



Lilly Bamlanivimab Antibody Playbook

ELI LILLY AND COMPANY | DECEMBER 2020

For the Emergency Use Authorization of bamlanivimab for the treatment of COVID-19

The Secretary of the Department of Health and Human Services has declared a public health emergency that justifies the emergency use of bamlanivimab to treat coronavirus disease 2019 (COVID-19) caused by SARS-CoV-2 infection. In response, the U.S. Food and Drug Administration (FDA) has issued an Emergency Use Authorization (EUA) for the unapproved product, bamlanivimab, for the treatment of COVID-19.

- Bamlanivimab has not been approved, but has been authorized for emergency use by FDA, to treat mild to moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with positive results of direct SARS-CoV-2 viral testing, and who are at high risk for progressing to severe COVID-19 and/or hospitalization.
- Bamlanivimab is authorized for the treatment of mild to moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with positive results of direct SARS-CoV-2 viral testing, and who are at high risk for progressing to severe COVID-19 and/or hospitalization only for the duration of the declaration that circumstances exist justifying the authorization of the emergency use of bamlanivimab under Section 564(b)(1) of the Act, 21 U.S.C. § 360bbb-3(b)(1), unless the authorization is terminated or revoked sooner.
- The FDA issued this EUA, requested by Eli Lilly and Company and based on their submitted data. Find more information in the [FDA Letter of Authorization](#).
- Healthcare providers should review the [Fact Sheet for Healthcare Providers](#) for important information on the authorized use of bamlanivimab and mandatory requirements of the EUA.

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EXECUTIVE SUMMARY

The world is currently in the midst of a global pandemic. As a global pharmaceutical company, we feel a responsibility to do our part to relieve the burden COVID-19 has placed on countries, communities and families around the world.

Clinical trials have shown that monoclonal antibodies may be effective in treating COVID-19. Lilly in partnership with AbCellera has developed a monoclonal antibody called bamlanivimab. Bamlanivimab is a recombinant neutralizing human IgG1 monoclonal antibody directed against the spike protein of SARS-CoV-2. It is designed to block viral attachment and entry into human cells, thus neutralizing the virus.

This Antibody Playbook provides information for state, territorial and local public health programs to plan and operationalize a bamlanivimab antibody response to COVID-19. The sections of this document cover specific areas of COVID-19 antibody program planning and implementation, as well as links to resources to assist with those efforts. The sections described in this Playbook may also overlap with routine monoclonal antibody treatment and infusion program activities. This playbook represents guidance based on Lilly's Clinical Trial experience in monoclonal antibody treatments and should not supersede local recommendations for infusion sites of care. Please defer to local guidelines.

Healthcare providers should review the Fact Sheet for information on the authorized use of bamlanivimab and mandatory requirements of the EUA.

In addition, the Playbook includes information regarding planning and implementation based on varying infusion sites of care, such as:

- Existing hospital or community-based infusion sites of care
- Existing clinical space (e.g., primary care practices affiliated with hospital systems, urgent care locations, emergency departments, surgery centers, dialysis centers, plasma centers, respiratory clinics and other healthcare delivery entities approved to administer infusion therapies)

We expect most infusion treatments will be administered in one of these aforementioned infusion sites of care, but other infusion sites of care may also be considered. **This Playbook provides information that may or may not be applicable to certain spaces depending on existing capabilities.**

SECTION 01

Population for Antibody Treatment and Regulatory Notices

POPULATION FOR ANTIBODY TREATMENT

This EUA is for the use of the unapproved product bamlanivimab for the treatment of mild to moderate[†] COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with positive results of direct SARS-CoV-2 viral testing, and who are at high risk for progressing to severe COVID-19 and/or hospitalization.

Limitations of Benefit in Patients with Severe COVID-19

Benefit of treatment with bamlanivimab has not been observed in patients hospitalized due to COVID-19. Monoclonal antibodies, such as bamlanivimab, may be associated with worse clinical outcomes when administered to hospitalized patients with COVID-19 requiring high flow oxygen or mechanical ventilation. Therefore, bamlanivimab is not authorized for use in patients:

- who are hospitalized due to COVID-19, OR
- who require oxygen therapy due to COVID-19, OR
- who require an increase in baseline oxygen flow rate due to COVID-19 in those on chronic oxygen therapy due to underlying non-COVID-19 related comorbidity.

For more information, reference the [Fact Sheet for Healthcare Providers](#).

High risk is defined as patients who meet at least one of the following criteria:

- Have a body mass index (BMI) ≥ 35
- Have chronic kidney disease
- Have diabetes
- Have immunosuppressive disease
- Are currently receiving immunosuppressive treatment
- Are ≥ 65 years of age
- Are ≥ 55 years of age AND have
 - cardiovascular disease, OR
 - hypertension, OR
 - chronic obstructive pulmonary disease/other chronic respiratory disease.
- Are 12 - 17 years of age AND have
 - BMI ≥ 85 th percentile for their age and gender based on CDC growth charts, https://www.cdc.gov/growthcharts/clinical_charts.htm, OR
 - sickle cell disease, OR
 - congenital or acquired heart disease, OR
 - neurodevelopmental disorders, for example, cerebral palsy, OR
 - a medical-related technological dependence, for example, tracheostomy, gastrostomy, or positive pressure ventilation (not related to COVID-19), OR
 - asthma, reactive airway or other chronic respiratory disease that requires daily medication for control.

Bamlanivimab must be administered by intravenous (IV) infusion.

Bamlanivimab may only be administered in settings in which healthcare providers have immediate access to medications to treat a severe infusion reaction, such as anaphylaxis, and the ability to activate the emergency medical system (EMS), as necessary.

Healthcare providers must submit a report on all medication errors and ALL SERIOUS ADVERSE EVENTS potentially related to bamlanivimab. See Sections 8 and 9 of the Fact Sheet for Healthcare Providers for reporting instructions below.

