



Drug and Biologic Coverage Policy

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COVID-19 Drug and Biologic Therapeutics

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Related Coverage Resources

- [Anti-Stockpiling Limits](#)
- [Clinical Trials](#)
- [COVID-19: In Vitro Diagnostic Testing](#)
- [Immunomodulators - Oral and Subcutaneous \(Employer Group Benefit Plans\)](#)
- [Immunomodulators - Oral and Subcutaneous \(Individual and Family Plans\)](#)
- [Immunomodulators – Oral and Subcutaneous \(Total Savings Drug List\)](#)
- [Tocilizumab Intravenous](#)

INSTRUCTIONS FOR USE

The following Coverage Policy applies to health benefit plans administered by Cigna Companies. Certain Cigna Companies and/or lines of business only provide utilization review services to clients and do not make coverage determinations. References to standard benefit plan language and coverage determinations do not apply to those clients. Coverage Policies are intended to provide guidance in interpreting certain standard benefit plans administered by Cigna Companies. Please note, the terms of a customer's particular benefit plan document [Group Service Agreement, Evidence of Coverage, Certificate of Coverage, Summary Plan Description (SPD) or similar plan document] may differ significantly from the standard benefit plans upon which these Coverage Policies are based. For example, a customer's benefit plan document may contain a specific exclusion related to a topic addressed in a Coverage Policy. In the event of a conflict, a customer's benefit plan document always supersedes the information in the Coverage Policies. In the absence of a controlling federal or state coverage mandate, benefits are ultimately determined by the terms of the applicable benefit plan document. Coverage determinations in each specific instance require consideration of 1) the terms of the applicable benefit plan document in effect on the date of service; 2) any applicable laws/regulations; 3) any relevant collateral source materials including Coverage Policies and; 4) the specific facts of the particular situation. Coverage Policies relate exclusively to the administration of health benefit plans. Coverage Policies are not recommendations for treatment and should never be used as treatment guidelines. In certain markets, delegated vendor guidelines may be used to support medical necessity and other coverage determinations.

Overview

This Coverage Policy addresses Drugs or Biologics for the treatment, prevention, or management of Coronavirus Disease 2019 (COVID-19) and related symptoms.

Agents addressed in this policy include:

- Bamlanivimab
- Baricitinib (Olmiant®)
- Casirivimab and Imdevimab
- Regiocit
- Remdesivir (Veklury®)
- Tocilizumab intravenous (Actemra IV®)

The use of intravenous tocilizumab for non-COVID-19 uses is addressed in a separate coverage policy. Please refer to the related coverage policy link above (Tocilizumab Intravenous).

The use of baricitinib for non-COVID-19 uses is addressed in separate coverage policies. Please refer to the related coverage policy links above (Immunomodulators - Oral and Subcutaneous).

Coverage Policy

The following Drugs or Biologics are considered medically necessary for the treatment, prevention, or management of COVID-19 and related symptoms when EITHER of the following criteria are met:

1. Drug or Biologic has received a FDA Emergency Use Authorization (EUA) for the treatment of COVID-19, and is used in accordance with the specifications of the EUA:

Product	Medical Necessity Criteria
Bamlanivimab	<p>ALL of the following are met:</p> <ol style="list-style-type: none"> a. Treatment of mild to moderate COVID-19 in adults and pediatric patients with positive results of direct SARS-CoV-2 viral testing (for example, molecular [PCR], or antigen [ELISA] laboratory methods) b. Individual is 12 years of age and older, weighing at least 40 kg c. Individual is at high risk* for progressing to severe COVID-19 d. May only be administered in settings in which health care 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 e. Use of bamlanivimab covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheet <p><u>*Note:</u> High risk is defined as patients who meet at least ONE of the following criteria:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ cardiovascular disease, OR ○ hypertension, OR ○ chronic obstructive pulmonary disease/other chronic respiratory disease. • Are 12 – 17 years of age AND have: <ul style="list-style-type: none"> ○ BMI ≥ 85th 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 <p>Bamlanivimab is NOT authorized by this EUA for use in the following patient populations:</p> <ol style="list-style-type: none"> a. Adults or pediatric patients who are hospitalized due to COVID-19 b. Adults or pediatric patients who require oxygen therapy due to COVID-19 c. Adults or pediatric patients who require an increase in baseline oxygen flow rate due to COVID-19 in those patients on chronic oxygen therapy due to underlying non-COVID-19-related comorbidity

Product	Medical Necessity Criteria
Baricitinib (Olumiant®)	<p>ALL of the following are met:</p> <ol style="list-style-type: none"> Treatment of suspected or laboratory confirmed COVID-19 in individuals 2 years of age or older Administered in combination with remdesivir (Veklury®) Used in hospitalized individuals requiring supplemental oxygen, invasive mechanical ventilation, or ECMO Use is for maximum of 14 days or until discharge from the hospital, whichever comes first Use of baricitinib covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheets
Casirivimab and Imdevimab	<p>ALL of the following are met:</p> <ol style="list-style-type: none"> Treatment of mild to moderate COVID-19 in adults and pediatric patients with positive results of direct SARS-CoV-2 viral testing (for example, molecular [PCR], or antigen [ELISA] laboratory methods) Individual is 12 years of age and older, weighing at least 40 kg Individual is at high risk* for progressing to severe COVID-19 Casirivimab and imdevimab may only be administered together Casirivimab and imdevimab may only be administered in settings in which health care 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 The use of casirivimab and imdevimab covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheets <p>*Note: High risk is defined as patients who meet at least ONE of the following criteria:</p> <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> ○ cardiovascular disease, OR ○ hypertension, OR ○ chronic obstructive pulmonary disease/other chronic respiratory disease. • Are 12 – 17 years of age AND have: <ul style="list-style-type: none"> ○ BMI ≥ 85th 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 <p>Casirivimab and imdevimab is NOT authorized for use in the following patient populations:</p> <ol style="list-style-type: none"> Adults or pediatric patients who are hospitalized due to COVID-19 Adults or pediatric patients who require oxygen therapy due to COVID-19 Adults or pediatric patients who require an increase in baseline oxygen flow rate due to COVID-19 in those patients on chronic oxygen therapy due to underlying non-COVID-19-related comorbidity

