COVID-19
Clinical Pathway Synopsis

COVID-19 Outpatient Management Algorithm

Exclusion Criteria:
- ≤ 60 days of age (Refer to Febrile Infant Clinical Pathway)
- Concern for multisystem inflammatory syndrome (MIS-C) (Reference MIS-C)

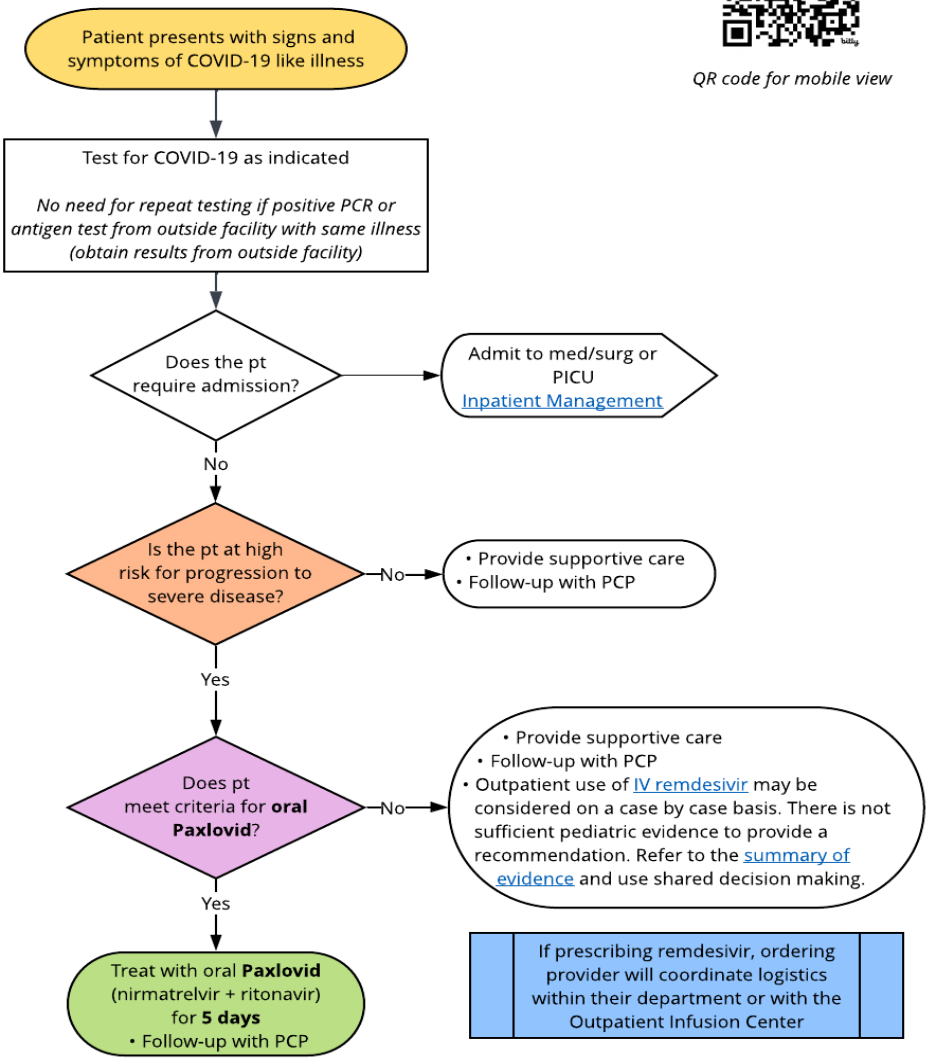
COVID-19 Like Illness
- Constellation of symptoms that may include: Cough, shortness of breath, difficulty breathing, loss of taste/smell, fever/chills, sore throat, runny nose/congestion

OR
- Fever in a child who cannot articulate another symptom (e.g., febrile infant or developmental delay)

High Risk of Progressing to Severe Disease
Regardless of COVID-19 immunization status
ANY of the following:
- Age < 1 year
- Prematurity in children < 2 years
- Immunosuppressed
- Obesity: BMI ≥ 30 kg/m^2 or > 95th percentile for age/weight
- Medical complexity with respiratory technology dependence
- Neurologic, genetic, metabolic, or other disability resulting in impaired airway clearance or limitations in self-care or activities of daily living
- Persistent asthma or chronic lung disease requiring > 2 inhaled or > 1 systemic medications daily
- Congenital or acquired cardiac disease
- Multiple moderate to severe chronic diseases
- Sickle cell disease
- Uncontrolled diabetes mellitus

