

**Monoclonal Antibodies Emergency Use Authorization Policy and Procedures
During COVID-19 Pandemic**

SCOPE:

Location (includes hospital and all inpatient and outpatient locations and subacute facilities of the hospital, unless otherwise indicated)	
Enterprise Wide	
O'Connor Hospital	HCC approved locations
Santa Clara Valley Medical Center	HCC approved locations
St. Louise Regional Hospital	HCC approved locations

Who May Perform This Procedure			
RN	X	MUC	
LVN		HSR	
HSA		Techs	
MA		MD/APP	X
Other (specify)		Pharmacists / Pharmacy Technicians	X

REFERENCE:

1. ACTIV-3/TICO Ly-CoV555 Study Group. A Neutralizing Monoclonal Antibody for Hospitalized Patients with COVID-19. *NEJM*. 2020; DOI: 10.1056/NEJMoa2033130
2. Bamlanivimab and Etesevimab: Emergency Use Authorization for the Treatment of COVID-19. August 2021 <https://www.covid19.lilly.com/bam-ete/hcp>
3. Bamlanivimab and Etesevimab Factsheet for Healthcare Providers. August 2021. Accessed at: <http://pi.lilly.com/eua/bam-and-ete-eua-factsheet-hcp.pdf> ([covid19.lilly.com](https://www.covid19.lilly.com))
4. Casirivimab/Imdevimab: Emergency Use Authorization for the Treatment of COVID-19. August 2021. Accessed at: [treatment-covid19-eua-fda-letter.pdf](https://www.regeneron.com/treatment-covid19-eua-fda-letter.pdf) ([regeneron.com](https://www.regeneron.com))

5. Casirivimab/Imdevimab Factsheet for Healthcare Providers. August 2021. Accessed at: [treatment-covid19-eua-fact-sheet-for-hcp.pdf \(regeneron.com\)](#)
6. Casirivimab/Imdevimab Emergency Use Authorization EU Guidebook. August 2021. Accessed at: [treatment-covid19-eua-guide-book.pdf \(regeneroneua.com\)](#)
Gandhi RT, Lynch JB, del Rio C. Mild or moderate COVID-19. N Engl J Med 2020; 383: 1757-66.
7. RECOVERY Collaborative Group. Casirivimab and imdevimab in patients admitted to hospitalized with COVID-19 (RECOVERY): a randomized, controlled, open-label, platform trial. *medRxiv preprint*. 2021; doi: 10.1101/2021.06.15.21258542
8. Sotrovimab: Emergency Use Authorization for the Treatment of COVID-19. May 2021: <https://www.fda.gov/media/149532/download>

POLICY:

Covid-19 Monoclonal antibodies (COVID-19-mAbs) may be prescribed for treatment of COVID-19 under the Emergency Use Authorization (EUA) issued by the Food and Drug Administration (FDA). Distribution of these monoclonal antibodies is controlled by the United States government, and acquisition/allocation to the County of Santa Clara Health System will be based on total supply and the needs of our patients.

The FDA issued guidance on appropriate use of COVID-19-mAbs, addressing prioritization in its use and allocation systems for limited supplies. Specific procedures should be followed to ensure safe and fair practices for COVID-19-mAbs. This policy and procedure outline the minimal eligibility, prioritization, and required procedures for mAb use.

Eligibility

Patients must meet the minimum inclusion criteria to be eligible to receive COVID-19-mAbs, restrictions will be designated based on emergency use criteria as well as emerging evidence. Additional criteria for exclusion are noted to minimize adverse events and provide fair allocation of the drug.

High risk factors for progressing to severe COVID-19

These criteria are subject to change without notice and may be subject to additional considerations and limitations, outlined in Table 1. If a patient does not meet a minimum of one of these criteria, do not submit a request. Note that meeting these minimum criteria does not guarantee approval of a request for COVID-19-mAbs.

