

Client	HEALTH BENCHMARKS, INC. STANDARD ALGORITHM <i>Implemented for Blue Cross Blue Shield of Texas</i>
Measure Title	CHILDHOOD IMMUNIZATION: MEASLES, MUMPS, AND RUBELLA (MMR)
Disease State	Measles, Mumps, Rubella Indicator Classification¹ Prevention
Strength of Recommendation²	A
Organizations Providing Recommendation	NCQA (HEDIS 2007 Technical Specification)
Clinical Intent	To ensure that all eligible children receive their MMR vaccination at the clinically appropriate timeframe.
Physician Specialties	Family Practice, Pediatrics
Clinical Rationale	<p>Disease Burden</p> <ul style="list-style-type: none"> • In the pre-vaccination era in the United States for measles (prior to 1963), rubella (prior to 1969), and mumps (prior to 1967), there were many more cases of these diseases than there are today. This decrease can be attributed to the implementation of universal immunization programs.[1] <ul style="list-style-type: none"> ○ For measles, there were 400,000 reported cases per year compared with less than ≤ 0.5 per 1,000,000 during the period 1997 to 1999.[2] ○ For mumps, there were 186,000 reported cases compared with 906 in 1995.[1] ○ For rubella, there were 57,600 reported cases compared with 225 in 1988.[1] • None of these diseases has been eradicated to date. Severe complications that can result from these diseases, serves as reason to continue to require administration of immunizations. Complications include: <ul style="list-style-type: none"> ○ Measles: Diarrhea, middle ear infection, bronchopneumonia, encephalitis, subacute sclerosing panencephalitis, and multiple severe problems in pregnancy; ○ Mumps: Parotitis, fever, headache, malaise, myalgia, anorexia, respiratory symptoms, orchitis, aseptic meningitis, meningoencephalitis, and fetal death if the infection is contracted in the first trimester; and ○ Rubella: Rash, lymphadenopathy, arthralgia, fever, polyarthritis, encephalitis, thrombocytopenia, and multiple severe problems in pregnancy.[3] <p>Reason for Indicated Intervention or Treatment</p> <ul style="list-style-type: none"> • Since the licensing of monovalent vaccines containing measles, rubella, and mumps vaccine viruses – and subsequently combined measles-mumps-rubella (MMR) vaccine, numbers of reported cases of measles, mumps, rubella, and congenital rubella syndrome (CRS) have decreased by more than 99%.[1]

- Less than 20% of children are vaccinated based on clinical guidelines in a timely manner and one in three is under vaccinated for 6 months during their first 24 months of life.[4, 5]

Evidence supporting Intervention or Treatment

- The vaccine has been shown to be highly immunogenic, with seroconversion rates of 95 to 100% being achieved for each of the 3 component vaccines. This immunity appears to be long-lasting and may even be lifelong.”[6, 7]
- Ninety-five percent of children vaccinated with the current measles vaccine at age 12 months and 98 percent vaccinated at age 15 months develop measles antibodies.[1]

Clinical Recommendations

- It is recommended that children receive 2 doses of MMR vaccine: The first at 12-15 months of age and the second at 4-6 years of age. Children can however receive the second dose at any age, as long as it is at least 28 days after the first dose.[4, 8]
- Some adults should also receive the MMR vaccine: Generally, anyone 18 years of age or older, who was born after 1956, should receive at least one dose of MMR vaccine, unless they can show that they have had either the vaccines or the diseases.”[4, 8]

Source	Adapted from the HEDIS 2007 specification. HBI uses an 11-24 month vaccination period and the same period requirement for continuous enrollment. HEDIS allows the vaccination to occur anytime before the child’s second birthday.
Denominator	Continuously enrolled children whose second birthday fell during the measurement year.
Denominator Exclusion	Members with contraindications for MMR in the member’s history at any time prior to or on their 2 nd birthday.
Numerator	Members with at least one MMR vaccination from 11 months of age through 24 months of age. Alternatively, a combination of either: (1) receipt of vaccination component between 11 months of age through 24 months of age or (2) history of disease diagnosis for measles, mumps, and rubella any time in available member’s history prior to or on the members’ 2nd birthday.
Interpretation of Score	High score implies better performance
Physician Attribution	If child meets numerator criteria, score all physicians that saw the member between ages 11 – 24 months. Likewise, if child does not meet numerator criteria, score all physicians that saw the member between ages 12 – 24 months.
References	1. Watson, J.C., et al., <i>Measles, mumps, and rubella--vaccine use and strategies for elimination of measles, rubella, and congenital rubella syndrome and control of mumps: recommendations of the Advisory Committee on Immunization Practices (ACIP)</i> . MMWR Recomm Rep, 1998. 47 (RR-8): p. 1-57.