- The authorized dosage for bamlanivimab is a single intravenous (IV) infusion of 700 mg administered as soon as possible after positive results of direct SARS-CoV-2 viral testing and within 10 days of symptom onset.
- Bamlanivimab is available as concentrated solution and must be diluted prior to administration.
- Administer bamlanivimab 700 mg via IV infusion over at least 60 minutes via pump or gravity.
- Clinically monitor patients during administration and observe patients for at least 1 hour after infusion is complete.
- Patients treated with bamlanivimab should continue to self-isolate and use infection control measures (e.g., wear mask, isolate, social distance, avoid sharing personal items, clean and disinfect “high touch” surfaces, and frequent handwashing) according to CDC guidelines.

The authorized dosage may be updated as additional data from clinical trials becomes available.

For information on clinical trials that are testing the use of bamlanivimab in COVID-19, please see www.clinicaltrials.gov.

†Patients with **mild** COVID-19 illness may exhibit a variety of signs and symptoms (e.g., fever, cough, sore throat, malaise, headache, muscle pain, nausea, vomiting, diarrhea, loss of taste and smell). They do not have shortness of breath, dyspnea on exertion, or abnormal imaging.

Moderate COVID-19 illness is defined as evidence of lower respiratory disease during clinical assessment or imaging, with SpO2 \geq 94% on room air at sea level.

Source: National Institutes of Health

Mandatory Requirements for Bamlanivimab Administration Under Emergency Use Authorization

In order to mitigate the risks of using this unapproved product under the EUA and to optimize the potential benefit of bamlanivimab, the following items are required. Use of bamlanivimab under this EUA is limited to the following (all requirements **must** be met):

1. Treatment of mild to moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with positive results of direct SARS-CoV-2 viral testing, and who are at high risk for progressing to severe COVID-19 and/or hospitalization [see Limitations of Authorized Use].
2. As the healthcare provider, communicate to your patient or parent/caregiver, as age appropriate, information consistent with the “Fact Sheet for Patients, Parents and Caregivers” prior to the patient receiving bamlanivimab. Healthcare providers (to the extent practicable given the circumstances of the emergency) must document in the patient’s medical record that the patient/caregiver has been:
 - a. Given the “Fact Sheet for Patients, Parents and Caregivers”,
 - b. Informed of alternatives to receiving authorized bamlanivimab, and
 - c. Informed that bamlanivimab is an unapproved drug that is authorized for use under this Emergency Use Authorization.
3. Patients with known hypersensitivity to any ingredient of bamlanivimab must not receive bamlanivimab.
4. The prescribing healthcare provider and/or the provider’s designee are/is responsible for mandatory reporting of all medication errors and serious adverse events* potentially related to bamlanivimab treatment within 7 calendar days from the onset of the event. The reports should include unique identifiers and the words “Bamlanivimab treatment under Emergency Use Authorization (EUA)” in the description section of the report.
 - **Submit adverse event reports to FDA MedWatch using one of the following methods:**
 - Complete and submit the report online: www.fda.gov/medwatch/report.htm, or
 - Use a postage-paid Form FDA 3500 (available at <http://www.fda.gov/downloads/AboutFDA/ReportsManualsForms/Forms/UCM163919.pdf>) and return it by mail (MedWatch, 5600 Fishers Lane, Rockville, MD 20852-9787), or by fax (1-800-FDA-0178), or
 - Call 1-800-FDA-1088 to request a reporting form
 - Submitted reports should include in the field name, “Describe Event, Problem, or Product Use/Medication Error” the statement “Bamlanivimab treatment under Emergency Use Authorization (EUA)”

***Serious Adverse Events are defined as:**

- death;
- a life-threatening adverse event;
- inpatient hospitalization or prolongation of existing hospitalization;
- a persistent or significant incapacity or substantial disruption of the ability to conduct normal life functions;
- a congenital anomaly/birth defect;
- a medical or surgical intervention to prevent death, a life-threatening event, hospitalization, disability or congenital anomaly.

5. The prescribing healthcare provider and/or the provider's designee are/is to provide mandatory responses to requests from FDA for information about adverse events and medication errors following receipt of bamlanivimab.

6. Other Reporting Requirements

- **In addition, please provide a copy of all FDA MedWatch forms to:**
Eli Lilly and Company, Global Patient Safety
Fax: 1-317-277-0853
E-mail: mailindata_gsmtindy@lilly.com
Or call Eli Lilly and Company at 1-855-LillyC19 (1-855-545-5921) to report adverse events.

Approved Available Alternatives

There is no adequate, approved and available alternative to bamlanivimab for patients who have mild to moderate COVID-19 who are at high risk for progressing to severe COVID-19 and/or hospitalization. Additional information on COVID-19 treatments can be found at <https://www.cdc.gov/coronavirus/2019-ncov/index.html>. The healthcare provider should visit <https://clinicaltrials.gov/> to determine whether the patient may be eligible for enrollment in a clinical trial.

Authority for Issuance of the EUA

The Secretary of the Department of Health and Human Services (HHS) has declared a public health emergency that justifies the emergency use of drugs and biological products during the COVID-19 pandemic. FDA has issued this EUA, requested by Eli Lilly and Company for the unapproved product bamlanivimab for the treatment of mild to moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40 kg) with positive results of direct SARS-CoV-2 viral testing, and who are at high risk for progressing to severe COVID-19 and/or hospitalization. As a healthcare provider, you must comply with the mandatory requirements of the EUA (see above).

Although limited scientific information is available, based on the totality of the scientific evidence available to date, it is reasonable to believe that bamlanivimab may be effective for the treatment of mild to moderate COVID-19 in certain high-risk patients as specified in this Fact Sheet. You may be contacted and asked to provide information to help with the assessment of the use of the product during this emergency.

This EUA for bamlanivimab will end when the Secretary determines that the circumstances justifying the EUA no longer exist or when there is a change in the approval status of the product such that an EUA is no longer needed.

Contact Information

For additional information visit www.bamlanivimab.com

If you have questions, please contact 1-855-LillyC19 (1-855-545-5921)

IMPORTANT SAFETY INFORMATION

There are limited clinical data available for bamlanivimab. Serious and unexpected adverse events may occur that have not been previously reported with bamlanivimab use.

