



Measles Clinical Pathway Synopsis

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

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.



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

Order Sets

- There are no order sets associated with this 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.

Educational 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. 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

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- 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 Children's Mercy. 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.

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Disclaimer

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

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References

- American Academy of Pediatrics. (2024). Measles. In Red Book: 2024–2027 Report of the Committee on Infectious Diseases. Retrieved May 20, 2025, from <https://publications.aap.org/redbook/book/755/chapter/14079321/Measles>
- Centers for Disease Control and Prevention. (2024, January 11). Appendix B. Air. Infection Control. Retrieved from <https://www.cdc.gov/infection-control/hcp/environmental-control/appendix-b-air.html>
- Centers for Disease Control and Prevention. (July 15, 2024.). Clinical overview of measles. Retrieved May 20, 2025, from <https://www.cdc.gov/measles/hcp/clinical-overview/index.html>
- Centers for Disease Control and Prevention. (July 15, 2024). Measles: Travel. Retrieved from <https://www.cdc.gov/measles/travel/index.html>
- Centers for Disease Control and Prevention. (September 20, 2024). Measles Vaccine Recommendations. Retrieved May 20, 2025 from <https://www.cdc.gov/measles/hcp/vaccine-considerations/index.html>
- Centers for Disease Control and Prevention. (May 16, 2025). Measles cases and outbreaks. Retrieved May 20, 2025, from <https://www.cdc.gov/measles/data-research/index.html>
- National Foundation for Infectious Diseases. (2023, April). Call to action: Vitamin A for the management of measles in the US. Retrieved from <https://www.nfid.org/wp-content/uploads/2023/04/Call-to-Action-Vitamin-A-for-the-Management-of-Measles-in-the-US-FINAL.pdf>
- New York City Department of Health and Mental Hygiene. (n.d.). Post-exposure prophylaxis for measles: Recommendations for providers. Retrieved from <https://www.nyc.gov/assets/doh/downloads/pdf/imm/pep-measles-providers.pdf>
- Nic Lochlainn, L. M., de Gier, B., van der Maas, N., van Binnendijk, R., Strebel, P. M., Goodman, T., ... & Hahne, S. J. (2019). Effect of measles vaccination in infants younger than 9 months on the immune response to subsequent measles vaccine doses: a systematic review and meta-analysis. *The Lancet Infectious Diseases*, 19(11), 1246-1254. [https://doi.org/10.1016/S1473-3099\(19\)30396-2](https://doi.org/10.1016/S1473-3099(19)30396-2)
- van der Staak, M., ten Hulscher, H. I., Nicolaie, A. M., Smits, G. P., de Swart, R. L., de Wit, J., Rots, N. Y., & van Binnendijk, R. S. (2025). Long-term dynamics of measles virus-specific neutralizing antibodies in children vaccinated before 12 months of age. *Clinical Infectious Diseases*, 80(4), 904–910. <https://doi.org/10.1093/cid/ciae537>
- Vittrup, D. M., Jensen, A., Sørensen, J. K., Zimakoff, A. C., Malon, M., Charabi, S., ... & Stensballe, L. G. (2024). Immunogenicity and reactogenicity following MMR vaccination in 5–7-month-old infants: a double-blind placebo-controlled randomized clinical trial in 6540 Danish infants. *EClinicalMedicine*, 68, 102421. <https://doi.org/10.1016/j.eclinm.2024.102421>
- Xu, J., Doyon-Plourde, P., Tunis, M., & Quach, C. (2021). Effect of early measles vaccination on long-term protection: A systematic review. *Vaccine*, 39(22), 2929–2937. <https://doi.org/10.1016/j.vaccine.2021.04.073>

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