# 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.)

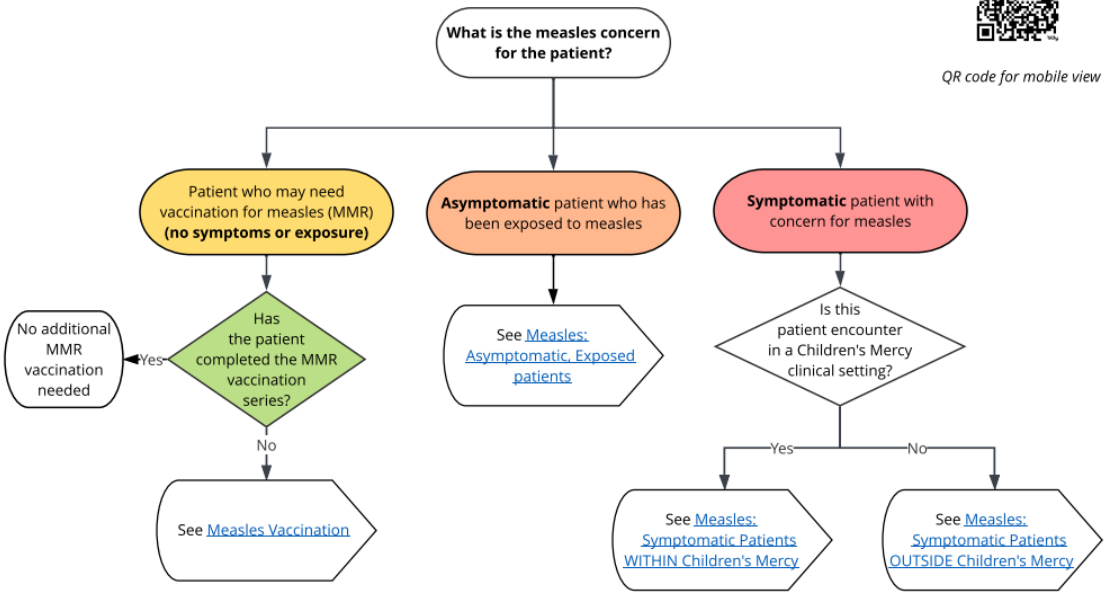
**Concern for Measles:**
*No single finding should dictate the plan of care. These features must be interpreted as a whole in the context of the specific patient scenario. If questions, contact an Infectious Diseases specialist or state epidemiologist for assistance.*

