Teen Vaccination Coverage Rates
Vincent Sacco, MS

During the past two years, the Advisory Committee on Immunization Practices recommended three new vaccines to protect pre-teens and teens from infectious diseases. The three new vaccines include MCV4, which protects against meningitis and its complications; Tdap, which is a booster against tetanus, diphtheria, and pertussis or "whooping cough"; and for girls, HPV which protects against the types of human papillomavirus that most commonly cause cervical cancer.

All three of these vaccines have the potential to prevent a substantial burden of disease. Meningococcal disease is one of the leading causes of bacterial meningitis, which can be severe and may result in permanent brain damage, hearing loss, or learning disability. Pertussis has been well controlled among young children but is now on the rise among adolescents and adults, with well over 20,000 cases among teens in the U.S. each year. Cervical cancer is diagnosed in more than 9,700 women each year in the United States and causes 3,700 deaths. Seventy percent of cervical cancers are caused by strains of HPV included in the newly licensed HPV vaccine.

There are other vaccines that are recommended for adolescents who have not been previously vaccinated. These include hepatitis B (HepB), measles-mumps-rubella (MMR), and varicella vaccines.

Since 2006, the Centers for Disease Control and Prevention has conducted the National Immunization Survey for Teens (NIS-Teen) to estimate vaccination coverage rates among teenagers 13–17 years of age based on provider reported vaccination histories. This survey serves as the nation’s report card on how well we are protecting pre-teens and teens with these new life-saving vaccines.

Compared with 2006, the NIS-Teen data from 2007 (Figure 1) show higher coverage rates for all vaccines including an increase of approximately 20% for the newly recommended vaccines Tdap and MCV4. Vaccination coverage for HepB, MMR and varicella also increased. HPV coverage was reported in 2007 for the first time.

MMR and HepB coverage levels have almost reached the Healthy People 2010 national objective of 90% coverage. Although the coverage rates are improving each year, we still have a ways to go to protect all teens from these diseases.

Figure 1

The Immunization Program at the Department of Public Health was also interested in assessing vaccine coverage rates for teens in Connecticut. In 2007, the program conducted a survey to determine coverage rates for four vaccines including varicella, Tdap, MCV4, and HPV vaccines. We selected eight of the largest pediatric practices in the state and reviewed a total of 764 records of children born...
The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing, annual state-based telephone survey that collects information on health risk behaviors, preventive health practices, and health-care use from approximately 400,000 randomly selected non-institutionalized U.S. civilians aged ≥ 18 years. Data are collected monthly and are weighted by age, sex and race-ethnicity. To determine influenza vaccination coverage, respondents are asked, “During the past 12 months, have you had a flu shot?” and, “During the past 12 months, have you had a flu vaccine that was sprayed in your nose?”. Data collected on influenza vaccination are analyzed from surveys that are collected between February and August, of each survey year, to assure that the information is for the influenza season. Connecticut participates in the BRFSS process and state-specific data on each question are available for analysis and comparison to national data.

Healthy people 2010 influenza vaccination targets are:

1. 90% influenza vaccination among all persons aged ≥65 years of age and
2. 60% vaccination among persons aged 18-64 years who have one or more high-risk conditions ¹

Recently released data from the 2006-2007 influenza season are shown below, for CT and all states combined. High-risk conditions include: diabetes, asthma, myocardial infarction and coronary artery disease.

For additional information see MMWR September 26, 2008/57(38):1033-1039.

Teen Vaccination Coverage Rates, Con’t.

During 1994 (13 year old cohort). The results (Figure 2) compare Connecticut coverage rates with the 2007 NIS data for the U.S.

Overall, Connecticut’s coverage rates were better than the national average for three of the four vaccines surveyed.

Coverage for one dose of varicella vaccine was 84%, eight percent higher than the national level. Seventy-nine percent of adolescents surveyed had at least one dose of Tdap or tetanus-diphtheria (Td) vaccine, compared with 72% nationally. Connecticut scored 13% higher than the national average for the first dose of HPV vaccine at 38% of the adolescent females surveyed, compared with 25% nationally. However, only 25% of Connecticut teens had one dose of MCV4 vaccine, compared with 32% nationally.

Although the survey data suggest that CT is faring better than the national average, to achieve among teens the same high coverage levels that young children benefit from, many more teens will need to be vaccinated each year.

Figure 2
Lest We Forget
Joan Christison-Lagay, MAT, MPH
Developer & Former Director of CIRTS

A child in my second grade Brownie troop with a hand crippled by polio, a fifth grade classmate of my brother who was institutionalized following brain damage caused by measles, a mother in East Hartford who lost a child to invasive Hib disease in the 1980’s. These cases of disease, all of which are now vaccine-preventable, underscore the importance of a registry to help protect Connecticut’s children against common childhood diseases.

From 1989-1991 the United States saw a dramatic increase in the number of measles cases -- 55,622 cases in the three year period compared to fewer than 5,000 cases in the previous three years. To address this problem of low vaccine coverage, the Centers for Disease Control and Prevention advocated for development of immunization registries. Such registries were to serve as a repository of immunization histories for children and would identify children who were late for immunizations.