Product	Medical Necessity Criteria
Regiocit	ALL of the following are met: <ol style="list-style-type: none"> Regiocit will be used as a replacement solution only in adult patients being treated with Continuous Renal Replacement Therapy (CRRT) and for whom regional citrate anticoagulation (RCA) is appropriate Regiocit will be administered only by a licensed healthcare provider in a critical care setting

2. The following product-specific criteria are met:

Product	Medical Necessity Criteria
Remdesivir (Veklury®)	ALL of the following are met: <ol style="list-style-type: none"> Used for the treatment of coronavirus disease 2019 (COVID-19) infection Severity of infection requiring hospitalization Administered via intravenous (IV) infusion
Tocilizumab intravenous (Actemra IV®)	The following is met: <ul style="list-style-type: none"> For the treatment of Cytokine Release Syndrome (CRS) associated with COVID-19

When coverage is available and medically necessary, the dosage, frequency, duration of therapy, and site of care should be reasonable, clinically appropriate, and supported by evidence-based literature and adjusted based upon severity, alternative available treatments, and previous response to therapy.

Any Drug or Biologic product that does not fall into one of the above categories is considered experimental, investigational or unproven for the treatment, prevention, or management of COVID-19.

Note: Receipt of sample product does not satisfy any criteria requirements for coverage.

Other Uses with Supportive Evidence

Tocilizumab intravenous (Actemra IV)

In COVID-19, the body may respond to the virus by overproducing immune cells and their signaling molecules in a phenomenon called cytokine release storm. By inhibiting IL-6, Actemra is speculated to be associated with better clinical outcomes, such as decreased systemic inflammation, improved survival rate, better hemodynamic and improved of respiratory distress. Clinical trials are underway evaluating Actemra in patients with severe or critical cytokine release syndrome. (U.S. NIH, 2020)

In a retrospective analysis from China, 21 patients with severe or critical COVID-19 were treated with Actemra IV (18 patients received one dose [400 mg IV] and 3 patients received a second dose within 12 hours). All patients had a 1-week history of routine treatment prior to Actemra. All patients received standard therapy, including lopinavir, methylprednisolone, other symptom relievers, and oxygen therapy. The mean age of enrolled patients was 57 years (range 25 to 88 years), and the majority (n = 18/21) were male. Overall, 17 patients were categorized with severe disease (defined as respiratory rate ≥ 30 breaths/min, peripheral oxygen saturation [SpO₂] $\leq 93\%$ [room air], and/or partial pressure of arterial oxygen/percentage of inspired oxygen [PaO₂/FiO₂] ≤ 300 mmHg). There were also four patients categorized as critical (defined as respiratory failure requiring mechanical ventilation; shock; or intensive care unit admission combined with other organ failure). All patients had abnormal computed tomography (CT) of the chest, primarily with plaque-like, ground-glass opacities and focal consolidation, mainly distributed in the peripheral (especially the subpleural) region. Mean IL-6 expression levels (132.38 \pm 278.54 pg/ml) prior to administration of Actemra suggested upregulation of IL-6. Body temperature of all patients normalized on the first day after receiving Actemra and remained stable thereafter. After treatment, CT scans showed that the chest lesions were absorbed in 19 patients (90.5%). At the time this analysis was published, 19 patients (90.5%) were discharged (average of 13.5 days after the treatment with Actemra) and the remaining patients continued to recover. There have been no reports of subsequent pulmonary infection, deterioration of illness, or death. (Xu, 2020)

Compendia and Other Published Clinical Studies

Compendia and other published clinical studies do not currently support any other Drug or Biologic for the treatment, prevention, or management of COVID-19 and related symptoms at this time. Coverage criteria will be updated as new published data are available.

