Monoclonal Antibody Use in COVID-19

September 2021—Version 2.0

NORTH MEMORIAL HEALTH

Monoclonal antibody therapy for COVID-19 has been studied since the early months of the pandemic. Initially, investigators hoped to demonstrate that these therapeutic agents helped to prevent morbidity and mortality in severe acute COVID-19 disease. Unfortunately, these trials in hospitalized populations did not show benefit, and they were stopped early due to harm or futility (https://pubmed.ncbi.nlm.nih.gov/33356051/, and https://www.niaid.nih.gov/news-events/statement-nih-sponsored-activ-3-trial-closes-ly-cov555-sub-study).

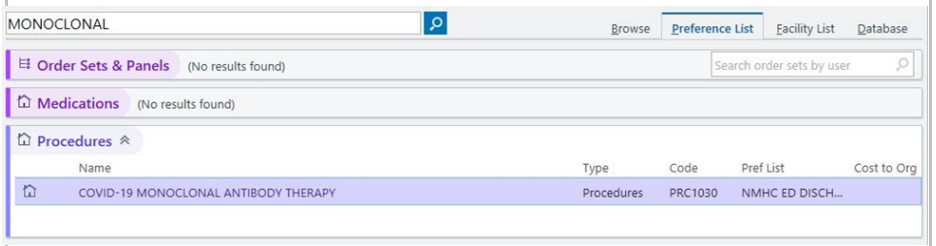
Most subsequent research has focused on ambulatory populations with higher risk of adverse outcomes. The North Memorial System COVID-19 Workgroup has reviewed all publications to-date, and we recommend consideration of COVID-19 antibody therapy in a subset of interested higher risk outpatients.

For those with known acute disease, the largest potential benefit has been demonstrated in populations with underlying comorbidities associated with worse COVID-19 outcomes (https://www.ncbi.nlm.nih.gov/pubmed/32249063, https://www.ncbi.nlm.nih.gov/pubmed/34159344). Of note, most of this evidence is not available in peer-reviewed publications, and much guidance is coming from the FDA Emergency Use Authorization (EUA) for the available medications (https://www.fda.gov/media/145802/download, https://www.fda.gov/media/145611/download, https://www.fda.gov/media/149534/download). There is also potential benefit for high-risk individuals with close contacts of known COVID-19 positive individuals (https://www.nejm.org/doi/full/10.1056/NEJMoa2109682).

The overall magnitude of benefit for recipients is relatively low, but the relative benefit is larger. According to manufacturer data, timely administration reduces the risk of hospitalization for severe COVID-19 by approximately 3%, meaning the number-needed-to-treat (NNT) is about 33 patients to prevent one hospitalization (https://doi.org/10.1101/2021.05.19.21257469). Both vaccinated and unvaccinated patients are eligible for treatment, though the available evidence is almost exclusively in unvaccinated populations.

We are continuing to monitor efficacy of these compounds against existing and emerging COVID-19 variants, as there is clear evidence of waning efficacy for some of the available medications (https://doi.org/10.1038/s41586-021-03777-9).

At this point in time, North Memorial Health is not administering COVID-19 monoclonal antibody infusions, but there is a Minnesota statewide allocation framework, available to clinicians or patients for referral: https://www.health.state.mn.us/diseases/coronavirus/mnrap.html.

Outpatient Group	NMH Treatment Option
Treatment • Positive PCR and within 7 days of symptom onset at time of referral • Age 18+ • One or more high risk criteria (see below)	Consider referral for monoclonal antibody treatment https://www.health.state.mn.us/diseases/coronavirus/mnrap.html
Post-Exposure Prophylaxis (PEP) • Confirmed exposure in the last 4 days at time of referral • Age 18+ • Not fully vaccinated or unlikely to mount adequate immune response • One or more of the high risk criteria listed below:	Consider referral for casirivimab/imdevimab monoclonal antibody treatment https://www.health.state.mn.us/diseases/coronavirus/mnrap.html
High Risk Criteria for Treatment or PEP: • Age >/=65 *(AIIa)* • BMI >30 *(AIIa)* • Diabetes *(AIIa)* • Immunosuppressive disease or treatment *(*AIII, prioritized by NIH)* • Cardiovascular disease (including congenital) or hypertension *(AIIa)* • Chronic lung diseases (ex: COPD, mod to severe asthma, interstitial lung disease, cystic fibrosis, and pulmonary hypertension) *(AIIa)* • Pregnancy *(*BIII)* • Chronic Kidney Disease *(*BIII)* • Sickle Cell Disease *(*BIII)* • Neurodevelopmental disorders (ex. Cerebral palsy) or other conditions that confer medical complexity (ex: genetic or metabolic syndromes and severe congenital anomalies) *(*BIII)* • Medical-related technological dependence (ex: tracheostomy, gastrostomy, or positive pressure ventilation (not related to COVID-19)) *(*BIII)* *(*) these populations were not well represented in clinical trials* *(A) NIH Rating of Recommendation Strong* *(B) NIH Rating of Recommendation Moderate* *IIa: randomized trials or subgroup analysis of randomized trials* *III: expert opinion*	Workflow: An discharge order is available in Epic. If you identify an eligible recipient, who is interested in receiving COVID-19 Monoclonal Antibody Therapy, place the order. This will automatically populate the encounter AVS with a link for scheduling. We will be monitoring usage, as a system, to determine the best operational solution.  

COVID-19 WORKGROUP FOR THE ACUTE MEDICINE CLINICAL PRACTICE COUNCIL

This team represents expertise in COVID-19. If you would like further information, please contact the work group lead, Cameron Berg, cameronberg@northmemorial.com.

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Revision History

This document is active and further recommendations are forthcoming. It will be updated as additions develop.

Revision	Description of Changes	Approvals	Date
2.0	Updated Guidance	Acute Medicine Clinical Practice Council	09/21/2021