Date Finalized: 05.23.2025

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Measles Clinical Pathway Synopsis

Measles Algorithm

Completed MMR Vaccination:

- Patients received 1st dose of MMR vaccine at >12 months of age
- AND 2nd dose at least 28 days after the 1st dose (often given at 4 - 6 years of age)

Note: Titers are not recommended as an alternative to vaccination, but if a patient has prior titers confirming immunity, then off pathway

Measles Exposure Within Last 21 days:

- Patient has been in shared space with someone with suspected or confirmed measles
- OR patient has been in a shared space vacated by someone with suspected or confirmed measles within 2 hours
- OR patient has been notified of exposure (by health dept, school, day care, etc.)

Concern for Measles:

1. Sign & Symptoms:

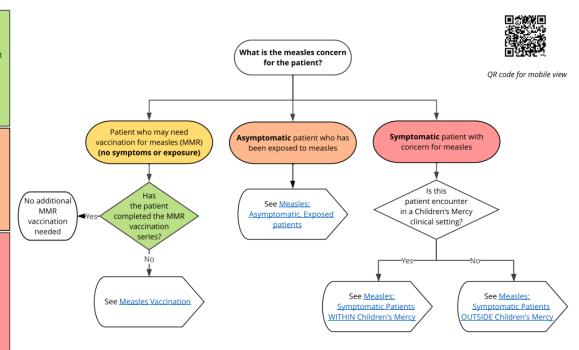
- Fever plus at least one of the following:
- Cough and coryza (runny nose)
- Bilateral conjunctivitis
- Koplik spots
- Maculopapular rash (spreads from head to trunk, then to arms and legs)
 See AAP Red Book for photos

2. Risk factors for severe measles disease:

- · Immunocompromised
- ≤ 12 months of age
- Unimmunized or unknown MMR vaccination

Note: Measles in vaccinated individuals is very rare, but may present with low-grade or no fever and mild rash.

3. Measles exposure within last 21 days (see above)





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Measles: Vaccination Algorithm

Exclusion criteria:

MMR is a live attenuated virus vaccine and is contraindicated in:

- Immunosuppressed patients (Recommend contacting the provider managing the immunosuppression)
- · Pregnant individuals

Completed MMR Vaccination:

- Patients received 1st dose of MMR vaccine at >12 months of age
- AND 2nd dose at least 28 days after the 1st dose (often given at 4 - 6 years of age)

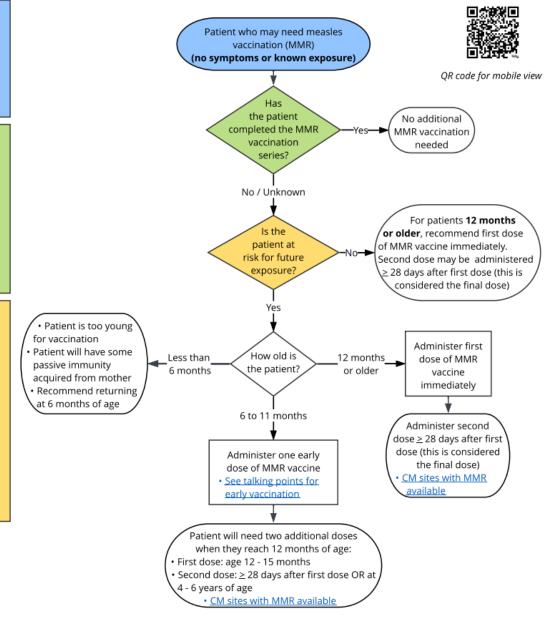
Note: Titers are not recommended as an alternative to vaccination, but if a patient has prior titers confirming immunity, then off pathway

Risk for Future Exposure:

 International travel prior to routine MMR vaccine schedule (see <u>CDC travel</u>

recommendations)

- Vaccination recommended at least 2 weeks prior to travel
- Community outbreak as defined by local health department (see <u>CDC outbreak information</u>):
 - County or bordering county of residence
 - Planned visit to county with outbreak or bordering county
- Or as recommended by local health department



Abbreviations:

PCP = primary care provider PEP - postexposure prophylaxis

Evidence Based Practice

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Measles Asymptomatic, Exposed Patients Algorithm