Health Care Provider Fact Sheet

FDA EUA Fact Sheet

Bamlanivimab	<p><u>LIMITATIONS OF AUTHORIZED USE</u></p> <p>Bamlanivimab is not authorized for use in patients:</p> <ul style="list-style-type: none">• 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 <p>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 Warnings and Precautions (5.2)].</p> <p><u>Patient Selection and Treatment Initiation</u></p> <p>This section provides essential information on the unapproved product bamlanivimab for the treatment of mild to moderate COVID-19 in adults and pediatric patients with positive results of direct SARS-CoV-2 viral testing who are 12 years of age and older weighing at least 40 kg, and who are at high risk for progressing to severe COVID-19 and/or hospitalization [see Limitations of Authorized Use].</p> <p><u>High risk</u> is defined as patients who meet at least ONE of the following criteria:</p> <ul style="list-style-type: none">• 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:<ul style="list-style-type: none">○ cardiovascular disease, OR○ hypertension, OR○ chronic obstructive pulmonary disease/other chronic respiratory disease.• Are 12 – 17 years of age AND have:<ul style="list-style-type: none">○ BMI ≥ 85th 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 <p><u>Dosage</u></p> <ul style="list-style-type: none">• The dosage of bamlanivimab in adults and pediatric patients 12 years of age and older weighing at least 40 kg is a single IV infusion of 700 mg bamlanivimab administered over at least 60 minutes.
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	<ul style="list-style-type: none"> • Bamlanivimab should be given as soon as possible after positive results of direct SARS-CoV-2 viral testing and within 10 days of symptom onset. <p>Bamlanivimab must be administered by <u>intravenous (IV) infusion</u>.</p> <p><u>Dosage Adjustment in Specific Populations</u> No dosage adjustment is recommended based on age, sex, race, body weight, renal or mild hepatic impairment, during pregnancy or while lactating, or for disease severity or inflammation [see Full EUA Prescribing Information, Use in Specific Populations (11)].</p> <p><u>Limitations of Benefit and Potential for Risk in Patients with Severe COVID-19</u> 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 [see Limitations of Authorized Use]:</p> <ul style="list-style-type: none"> • 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
<p>Baricitinib (Olumiant)</p>	<p><u>INSTRUCTIONS FOR ADMINISTRATION</u></p> <p><u>Adult Patients</u></p> <ul style="list-style-type: none"> • The recommended dosage in adults with eGFR ≥ 60 mL/min/1.73 m² is 4 mg <u>once daily for 14 days of total treatment or until hospital discharge</u>, whichever is first. • Dosage adjustments in patients with renal or hepatic impairment are recommended • Dosage adjustments due to drug interactions are recommended • In hospitalized patients with COVID-19, prophylaxis for venous thromboembolism (VTE) is recommended unless contraindicated <p><u>Pediatric Patients</u></p> <ul style="list-style-type: none"> • Limited data informing baricitinib dosing in pediatric patients comes from ongoing clinical trials for other uses. Based on the available information, treatment for COVID-19 for pediatric patients under this EUA is as follows: • The recommended dosage for patients 9 years of age and older is 4 mg once daily for 14 days of total treatment or until hospital discharge, whichever is first. • The recommended dosage for patients ages 2 years through less than 9 years of age is 2 mg once daily for 14 days of total treatment or until hospital discharge, whichever is first. • Baricitinib is not authorized for patients younger than 2 years of age. • Dosage adjustments in patients with renal or hepatic impairment are recommended <p><u>Administration</u> Baricitinib tablets are given orally once daily with or without food.</p> <p><u>Alternate Administration</u></p> <ul style="list-style-type: none"> • For patients who are unable to swallow whole tablets, alternate administration may be considered: <ul style="list-style-type: none"> ○ Oral dispersion ○ Gastrostomy tube (G tube) ○ Nasogastric tube (NG tube)
<p>Casirivimab and Imdevimab</p>	<p><u>LIMITATIONS OF AUTHORIZED USE</u></p> <ul style="list-style-type: none"> • Casirivimab and imdevimab are not authorized for use in patients: <ul style="list-style-type: none"> ○ 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
- Benefit of treatment with casirivimab and imdevimab has not been observed in patients hospitalized due to COVID-19. Monoclonal antibodies, such as casirivimab and imdevimab, may be associated with worse clinical outcomes when administered to hospitalized patients requiring high flow oxygen or mechanical ventilation with COVID-19.

Casirivimab and imdevimab have been authorized by FDA for the emergency uses described above.

Casirivimab and imdevimab are not FDA-approved for these uses.

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

Casirivimab and imdevimab must be administered together after dilution by INTRAVENOUS (IV) INFUSION ONLY.

Dosage

- The dosage in adults and in pediatric patients (12 years of age and older weighing at least 40 kg) is 1,200 mg of casirivimab and 1,200 mg of imdevimab administered together as a single intravenous infusion over at least 60 minutes.
- Casirivimab and imdevimab solutions must be diluted prior to administration.
- **Casirivimab and imdevimab should be given together as soon as possible after positive results of direct SARS-CoV-2 viral testing and within 10 days of symptom onset.**

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

Benefit of treatment with casirivimab and imdevimab has not been observed in patients hospitalized due to COVID-19. Monoclonal antibodies, such as casirivimab and imdevimab, may be associated with worse clinical outcomes when administered to hospitalized patients requiring high flow oxygen or mechanical ventilation with COVID-19. Therefore, casirivimab and imdevimab are not authorized for use in patients [see Limitations of Authorized Use]:

- who are hospitalized due to COVID-19, OR
- who require oxygen therapy due to COVID-19, OR

	<ul style="list-style-type: none"> 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 																								
Regiocit	<p><u>Important Administration Instructions:</u></p> <ul style="list-style-type: none"> A separate systemic infusion of calcium must be administered during use of Regiocit to prevent or treat hypocalcemia. Blood calcium concentrations (ionized and total) must be monitored throughout CRRT. Regiocit solution must be used in pre-dilution mode only, with appropriate extracorporeal renal replacement equipment intended for CRRT, using an integrated preblood pump for RCA and in combination with other replacement and/or dialysate solution to provide the recommended dose of CRRT. Regiocit may only be administered by health care providers/institutions that have been qualified by Baxter to administer the product. <p><u>Administration Instructions</u></p> <ul style="list-style-type: none"> Renal Replacement Solution: For Extracorporeal use only. Not for direct intravenous infusion. The recommended effluent volume for patients receiving CRRT for acute kidney injury (AKI) is 20 to 25 mL/kg/h. This usually requires a higher prescription of effluent volume. The prescription of Regiocit solution must consider the flow rates of the effluent and other therapeutic fluids, the patient's fluid removal requirements, additional fluid inputs and outputs, and the desired acid-base and electrolyte balance. The mode of therapy, solute formulations, flow rates and length of therapy should be selected by the physician responsible for managing treatment depending on the clinical condition of the patient as well as the patient's fluid, electrolyte, acid base and glucose balance. Dialysate and replacement fluid formulations and flow rates are prescribed in accordance with the patient's clinical needs. The use of a calcium-containing dialysate or replacement fluid is not recommended, since the calcium provided by these solutions may counteract the anticoagulant effect of citrate in the circuit. <p><u>Suggested Dosing</u></p> <ul style="list-style-type: none"> The rate at which Regiocit solution is administered depends on the targeted citrate dose and the prescribed blood flow rate. The pre-filter infusion rate of Regiocit solution is indexed to the blood flow rate to achieve a target blood citrate concentration of 3 mmol/L of blood (See Table 1). Flow rate for anticoagulation of the extracorporeal circuit should be titrated to achieve a post-filter concentration of ionized calcium in the range of 0.25 to 0.35 mmol/L. <p>Table 1: Regiocit Solution Flow Rates to Achieve Citrate Dose of 3 mmol/L of Blood</p> <table border="1" data-bbox="415 1396 1399 1780"> <thead> <tr> <th>Blood flow rate (mL/min)</th> <th>Regiocit solution flow rate (mL/h)</th> </tr> </thead> <tbody> <tr><td>100</td><td>1000</td></tr> <tr><td>110</td><td>1100</td></tr> <tr><td>120</td><td>1200</td></tr> <tr><td>130</td><td>1300</td></tr> <tr><td>140</td><td>1400</td></tr> <tr><td>150</td><td>1500</td></tr> <tr><td>160</td><td>1600</td></tr> <tr><td>170</td><td>1700</td></tr> <tr><td>180</td><td>1800</td></tr> <tr><td>190</td><td>1900</td></tr> <tr><td>200</td><td>2000</td></tr> </tbody> </table> <ul style="list-style-type: none"> Prior to initiating therapy, the patient's systemic ionized calcium concentration should be within the normal physiologic range (1.0 to 1.2 mmol/L) by adjustment of calcium supplementation. A separate infusion of calcium is always required during use of 	Blood flow rate (mL/min)	Regiocit solution flow rate (mL/h)	100	1000	110	1100	120	1200	130	1300	140	1400	150	1500	160	1600	170	1700	180	1800	190	1900	200	2000
Blood flow rate (mL/min)	Regiocit solution flow rate (mL/h)																								
100	1000																								
110	1100																								
120	1200																								
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150	1500																								
160	1600																								
170	1700																								
180	1800																								
190	1900																								
200	2000																								