Hypersensitivity Including Anaphylaxis and Infusion-Related Reactions

There is a potential for serious hypersensitivity reaction, including anaphylaxis with administration of bamlanivimab. If signs and symptoms of a clinically significant hypersensitivity reaction or anaphylaxis occur, immediately discontinue administration and initiate appropriate medications and/or supportive therapy.

Infusion-related reactions have been observed with administration of bamlanivimab. Signs and symptoms of infusion related reactions may include:

- fever, chills, nausea, headache, bronchospasm, hypotension, angioedema, throat irritation, rash including urticaria, pruritus, myalgia, dizziness.

If an infusion-related reaction occurs, consider slowing or stopping the infusion and administer appropriate medications and/or supportive care.

Limitations of Benefit and Potential Risk in Patients with Severe COVID-19

Benefit of treatment with bamlanivimab has not been observed in patients hospitalized due to COVID-19. Monoclonal antibodies, such as bamlanivimab, may be associated with worse clinical outcomes when administered to hospitalized patients with COVID-19 requiring high flow oxygen or mechanical ventilation. See Limitations of Authorized Use.

Adverse Events

Adverse events reported in at least 1% of BLAZE-1 clinical trial participants on bamlanivimab 700 mg and placebo were Nausea (3% vs 4%), Diarrhea (1% vs 5%), Dizziness (3% vs 2%), Headache (3% vs 2%), Pruritus (2% vs 1%) and Vomiting (1% vs 3%).

Use in Specific Populations

Pregnancy

There are insufficient data on the use of bamlanivimab during pregnancy. Bamlanivimab should only be used during pregnancy if the potential benefit outweighs the potential risk for the mother and the fetus.

Breastfeeding

There are no available data on the presence of bamlanivimab in human or animal milk, the effects on the breastfed infant, or the effects on milk production. Breastfeeding individuals with COVID-19 should follow practices according to clinical guidelines to avoid exposing the infant to COVID-19.

SECTION 02

Supply and Scale of Effort

SUPPLY & SCALE OF EFFORT

Product Allocation and Supply

Lilly has committed to manufacturing up to 1,000,000 vials of bamlanivimab in 2020, with 100,000 doses available to ship within days of authorization.

Additionally, Lilly has reached an agreement with the U.S. government to supply 650,000 vials to be delivered through December 2020 and an additional 300,000 vials to be delivered through January 2021 for a total of 950,000 vials through January 2021. The federal government will allocate cases of bamlanivimab to states, territories and identified agencies on a weekly basis. You can view the most updated allocation tables [here](#).

Bamlanivimab will be allocated to each state by the Federal Government. Upon EUA, the Federal Government will begin allocating to states immediately and thereafter on a weekly basis. Weekly allocations to state and territorial health departments will be proportionally based on confirmed hospitalizations and COVID-19 cases in each state and territory over the previous seven days, based on data hospitals and state health departments enter into the HHS Protect data collection platform. State health authorities will then allocate to individual sites of care within their jurisdiction. If you would like more information about the allocation process or would like to be considered for product allocation, please contact your state health department directly.

Scaling Operations

The time duration to administer a 700 mg / 20 mL dose of bamlanivimab is 60 minutes at the appropriate infusion rate (as shown in the **Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion**) for both infusion pumps and gravity infusion. Treatment also requires a post-infusion observation period. It is clinically recommended to monitor patients during administration and observe patients for at least 1 hour after infusion is complete. Sites of care should follow local recommendations when determining appropriate observation periods. If patients will occupy chairs for infusion during this period, rather than a post-treatment monitoring area, planning must account for this time as well.

The number of chairs for infusion can be scaled along with the hours of operation to determine the size of the infusion site of care. Infusion sites of care should take into account time for patient intake, IV preparation, infusion and post-infusion observation when determining potential capacity. For example, in Lilly's monoclonal antibody clinical trial settings, Lilly found a single infusion could take between 165 - 225 minutes to complete from patient intake to discharge. See Appendix A for more information.

The above values could be used to determine a rough approximation of the number of infusion sites of care that may be needed per region. A region can easily modify the number based on changing the capacity assumptions with the various infusion sites of care. Depending on the dispersion of the population in a region, the region may choose to size some infusion sites of care larger than others.