Measles Exposure Within Last 21 days: ASYMPTOMATIC patient who Patient has been in shared space with has been exposed to measles someone with suspected or confirmed · OR patient has been in a shared space Expedite to room: QR code for mobile view vacated by someone with suspected or · Mask patient and their family members confirmed measles within 2 hours · Place patient in a negative pressure room and · OR patient has been notified of use airborne precautions exposure (by health dept, school, day If there is not a negative pressure room available, place patient in a room with the door closed · Minimize transportation of the patient/family within the clinical setting See CM Infection Prevention & Control full recommendations to minimize measles exposure Has the patient had at least Patient can be moved to one dose of MMR vaccine > 12 regular room (if needed) months of age AND is with standard precautions immunocompetent? No / Unknown Ouarantine is not recommended Notify: · Follow-up with PCP as needed · Infection Prevention & Control in your Recommend that household members contact organization their PCP or local health dept, to determine if they · OR local health dept. (Contact info at are at risk (contact clinic BEFORE being seen) https://libraries.cste.org/after-hours-contact/ Note: Measles in vaccinated individuals is very rare, but may present with low-grade or no fever and mild Measles testing not recommended for asymptomatic patients Provide post-exposure prophylaxis (PEP) based on age, immunization status, and time from exposure (see PEP information) . CM sites with Ig/MMR available Room must be closed for at least 2 hours after patient leaves (at least 1 hour for negative Symptomatic patients: pressure room) Within CM • Link to CM Infection Prevention & Control full Outside CM recommendations Measles Home · Instruct patient/household contacts to immediately quarantine at home until contacted by Page the health dept. with further instruction (quarantine of 21-28 days may be recommended) · Everyone should mask for departure from clinical setting and if encountering others on the way home (e.g., public transportation) (see Infection Control instructions for patient/household members) Monitor for symptoms. If symptoms occur, contact PCP or local health dept. BEFORE being seen (see

These clinical pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances existing at the time. It is impossible to anticipate all possible situations that may exist and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.

Recommend that household members contact their PCP or local health dept. to determine

pathways for symptomatic patients seen within CM or

need for PEP (contact clinic BEFORE being seen)

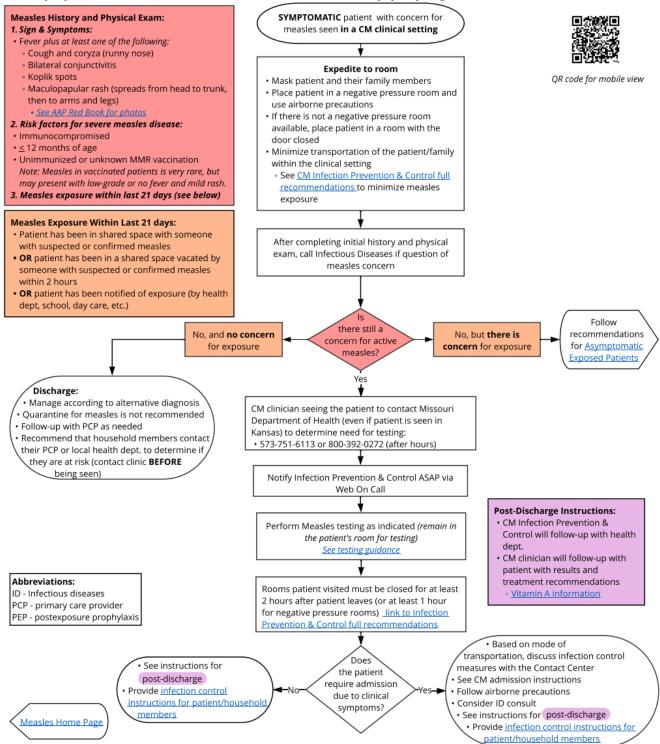
symptomatic patients seen outside CM)



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Measles: Symptomatic Patients Seen Within Children's Mercy (CM) Algorithm



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Measles: Symptomatic Patients Seen Outside CM Algorithm