	<p>Regiocit, due to loss in the effluent. Calcium solution infusion is commenced at the rate of 4 mmol/h, when commencing therapy (see <i>Table 4 in HCP Fact Sheet for more information</i>).</p> <ul style="list-style-type: none"> Adjust or stop calcium infusion according to physician's prescription when Regiocit is stopped. Citrate also acts as a buffer source (due to conversion to bicarbonate); the infusion rate of Regiocit solution must be considered in relation to the rate at which buffer administration occurs from other sources (e.g., dialysate and/or replacement fluid). Regiocit solution must be used together with a dialysis solution/replacement solution with appropriate bicarbonate concentration. 											
<p>Remdesivir (Veklury®)</p>	<p><u>Patient Selection and Treatment Initiation</u></p> <ul style="list-style-type: none"> Empiric treatment of hospitalized patients with suspected COVID-19 can be considered pending laboratory confirmation of SARS-CoV-2 infection. Veklury can be used at any time after onset of symptoms in hospitalized patients. Pediatric patients (greater than 28 days old) must have an estimated glomerular filtration rate (eGFR) determined and full-term neonates (at least 7 days to less than or equal to 28 days old) must have serum creatinine determined before starting Veklury and be monitored during treatment as clinically appropriate. Perform hepatic laboratory testing in all patients before starting VEKLURY and during treatment as clinically appropriate Determine prothrombin time in all patients before starting Veklury and monitor during treatment as clinically appropriate. <p>The only authorized dosage form of Veklury for pediatric patients weighing 3.5 kg to less than 40 kg or pediatric patients less than 12 years of age weighing at least 3.5 kg is Veklury for injection (supplied as 100 mg lyophilized powder in vial).</p> <p>For pediatric patients weighing 3.5 kg to less than 40 kg, administer a body weight-based dosing regimen of Veklury via intravenous (IV) infusion. The dosage should be calculated using the mg/kg dose according to the patient's weight.</p> <p>For pediatric patients less than 12 years of age and weighing 40 kg and higher, administer a single loading dose of Veklury 200 mg on Day 1 followed by once-daily maintenance doses of Veklury 100 mg from Day 2.</p> <p>Refer to Table 1 below for recommended dosage form and dosage in pediatric patients according to weight [see Dosage and Administration (2.4), Use in Specific Populations (11.3)]</p> <p>Table 1: Recommended Dosage Form and Dosage in Pediatric Patients</p> <table border="1" data-bbox="370 1394 1354 1675"> <thead> <tr> <th>Body Weight</th> <th>Recommended dosage form</th> <th>Loading Dose (on Day 1)</th> <th>Maintenance dose (from Day 2)</th> </tr> </thead> <tbody> <tr> <td>3.5 kg to less than 40 kg</td> <td rowspan="2">Veklury (remdesivir) Lyophilized Powder for Injection <u>Only</u></td> <td>5 mg/kg</td> <td>2.5 mg/kg</td> </tr> <tr> <td>40 kg and higher</td> <td>200 mg</td> <td>100 mg</td> </tr> </tbody> </table> <ul style="list-style-type: none"> The recommended treatment duration for patients not requiring invasive mechanical ventilation and/or extracorporeal membrane oxygenation (ECMO) is <u>5 days</u>. If a patient does not demonstrate clinical improvement, treatment may be extended for up to 5 additional days for a total treatment duration of up to <u>10 days</u>. The recommended total treatment duration for patients requiring invasive mechanical ventilation and/or ECMO is <u>10 days</u>. 	Body Weight	Recommended dosage form	Loading Dose (on Day 1)	Maintenance dose (from Day 2)	3.5 kg to less than 40 kg	Veklury (remdesivir) Lyophilized Powder for Injection <u>Only</u>	5 mg/kg	2.5 mg/kg	40 kg and higher	200 mg	100 mg
Body Weight	Recommended dosage form	Loading Dose (on Day 1)	Maintenance dose (from Day 2)									
3.5 kg to less than 40 kg	Veklury (remdesivir) Lyophilized Powder for Injection <u>Only</u>	5 mg/kg	2.5 mg/kg									
40 kg and higher		200 mg	100 mg									

	<ul style="list-style-type: none"> • Veklury for injection must be reconstituted and further diluted prior to intravenous infusion.
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FDA EUA Letter