SECTION 03

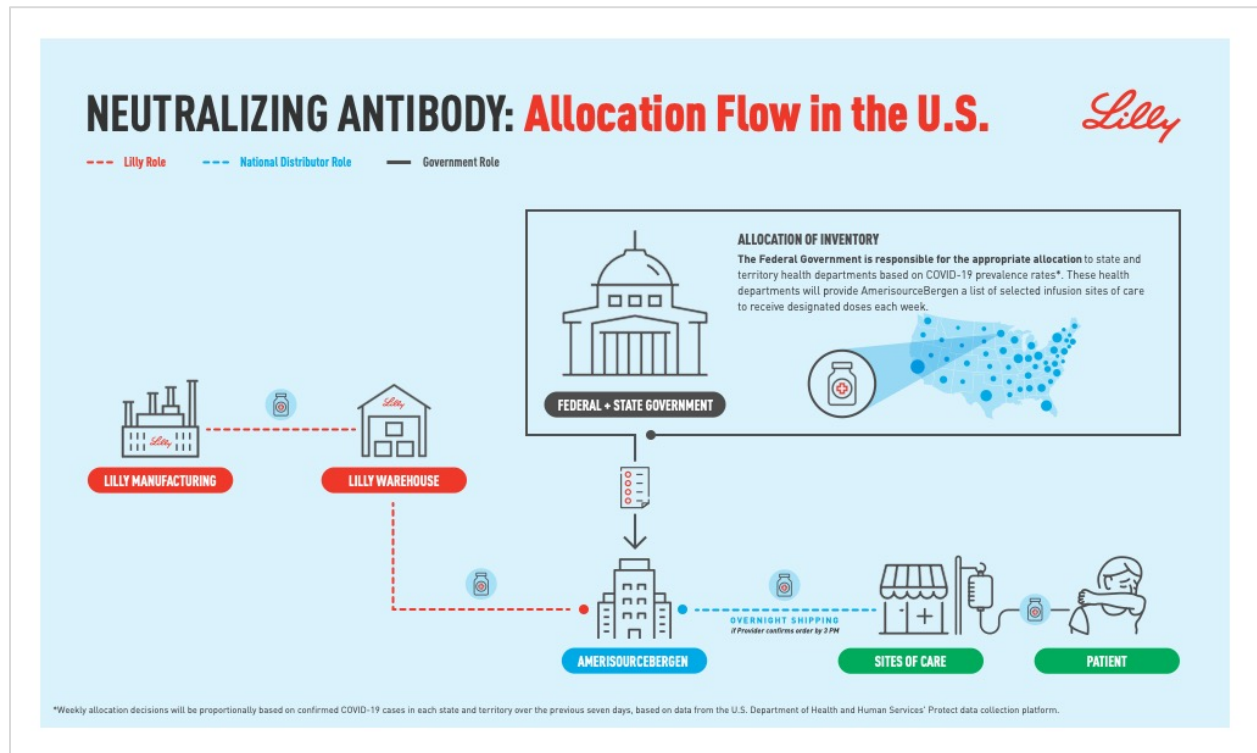
Allocation and Ordering

ALLOCATION AND ORDERING

- **How can the product be ordered?** State health departments will allocate an amount of the product to infusion sites of care. AmerisourceBergen, the contracted distributor, will contact these infusion sites of care directly. They may accept (in part or in full) or decline the allocated product. The receipt of the product requires an account with AmerisourceBergen. Infusion sites of care that would like to be considered for product allocation should contact their state health departments directly.
- **When can orders be placed?** Infusion sites of care cannot order product from their wholesaler(s). AmerisourceBergen will proactively contact infusion sites of care that have received state health department allocations to confirm acceptance of the allocation. Product allocations will occur on a weekly basis after the initial allocation, and quantities may fluctuate depending on highest medical need.
- **Where can orders be shipped?** Orders will be shipped via UPS overnight to infusion sites of care that have received state health department allocations and that accepted product upon being contacted by AmerisourceBergen customer service.

Flow of Allocated Product

Below is a depiction of the basic flow of allocated product. Through a government allocation program, the Federal Government, in partnership with state health departments, will provide the contracted distributor, AmerisourceBergen, with a list of infusion sites of care approved for a product allocation on a periodic basis. The distributor will then contact the approved infusion sites of care, confirm they would like to receive the allocated amount of product and then ship the product.



SECTION 04

Infusion Site of Care Recommendations

INFUSION SITE OF CARE RECOMMENDATIONS

Preparation, Storage and Handling

Prepare infusions using aseptic technique, in a manner consistent with local laws, regulations, guidelines and policies for outpatient infusion.

- Use aseptic technique and applicable good clinical practice for intravenous solution preparations of bamlanivimab.
- Only use materials which are listed as compatible with bamlanivimab for preparation and administration of the infusion solutions (see **Compatible Materials** section below).
- Gather the materials for infusion:
 - Polyvinyl chloride (PVC) or polyethylene (PE)-lined PVC infusion set
 - Use of an in-line or add-on 0.20/0.22 micron polyethersulfone (PES) filter is strongly recommended.
- Use new, sterile syringes and needles to prepare each dosing solution of bamlanivimab.
- Refrigerate bamlanivimab drug product when not in use at 2° C to 8° C (36° F to 46° F).
- Bamlanivimab should be free of any visible particulate matter. Obtain new vial(s) and/or IV bags if the drug product contains any visible particulate matter.
- All medication must be stored, inventoried and destroyed according to applicable regulations.
- Bamlanivimab is administered by intravenous (IV) infusion either using an infusion pump or gravity infusion. Consider use of a rate control or infusion rate monitoring device if using gravity infusion. Tubing with an integrated rate flow regulator can also be considered if an infusion pump is not available.
- The IV solutions are intended for immediate patient administration. If immediate administration is not possible, store the diluted bamlanivimab infusion solution for up to 24 hours at refrigerated temperature (2° C to 8° C [36° F to 46° F]) and up to 7 hours at room temperature (20° C to 25° C [68° F to 77° F]) including infusion time. If refrigerated, allow the infusion solution to equilibrate to room temperature for approximately 20 minutes prior to administration. The hold time includes preparation, solution hold, infusion and flush.

Compatible Materials

Individual infusion sites of care should follow best medical practices when determining materials to use. Procurement of materials from a specific vendor or vendors is not required. If alternate materials are used, the compatibility of these materials should be confirmed with that vendor. Bamalanivimab has no known incompatibilities with conventional medical supplies and equipment. During clinical trials, Lilly has used the following materials:

- Polypropylene syringes
- Stainless steel needles
- Polyvinyl chloride (PVC) IV bags with or without DEHP
- Polyvinyl chloride (PVC) infusion sets with or without DEHP containing an in-line polyethersulfone (PES)* filter (Please see footnote.)

Storage

Refrigerate unopened vials at 2° C to 8° C (36° F to 46° F) in the original carton to protect from light. Do not freeze, shake or expose to direct light.

Preparation and Administration

- **The 700 mg dose MUST BE prepared using 0.9% sodium chloride.**
 - [Preparation of 700 mg dose of bamlanivimab for IV infusion](#)
 - [Administration of a dose of 700 mg of bamlanivimab in an IV infusion](#)
- Bamlanivimab solution for infusion should be prepared by a qualified healthcare professional using aseptic technique.
- Refer to section on **Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion** for additional dose preparation information.
- Remove one bamlanivimab 700 mg / 20 mL vial from refrigerated storage and allow to equilibrate the vial to room temperature for approximately 20 minutes before preparation. **Do not expose to direct heat. Do not shake the vial.**
- **Do not shake** or vigorously agitate the vial. Visually inspect the vial for the presence of any visible particulate matter and discoloration. Bamlanivimab is a clear to slightly opalescent and colorless to slightly yellow to slightly brown solution. If visible particulate matter is observed, appropriately discard the vial, obtain a new vial, and restart the preparation, beginning at the prior step.
- Prepare the IV solution using the following approach using aseptic technique.
 - Using a new, sterile syringe with an 18-gauge needle, withdraw 20 mL of bamlanivimab from one 20 mL vial and inject into an infusion bag containing 250 mL prefilled 0.9% Sodium Chloride Injection (**see Preparation Summary Table for 700 mg dose of Bamlanivimab Solution for IV Infusion**).
 - Discard any product remaining in the vial.
 - Gently invert IV bag by hand approximately 10 times to mix. Do not shake.
- **Do not shake** or vigorously agitate the prepared bag. Avoid foaming. Visually inspect the bag after preparation. The contents of the bag should be free of any visible particulate matter. Obtain new vial(s) and re-prepare the dose if visible particulate matter is observed.