Measles History and Physical Exam: SYMPTOMATIC patient with concern for 1. Sign & Symptoms: measles seen in clinical setting outside of CM · Fever plus at least one of the following: · Cough and coryza (runny nose) · Bilateral conjunctivitis Koplik spots Expedite to Room: QR code for mobile view · Maculopapular rash (spreads from head to · Mask patient and their family members trunk, then to arms and legs) · Place patient in a negative pressure room and See AAP Red Book for photos use airborne precautions 2. Risk factors for severe measles disease: · If there is not a negative pressure room Immunocompromised available, place patient in a room with the ≤ 12 months of age door closed · Unimmunized or unknown MMR vaccination · Minimize transportation of the patient/family Note: Measles in vaccinated patients is very rare, but within the clinical setting may present with low-grade or no fever and mild rash. Follow local infection prevention & control 3. Measles exposure within last 21 days (see below) precautions to minimize measles exposure · See CM Infection Prevention & Control full recommendations for reference Measles Exposure Within Last 21 days: · Patient has been in shared space with someone with suspected or confirmed measles · OR patient has been in a shared space vacated by Recommend call to Infectious Diseases someone with suspected or confirmed measles specialist if question of measles concern within 2 hours · OR patient has been notified of exposure (by health dept, school, day care, etc.) Is there Follow still a concern No, and no concern No, but there is recommendations for exposure for active concern for exposure for Asymptomatic measles? Exposed Patients Discharge: · Manage according to alternative diagnosis Quarantine for measles is not recommended Contact your local health dept. to determine need for testing · Follow-up with PCP as needed • MO: 573-751-6113 or 800-392-0272 (after hours) · Recommend that household members contact their PCP or local health dept. to determine if KS: 877-427-7317 (24/7), option 5 · Others: https://libraries.cste.org/after-hours-contact/ they are at risk (contact clinic BEFORE being seen) Perform Measles testing as indicated (remain in the patient's room for testing) See testing guidance Post-Discharge Instructions: · Ordering clinician to follow up with health dept. Rooms patient visited must be closed for at least 2 Ordering clinician to follow up hours after patient leaves (or at least 1 hour for with patient with results and negative pressure rooms) link to CM Infection treatment recommendations Prevention & Control full recommendations Vitamin A information Does · Contact admitting hospital to discuss Measles Home Page See instructions for the patient infection control processes for admission post-discharge require admission · Follow airborne precautions Provide instructions for due to clinical See instructions for post-discharge patient/household members symptoms? · Provide instructions for Abbreviations: patient/household members PCP - primary care provider PEP - postexposure prophylaxis



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Objective of Clinical Pathway

The aim of this pathway is to provide care standards for patients in need of measles vaccination, asymptomatic patients exposed to measles, and symptomatic patients with concern for measles infection seen within or outside of the Children's Mercy system.

Background

Measles is a highly contagious viral illness characterized by symptoms including fever, cough, runny nose, conjunctivitis, and a maculopapular rash (American Academy of Pediatrics [AAP], 2024). Measles infections may result in complications ranging from otitis media, pneumonia, croup, and diarrhea to serious complications such as acute encephalitis (AAP, 2024). Measles cases have increased since 2020, with most cases related to outbreaks occurring in unvaccinated individuals (CDC, 2025). This pathway provides comprehensive guidance for prevention, infection control, diagnosis, and treatment of measles in patients seen within and outside of Children's Mercy.

Target Users

- Physicians (Emergency Medicine, Urgent Care, Hospital Medicine, Infectious Diseases, Primary Care, Ambulatory Clinics, Fellows, Residents)
- Advanced Practice Providers
- Nurses
- Pharmacists
- Infection Prevention and Control

Target Population

Inclusion Criteria

- Patients in need of measles, mumps, and rubella (MMR) vaccination
- Asymptomatic patients exposed to measles within the last 21 days
- Symptomatic patients with concern for measles infection

Exclusion Criteria

• MMR is a live, attenuated virus and is contraindicated in immunosuppressed patients and pregnant individuals. However, immunosuppressed patients may qualify for other parts of the clinical pathway (e.g., exposure or concern for infection).

Practice Recommendations

The AAP Red Book Chapter on Measles (AAP, 2024) and the United States Centers for Disease Prevention and Control Measles guidance (CDC, 2025) were used to inform sections of this clinical pathway, including information for MMR vaccination, post-exposure prophylaxis (PEP), infection control recommendations, clinical and laboratory diagnosis, and treatment. This information was incorporated into logistical recommendations using the expert opinion and consensus of the Measles Clinical Pathway committee.

Additional Questions Posed by the Clinical Pathway Committee

No additional clinical questions not addressed in the above practice recommendations were posed for this review.

Recommendation Specific for Children's Mercy

In the absence of a comprehensive clinical guideline, practice recommendations and the employment of selected tools and resources were based on the expert opinion of the Measles Clinical Pathway Committee.

Measures

• Utilization of the Measles Clinical Pathway and associated resources



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Value Implications

The following improvements may increase value by reducing healthcare costs and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and families and reducing costs and resource utilization for healthcare facilities.