Criteria for Oral Paxlovid (nirmatrelvir + ritonavir)
Must meet **ALL** of the following:
- ≥ 12 years old AND ≥ 40 kg
- Able to take first dose within 5 days of symptom onset
- No known or suspected severe renal impairment (eGFR ≤ 30 mL/min)
- No significant drug-drug interactions with ritonavir (Reference *Drug Interactions*)

Paxlovid Dosing
- Standard dose (eGFR ≥ 60 mL/min): nirmatrelvir 300 mg + ritonavir 100 mg PO BID for 5 days
- If eGFR 30 - 60 mL/min: nirmatrelvir 150 mg + ritonavir 100 mg PO BID for 5 days



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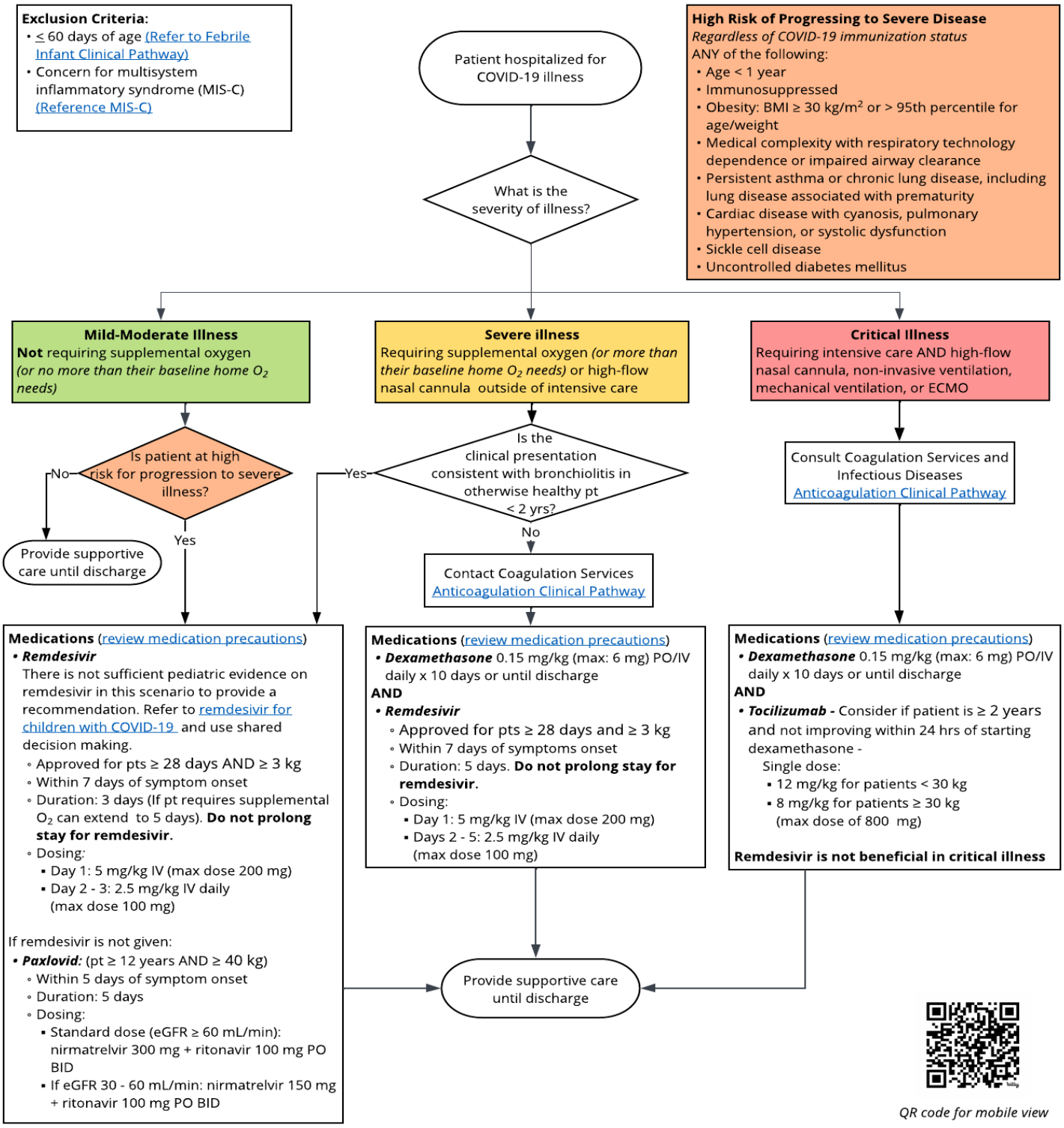
These clinical pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment in determining what is in the best interests of the patient based on the circumstances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