*If alternate materials are used, the compatibility of these materials should be confirmed with that vendor. Bamalanivimab has no known incompatibilities with conventional medical supplies and equipment.

- Attach an infusion set containing a 0.20/0.22 µm filter to the IV bag. Bamlanivimab has no known incompatibilities with traditional medical supplies and equipment. Infusion sites of care may determine based on medical best practices what supplies and equipment to use when administering bamlanivimab, including add-on filter devices.
- Prime the infusion set and adjust for the appropriate flow rate (as shown in the **Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion**) for both infusion pumps and gravity infusion. Administer the infusion solution over 60 minutes.

Infusion sites of care can use the following chart to calculate a 60 minute drip rate when administering via gravity infusion.

250 mL Saline Bag 60 Minute Drip Rate for Gravity Infusion						
Saline	Bamlanivimab	VTBI (mL)	Duration (min)	Drip Factor (drops per milliliter)	Drops per minute	Drops per 15 seconds
250	20	270	60	10 gtt/mL	45 gtt/min	11 drops per 15 seconds
250	20	270	60	15 gtt/mL	68 gtt/min	17 drops per 15 seconds
250	20	270	60	20 gtt/mL	90 gtt/min	23 drops per 15 seconds

Drip Rate Formula

$$\frac{\text{Volume to be infused (in mL)} \times \text{Drop factor (see tubing package)}}{\text{Total infusion time (in minutes)}} = \text{Drip rate (in drops/min)}$$

- At the discretion of the infusion site of care medical staff, the proposed infusion rate may be reduced and the corresponding infusion time increased for infusion reactions or patient circumstances.
- This product is preservative-free and therefore, the diluted infusion solution should be administered immediately. If immediate administration is not possible, store the diluted bamlanivimab infusion solution for up to 24 hours at refrigerated temperature (2° C to 8° C [36° F to 46° F]) and up to 7 hours at room temperature (20° C to 25° C [68° F to 77° F]) including infusion time. If refrigerated, allow the infusion solution to equilibrate to room temperature for approximately 20 minutes prior to administration. The hold time includes preparation, solution hold, infusion and flush.
- After the appropriate infusion volume (as shown in the **Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion**) has been administered, flush the tubing as per infusion site of care recommendations or with sufficient volume to flush residual volume from tubing to ensure patient receives entire dose. Discard unused product.
- If the infusion must be discontinued due to an infusion reaction, discard any unused product.
- The use of close system transfer devices (CSTDs), elastomeric pumps, and pneumatic transport with bamlanivimab has not been studied.
- For additional information, please see [Fact Sheet for Healthcare Providers](#).

Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion

	250 mL Saline Bag
Bamlanivimab Dose	700 mg
Volume of Bamlanivimab Drug Product (and # of Vials) Needed	20 mL (1 vial)
Nominal Bamlanivimab Dosing Solution Concentration	2.7 mg/mL
Total Infusion Volume Prepared and Administered	270 mL
Maximum infusion rate ¹	270 mL/hr.
Minimum infusion time ¹	60 min.

¹At the discretion of the infusion site of care medical staff, the proposed infusion rate may be reduced and the corresponding infusion time increased for infusion reactions or patient circumstances.

Note: After the appropriate infusion volume (as shown in the **Preparation Summary Table for 700 mg Dose of Bamlanivimab Solution for Intravenous Infusion**) has been administered, flush the tubing as per infusion site of care recommendations or with sufficient volume to flush residual volume from tubing to ensure the patient receives the entire dose. Discard unused product.

SECTION 05

Recommended Infusion Site of Care Resources and Equipment Considerations

STAFFING RECOMMENDATIONS

Staffing recommendations may vary by state. Follow your local recommendations when determining the staff needed for your infusion site of care. Based on Lilly’s clinical trial experience, the following roles should be considered to ensure the safest care environment for patients receiving bamlanivimab antibody infusion.

Infusion sites of care should have appropriately trained medical staff to administer infusion treatments and identify and manage potential adverse reactions. It is recommended that participants who experience a systemic hypersensitivity reaction be treated per the local standard of care.

IV admixture should be prepared in a dedicated area with a working sink available. Depending on their role in the infusion unit, all individuals may be trained to wear PPE.

Role	Recommendations
Patient intake	Person with basic administrative skills
Drug infusion preparation	Healthcare professional trained in IV admixture preparation (such as a nurse, pharmacist, pharmacy tech)
Infusion: start IV	Healthcare professional trained to start an IV
Infusion: administer infusion	Healthcare professional trained in IV infusion administration (such as a nurse, pharmacist, pharmacy tech)
Infusion monitoring	Healthcare professional trained in: <ul style="list-style-type: none"> • assessing infusion-related reactions • treating infusion-related reactions • vital sign monitoring
Post-infusion observation	Healthcare professional trained in: <ul style="list-style-type: none"> • assessing infusion-related reactions • treating infusion-related reactions • vital sign monitoring • providing post-infusion education for the patient
Patient release	Person with basic administrative skills
Waste removal and cleaning	Person trained in COVID-19 cleaning and disinfection

Notes:

- At least one healthcare professional should have Advanced Cardiovascular Life Support (ACLS) or Basic Life Support (BLS) certification or equivalent.
- At least one healthcare professional should be able to respond to medical emergency (e.g., severe infusion reaction); any specific certifications based on state and healthcare facility regulations and policies.
- The same healthcare professional may perform more than one role.
- State or country recommendations may dictate specific qualifications for some roles.