- Increased frequency of recommended measles vaccination
- Increased frequency of appropriate screening, testing, referrals, and follow-up for patients with exposure or concern for measles infection
- Increased rate of appropriate isolation of patients and families with measles exposure or concern for measles infection, thereby reducing the risk of virus transmission
- Increased rate of appropriate prophylaxis for patients with exposure to measles
- Decreased risk of missed diagnosis or unnecessary prophylaxis
- Decreased unwarranted variation in care

Organizational Barriers and Facilitators

Potential Barriers

- Potential changes to recommendations as measles outbreaks evolve
- Vaccination hesitancy by some patients and families
- Variability of utilization of clinical pathway, including appropriate isolation and instructions for follow-up
- Challenges with health literacy and/or access to healthcare faced by some families

Potential Facilitators

- Collaborative engagement across care continuum settings during clinical pathway development
- Anticipated high rate of use of the clinical pathway

Bias Awareness

Bias awareness is our aim to recognize social determinants of health and minimize healthcare disparities while acknowledging that our unconscious bias can contribute to these inequities.

Associated Policies

Diseases Requiring Isolation

Education Materials

- Infection Control Instructions for Patients with Measles Symptoms and Their Household Members
 - o English version



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Clinical Pathway Preparation

This pathway was prepared by the Evidence Based Practice (EBP) Department in collaboration with the Measles Clinical Pathway Committee composed of content experts at Children's Mercy Kansas City. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

Measles Clinical Pathway Committee Members and Representation

- Christelle Ilboudo, MD | Infectious Diseases, Infection Prevention & Control | Committee Chair
- Kathy Auten, MSN, RN, CIC | Infection Prevention & Control | Committee Member
- Angie Black, DNP, RN, CPNP-PC, CPN | Ambulatory Administration | Committee Member
- Sarah Bledsoe, PharmD, MSHA, CPHIMS, BCSCP | Pharmacy | Committee Member
- Amy Boren, MSN, RN, CPN | Urgent Care | Committee Member
- Alaina Burns, PharmD, BCPPS | Pharmacy | Committee Member
- Maria Martinez, RN, BSN, MSN, MBA, CPN | Patient Care Services | Committee Member
- JoLynn Parker, MSN, RN, CPN | Ambulatory Administration | Committee Member
- Erin Scott, DO | Emergency Medicine | Committee Member
- Douglas Swanson, MD | Infectious Diseases | Committee Member
- Gina Weddle, DNP, RN, CPNP-AC/PC | Infectious Diseases, Infection Prevention & Control | Committee Member

EBP Committee Members

- Kathleen Berg, MD, FAAP | Evidence Based Practice
- Megan Gripka, MPH, MT (ASCP) SM | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Infection Prevention & Control, Infectious Diseases, Emergency Department, Urgent Care, Ambulatory Administration, Pharmacy, and Evidence Based Practice.

Conflict of Interest

The contributors to the Measles Clinical Pathway have no conflicts of interest to disclose related to the subject matter or materials discussed.

Approval Process

- This pathway was reviewed and approved by the Measles Committee, Content Expert Departments/Divisions, and the EBP Department, after which the Medical Executive Committee approved it.
- Pathways are reviewed and updated as necessary every 3 years within the EBP Department at CMKC. Content expert teams are involved with every review and update.

Review Requested

Department/Unit	Date Obtained
Ambulatory Administration	May 2025
Emergency Department	May 2025
Infection Prevention & Control	May 2025
Infectious Diseases	May 2025
Pharmacy	May 2025
Urgent Care	May 2025
Evidence Based Practice	May 2025



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Version History

Date	Comments	
May 2025	Version one – Development of: algorithms for Measles Vaccination, Care Managemen	
	of Asymptomatic Exposed Patients, and Care Management of Symptomatic Patients;	
	PEP and immunization recommendations, Infection Control & Prevention	
	recommendations, and testing information	

Date for Next Review

• 2028

Implementation & Follow-Up

- Once approved, the pathway was presented to appropriate care teams and implemented. Care measurements will be assessed and shared with appropriate care teams to determine if changes need to occur.
- Education tools were reviewed for health literacy.
- Education was provided to stakeholders:
 - Divisions of Emergency Medicine, Urgent Care, Infectious Diseases, Infection Prevention & Control
- Additional institution-wide announcements were made via email, the hospital website, and relevant huddles.

Disclaimer

When evidence is lacking or inconclusive, options in care are provided in the supporting documents and the power plan(s) that accompany the clinical pathway.

These clinical pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the best interests of the patient based on the circumstances existing at the time.

It is impossible to anticipate all possible situations that may exist and to prepare clinical pathways for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.

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