data on statewide immunization levels, and, for those that did, the data were not uniformly collected and thus could not be aggregated nationally. CDC did not issue mandatory guidelines to correct this problem until 1991. Moreover, national immunization rate data for 1991, the first year the National Center for Health Statistics' National Health Interview Survey collected such data, will not be available until early 1993. Consequently, CDC has not had national data for nearly 7 years, which has hampered its ability to assess national immunization trends and the effectiveness of national immunization strategies.

After discontinuance of the United States Immunization Survey, CDC determined that its national immunization strategy had to be focused on the preschool population. It also decided that for evaluation and assessment purposes current state as well as national immunization rate data for the preschool population were an important component of that strategy. CDC considers state data to be important so that it can assess individual state initiatives and target resources to states with problems. However, unless CDC develops a new collection mechanism, it will still not have current state level data.

NEEDED IMMUNIZATION DATA
NOT AVAILABLE

To be a useful measure of the status of national immunization, CDC believes that national immunization rates must be current, age-specific, and representative of the population at large. Until 1986 the United States Immunization Survey provided CDC with data on national immunizations for children of various age groups, including preschool-aged children. The survey was a supplement to the Bureau of the Census Current Population Survey.³ While

³The Current Population Survey is a national random-probability telephone survey of about 50,000 housing units, the main focus of which has been population estimates and employment statistics. The survey was conducted primarily by field interviews until about 1975, when the survey approach shifted primarily to telephone interviews.

it generally could not be broken down by state, the United States Immunization Survey provided current immunization data that could be tabulated for large geographic areas, 2-year olds, and other broad age groupings (for example, 1- to 4-year olds).

Since discontinuing the United States Immunization Survey, CDC has obtained immunization data through special studies, other federal surveys, or from states. However, data from these sources are either not nationally representative, current, or age specific and, therefore, do not provide an adequate basis to assess national immunization levels, particularly for preschool children.

The United States Immunization Survey offered the only national data on immunization trends. However, CDC officials told us that compared to other data available in the early 1980s of actual immunizations of children entering kindergarten or the first grade, the survey underestimated the national immunization rate by about 5 to 7 percentage points depending on the type of vaccine. The officials attributed this perceived difference to parents usually relying on their memories rather than immunization records in responding to the survey.

CDC officials told us that the United States Immunization Survey, which cost \$255,500 in 1985, was discontinued primarily for funding reasons. They said CDC was faced with a reduced budget, competing funding priorities, such as AIDS-related activities, and the possibility of having to eliminate positions to meet budgetary goals.

CDC Data Collection Efforts Do Not Provide Nationwide Trends

From 1986 through 1990, CDC relied on special studies, other federal surveys, or states for data on children's immunizations. Because data from these sources were not representative of all children, current, or age specific, they did not provide an adequate basis for CDC to assess national immunization levels, particularly for preschool children.

CDC obtained survey data on the immunization status of preschool children in 16 states from 1988 through 1990. In 1991, CDC retrospectively studied the immunization status of school-aged children at age 3 months and 2 years in nine cities. While both studies show that the immunization levels of preschool children in most of the states and cities covered by the studies were below 60 percent, the

results of the studies were not necessarily representative of the remaining states and, consequently, could not be used to project national immunization rates.

In 1991, immunization questions were added to the National Center for Health Statistics' National Health Interview Survey (NHIS). The addition of the immunization questions to this survey were the result of discussions initiated by CDC officials in 1986.

NHIS is an annual health survey conducted by interview teams at about 50,000 randomly selected housing units comprising a national sample. The survey has two sets of questions: core and supplemental questions. The core questions cover the general health of each person in a household. The supplemental questions relate to, among other things, immunizations for children under 6 years old. However, the immunization questions are administered to obtain information about only one randomly selected child in the household irrespective of the size of the household.

Because the immunization questions cover children under 6 years old, if the child selected is not under 6 years of age, none of the immunization questions are asked. Under this sampling methodology, NHIS will provide national immunization rates for children under 6 years of age as a group and by single year of age, but will not have a large enough sample of preschoolers to provide information by state. CDC expects the initial data from the survey to be available early in 1993.

CDC had not previously collected state-specific information. However, CDC officials told us that such information is necessary to enable CDC to assess individual state initiatives and target resources to states with specific problems.

Additionally, CDC continues efforts started in the late 1970s to collect immunization data from the 50 states and five local health departments that receive CDC immunization grants. CDC requires grantees to report on immunization levels for specific groups, such as children entering school or children in licensed day-care facilities. The annual kindergarten-first grade immunization assessment has been collected since the 1978-79 school year. These data are the most accurate national information available on children's immunization status when entering school (that is, the 5- to 6-year-old age group). But the data do not cover the immunization status for the preschool population.

The annual day-care facilities' assessment includes only information on preschool children in licensed day-care facilities; these data are not representative of the general preschool population. Likewise, CDC officials told us an annual census of Head Start children is not representative of the general population and is more a measure of the Head Start program's effectiveness than a measure of national immunization levels.

To obtain information on immunizations of preschool children, CDC has recently required grantees to collect and report to CDC the immunization status of preschool children. Beginning in fiscal year 1991, CDC has required grantees to provide CDC with immunization data indicating at what age children entering school were immunized based on retrospective surveys of school entrance records. CDC believes the retrospective survey is the most affordable and accurate way to assess the immunization levels of preschool children. By reviewing samples of immunization records when a child enters school, states can determine the age of children at the time they were immunized.

To ensure uniformity and standardization, CDC published mandatory guidelines for conducting retrospective surveys in July 1991. CDC expects that all states may not uniformly report immunization data based on the retrospective survey guidelines until the 1993-94 school year. Even when the data are uniformly reported, the data reported for 2-year olds will be 3 to 4 years old by the time these children enter school.

IMMUNIZATION DATA ARE CRITICAL
FOR PLANNING, EVALUATING, AND
MODIFYING IMMUNIZATION STRATEGIES

CDC's Director of the Division of Immunization said that current national and state immunization data are critical for assessing the magnitude of the immunization problem and the success of federal and state initiatives to immunize children.⁴ National assessment data are also useful in guiding federal planning efforts and evaluating funding needs for immunization activities. These data, however, are not available, and the lack of the data has hampered CDC's ability to assess national immunization trends and the effectiveness of national immunization strategies.

⁴Walter A. Orenstein, M.D., et al, "Barriers to Vaccinating Preschool Children," Journal of Health Care for the Poor and Underserved, Winter 1990, 315-330.

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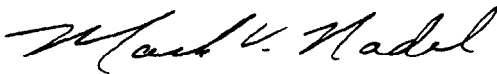
In 1988, CDC started redirecting the national immunization program to focus on the preschool population, as part of its Infant Immunization Initiative. A key element of this initiative is collecting current national and state immunization rate data to target and evaluate national and state initiatives for improving preschool immunization levels. However, as noted earlier, CDC does not have a means for collecting current state-specific data.

In January 1991, CDC convened a panel of statisticians and immunization specialists to address options for assessing the immunization status of preschool children. A majority of the panel members agreed with the need for information on state and national immunizations but could not reach a consensus on the best way to obtain it. While CDC expects that the national estimates will be determined from NHIS, it has not yet determined the best method to obtain current state-specific information. For the time being, CDC has decided to collect state immunization data based on retrospective surveys of school entrance records.

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As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this letter until 7 days from its issue date. At that time, copies will be sent to the Secretary of Health and Human Services and other interested parties. We will also make copies available to others upon request. If you have any questions about this letter, please call me at (202) 512-7119.

Sincerely yours,



Mark V. Nadel
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Public Health Policy Issues

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