INFUSION SITE OF CARE MATERIALS

Equipment recommendations may vary by state. Follow your local recommendations when determining the equipment needed for your infusion site of care. Based on Lilly’s clinical trial experience, the following equipment should be considered to ensure the safest infusion site of care environment for patients receiving bamlanivimab antibody infusion. Additional recommended equipment and emergency medical supplies can be found in Appendix B.

Below are recommended non-consumable materials which are needed in an infusion site of care:

- Infusion pumps (if available)
- Infusion pump bracket for IV pole (if available)
- Chairs for infusion
- Mobile IV poles
- Emergency medical management equipment and backboard, including a reaction management kit (see Appendix B)
- Chairside table
- Locking refrigerator with temperature monitoring capability
- Transilluminator (vein finder)
- Vital sign monitoring equipment (see Appendix B)

Below are recommended consumable items which are needed in an infusion site of care:

Consumable Items Recommended supplies are based on Lilly’s clinical trial experience.		
PPE	Infusion supplies*	General supplies
Gloves Gowns Eye and face protection (e.g., goggles, safety glasses, face shields) NIOSH-certified, disposable N95 filter facepiece respirators or better	IV and catheters** 0.20/0.22 µm filter 250 mL 0.9% sodium chloride (infusion prep) Pre-filled saline syringes Appropriately sized syringes Alcohol wipes 2x2 gauze pads Adhesive bandages Tegaderm bio-occlusive dressing Absorbent underpads (blue pads) Extension set tubing Sterile needles - stainless steel 18ga IV administration sets (tubing) Sharps containers Transpore tape	Biohazard disposal bag Disposable disinfecting wipes Thermometer probe covers (if required) 70% alcohol wipes Paper towels Trash bins and liners Infusion Reaction Kit (see Appendix B)

Listed supplies are reflective of quantities/volumes used in Lilly clinical trials. Infusion sites of care may substitute alternate quantities and volumes as needed based on best medical practices and local recommendations.

**24 g catheter is sufficient.

SECTION 06

Long Term
Care Facility
Considerations

CONSIDERATIONS FOR RESIDENTS OF LONG TERM CARE FACILITIES

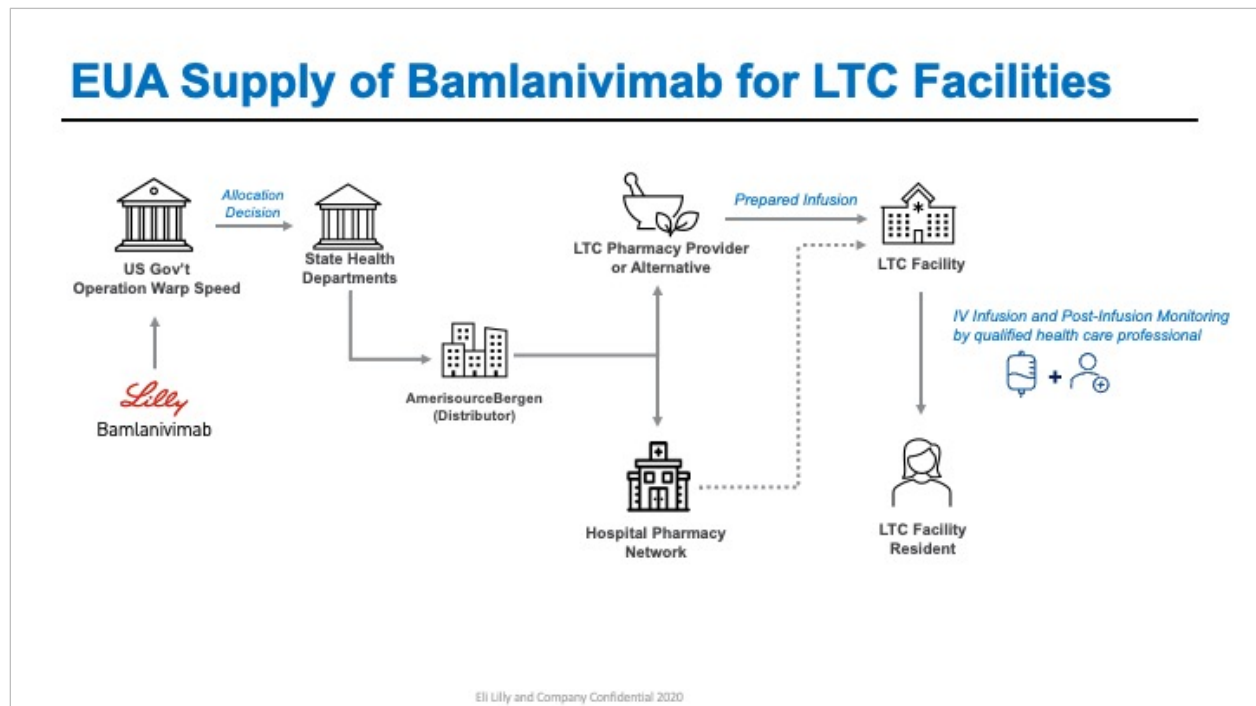
The COVID-19 pandemic presents unique challenges to long-term care facilities. Residents of long term care facilities account for only 7% of U.S. cases but 40% of U.S. deaths from COVID-19†. It is critical that available treatments, such as bamlanivimab, are accessible to these facilities and the residents they care for. Below, find information about allocation, reimbursement and unique considerations for long term care facilities administering bamlanivimab.

†Source: [Kaiser Family Foundation](#)

Allocation and Ordering

Through a government allocation program, the Federal Government, in partnership with state health departments, will provide the contracted distributor, AmerisourceBergen, with a list of long term care facilities approved for a product allocation on a periodic basis. The distributor will then contact the approved long term care facilities, confirm they would like to receive the allocated amount of product and then ship the product.