***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 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)***




*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.*

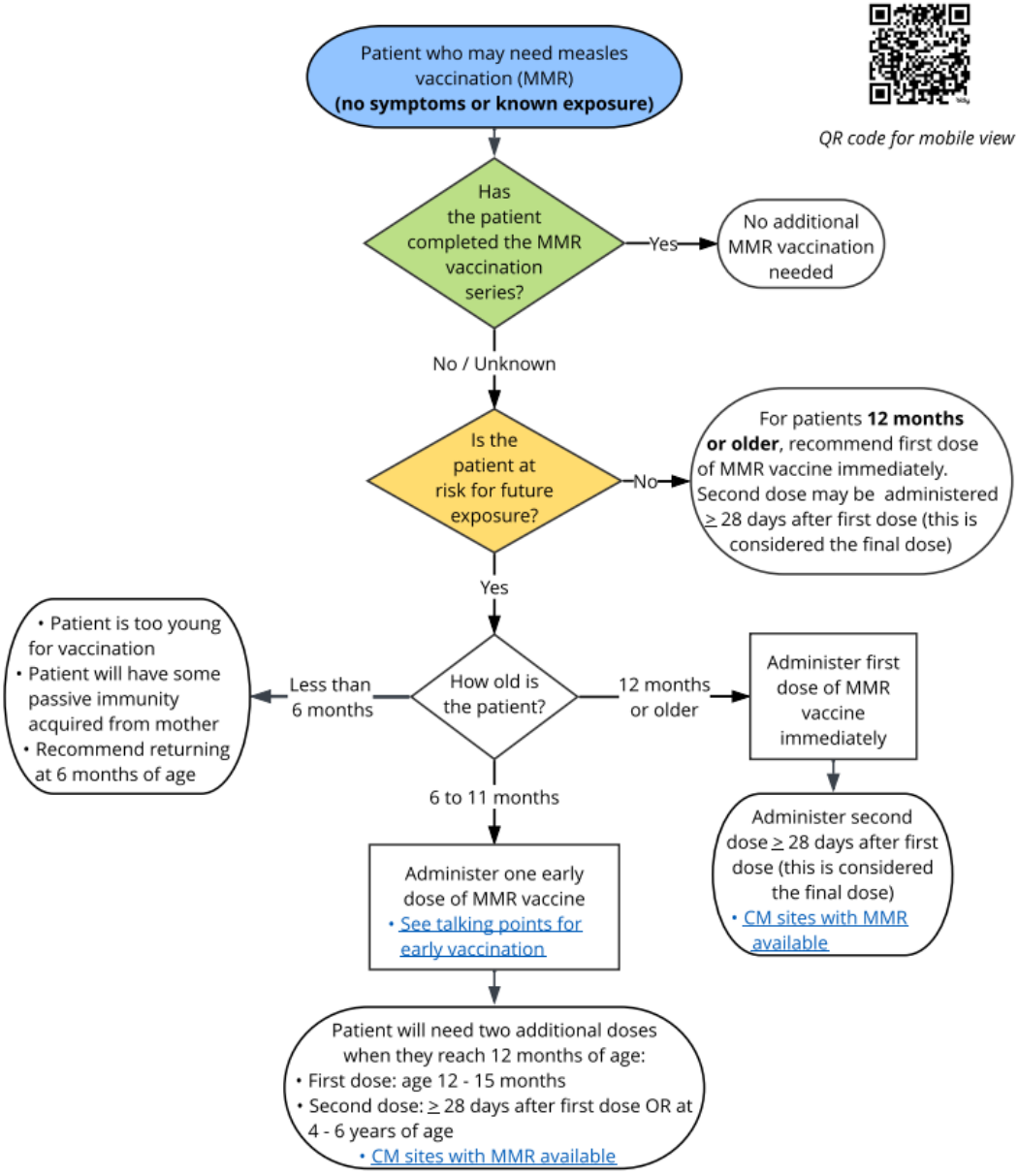
## Measles: Vaccination Algorithm

**Exclusion criteria:**
MMR is a live attenuated virus vaccine and is contraindicated in:
- Immunosuppressed patients *(Recommend contacting the provider managing the immunosuppression)*
- Pregnant individuals

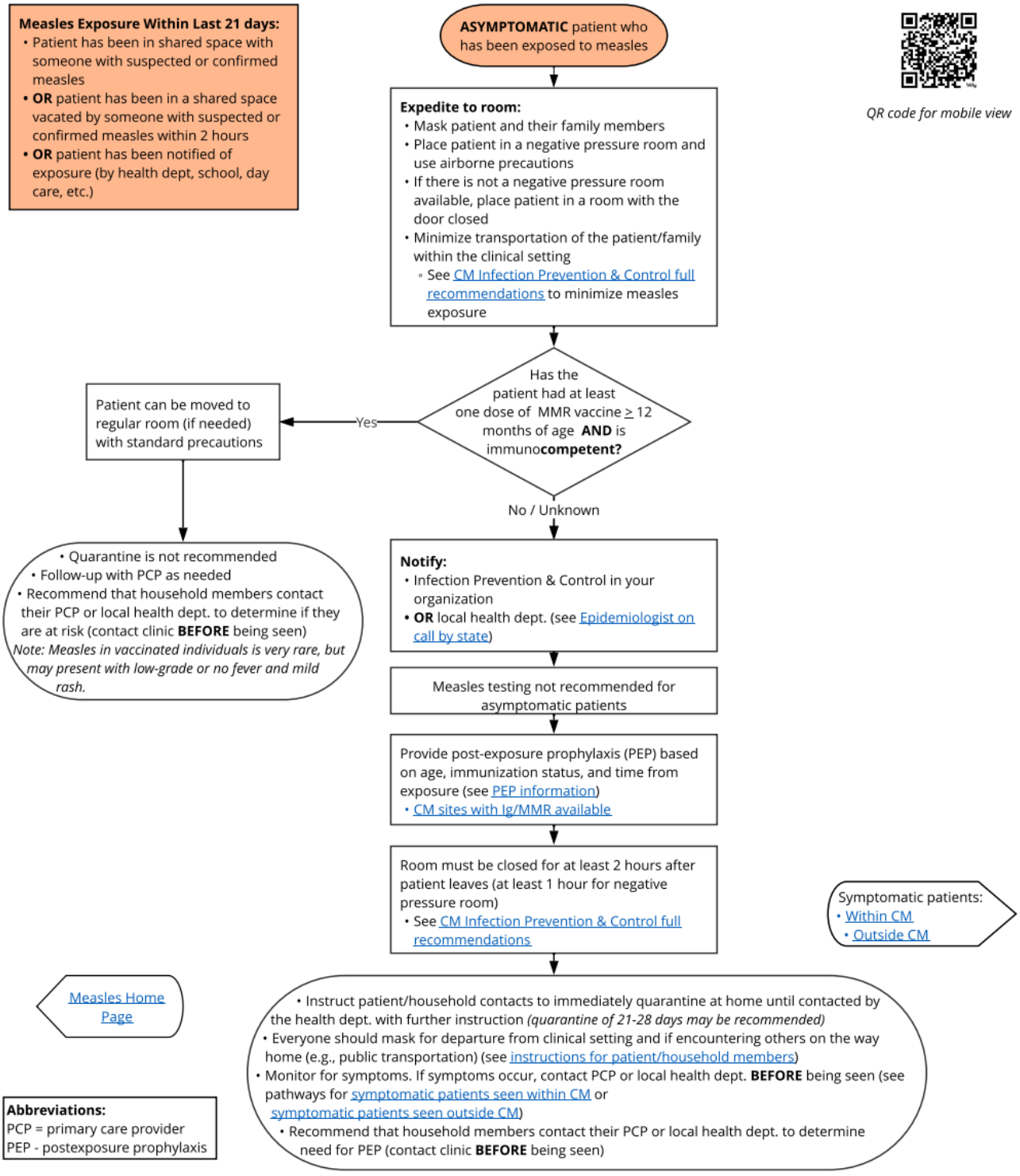
**Completed MMR Vaccination:**
- Patients received 1st dose of MMR vaccine at >12 months of age
- **AND** 2nd dose at least 28 days after the 1st dose (often given at 4 - 6 years of age)

