

Health Benchmarks[®] Program

Clinical Quality Indicator Specification 2011

Measure Title	CHILDHOOD IMMUNIZATION: MEASLES, MUMPS, AND RUBELLA (MMR)		
Disease State	Measles, Mumps, Rubella	Indicator Classification¹	Prevention
Strength of Recommendation²	A		
Organizations Providing Recommendation	Centers for Disease Control and Prevention		
Clinical Intent	To ensure that all children receive at least 1 MMR vaccine prior to their second birthday.		
Background	<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 due to the implementation of universal immunization programs.[1] <ul style="list-style-type: none"> ○ For measles, there were 131 measles cases reported to the CDC between January and July of 2008 compared with an average of 63 cases per year during 2000-2007.[2] For mumps, the average reported incidence has been 0.1 per 100,000 since 1993, except in 2006, when a large outbreak occurred primarily affecting the Midwest, and during 2009-2010, when an outbreak occurred in a community in the Northeast.[3] [1] ○ For rubella, there were 57,600 reported cases compared with 225 in 1988.[1] ○ Endemic transmission for measles and rubella was eliminated in 2000 and 2004, respectively.[3] • In 2006, the United States experienced the largest nationwide mumps epidemic in 20 years.[4] • None of these diseases has been eradicated and severe complications require immunizations to continue to be administered. Complications include: <ul style="list-style-type: none"> ○ Diarrhea, middle ear infection, bronchopneumonia, encephalitis, subacute sclerosing panencephalitis, and multiple severe problems in pregnancy for measles; ○ Parotitis, fever, headache, malaise, myalgia, anorexia, respiratory symptoms, orchitis, aseptic meningitis, meningoencephalitis, and fetal death if the infection is contracted in the first trimester for mumps; and ○ Rash, lymphadenopathy, arthralgia, fever, polyarthrititis, encephalitis, thrombocytopenia, and multiple severe problems in pregnancy for rubella.[5] 		

Reason for Indicated Intervention or Treatment

- Since monovalent vaccines containing measles, rubella, and mumps vaccine viruses – and subsequently combined measles-mumps-rubella (MMR) vaccine – were licensed, the numbers of reported cases of measles, mumps, rubella, and congenital rubella syndrome (CRS) have decreased by more than 99%.[1]
- In 2003, 23% of children were delayed in receiving their MMR vaccine when compared to the recommended timeline set by the Centers for Disease Control.[6, 7]
- In 2009, coverage from MMR among children 19-35 months declined to 90% as opposed to 92.3% in 2007.[8]

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.[9, 10]
- 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]
- Children should get 2 doses of MMR vaccine: The first at 12-15 months of age and the second at 4-6 years of age. Children can get the second dose at any age, as long as it is at least 28 days after the first dose.[6, 11-14]

Clinical Recommendations

Source

Healthcare Effectiveness Data and Information Set (HEDIS®) 2011 Technical Specification for Physician Measurement

Denominator

Denominator Definition Continuously enrolled children who had their 2nd birthday during the measurement year.

Denominator Index Date Date of 2nd birthday

Denominator Encounters/Claims Criteria N/A

Denominator Exclusion

Denominator Exclusion Definition Members with contraindications for MMR any time on or before the index date.

Note: Children who had a contraindication for a specific vaccine should be excluded from the denominator for all antigen rates and combination rates. The denominator for all rates must be the same. A user organization that excludes

contraindicated children may do so only if the electronic data do not indicate that the contraindicated immunization was rendered. The exclusion must have occurred by the 2nd birthday. (HEDIS®, 2011)

If the organization uses the same sample as for the Lead Screening in Children measure, the same children will be excluded from the Lead Screening in Children measure. (HEDIS®, 2011)

Denominator Exclusion Claims Criteria ICD-9 diagnosis code(s): 042, 200.xx-202.xx, 203.xx, 204.xx-208.xx, 279.xx, 999.4, V08

Numerator

Numerator Definition Members with at least 1 MMR vaccination any time on or before the index date. Alternatively, a combination of either: (1) receipt of vaccination component any time on or before the index date or (2) history of disease diagnosis for measles, mumps, and rubella any time prior to or on the index date.

Numerator Claims Criteria CPT-4 code(s): 90704, 90705, 90706, 90707, 90708, 90710
 ICD-9 surgical proc code(s): 99.45, 99.46, 99.47, 99.48
 ICD-9 diagnosis code(s): 055.xx, 056.xx, 072.xx

Physician Attribution

Physician Attribution Description If child meets numerator criteria, score all physicians that saw the member from 11 months of age through the index date.
 Likewise, if child does not meet numerator criteria, score all physicians that saw the member from 12 months of age through the index date.

References

1. Watson, J.C., et al., *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)*. MMWR Recomm Rep, 1998. **47**(RR-8): p. 1-57.
2. Prevention, C.f.D.C.a., *Update: Measles --- United States, January--July 2008*. 2008. **57**(33): p. 893-896.
3. Marin M, B.K., Temte JL, Snider DE, Seward JF, *Use of Combination Measles, Mumps, Rubella, and Varicella Vaccine: Recommendations of the Advisory Committee on Immunization Practices (ACIP)*. MMWR, 2010. **59**(RR03): p. 1-12.
4. Barskey, A.E., J.W. Glasser, and C.W. LeBaron, *Mumps resurgences in the United States: A historical perspective on unexpected elements*. Vaccine, 2009. **27**(44): p. 6186-95.
5. Bloch, A.B., et al., *Health impact of measles vaccination in the United States*. Pediatrics, 1985. **76**(4): p. 524-32.