In 1992, the City of Hartford, in conjunction with Newington Children’s Hospital, received a grant from the Aetna Foundation to launch New England’s first registry. In 1993, CIRTS’ predecessor, the Hartford Childhood Immunization Registry, enrolled its first children on a voluntary basis. The following year, the City of Hartford, the CT Chapter of the American Academy of Pediatrics and the CT Commission on Children lobbied for passage of a state statute to establish a statewide registry that required providers to submit the immunization histories of all preschool children vaccinated. In 1994, Governor Lowell Weicker signed this legislation into law.

From 1994-1996 the registry expanded from serving City of Hartford children only to serving the greater Hartford area. During this time, the immunization rate of preschool children in Hartford increased from 52 to 78%. The ending of grant funding and the success of the registry, caused the State of CT to assume management of the registry in 1996 under a new name, CIRTS, the CT Immunization Registry and Tracking System. At this time, the registry expanded to include all children enrolled in Medicaid Managed Care Programs statewide. Two years later, in 1998, the registry expanded to include all children in the entire State. 1998 marks the birth of CIRTS as it operates today.

CT has a long history of being ranked high for vaccine coverage in CDC’s national immunization survey and CIRTS contributes to this ranking. With its “tickler system” approach of sending monthly 7 and 19 month compliancy reports to all pediatric practices statewide, CIRTS provides an opportunity for histories to be reviewed and children called in for follow-up visits as necessary. Ensuring that CT does not experience outbreaks of vaccine-preventable diseases is a core function for CIRTS. However, CIRTS also provides services helpful to Connecticut’s pediatric providers. It provides:

- the birth dose date of Hepatitis B vaccine
- previous immunization histories of children who move from one practice to another with no record of their vaccinations
- yearly immunization rates of the two year old population of every pediatric provider in the state
- reports that indicate those vaccines that are missing and/or invalid due to age or interval
- school “Blue Forms” with vaccination boxes populated. This usually eliminates the need to fill in all but the 4 year old booster vaccinations, certainly a time saver for practices. Each year CIRTS provides approximately 18,000 “Blue Forms”.

CIRTS now has immunization data on more than 487,000 children. As it begins its second decade of operation, it will continue to help ensure that Connecticut’s children are not victims of diseases that should be relegated to the past.
**VFC Order Support Team**

*Maria Heinz, Carol Natitus, Claudia Soprano*

**Tiered Ordering Schedule**

You will be receiving your new vaccine ordering schedule soon. Schedules will be mailed out to all users of state vaccine. Large volume users will be able to order on a monthly basis, medium volume users every other month and small volume users every 3 months.

**Tip:** Mark up a 2009 calendar with the months you are scheduled to order and be sure to share that information with all relevant staff including a designated back-up person. List all state vaccines due to expire in 2009 with expiration dates. Post the calendar on the refrigerator to remind you of your vaccine schedule and expiring vaccine dates.

**Pentacel**

Please use the supplemental “DTAP/IPV/HIB” vaccine order sheet when recording your Pentacel order, inventory and usage. Be sure to include your pin number at the top right hand corner. Submit this form when sending in your vaccine report.

Your vaccine report should now include the regular vaccine order form (VOF) dated 9/08, the Doses Administered form and the supplemental Pentacel form. Additional order forms can be requested by calling (860) 509-7929.

**Doses Administered (DA)**

All VFC doses must be accurately documented and accounted for. Your current inventory on hand should always match up with your previous doses administered report: take your previous inventory, add in the doses you received from your current vaccine order and any doses transferred in or out of your office, then subtract the doses administered. Your balance should match up with your current physical inventory.

When submitting the doses administered page along with your order and inventory page, please record these figures neatly and accurately. Please do not use tick or hash marks as they are difficult to decipher and can result in inaccurate information being documented or a call being made requesting further explanation. Remember to record the month(s) you are submitting your doses administered data for at the top of the page as well as all subtotals and totals as indicated in the blocks to the far right.

**New Provider Agreement Form**

The new provider agreement form was sent out to all users of state supplied vaccines on December 3, 2008. The language in the Provider Agreement has been revised in an effort to clarify several issues that were raised including the administration fee that can be charged per dose administered. The new language specifies that the maximum administration fee that can be charged (i.e. collected) from uninsured and underinsured patients is $21 per dose. In order to continue to receive uninterrupted state supplied vaccines, the signed Agreement Form should have been submitted to the Immunization Program by January 2, 2009.

**Extreme Temperatures**

Open vaccine packages IMMEDIATELY to check the temperature monitor and inspect the vaccine and the box contents. If vaccines have been compromised or if temperature monitors are out of range, contact the Immunization Program immediately. We only have two hours to report out-of-range temperatures to McKesson.

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Visit out website: [www.ct.gov/dph](http://www.ct.gov/dph)
(click on Programs and Services, then choose Immunization Program)