Bamlanivimab

Date	EUA Letter
11/9/2020	<p>The FDA issued an EUA on November 11, 2020 to permit the emergency use of the unapproved product, bamlanivimab. Bamlanivimab is a neutralizing IgG1 monoclonal antibody that binds to the receptor binding domain of the spike protein of SARS-CoV-2. (U.S. FDA EUA, 2020d)</p> <p>It is an investigational drug and is not currently approved for any indication.</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> • Distribution of the authorized bamlanivimab will be controlled by the United States (U.S.) Government for use consistent with the terms and conditions of this EUA. Lilly will supply bamlanivimab to authorized distributors, who will distribute to healthcare facilities or healthcare providers as directed by the U.S. Government, in collaboration with state and local government authorities, as needed; • The bamlanivimab covered by this authorization will be used only by healthcare providers to treat mild to moderate COVID-19 in adults and pediatric patients with positive results of direct SARS-CoV-2 viral testing who are 12 years of age and older weighing at least 40 kg, and who are at high risk for progressing to severe COVID-19 and/or hospitalization; • Bamlanivimab is not authorized for use in the following patient populations: <ul style="list-style-type: none"> ○ Adults or pediatric patients who are hospitalized due to COVID-19, or ○ Adults or pediatric patients who require oxygen therapy due to COVID-19, or ○ Adults or pediatric patients who require an increase in baseline oxygen Flow rate due to COVID-19 in those patients on chronic oxygen therapy due to underlying non-COVID-19-related comorbidity • Bamlanivimab may only be administered in settings in which health care 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 • The use of bamlanivimab covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheets.

Product Description

Bamlanivimab is a neutralizing IgG1 monoclonal antibody that binds to the receptor binding domain of the spike protein of SARS-CoV-2. Bamlanivimab, injection, 700 mg/20 mL, is a sterile, preservative-free aqueous solution that is to be diluted by using a 250 mL prefilled 0.9% Sodium Chloride Injection infusion solution, withdrawing and discarding 70 mL of 0.9% Sodium Chloride Injection from the infusion bag, and then transferring 20mL of 700mg/20mL bamlanivimab to the 0.9% Sodium Chloride Injection infusion bag. The authorized bamlanivimab includes a vial label and/or carton labeling that is clearly marked for "emergency use authorization".

Bamlanivimab, injection, 700 mg/20 mL, vials should be stored in unopened vials under refrigerated temperature at 2°C to 8°C (36°F to 46°F) in the original carton to protect from light until time of use. Diluted bamlanivimab infusion solution can be stored for up to 24 hours at refrigerated temperature (2°C to 8°C [36°F to 46°F]) or up to 7 hours at room temperature (20°C to 25°C [68°F to 77°F]) including infusion time.

Baricitinib (Olumiant)

Date	EUA Letter
11/19/2020	<p>The FDA issued an EUA on November 19, 2020 for emergency use of baricitinib (Olumiant), in combination with remdesivir (Veklury), for the treatment of suspected or laboratory confirmed coronavirus disease 2019 (COVID-19) in certain hospitalized patients requiring supplemental oxygen, invasive mechanical ventilation, or extracorporeal membrane oxygenation (ECMO). (U.S. FDA EUA, 2020d)</p> <p>Baricitinib (Olumiant) is approved by FDA for the treatment of adult patients with moderately to severely active rheumatoid arthritis who have had an inadequate response to one or more tumor necrosis factor antagonist therapies. Baricitinib has not been approved by FDA for the treatment of COVID-19.</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> • The baricitinib covered by this authorization will be used only by healthcare providers, in combination with remdesivir, to treat suspected or laboratory confirmed COVID-19 in hospitalized adults and pediatric patients 2 years of age or older requiring supplemental oxygen, invasive mechanical ventilation, or ECMO; and • The use of baricitinib covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheets.

Product Description

Baricitinib is a Janus kinase (JAK) inhibitor. Baricitinib is available as debossed, film-coated, immediate-release tablets. Each tablet contains a recessed area on each face of the tablet surface. Baricitinib tablets are to be taken orally or can be crushed, dispersed in water, and given via a gastrostomy tube. The authorized baricitinib includes commercially available Olumiant (baricitinib) supplied in 30 count bottles as follows:

- OLUMIANT (baricitinib) 1 mg (NDC 0002-4732-30)
- OLUMIANT (baricitinib) 2 mg (NDC 0002-4182-30)

Casirivimab and Imdevimab

Date	EUA Letter
11/21/2020	<p>The FDA issued an EUA on November 19, 2020 for emergency use of casirivimab and imdevimab, administered together, for the treatment of mild to moderate coronavirus disease 2019 (COVID-19). (U.S. FDA EUA, 2020e)</p> <p>Casirivimab and imdevimab are recombinant human IgG1 monoclonal antibodies that target the receptor binding domain of the spike protein of SARS-CoV-2. They are investigational drugs and are not approved for any indication.</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> • Distribution of the authorized casirivimab and imdevimab will be controlled by the United States (U.S.) Government for use consistent with the terms and conditions of this EUA. Regeneron will supply casirivimab and imdevimab to authorized distributor(s), who will distribute to healthcare facilities or healthcare providers as directed by the U.S. Government, in collaboration with state and local government authorities, as needed; • The casirivimab and imdevimab covered by this authorization will be used only by healthcare providers 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; • Casirivimab and imdevimab may only be administered together; • Casirivimab and imdevimab is not authorized for use in the following patient populations: <ul style="list-style-type: none"> ○ Adults or pediatric patients who are hospitalized due to COVID-19, or ○ Adults or pediatric patients who require oxygen therapy due to COVID19, or

Date	EUA Letter
	<ul style="list-style-type: none"> ○ Adults or pediatric patients who require an increase in baseline oxygen flow rate due to COVID-19 in those patients on chronic oxygen therapy due to underlying non-COVID-19-related comorbidity. ● Casirivimab and imdevimab may only be administered in settings in which health care 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. ● The use of casirivimab and imdevimab covered by this authorization must be in accordance with the dosing regimens as detailed in the authorized Fact Sheets