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



## Measles Asymptomatic, Exposed Patients Algorithm

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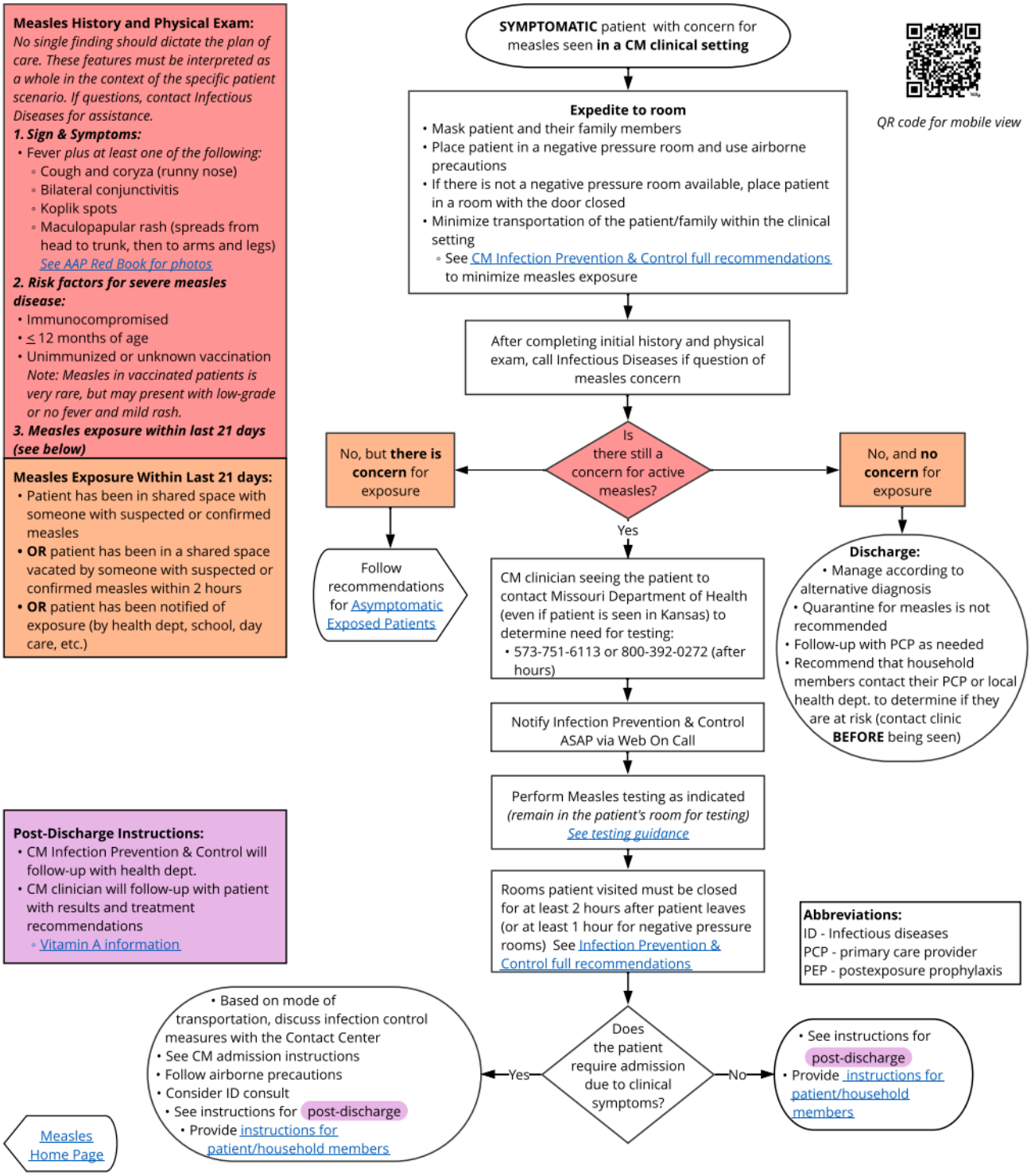
## Measles: Symptomatic Patients Seen Within Children's Mercy (CM) Algorithm