Table 1. High risk factors for progressing to severe COVID-19

High risk criterion	Comments
Age \geq 65 years	

Obesity or being overweight	Age >17 years: BMI ≥ 25 kg/m ² Age 12-17 years: BMI $\geq 85^{\text{th}}$ percentile for their age/gender based on CDC growth chart (https://www.cdc.gov/growthcharts/clinical_charts.htm)
Pregnancy	
Chronic kidney disease	
Diabetes mellitus	Type I or type II
Immunosuppressive disease or receiving treatment	
Cardiovascular disease or hypertension	Including congenital heart disease
Chronic lung disease	COPD, moderate-severe asthma, interstitial lung disease, cystic fibrosis, pulmonary hypertension
Sickle cell disease	
Neurodevelopmental disorders	e.g. Cerebral palsy
Other condition that confers medical complexity	Genetic or metabolic syndromes and sever congenital abnormalities
Medical-related technological dependence	Tracheostomy, gastrostomy, positive pressure ventilation (not related to COVID-19)

Priority and Restriction

If there are more patients than number of drug courses, patient will be allotted mAb based on the sequence of arrival at the site of administration.

Table 2. Minimum criteria for eligibility and restricted indications for use of COVID-19-mAbs

Indication		Bamlanivimab/etesevimab	Casirivimab/imdevimab	Sotrovimab
Post-exposure prophylaxis	Assessment	Exposed or anticipated exposure to patient diagnosed with SARS-COV-2		
	FDA approval	-	Approved under EUA for High Risk Patients	-
	Inclusion criteria	-	1. Not fully vaccinated or not expected to mount an immune response to vaccine 2. Exposed or high risk of exposure ¹ to an individual infected with SARS-CoV-2	-

			3. Age \geq 12 years or older and body weight \geq 40kg 4. High risk ² for progressing to severe COVID or hospitalization	
	Exclusion criteria	-	None	-
ED use or Secondary Diagnosis of Mild-moderate COVID-19	Assessment	General: fever, malaise, headache, muscle pain Respiratory: cough, sore throat, shortness of breath/dyspnea on exertion GI: nausea, vomiting, diarrhea Other: loss of taste or smell Lower respiratory disease during clinical assessment or imaging, with SpO ₂ \geq 94% on room air at sea level		
	FDA approval	Approved under EUA for High Risk ³		
	Inclusion criteria	1. Age \geq 12 years or older and body weight \geq 40kg 2. Confirmed SARS-CoV-2 by PCR AND within 10 days of symptom onset 3. At risk of for progressing to severe COVID-19 or hospitalization (refer to Table 1)		
	Exclusion Criteria	1. Hospitalized due to COVID-19 2. Needing oxygen therapy for COVID-19 3. Requiring a higher oxygen flow rate (from baseline) due to COVID-19 in patients on chronic oxygen therapy for underlying non-COVID-19 related comorbidity 4. Known hypersensitivity to any ingredient of bamlanivimab, casirivimab/imdevimab, or sotrovimab injection (for the medication to be administered) 5. Patients who are terminally ill and their death is imminent.		

Table 2. Minimum criteria for eligibility and restricted indications for use of COVID-19-mAbs

		Bamlanivimab/etesevimab	Casirivimab/imdevimab	Sotrovimab
Hospitalized for Moderate-Severe COVID-19	Assessment	Sustained SpO ₂ <94% or requires supplemental oxygen and/or respiratory assistance		
	FDA approval	Not indicated, no supportive data Warning noted in EUA ⁴	Not EUA approved for this indication. Must obtain compassionate use approval from hospital's	Not indicated, no supportive data

			Institutional Review Board (IRB) prior to administration	
	Inclusion criteria ONLY IF APPROVED BY IRB FOR COMPASSIONATE USE	-	<ol style="list-style-type: none"> 1. Hospitalized for COVID-19 (confirmed by PCR) 2. Symptom onset less than 10 days 3. Age \geq 12 years or older and body weight \geq 40kg 4. Not fully vaccinated or not expected to mount an immune response to vaccine⁵ 5. Anti-spike protein antibodies are ordered or sent and in progress 	-
	Exclusion criteria (should not use)	-	<ol style="list-style-type: none"> 1. Mechanical ventilation without ID, Pulmonology, Antibiotic Stewardship, or designee approval. 2. Patients who are terminally ill and their death is imminent. 	-

¹Exposure defined as someone who was within 6 feet of an infected person for a cumulative total of 15 minutes or more over 24-hour period; high risk of exposure examples such as nursing homes or prisons

²Refer to high risk factors noted in Table 1

³Due to variants circulating in California, the CDPH does not recommend use of bamlanivmiab/etesesevimab. **Variants:** circulating SARS-CoV-2 viral variants may be associated with resistance to monoclonal antibodies. Health care providers should refer to the CDC website (<https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/variant-proportions.html>) as well as information from state and local health authorities regarding reports of viral variants of importance in their region to guide treatment decisions.