6. *Recommended childhood and adolescent immunization schedule-- United States, January-June 2004.* MMWR Morb Mortal Wkly Rep, 2004. **53**(1): p. Q1-4.
7. 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.
8. CDC, *National, State, and Local Area Vaccination Coverage Among Children Aged 19--35 Months --- United States, 2009.* MMWR. **59**(36): p. 1171-1177.
9. Carter, H. and H. Campbell, *Rational use of measles, mumps and rubella (MMR) vaccine.* Drugs, 1993. **45**(5): p. 677-83.
10. Fahlgren, K., *Two doses of MMR vaccine--sufficient to eradicate measles, mumps and rubella?* Scand J Soc Med, 1988. **16**(3): p. 129-35.
11. Fernandes, A.W., et al., *Outcomes of inappropriate prescribing of beta-blockers after an acute myocardial infarction in a Medicaid population.* Ann Pharmacother, 2005. **39**(9): p. 1416-22.
12. *Recommended Childhood and Adolescent Immunization Schedule. United States. 2006.* Department of Health and Human Services. Centers for Disease Control and Prevention 2006 [cited October 15, 2007 <http://www.immunize.org/cdc/child-schedule.pdf>].
13. ICSI, *Immunizations.* Institute for Clinical Systems Improvement, 2008: p. 64.
14. *Update: recommendations from the Advisory Committee on Immunization Practices (ACIP) regarding administration of combination MMRV vaccine.* MMWR Morb Mortal Wkly Rep, 2008. **57**(10): p. 258-60.

¹ **Indicator Classification** (Adapted from HEDIS® technical specifications)

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).
Effectiveness of Care	
Prevention	Measures applicable to asymptomatic individuals that are designed to prevent the onset of the targeted condition (e.g., immunizations).
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).
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).
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).
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).
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).

² Strength of Recommendation

Strength of Recommendation Based on a Body of Evidence

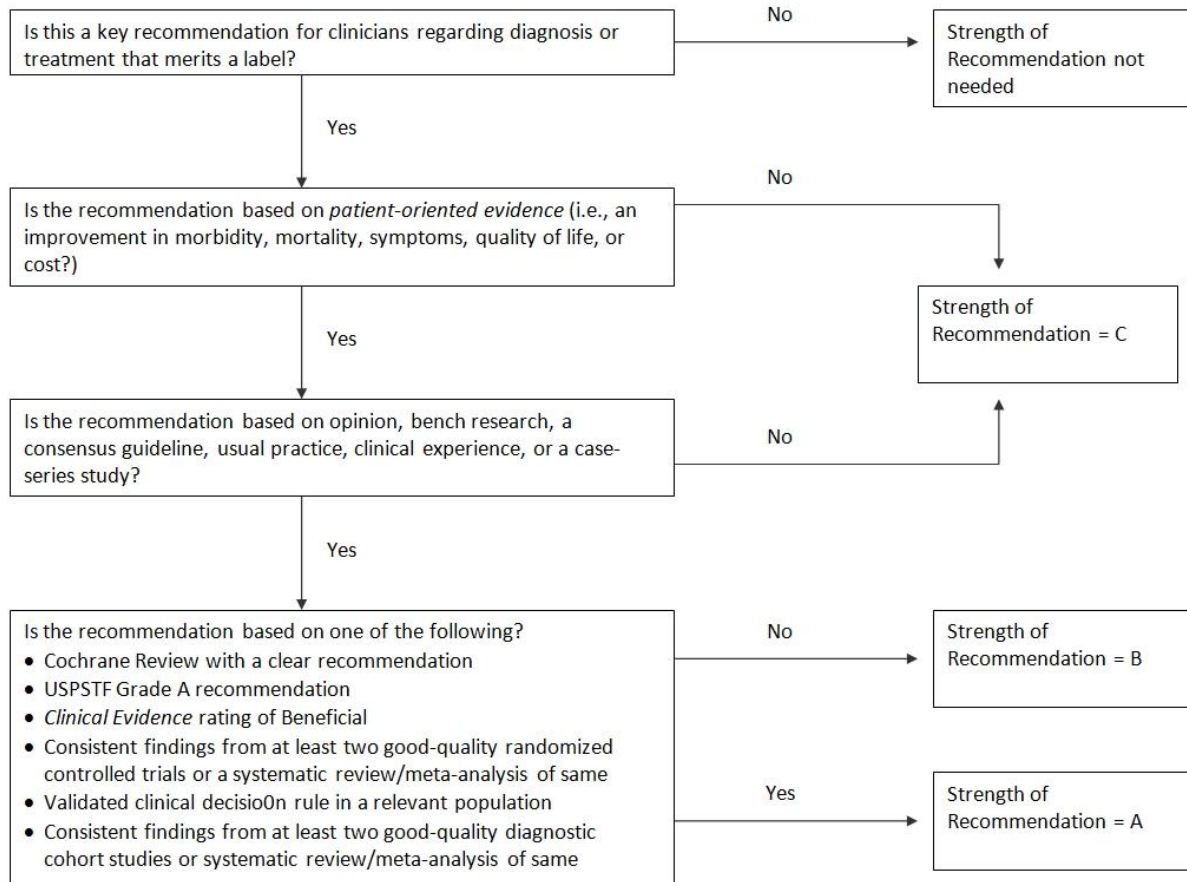


FIGURE 2. Algorithm for determining the strength of a recommendation based on a body of evidence (applies to clinical recommendations regarding diagnosis, treatment, prevention, or screening). While this algorithm provides a general guideline, authors and editors may adjust the strength of recommendation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