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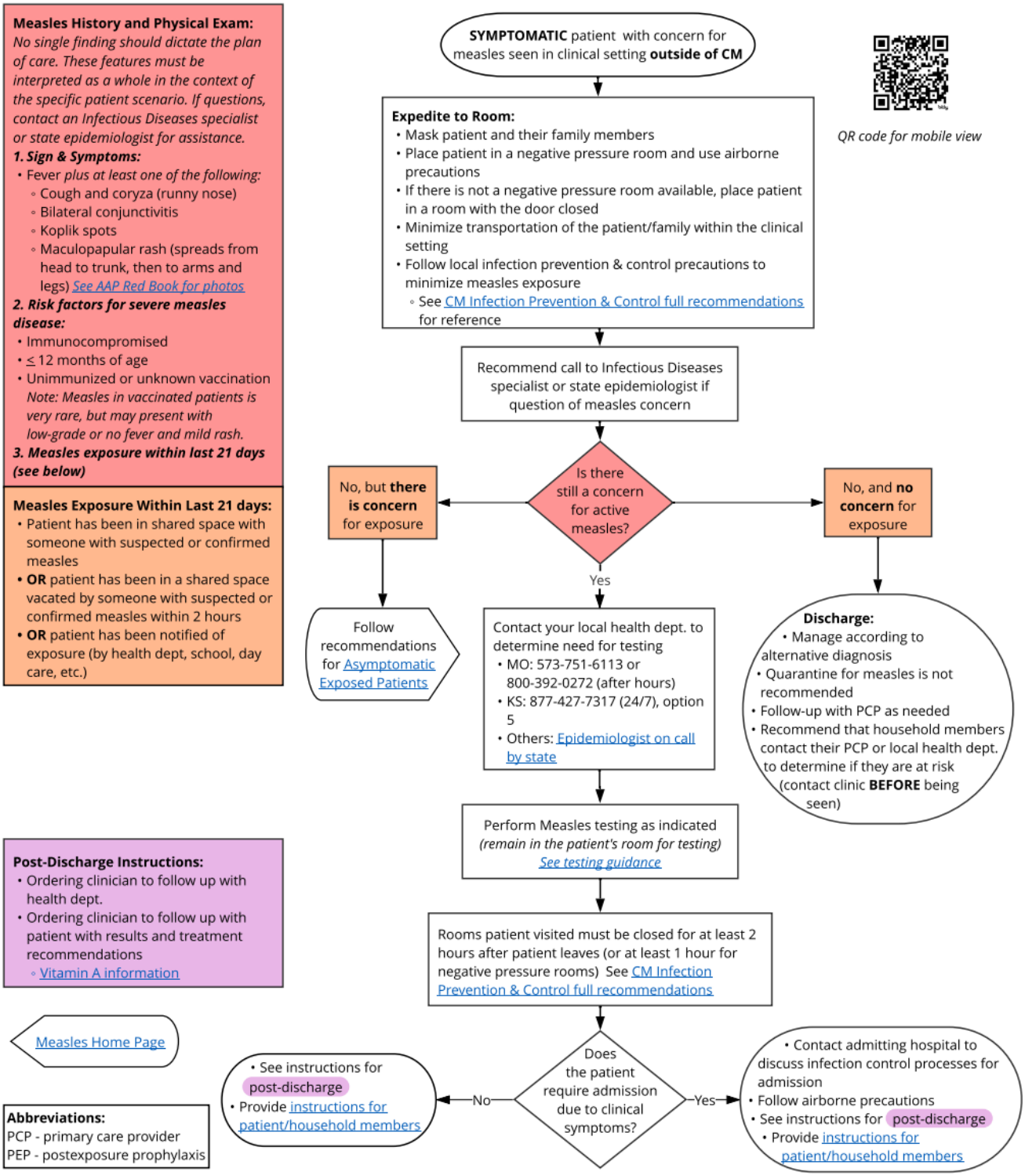
## Measles: Symptomatic Patients Seen Outside CM Algorithm

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## Table of Contents

**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

**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
  - English version

**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 |

**Version History**

| Date | Comments |
|---|---|
| May 2025 | Version one – Development of: algorithms for Measles Vaccination, Care Management 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.

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