Product description

Regiocit

Date	EUA Letter
8/13/2020	<p>The FDA issued an EUA on August 13, 2020 to permit the emergency use of the unapproved product, Regiocit: a replacement solution that contains citrate for Regional Citrate Anticoagulation (RCA) of the extracorporeal circuit. Regiocit has been authorized for emergency use as a replacement solution in adult patients treated with Continuous Renal Replacement Therapy (CRRT), and for whom RCA is appropriate, during the COVID-19 pandemic. Regiocit is intended for use in a critical care setting. Regiocit is intended to be used in continuous venovenous hemofiltration (CVVH) and continuous venovenous hemodiafiltration (CVVHDF) modalities. Use of Regiocit is limited to healthcare providers and/or institutions that Baxter has qualified to administer Regiocit for these emergency uses. (U.S. FDA EUA, 2020c)</p> <p>Regiocit has been authorized by FDA for emergency use. Regiocit is not FDA-approved.</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> ● Regiocit will be used as a replacement solution only in adult patients being treated with CRRT and for whom RCA is appropriate. ● Regiocit will be administered only by a licensed healthcare provider in a critical care setting. ● Regiocit will be available for use only in facilities that Baxter Healthcare Corporation has qualified for receiving Regiocit.

Product Description

Regiocit (sodium chloride and sodium citrate) solution is for use in adults as replacement solution for regional citrate anticoagulation (RCA) of the extracorporeal circuit in patients treated with continuous renal replacement therapy (CRRT), particularly when systemic anticoagulation with heparin is contraindicated, e.g., in patients with increased bleeding risks.

Regiocit, contains physiological concentrations of sodium (140 mmol/l), chloride (86 mmol/l), and a low concentration of citrate (18 mmol/L). (Regiocit PI, 2020)

Regiocit should be administered only under the supervision of a physician experienced in the use of CRRT.

Remdesivir

Date	EUA Letter
10/22/2020	On October 22, 2020, FDA approved Veklury (remdesivir) for use in adults and pediatric patients (12 years of age and older and weighing at least 40 kg) for the treatment of

Date	EUA Letter
	<p>COVID-19 requiring hospitalization. Veklury should only be administered in a hospital or in a healthcare setting capable of providing acute care comparable to inpatient hospital care.</p> <p>This approval does not include the entire population that had been authorized to use Veklury under an Emergency Use Authorization (EUA) originally issued on May 1, 2020. In order to ensure continued access to the pediatric population previously covered under the EUA, the EUA for Veklury continues to authorize Veklury for emergency use by licensed healthcare providers for the treatment of suspected or laboratory-confirmed COVID-19 in hospitalized pediatric patients weighing 3.5 kg to less than 40 kg or hospitalized pediatric patients less than 12 years of age weighing at least 3.5 kg. (U.S. FDA EUA, 2020b)</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> The Veklury covered by this authorization will be used only to treat suspected or laboratory-confirmed COVID-19 in hospitalized* pediatric patients weighing 3.5 kg to less than 40 kg or hospitalized pediatric patients less than 12 years of age weighing at least 3.5 kg administered via intravenous (IV) infusion by a healthcare provider; The use of Veklury covered by this authorization should be in accordance with the dosing regimens as detailed in the authorized Facts Sheets. <p>*Note: Individuals determined as being appropriate for acute inpatient hospitalization and who are admitted or transferred to an alternate care site (ACS) that is capable of providing acute care that is comparable to general inpatient hospital care are within the terms and conditions of the Letter of Authorization. An ACS is intended to provide additional hospital surge capacity and capability for communities overwhelmed by patients with COVID-19.</p>
8/28/2020	<p>The FDA reissued the May 1, 2020 letter in its entirety with revisions incorporated to expand the authorized use of Veklury by no longer limiting its use to the treatment of patients with severe disease. (U.S. FDA EUA, 2020b)</p> <p>Scope of Authorization:</p> <ul style="list-style-type: none"> Distribution of the authorized Veklury will be controlled by the United States (U.S.) Government for use consistent with the terms and conditions of this EUA. Gilead will supply Veklury to authorized distributors⁷, or directly to a U.S. government agency, who will distribute to hospitals and other healthcare facilities as directed by the U.S. Government, in collaboration with state and local government authorities, as needed The Veklury covered by this authorization will be used only to treat adults and children with suspected or laboratory confirmed COVID-19 administered in an in-patient hospital setting via intravenous (IV) infusion by a healthcare provider The use of Veklury covered by this authorization should be in accordance with the dosing regimens as detailed in the authorized Facts Sheets.
5/1/2020	<p>FDA issued an EUA to allow remdesivir to be distributed and used by licensed health care providers to treat adults and children hospitalized with severe COVID-19.</p>

Product Description

Remdesivir is a direct acting antiviral drug that inhibits viral RNA synthesis. It is an investigational drug and is not currently approved for any indication. Remdesivir has activity in cell culture and animal models against SARS-CoV, MERS-CoV, and SARS-CoV-2. Based on review of the topline data from the randomized, double-blinded, placebo-controlled trial conducted by NIAID (NCT04280705) and from the Gilead-sponsored open-label trial that evaluated different durations of remdesivir (NCT04292899), it is reasonable to believe that the known and potential benefits of RDV outweigh the known and potential risks of the drug for the treatment of patients hospitalized with severe COVID-19. (U.S. FDA EUA, 2020b)

Chloroquine phosphate, hydroxychloroquine sulfate

Date	EUA Letter
6/15/2020	FDA revoked the emergency use authorization (EUA) that allowed for chloroquine phosphate and hydroxychloroquine sulfate. The agency determined that the legal criteria for issuing an EUA are no longer met. Based on its ongoing analysis of the EUA and emerging scientific data, the FDA determined that chloroquine and hydroxychloroquine are unlikely to be effective in treating COVID-19 for the authorized uses in the EUA. Additionally, in light of ongoing serious cardiac adverse events and other potential serious side effects, the known and potential benefits of chloroquine and hydroxychloroquine no longer outweigh the known and potential risks for the authorized use.(U.S. FDA EUA, 2020a)

General Background

FDA-Approved Indication

Drug	FDA-approved Indication
Remdesivir (Veklury®)	Veklury is indicated for adults and pediatric patients (12 years of age and older and weighing at least 40 kg) for the treatment of coronavirus disease 2019 (COVID-19) requiring hospitalization. Veklury should only be administered in a hospital or in a healthcare setting capable of providing acute care comparable to inpatient hospital care.

