Client: HMSA: PQSR 2009

Measure Title: CHILDHOOD IMMUNIZATION: DTaP/DT

Disease State: Diphtheria, tetanus, and pertussis

Indicator Classification: Prevention

Strength of Recommendation: A

Organizations Providing Recommendation: Centers for Disease Control and Prevention

Clinical Intent: To ensure that all eligible children receive their diphtheria, tetanus, and pertussis vaccination within a clinically appropriate timeframe.

Physician Specialties (suggested): Refer to PQSR 2009 Clinical Measures by Specialty.

Background: Disease Burden

- In 1945, approximately 19,000 children had diphtheria and in the six year period between 1940-1945, more than 1 million cases of pertussis were reported, averaging 175,000 cases per year.[1]
- From 1980 through 2004, 57 cases of diphtheria were reported in the United States, an average of 2–3 per year, and only 5 cases have been reported since 2000.[1]
- Pertussis incidence has been gradually increasing since the early 1980s, and a total of 25,827 cases was reported in 2004, though the reasons for the increase are not clear.[1]
- Due to effective immunization programs, only 1 case of diphtheria and 7,298 cases of pertussis were reported in 1999.[1, 2]
- Epidemiological statistics show that 5-10% of children with diphtheria and about 33% of children with tetanus die.[3]
- Approximately 50% of the babies who get pertussis require hospitalization.[3]

Reason for Indicated Intervention or Treatment

- Evidence shows that childhood immunizations are effective in preventing diphtheria, tetanus, and pertussis. Yet, vaccination rates for DTaP still vary among states ranging from 73.9% to 92.6% coverage.[2, 4]
- In 2001, only 77.2% of US toddlers 19 to 35 months of age had received their basic immunization series which included the DTaP vaccine.
In 2005, less than 86% of children had received four or more DTP/DT/DTaP vaccinations by 35 months of age.[5]

Evidence Supporting Intervention or Treatment

- Efficacy of the DTaP vaccines in prevention of severe pertussis ranges from 59 to 95%.[6, 7]
- Children less than five years of age who received at least three doses of a pertussis vaccine had 12% less clinical disease than children who did not receive a minimum of three doses.[8]

Clinical Recommendations

- The CDC recommends that children get 5 doses of the DTaP vaccine, one dose at each of the following ages: 2 months, 4 months, 6 months, 15-18 months, and 4-6 years. In addition, a booster shot of the DT vaccine (tetanus and diphtheria) is recommended at 11-12 years of age, and then every 10 years.[9-11]

Source

Adapted from Healthcare Effectiveness Data and Information Set (HEDIS®) 2008 Technical Specification:

- HBI extended continuous enrollment period from “12 months prior to the child’s 2nd birthday” to “42 days old through 2 years old” in order to cover the entire numerator timeframe.
- HBI added denominator exclusion criterion [D] in order to exclude members who refused vaccination. HMSA modified denominator exclusion criterion [D] to only use ICD-9 diagnosis codes V64.05, V64.06 and V64.07.

Denominator

| Denominator Definition | Continuously enrolled children whose 2nd birthday occurred on any day during the measurement year. |

Denominator Exclusion

| Denominator Exclusion Definition | Members with contraindications for DTaP at any time in the member’s history prior to and including their 2nd birthday and members who were offered vaccination and refused for various reasons from when the member was 42 days of age through 2 years of age. |

Numerator

| Numerator Definition | Members with any combination of at least 4 diphtheria, four tetanus, and 4 pertussis vaccinations (or the equivalent combined vaccines) occurring in the time period between 42 days after birth and on or before the member’s 2nd birthday. |

Physician Attribution

| Physician Attribution | Score all physicians (in the selected specialties) that saw the member |
Description  
from 42 days of age through 2 years of age (inclusive of 2nd birthday).

References  

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