2. *Progress toward measles elimination--region of the Americas, 2002-2003.* MMWR Morb Mortal Wkly Rep, 2004. **53**(14): p. 304-6.
3. Bloch, A.B., et al., *Health impact of measles vaccination in the United States.* Pediatrics, 1985. **76**(4): p. 524-32.
4. *Recommended childhood and adolescent immunization schedule--United States, January-June 2004.* MMWR Morb Mortal Wkly Rep, 2004. **53**(1): p. Q1-4.
5. Luman, E.T., et al., *Timeliness of childhood vaccinations in the United States: days undervaccinated and number of vaccines delayed.* Jama, 2005. **293**(10): p. 1204-11.
6. Carter, H. and H. Campbell, *Rational use of measles, mumps and rubella (MMR) vaccine.* Drugs, 1993. **45**(5): p. 677-83.
7. Fahlgren, K., *Two doses of MMR vaccine--sufficient to eradicate measles, mumps and rubella?* Scand J Soc Med, 1988. **16**(3): p. 129-35.
8. *Recommended childhood and adolescent immunization schedule: United States, 2005.* Pediatrics, 2005. **115**(1): p. 182.

¹ **Indicator Classification** (Adapted from Health Plan Employer Data Information Set (HEDIS®) technical specifications)

Effectiveness of Care	<p>Diagnosis Measures applicable to patients receiving diagnostic workups for a symptom or condition that delineate appropriate laboratory or radiological testing to be performed (e.g. evaluation of thyroid nodule; pregnancy test in patients with vaginal bleeding or abdominal pain)</p> <p>Prevention Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g. immunizations).</p> <p>Screening Measures applicable to asymptomatic patients who have risk factors or pre-clinical disease, but in whom the condition has not become clinically apparent (e.g. pap smears; screening for elevated blood pressure).</p> <p>Disease Management Measures applicable to individuals diagnosed with a condition that are part of the treatment or management of the condition (e.g. cholesterol reduction in patients with diabetes; radiation therapy following breast conserving surgery; appropriate follow-up after acute event).</p> <p>Medication Monitoring Measures applicable to patients taking medications with narrow therapeutic windows and / or potential preventable significant side effects or adverse reactions (e.g. thyroid stimulating hormone (TSH) testing after levothyroxine dose change; hepatic enzyme monitoring for patients using antimycotic pharmacotherapy)</p> <p>Medication Adherence Measures applicable to patients taking medications for chronic conditions that are designed to assess patient adherence to medication (e.g. adherence to lipid lowering medication).</p> <p>Utilization Measures applicable to patients receiving treatment for a symptom or condition that advocate appropriate utilization of laboratory and pharmaceutical resources (e.g. conservative use of imaging for low back pain; inappropriate use of antibiotics for viral upper respiratory infection).</p>
------------------------------	--

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

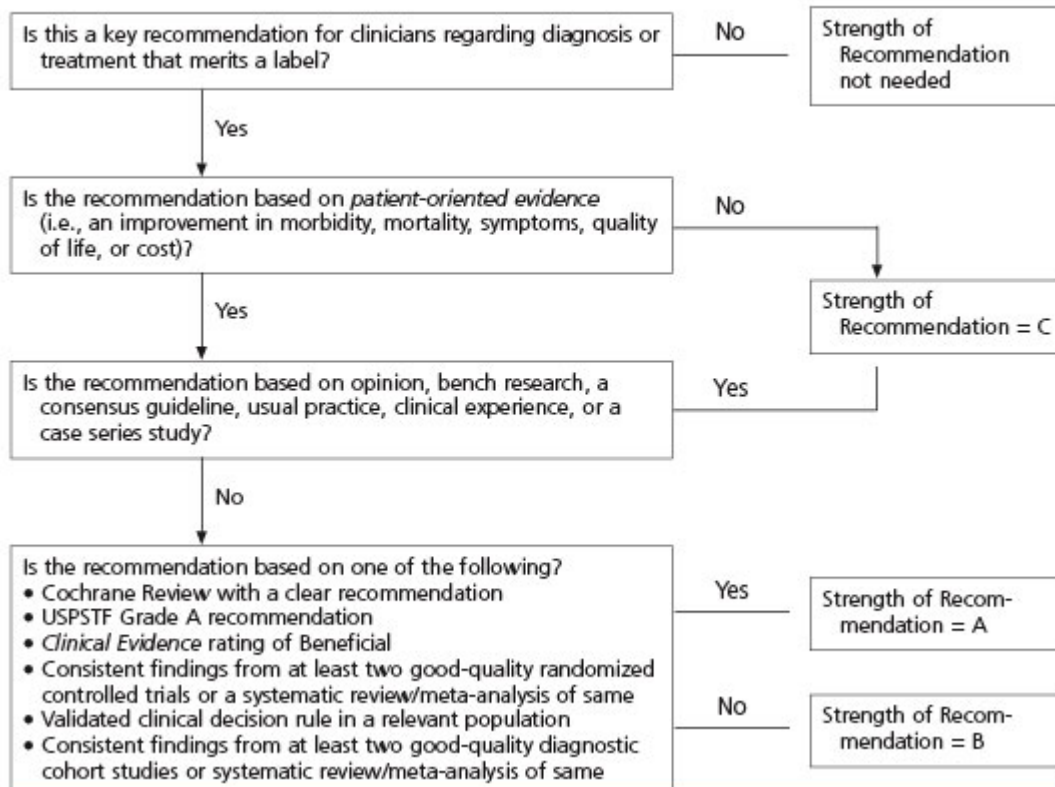


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation based on the benefits, harms, and costs of the intervention being recommended. (USPSTF = U.S. Preventive Services Task Force)