FDA Prescribing Information

Drug	Prescribing Information
Remdesivir (Veklury®)	<p><u>Dosage</u> The recommended dosage for adults and pediatric patients 12 years of age and older and weighing at least 40 kg is a single loading dose of Veklury 200 mg on Day 1 via intravenous infusion followed by once-daily maintenance doses of Veklury 100 mg from Day 2 via intravenous infusion.</p> <ul style="list-style-type: none"> The recommended treatment duration for patients not requiring invasive mechanical ventilation and/or extracorporeal membrane oxygenation (ECMO) is 5 days. If a patient does not demonstrate clinical improvement, treatment may be extended for up to 5 additional days for a total treatment duration of up to 10 days. The recommended total treatment duration for patients requiring invasive mechanical ventilation and/or ECMO is 10 days. <p><u>Product Availability</u> Veklury is available in two dosage forms:</p> <ul style="list-style-type: none"> Veklury for injection, 100 mg, available as a sterile, preservative-free white to off-white to yellow lyophilized powder in single-dose vial for reconstitution. Veklury injection, 100 mg/20 mL (5 mg/mL), available as a clear, colorless to yellow solution, free of visible particles in single-dose vial. <p><u>Other</u></p> <ul style="list-style-type: none"> Risk of Reduced Antiviral Activity When Coadministered with Chloroquine Phosphate or Hydroxychloroquine Sulfate <ul style="list-style-type: none"> Coadministration of Veklury and chloroquine phosphate or hydroxychloroquine sulfate is not recommended based on cell culture data demonstrating an antagonistic effect of chloroquine on the intracellular metabolic activation and antiviral activity of Veklury The safety and effectiveness of Veklury have not been established in pediatric patients younger than 12 years of age or weighing less than 40 kg.

Disease Overview

Coronavirus disease 2019 (COVID-19) is a respiratory illness that can spread from person-to-person. Many types of human coronaviruses exist, including some that commonly cause mild upper-respiratory tract illnesses. COVID-19 is a new disease, caused by a novel (new) coronavirus that has not previously been seen in humans. Current symptoms reported for patients with COVID-19 have included mild to severe respiratory illness with fever, cough, and difficulty breathing. (FDA FAQs, 2020)

Professional Societies/Organizations

Centers for Disease Control and Prevention (CDC)

No FDA-approved drugs have demonstrated safety and efficacy in randomized controlled trials for patients with COVID-19. Use of investigational therapies for treatment of COVID-19 should ideally be done in the context of enrollment in randomized controlled trials. Several clinical trials are underway testing multiple drugs with *in vitro* antiviral activity against SARS-CoV-2 and/or immunomodulatory effects that may have clinical benefit. For the latest information, see Information for Clinicians on Therapeutic Options for COVID-19 Patients located on the CDC COVID-19 website. (CDC, 2020)

Institute of Infectious Diseases (IDSA)

The IDSA recently published guidelines on the treatment and management of patients with COVID-19. The panel made recommendations for therapeutic agents that were currently available for use. In the most recent guideline update, remdesivir received recommendations by the IDSA panel. (IDSA, 2020)

• Remdesivir

- In hospitalized patients with severe* COVID-19 (SpO₂ ≤94% on room air; on supplemental oxygen, mechanical ventilation, or ECMO, the IDSA panel suggests remdesivir over no antiviral treatment. (Conditional recommendation, Moderate certainty of evidence)
 - *Severe illness is defined as patients with SpO₂ ≤94% on room air, including patients on supplemental oxygen, on mechanical ventilation and ECMO.
 - Remark: For consideration in contingency or crisis capacity settings (i.e., limited remdesivir supply): Remdesivir appears to demonstrate the most benefit in those with severe COVID-19 on supplemental oxygen rather than in patients on mechanical ventilation or extracorporeal mechanical oxygenation (ECMO)
- In patients on supplemental oxygen but not on mechanical ventilation or ECMO, the IDSA panel suggests treatment with five days of remdesivir rather than 10 days of remdesivir. (Conditional recommendation, Low certainty of evidence)
 - Remark: In patients on mechanical ventilation or ECMO, the duration of treatment is 10 days
- In patients with COVID-19 admitted to the hospital without the need for supplemental oxygen and oxygen saturation >94% on room air, IDSA suggests against the routine use of remdesivir. (Conditional recommendation, Very low certainty of evidence)

• Tocilizumab

- Among patients who have been admitted to the hospital with COVID-19, the IDSA guideline panel suggests against the routine use of tocilizumab. (Conditional recommendation, Low certainty of evidence)

National Institute of Health (NIH)

The NIH recently published COVID-19 treatment guidelines which includes discussion on therapeutic options under investigation. At present, no drug has been proven to be safe and effective for treating COVID-19. There are no Food and Drug Administration (FDA)-approved drugs specifically to treat patients with COVID-19. The COVID-19 Treatment Guidelines Panel (the Panel) does not recommend the use of any agents for pre-exposure prophylaxis (PrEP) or for post-exposure prophylaxis (PEP) against severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) outside of the setting of a clinical trial. The Panel recommends no additional laboratory testing and no specific treatment for persons with suspected or confirmed asymptomatic or presymptomatic SARS-CoV-2 infection. At present, no drug has been proven to be safe and effective for treating