COVID-19: Inpatient Algorithm



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Objective of Clinical Pathway

The objective is to provide care standards for patients with signs and symptoms or a diagnosis of COVID-19. The aim is to provide guidance regarding assessment and treatment for eligible patients to maximize patient safety and minimize variation in care.

Background

Coronavirus Disease 2019 (COVID-19), the illness caused by the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first identified in December 2019 and quickly spread to a global pandemic. Compared to adults, most children infected with COVID-19 are asymptomatic or experience only mild symptoms (Player et al., 2024). However, children with comorbidities tend to be at a higher risk for severe disease and hospitalization (Woodruff et al., 2022; Graff et al., 2021). Although treatment guidance for both ambulatory and hospitalized patients is provided by the Infectious Diseases Society of America (IDSA, 2024), the recommendations are largely based on evidence from adult studies.

Although COVID-19 is no longer a pandemic, the SARS-CoV-2 virus remains active. Evidence on treatment efficacy and safety in the pediatric population is still limited, and pediatric-specific guidelines have yet to be established. In response, the COVID-19 Clinical Pathway Committee has developed evidence-based guidance, with input from content experts, to support treatment decisions.

Target Users

- Physicians (Emergency Medicine, Urgent Care, Infectious Diseases, Primary Care, Hospitalists, Fellows, Residents)
- Nurses (Advanced Practice, Direct Care)

Target Population

Inclusion Criteria

- Pediatric patients presenting with signs and symptoms of COVID-19-like illness

Exclusion Criteria

- Neonates ≤ 60 days of age
- Patients with concern for multisystem inflammatory syndrome (MIS-C)

AGREE II

The Infectious Diseases Society of America (IDSA) national guideline provided guidance to the COVID-19 Committee (Bhamrai et al., 2024). See Table 1 for AGREE II.

Table 1

AGREE II[a] Summary for the IDSA Guideline (Bhamrai et al., 2024)

Domain	Percent Agreement	Percent Justification^
Scope and purpose	99%	The aim of the guideline, the clinical questions posed, and the target populations **were** identified.
Stakeholder involvement	75%	The appropriate stakeholders developed the guideline, which represents the views of its intended users but **does not** include the viewpoints of the target population.
Rigor of development	97%	The process used to gather and synthesize the evidence, the methods to formulate the recommendations and to update the guidelines **were** explicitly stated.
Clarity and presentation	98%	The guideline recommendations **are** clear, unambiguous, and easily identified. Different management options are also presented.
Applicability	74%	The guideline **did not** fully address barriers and facilitators to implementation, strategies to improve utilization, and resource implications.
Editorial independence	75%	It is **unclear** if competing interests biased the recommendations.
Overall guideline assessment	88%	

See Practice Recommendations

Note: Four EBP Scholars and one EBP Program Manager completed the AGREE II on this guideline.
^Percentage justification is an interpretation based on the Children's Mercy EBP Department standards.

Practice Recommendations

The Infectious Diseases Society of America (Bhamrai et al., 2024) Clinical Practice Guideline provided guidance to the COVID-19 Clinical Pathway. Please refer to this guideline for full practice recommendations, apart from treatment with IV remdesivir, which will be addressed under additional questions posed by the clinical pathway committee.

Additional Questions Posed by the Clinical Pathway Committee

What are the risks and benefits of treatment with remdesivir in children with COVID-19?

Recommendations from the COVID-19 Clinical Pathway Committee

The COVID-19 Clinical Pathway Committee **recommends** remdesivir for hospitalized patients with severe illness, excluding those under 2 years of age with bronchiolitis. However, it **does not** recommend remdesivir for patients in the ambulatory setting with mild to moderate disease or those hospitalized with mild to moderate illness without risk for progressing.