Long term care pharmacy providers will typically receive infusion treatments from a long term care pharmacy, hospital pharmacy network or contract pharmacy network.



Reimbursement Process for mAbs Therapeutic Under EUA

Medicare beneficiaries can receive coverage of monoclonal antibodies to treat coronavirus disease 2019 (COVID-19) with no cost-sharing during the public health emergency (PHE). CMS' coverage of monoclonal antibody infusions applies to bamlanivimab, which received an emergency use authorization (EUA) from the U.S. Food and Drug Administration. See the [Medicare Monoclonal Antibody COVID-19 Infusion Program Instruction](#) for more information.

Infusion Order Considerations

Find resources below to aid in accurately prescribing and administering bamlanivimab to patients in long term care facilities.

- [Bamlanivimab Order Set](#) | Long term care facilities can use the Bamlanivimab Orders Set to standardize and expedite the process of making clinical decisions for patients with COVID-19 who may benefit from receiving bamlanivimab antibody treatment. See Appendix C for the Bamlanivimab Order Set.
- [Bamlanivimab Infusion Flowsheet](#) | Long term care facilities can use the Bamlanivimab Infusion Flowsheet to keep track of patient data, treatment and progress, and routine infusion administration tasks. See Appendix D for the Bamlanivimab Infusion Flowsheet.

Long Term Care Recommended Resources and Equipment Considerations

Long term care facilities may need to take unique equipment considerations into account. In addition to resources and equipment recommendations outlined in other parts of this Playbook (See Section 5 and Appendix B), long term care facilities should consider the following:

- Needles (18 gauge may be incompatible with this population)
- Pharmacy/transportation considerations

SECTION 07

Education and Awareness

INFUSION SITE OF CARE MATERIALS

Attacking the coronavirus will require a diverse set of approaches, including both vaccines and treatments, such as antibodies.

Q. What's the difference between vaccines and monoclonal antibody drugs?

A. While there are some similarities, here's how they are different:

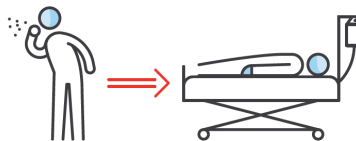
- Monoclonal antibody drugs, like bamlanivimab, provide passive immunity by giving the body antibodies to protect itself. Vaccines provide active immunity by helping the body make its own antibodies to protect itself.
- Monoclonal antibody drugs are designed to start working faster than vaccines, while protection provided by vaccines will generally last longer.
- Generally, scientists are able to develop antibody treatments faster than they are able to develop vaccines.

Developing any approach against COVID-19 involves assessing key factors:



Viral exposure

A vaccine will not help an already-infected patient



Stage of disease

When to apply the medicine to prevent the infection or treat the disease

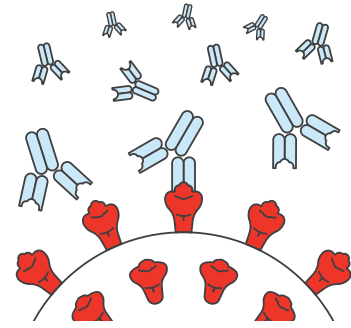


At-risk populations

Factors linked to worse outcomes (e.g., age, concurrent diseases)

NEUTRALIZING ANTIBODIES AS POTENTIAL TREATMENTS

Identified and characterized using various methods, including from the blood of COVID-19 survivors, neutralizing antibodies target the viral spike protein that SARS-CoV-2 uses to gain entry into host cells. Neutralizing antibodies, therefore, are specifically designed to treat COVID-19.



Q. What are antibodies?

A. Antibodies are naturally made in our bodies to fight infection.

- Whenever the immune system meets a new foreign substance in the body, it makes new antibodies that attack the foreign substance. The next time that substance shows up, the immune system can produce the same antibodies to help the body fight it off before it can make a person sick. These types of naturally occurring antibodies provide active immunity.
- Vaccines work in a similar way, helping the body make antibodies to attack specific foreign substances and providing active immunity in the body.
- Antibody drugs are different. They are man-made antibodies that are given directly through an infusion or injection rather than prompting the body to make the antibodies for itself. This type of immunity is called passive immunity.

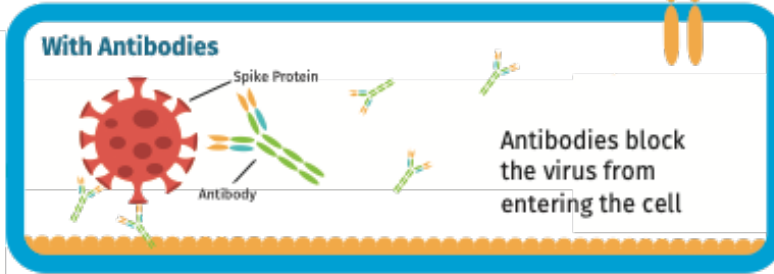
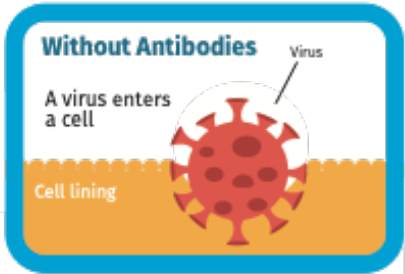
Find more information about monoclonal antibody drugs and vaccines from the CDC, State Health Departments, and the following resources:

- www.coronaviruspreventionnetwork.org
- www.infusioncenter.org/
- [Fact Sheet for Healthcare Providers](#)
- [Fact Sheet for Patients, Parents and Caregivers \(English\)](#)
- [Fact Sheet for Patients, Parents and Caregivers \(Spanish\)](#)
- [FDA Letter of Authorization](#)

Monoclonal Antibodies



What are antibodies? Antibodies are naturally made in our bodies to fight infection.



What are **MONOCLONAL ANTIBODIES**?



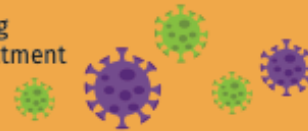
Monoclonal antibodies (**mAbs**) are antibodies developed in a laboratory to help our bodies fight infection.