⁴ACTIV-3 Trial studying bamlanivimab for hospitalized patients found a possible association of worse clinical outcomes and do not recommended for moderate-severe COVID-19

⁵**Moderately-severely immunocompromised conditions** are defined as: 1) active treatment for solid tumor and hematologic malignancies; 2) receipt of solid-organ transplant and taking immunosuppressive therapy; 3) receipt of CAR-T-cell or hematopoietic stem cell transplant (within 2 years of transplantation or taking immunosuppression therapy); 4) Moderate or severe primary immunodeficiency (e.g., DiGeorge, Wiskott-Aldrich syndromes); 5) Advanced or untreated HIV infection; 6) Active treatment with high-dose corticosteroids (i.e., \geq 20mg prednisone or equivalent per day), alkylating agents, antimetabolites, transplant-related immunosuppressive drugs, cancer chemotherapeutic agents classified as severely immunosuppressive, TNF blockers and other biologic agents that are immunosuppressive or immunomodulatory

PROCEDURE:

Responsible Party

Action

Providers/APPs

Patient Eligibility Screening:

1. Review patient eligibility criteria outlined in this document.
2. Document the patient eligibility criteria in HealthLink progress note.
3. Contact the IRB for compassionate use process if seeking to use for hospitalized patients

Medication Ordering:

1. Treating provider to submit HealthLink order for COVID-19-mAb Document the following in the order
 - a. Confirm the respective COVID-19-mAb Fact Sheet for Health Care Providers has been reviewed by provider
 - b. Confirm the respective COVID-19-mAb Fact Sheet for Patients and Parents/Caregivers has been provided to patient or their representative.
 - c. Document if patient requires supplemental oxygen
 - d. Document if IRB approval was obtained for hospitalized patients

Documentation:

1. After pharmacy review and processing, the provider must complete the following prior to start of treatment.
 - a. Provider must review the respective COVID-19-mAb Fact Sheet for Health Care Providers.
 - b. Provider must review and provide a copy of the respective COVID-19-mAb Fact Sheet for Patients and Parent/Caregivers to the patient or their representative.
 - c. Inform the patient of alternatives to receiving COVID-19-mAbs such as supportive care symptom management.
 - d. Inform patient COVID-19-mAb therapy is an FDA unapproved drug that is authorized for use under EUA.
 - e. Document patient counseling in the progress notes.
 - f. Ensure appropriate compassionate use approvals from IRB if using for hospitalized patients.

Monitoring:

1. The patient will need to be monitored for minimum of 1 hour after the COVID-19-mAb administration is completed.
2. Monitor for and report any adverse reactions.

Follow up:

1. Provider or designee will follow up with the patient in 3-7 days to screen for adverse events and assess clinical progression.

Serious adverse events and medication errors potentially related to COVID-19-mAb administration must be reported immediately to the Hospital Command Center (HCC) AND to the FDA MedWatch within 7 days of onset (See Adverse Event Reporting).

PROCEDURE:

Responsible Party	Action
All	<p>Adverse Event Reporting for all medication errors and all serious adverse events potentially relating to COVID-19-mAbs</p> <ol style="list-style-type: none">1. Submit immediate report to the following systems:<ol style="list-style-type: none">a. SI report or RL6 internal hospital reporting systems.b. Report through the MedWatch Online Voluntary Reporting Form.c. Report to Hospital Command Center2. Submitted reports should include in the field name<ol style="list-style-type: none">a. "Describe 280 Event, Problem, or Product Use/Medication Error" a statement 281 "[insert respective COVID-19-mAbs] under Emergency Use Authorization (EUA)."3. See respective COVID-19-mAbs Healthcare Provider Fact Sheet for Additional Information and Reporting Requirements.4. A copy of the FDA report must also be submitted to respective pharmaceutical company:<ol style="list-style-type: none">a. Bamlanivimab/etesevimab: Eli Lilly and Company at Global Patient Safety. Email: mailindata_gsmtindy@lilly.comb. Casirivimab/imdevimab: Regeneron Pharmaceuticals, Inc. Fax: 1-888-876-2736; Email; medical.information@regeneron.com OR call Regeneron Pharmaceuticals at 1-844-734-6643.c. Sotrovimab: GlaxoSmithKline, Global Safety. Fax 919-287-2902. Email: WW.GSKAEReportingUS@gsk.com OR call GSK COVID Contact Center 1-866-GSK-COVID (866-475-2684).
Pharmacy	<p>Medication Order Review:</p> <ol style="list-style-type: none">1. Review and confirm patient meets eligibility criteria as outlined in Table 22. Confirm available inventory to complete the one-time infusion. If insufficient supply, notify provider.3. If insufficient supply to fulfill all the orders, COVID-19-mAbs will be dispensed in chronological order based on medication order time stamp <p>Drug preparation:</p> <ol style="list-style-type: none">1. Allocate the entire treatment course for the patient placing the vial in a plastic bag with the patient's name on the vial. Use the dispensing log established at each hospital / clinic site.2. Follow sterile compounding policy and procedures.3. Review the compounding instructions in the respective COVID-19-mAb Fact Sheet and the inpatient pharmacy master compounding formula.4. Review summary monograph for dosing, side effects, and monitoring information. <p>Dispensing</p> <ol style="list-style-type: none">1. Vials to be compounded will be stored in the inpatient pharmacy.2. Orders will be compounded by inpatient pharmacy, unless determined otherwise