This leaves several groups of patients for whom there is insufficient evidence to provide a recommendation for or against remdesivir:

1. Ambulatory patients with a risk for progression to severe disease.
2. Hospitalized patients with mild to moderate illness with a risk for progression to severe disease.
3. Hospitalized patients under 2 years of age with bronchiolitis.

For these patients, the COVID-19 Clinical Pathway Committee recommends applying the summary of evidence and employing shared decision-making with the patient and family.

Measures

- Use of the COVID-19 Clinical Pathway

Value Implications

The following improvements may increase value by reducing healthcare 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.

- Decreased risk of overtreatment (i.e., decreased use of remdesivir for ambulatory patients when steroid or NSAID treatment is more appropriate)
- Decreased unwarranted variation in care

Organizational Barriers and Facilitators

Potential Barriers

- Variability of acceptable level of risk among providers
- Challenges with follow-up faced by some families
- Challenges with scheduling and staff availability

Potential Facilitators

- Collaborative engagement across care continuum settings during clinical pathway development
- High rate of use of the clinical pathway
- Standardized order set for Urgent Care Clinic, Emergency Department, and Hospital Medicine

Power Plans

- Acute COVID-19 Admit (Non-MIS-C Other Sequala)
- COVID Remdesivir Ambulatory Infusion

Associated Policies

- There are no associated policies

Education Materials

- No educational materials were developed; however, a quick reference guide was created for providers for shared decision-making regarding the use of remdesivir

Clinical Pathway Preparation

This pathway was prepared by the Evidence Based Practice (EBP) Department in collaboration with the COVID-19 Clinical Pathway Committee composed of content experts at Children's Mercy Kansas City. EBP Scholars and the EBP team performed a literature analysis for additional questions posed by the COVID-19 Committee. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

COVID-19 Clinical Pathway Committee Members and Representation

- Gina Weddle, DNP, RN, CPNP-AC/PC | Infectious Diseases, Infection Control | Committee Co-Chair
- Alaina Burns, PharmD, BCPPS | Infectious Diseases | Committee Co-Chair
- Josh Herigon, MD, MPH, MBI | Infectious Diseases | Committee Member
- Rohan Akhouri, MD, MPH, MS | Emergency Medicine | Committee Member
- Rasika Bhamre, MD, MBBS | Emergency Medicine | Committee Member
- Jamey Garner, MD | Urgent Care | Committee Member
- Marina Dantas, MD, MSCR | Hospital Medicine | Committee Member
- Susan Elmore, MSN, APRN, PCNS-BC | Beacon Program | Committee Member
- Melanie Foltz, MSN, RN, NE-BC | Fetal Health Center | Committee Member

COVID-19 Clinical Pathway Consultants

- Raschelle Schowengerdt, MD | Fetal Health Center
- Lauren Amos, MD, MS | Hematology, Oncology, BMT
- Adrienne DePorre, MD | Hospital Medicine

EBP Committee Members

- Kathleen Berg, MD, FAAP | Hospitalist, Evidence Based Practice
- Andrea Melanson, OTD, OTR/L | Evidence Based Practice

Clinical Pathway Development Funding

The development of this clinical pathway was underwritten by the following departments/divisions: Infectious Diseases, Emergency Medicine, Urgent Care, Hospital Medicine, Beacon Program, Fetal Health Center, Hematology/Oncology/BMT, and Evidence Based Practice.

Conflict of Interest

The contributors to the COVID-19 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 COVID-19 Clinical Pathway Committee, Content Expert Departments/Divisions, and the EBP Department, after which the Medical Executive Committee approved them.
- 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
Infectious Diseases	February 2025
Emergency Medicine	February 2025
Urgent Care	February 2025
Hospital Medicine	February 2025
Beacon Program	February 2025

Fetal Health Center	February 2025
Hematology/Oncology/BMT	February 2025
Evidence Based Practice	February 2025

Version History

Date	Comments
March 2025	Version one – (assessment and intervention management algorithms for ambulatory and hospitalized patients, evidence summary, and synopsis)

Date for Next Review

- March 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 was provided to all stakeholders:
  Nursing units where the COVID-19 Inpatient Algorithm is used
  Department of Emergency Medicine, Urgent Care, Hospital Medicine, Infectious Diseases, Fetal Health Center, Hematology/Oncology/BMT, and the Beacon Program
- 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.

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