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Vaccination Status Among Pertussis Cases, Montana, 2013

Background. Pertussis is a respiratory illness caused by infection with the bacterium *Bordetella pertussis*. Pertussis is transmitted person-to-person usually via aerosolization following close contact with infected persons. Routine vaccination against pertussis is the best known prevention method. Five doses of diphtheria, tetanus, and acellular pertussis vaccine (DTaP) are recommended before age seven years. DTaP should be administered at age 2, 4, 6, and 15 months, and between 4 to 6 years. A single dose of tetanus, diphtheria, and acellular pertussis vaccine (Tdap) is recommended by age 11 to 12 years, for each adult who has not previously received Tdap, and during each pregnancy for women.

Methods. The Montana Department of Public Health and Human Services (DPHHS) identified pertussis cases through case reporting by county health departments. Cases were assessed for evidence of having received pertussis-containing vaccines through only a review of readily available data, including case report forms and Montana's Immunization Information System (imMTrax). Cases were considered up-to-date for pertussis-containing vaccines if the patient had received all vaccines recommended for their age by the Advisory Committee on Immunization Practices (ACIP). Cases without evidence of having received all age-appropriate ACIP recommended pertussis-containing vaccines were classified as not known to be up-to-date.

Results. During 2013, 661 cases of pertussis were reported from 37 counties in Montana. Of these, 337 (51%) were male and the median age was 12 years (range: 1 month–97 years). The crude incidence rate in Montana was 66 cases per 100,000 population compared with the 2012 US rate of 15 cases per 100,000 population. Nearly 225 (34%) cases occurred among children aged 7 to 12 years. Over 155 cases had no vaccination data located in imMTrax. Only 338 (51%) cases were known to be up-to-date on the recommended pertussis-containing vaccines (Table).

Conclusions. Using only data from case report forms and imMTrax, nearly one-half of pertussis cases were not known to be up-to-date on DTaP or Tdap. Among adults aged 18 years and older, nearly 80% were not known to have received Tdap.

Recommendations: Healthcare providers should take the following actions to ensure each patient is up-to-date on their pertussis-containing vaccines:

- 1) Administer DTaP and Tdap at age-appropriate intervals per ACIP recommendations (<http://www.cdc.gov/vaccines/acip/>);
- 2) *do not miss opportunities to administer DTaP or Tdap* (i.e., check vaccination status at all visits and administer vaccine to the patient when eligible and not up-to-date);
- 3) ensure all pregnant women and adults in contact with infants aged less than 12 months have received a single dose of Tdap;
- 4) use reminder/recall systems to increase vaccination coverage; and,
- 5) update patient records in imMTrax to reflect current vaccination status.

Table. Vaccination status among pertussis cases, Montana, 2013

Age	No. of cases	Vaccination data located in imMTrax (%)	Up-to-date* (%)	Not known to be up-to-date (%)	Eligible but not overdue for vaccination (%)
<2 months	4	4 (100)	N/A	N/A	N/A
2–4 months	6	5 (83)	2 (33)	2 (33)	2 (34)
5–6 months	7	5 (83)	2 (29)	3 (43)	2 (29)
7–14 months	16	13 (81)	5 (31)	7 (44)	4 (25)
15 months–3 years	46	39 (81)	32 (70)	10 (22)	4 (9)
4–6 years	33	27 (82)	15 (45)	12 (36)	6 (18)
7–12 years	224	181 (81)	136 (61)	75 (33)	13 (6)
13–17 years	176	156 (89)	115 (65)	61 (35)	0 (0)
18–65 years	132	69 (52)	31 (23)	101 (77)	0 (0)
>65 years	17	5 (29)	0 (0)	17 (100)	0 (0)
Total	661	504 (75)	338 (51)	288 (44)	31 (5)

*Considered up-to-date for pertussis-containing vaccines if evidence existed the patient had received all vaccines recommended for their age by the Advisory Committee on Immunization Practices (ACIP).