Nearly
100

mAbs are FDA approved to treat health conditions including cancers and autoimmune diseases.



mAbs are also being studied for the treatment and prevention of COVID-19.



How are mAbs administered?



mAbs are given through intravenous infusion (i.e., through a vein) or injection.

OR



How often infusions or injections of mAbs are needed depends on the specific mAbs.

What are common side effects of mAbs?



Allergic reactions



Flu-like Symptoms



Nausea & Vomiting

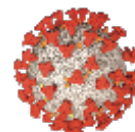


Diarrhea



Low blood pressure

ama-assn.org cdc.gov mayoclinic.org medlineplus.gov nature.com synabs.be uptodate.com



COVID-19
Prevention Network
PreventCOVID.org

APPENDIX A

Lilly Monoclonal Antibody
Clinical Trial Modeling
Information



LILLY MONOCLONAL ANTIBODY CLINICAL TRIAL MODELING INFORMATION

Assuming the infusion site of care setup details provided below, this information can be used to model the estimated number of infusions (patients) an infusion site of care can serve, depending on its capacity.

Each infusion site of care will vary in terms of the amount of chairs for infusion, staffing considerations, work day length and more. The information provided here is meant as a general guide based upon Lilly's clinical trial experience. In some cases, ideal criteria are included, such as for observation time. In other instances, such as the patient education and intake time, there are estimated ranges shown, with "+" or "-" conditions in parentheses.

Infusion Timing		
Criteria	Details	Additional Notes
Patient education and intake time	30 min (+/- 15 min)	Patient education and intake may occur outside of the infusion chair, such as at the prescriber's location, and patient education and intake time may vary per patient.
IV prep time	30 min	This step usually does not take place until the patient is in the chair for infusion and vascular access has been obtained.
Infusion time	60 min (+30 min)	Infusion time should be a minimum of 60 minutes, although more time may be necessary.
Observation time*	60 min	It is clinically recommended to monitor patients during infusion and observe patients for at least 1 hour after infusion is complete, although more time may be necessary. Sites of care should follow local recommendations when determining appropriate observation periods.
TOTAL TIME	165 – 225 min	This represents the estimated total time from patient education through observation of the patient.

*It is recommended that infusion sites of care have a protocol in place for patients who refuse to stay for post-infusion observation. For example, this may include an AMA form, release of responsibility waiver, etc.

APPENDIX B

Basic Equipment Recommendations

Lilly

BASIC EQUIPMENT RECOMMENDATIONS

Equipment recommendations may vary by state. Follow your local recommendations when determining the equipment needed for your infusion center. Based on Lilly’s clinical trial experience, the following equipment should be considered to ensure the safest care environment for patients receiving bamlanivimab antibody infusion.

Basic Equipment Recommendations	
Drug preparation	<ul style="list-style-type: none"> Locked refrigerator with min/max temp monitoring Prep table or area 18 ga needles Appropriate sized syringes 250 mL 0.9% sodium chloride Sterile alcohol prep pads PPE gloves all sizes PPE face shields or goggles (only if prepared in the COVID-19 unit) PPE N95 masks (only if prepared in the COVID-19 unit) Sharps containers Drug transport bags (if using mobile pharmacy) Alcohol sanitizing wipes Step-by-step instruction sheet (with images)
Patient intake and release	<ul style="list-style-type: none"> Signage with patient instructions Phone for intake worker Schedule or list of appointments Office supplies (e.g. pens, stapler, scissors, paper clips, etc.) Clipboard with patient intake and monitoring sheet Patient intake and monitoring form Check-in table Chair(s) for check-in staff Bleach sanitizing wipes Hand sanitizer PPE gloves all sizes PPE face shields or goggles PPE N95 masks PPE gowns

Basic Equipment Recommendations

<p>Infusion area supplies</p>	<ul style="list-style-type: none"> Chairs for infusion Chairside table IV poles IV pump (or gravity feed) Vital signs monitoring equipment (BP, HR, resp rate, temp, O2 sat) Supply cart or other storage cabinet Hand sanitizer Hand soap Biohazard trash can Bleach wipes (cleaning non-electronic equipment) Alcohol wipes (cleaning electronic equipment) Medical emergency supplies Sterile alcohol prep pads IV catheters IV extension tubing Tourniquet PVC infusion sets 0.20/0.22 µm filter Gauze pads Adhesive bandages 0.9% sodium chloride flush syringes Bio-occlusive dressing Tape 50 mL saline bag or 20 mL syringe to flush the tubing following infusion PPE gloves all sizes PPE face shields or goggles PPE N95 masks PPE gowns
<p>Observation area</p>	<ul style="list-style-type: none"> Vital signs monitoring equipment (BP, HR, resp rate, temp, O2 sat) Table for staff Chairs for patients and staff Bleach sanitizing wipes Hand sanitizer PPE gloves all sizes PPE face shields or goggles PPE N95 masks PPE gowns

MEDICAL EMERGENCY SUPPLIES AND MEDICATIONS

Emergency medical management equipment should contain the following items:

**Some medications listed below should only be administered by a healthcare provider with ACLS training*

	Essential	Recommended
Medications	Albuterol inhaler Diphenhydramine injection Epinephrine 0.1 mg/mL (1 mg / 10 mL) OR epinephrine auto-injector 0.3 mg Solu-Medrol injection	Adenosine injection Atropine sulfate Chewable ASA Dextrose 50% injection Insta glucose Nitroglycerine Ondansetron injection Sodium bicarb injection
IV supplies	0.9% Sodium chloride flush (10 mL) 0.9% Sodium chloride bag (500 mL)	IV admin set IV start kit IV catheter Non-DEHP cath/extension set 5% dextrose bag
Airway		Nasopharyngeal/oral airway suction Barrier mask for CPR Ambu Bag Oxygen and airway equipment
Emergency medical management	Infusion sites of care should have a standard operating procedure in place instructing infusion site of care staff how emergency events should be managed, including appropriate contacts (911, physician, etc.), ACLS protocol and any follow-up activities.	