COVID-19. There are insufficient data to recommend either for or against the use of any antiviral or immunomodulatory therapy in patients with COVID-19 who have mild, moderate, severe, or critical illness. Although reports have appeared in the medical literature and the lay press claiming successful treatment of patients with COVID-19 with a variety of agents, definitive clinical trial data are needed to identify optimal treatments for this disease. Recommended clinical management of patients with COVID-19 includes infection prevention and control measures and supportive care, including supplemental oxygen and mechanical ventilatory support when indicated. As in the management of any disease, treatment decisions ultimately reside with the patient and their health care provider. (NIH, 2020)

Included in the guideline is a section for discussion of therapeutic options under investigation that are currently in use by healthcare providers for COVID-19. Therapies are divided into two broad categories: antivirals, which may target the coronavirus directly, and host modifiers and immune-based therapies, which may influence the immune response to the virus or target the virus. Agents included in the antiviral section at present are as follows: chloroquine, hydroxychloroquine, hydroxychloroquine-azithromycin, remdesivir, and lopinavir-ritonavir. Agents included in the host modifiers and immune-based section at present are as follows: immunoglobulin, interleukin-6 inhibitors (sarilumab, siltuximab, tocilizumab), interleukin-1 inhibitors (anakinra), interferons, and janus kinase inhibitors (baricitinib). At present per the NIH guideline, there is insufficient clinical data to recommend either for or against the use of for all previous mentioned therapies. Specific to chloroquine/hydroxychloroquine, hydroxychloroquine-azithromycin, lopinavir-ritonavir, interferons, and janus kinase inhibitors therapies, the guideline recommends against the use except in the context of a clinical trial. The guideline also include recommendations regarding the use of concomitant medications. These includes: statins, corticosteroids, non-steroidal anti-inflammatory drugs, and certain drugs used to control hypertension (ACE inhibitors, ARBs). Please refer to the guideline for positional statements on the various products. The guidelines will be updated as new data are published in peer-reviewed scientific literature and other authoritative information emerges. (NIH, 2020)

The NIH guidelines were recently updated; the following recommendations were provided:

- **Interleukin-6 Inhibitors (i.e. tocilizumab)** - The Panel **recommends against** the use of anti-IL-6 receptor monoclonal antibodies (e.g., **sarilumab, tocilizumab**) or anti-IL-6 monoclonal antibody (**siltuximab**) for the treatment of COVID-19, except in a clinical trial (**BI**).
- **Remdesivir** – the Panel recommends the investigational antiviral agent remdesivir for the treatment of COVID-19 with the following conditions:

Recommendation for Prioritizing Limited Supplies of Remdesivir

- Because remdesivir supplies are limited, the Panel recommends prioritizing remdesivir for use in hospitalized patients with COVID-19 who require supplemental oxygen but who do not require oxygen delivery through a high-flow device, noninvasive ventilation, invasive mechanical ventilation, or extracorporeal membrane oxygenation (ECMO) (**BI**).

Recommendation for Patients With Mild or Moderate COVID-19

- There are insufficient data for the Panel to recommend either for or against the use of remdesivir in patients with mild or moderate COVID-19.

Recommendations for Patients with COVID-19 Who Require Supplemental Oxygen

- For Patients Who Do Not Require Oxygen Delivery Through a High-Flow Device, Noninvasive Ventilation, Invasive Mechanical Ventilation, or ECMO
 - The Panel recommends using remdesivir for 5 days or until hospital discharge, whichever comes first (**AI**).
 - If a patient who is on supplemental oxygen while receiving remdesivir progresses to requiring delivery of oxygen through a high-flow device, noninvasive ventilation, or invasive mechanical ventilation, or ECMO, the course of remdesivir should be completed.

- For Patients Who Require Oxygen Delivery Through a High-Flow Device, Noninvasive Ventilation, Invasive Mechanical Ventilation, or ECMO
 - Because there is uncertainty regarding whether starting remdesivir confers clinical benefit in these groups of patients, the Panel cannot make a recommendation either for or against starting remdesivir.

Duration of Therapy for Patients Who Have Not Shown Clinical Improvement After 5 Days of Therapy

- There are insufficient data on the optimal duration of remdesivir therapy for patients with COVID-19 who have not shown clinical improvement after 5 days of therapy. In this group, some experts extend the total remdesivir treatment duration to up to 10 days (CIII).

Strength of Recommendation	Quality of Evidence for Recommendation
A: Strong recommendation for the statement	I: One or more randomized trials with clinical outcomes and/or validated laboratory endpoints
B: Moderate recommendation for the statement	II: One or more well-designed, nonrandomized trials or observational cohort studies
C: Optional recommendation for the statement	III: Expert opinion

Coding/Billing Information

Note: Drugs and biologics are typically covered under pharmacy benefit plans. Certain prescription drugs require an authorization for coverage to ensure that appropriate treatment regimens are followed. Medical drug coding and diagnosis codes, however, are generally not required for pharmacy claims submissions.

Note: 1) This list of codes may not be all-inclusive.

2) Deleted codes and codes which are not effective at the time the service is rendered may not be eligible for reimbursement.

Considered Medically Necessary when criteria in the applicable policy statements listed above are met:

HCPCS Codes	Description
J3262	Injection, tocilizumab, 1 mg
J3490 [†]	Unclassified drug injection
M0239	Intravenous infusion, bamlanivimab-xxxx, includes infusion and post administration monitoring
M0243	Intravenous infusion, casirivimab and imdevimab includes infusion and post administration monitoring
Q0239	Injection, bamlanivimab-xxxx, 700 mg
Q0243	Injection, casirivimab and imdevimab, 2400 mg

†Note: Considered Medically Necessary when used to report Remdesivir (Veklury®)

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