3. The scheduled dose must be picked up from the designated pharmacy and signed for by RN.

PROCEDURE:

Responsible Party

Action

Nursing

Medication Administration:

1. Record baseline vital signs (blood pressure, heart rate, respiratory rate, and temperature)
2. Administer Medication According to MAR instructions
3. Monitor for infusion related reactions (see monitoring).
 - a. If patient develops adverse reaction, discontinue the infusion immediately. Follow BRN 1 Anaphylaxis Protocol.
 - b. Notify provider immediately.
4. Routes of administration:
 - a. Intravenous administration
 - i. Following administration of COVID-19-mAbs, the IV medication line should be flushed with at least 30 mL of Normal Saline to ensure complete drug administration.
 - ii. Patient will be monitored for one-hour post infusion according to provider orders.
 - b. Subcutaneous injection (casirivimab/imdevimab only)
 - i. Clinically monitor patients after injections and observe patients for at least 1 hour
5. Document any waste (i.e., infusion appointment cancellation) or discontinuation of infusion due to ADR in the MAR.
6. Advise provider/pharmacist of any adverse reaction potentially related to respective COVID-19-mAbs.

Monitoring:

7. At minimum, vital signs will be checked prior to discharge and as needed when patient reports adverse reactions.
8. Fever, difficulty breathing, reduced oxygen saturation, chills, fatigue, arrhythmia (e.g., atrial fibrillation, sinus tachycardia, bradycardia), chest pain or discomfort, weakness, altered mental status, nausea, headache, bronchospasm, hypotension, hypertension, angioedema, throat irritation, rash including urticaria, pruritus, myalgia, dizziness and diaphoresis
9. Post-infusion monitoring shall include:
 - a. Mandatory reporting of all medication errors, adverse events (death, serious injury, other adverse events per Hospital policy) potentially related to respective COVID-19-mAbs occurring during treatment must be done within 7 days of onset of the event. See Adverse Event Reporting.

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- b. Notify treating provider, clinic manager, and pharmacy of therapy discontinuation due to adverse events or medication errors.

Attachments:

1. **Appendix A.** Bamlanivimab/etesevimab Fact Sheet for Health Care Providers
2. **Appendix B.** Bamlanivimab/etesevimab Fact Sheet for Patients and Parents/Caregivers
3. **Appendix C.** Casirivimab/imdevimab Fact Sheet for Health Care Providers
4. **Appendix D.** Casirivimab/imdevimab Fact Sheet for Patients and Parents/Caregivers

Policies replaced:

- Bamlanivimab Emergency Use Authorization Policy and Procedures
- Casirivimab/Imdevimab Emergency Use Authorization Policy and Procedures

Issued: Hospital Command Center 12/1/2020

Revised: 6/22/2021, 10/5/2021

- Appendix A.** [Bamlanivimab and Etesevimab Fact Sheet for Health Care Providers](#)
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Appendix C. [Casirivimab/Imdevimab Fact Sheet for Health Care Providers](#)
Appendix D. [Casirivimab/Imdevimab Fact Sheet for Patients and Parents/Caregivers](#)
Appendix E. [Sotrovimab Fact Sheet for Health Care Providers](#)
Appendix F. [Sotrovimab Fact Sheet for Patients and Parents/Caregivers](#)