SEP 2022

Side-by-Side Overview of Therapeutics Authorized or Approved for the Prevention of COVID-19 Infection or Treatment of Mild to Moderate COVID-19

This table is a quick reference summarizing key information **for available pre-exposure prophylaxis (PrEP)** for preventing COVID-19 infection and **for all outpatient therapies currently authorized or approved in the United States for treatment** of mild to moderate COVID-19. If Paxlovid or Veklury are not indicated/available, bebtelovimab or Lagevrio should be considered.[1] This resource will be regularly reviewed and updated.

For full details, please review the Fact Sheets for Healthcare Providers for each product (links below).

PRODUCT	MONOCLONAL ANTIBODIES (mAbs)		IV ANTIVIRALS	ORAL ANTIVIRALS	
	Preventative (PrEP)	Treatment	Treatment	Treatment	
	Evusheld (tixagevimab/cilgavimab)	Bebtelovimab	Veklury (remdesivir)	Paxlovid (nirmatrelvir/ritonavir)	Lagevrio (molnupiravir)
Manufacturer	AstraZeneca Pharmaceuticals LP	Eli Lilly and Company	Gilead Sciences, Inc.	Pfizer, Inc.	Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc.
Product Websites	Evusheld website	Bebtelovimab website	Veklury website	Paxlovid website	Lagevrio website
Package Insert	N/A	N/A	Veklury Package Insert	N/A	N/A
Fact Sheets for Healthcare Providers	Evusheld Healthcare Provider Fact Sheet	Bebtelovimab Healthcare Provider Fact Sheet	N/A	Paxlovid Healthcare Provider Fact Sheet	Lagevrio Healthcare Provider Fact Sheet
Fact Sheets for Patients, Parents, and Caregivers (English)	Evusheld Patient Fact Sheet (English)	Bebtelovimab Patient Fact Sheet (English)	Veklury Patient Information (English)	Paxlovid Patient Fact Sheet (English)	Lagevrio Patient Fact Sheet (English)
Fact Sheets for Patients, Parents, and Caregivers (Spanish)	Evusheld Patient Fact Sheet (Spanish)	Bebtelovimab Patient Fact Sheet (Spanish)	N/A	Paxlovid Patient Fact Sheet (Spanish)	Lagevrio Patient Fact Sheet (Spanish)
Mechanism of Action	mAb against conserved epitope of spike protein; blocks viral entry	mAb against conserved epitope of spike protein; blocks viral attachment to host cells	Nucleotide analog ribonucleic acid (RNA) polymerase inhibitor that halts viral replication	Viral protease inhibitor that halts viral replication	Nucleoside analog that inhibits viral replication by viral mutagenesis
Treatment Efficacy per Clinical Trials[2]	77% reduction in developing symptomatic COVID-19	Day 5 reduction in viral load[3]	87% reduction in hospitalizations/deaths[4]	88% reduction in hospitalizations/deaths	30% reduction in hospitalizations/deaths
Activity Against SARS-CoV- 2 Variants[5]	See Section 12.4 of Evusheld Healthcare Provider Fact Sheet	See Section 12.4 of Bebtelovimab Healthcare Provider Fact Sheet	See Section 12.4 of Veklury Prescribing Information	See Section 12.4 of Paxlovid Healthcare Provider Fact Sheet	See Section 12.4 of Lagevrio Healthcare Provider Fact Sheet
Authorized Use(s)	Pre-exposure prophylaxis (PrEP)	Treatment of mild to moderate COVID-19	Treatment of mild to moderate COVID-19	Treatment of mild to moderate COVID-19	Treatment of mild to moderate COVID-19

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Eligible Population(s)[6]	Adult and pediatric patients (at least 12 years of age and older weighing at least 40 kg) who are not currently infected with SARS-CoV-2 and who have not had a known recent exposure to an individual infected with SARS CoV-2, and who have moderate to severe immune compromise or for those who any EUA or approved vaccine is not recommended	Adult and pediatric patients (at least 12 years of age and older weighing at least 40 kg) at high risk for progressing to severe COVID-19, including hospitalization or death, and for whom alternative COVID-19 treatment options approved or authorized by the U.S. Food and Drug Administration (FDA) are not accessible or clinically appropriate	**FDA-approved for:** Adults and pediatric patients (28 days of age and older and weighing at least 3 kg with positive results of direct severe acute respiratory SARS-CoV-2 viral testing who are (1) hospitalized or (2) not hospitalized and have mild-to-moderate COVID-19, and are at high risk for progression to severe COVID-19, including hospitalization or death	Adults and pediatric patients (12 years of age and older weighing at least 40 kg) at high risk for progressing to severe COVID-19, including hospitalization or death	Adult patients (18 years of age and older) at high risk for progressing to severe COVID-19, including hospitalization or death, and for whom alternative COVID-19 treatment options authorized by FDA are not accessible or clinically appropriate
Prescribing Window	Pre-exposure only	Initiate within 7 days of symptom onset	Initiate within 7 days of symptom onset	Initiate within 5 days of symptom onset	Initiate within 5 days of symptom onset
SARS-CoV-2 Testing	None	Positive SARS-CoV-2 viral test	Positive SARS-CoV-2 viral test	Positive SARS-CoV-2 viral test	Positive SARS-CoV-2 viral test
History Requirements	Not specified	Not specified	Assessment of renal health (eGFR) Assessment of hepatic health Assessment of prothrombin time	Assessment of renal health (eGFR) Assessment of hepatic health	Assessment of pregnancy status and oral contraceptive use Assessment of breastfeeding status
Limitations of Authorized Use	**Not authorized for**: • Patients less than 12 years of age • Patients weighing less than 40 kg • Treatment of COVID-19 • Post-exposure prophylaxis of COVID-19 in individuals who have been exposed to someone infected with SARS-CoV-2 In individuals who have received a COVID-19 vaccine, Evusheld should be administered at least two weeks after vaccination	**Not authorized for**: • Patients less than 12 years of age • Patients weighing less than 40 kg • Patients who are hospitalized due to COVID-19 • Patients who require oxygen therapy due to COVID-19 **OR** • Patients who require an increase in baseline oxygen flow rate and/or respiratory support due to COVID-19 and are on chronic oxygen therapy and/or respiratory support due to underlying non-COVID-19 related comorbidity.	This product has now received FDA approval. Please refer to prescribing information in package insert for further information.	**Not authorized for**: • Patients less than 12 years of age • Patients weighing less than 40 kg • Patients requiring hospitalization due to severe or critical COVID-19 • Pre-exposure or post-exposure prophylaxis for prevention of COVID-19 • Use for longer than 5 consecutive days	**Not authorized for**: • Patients less than 18 years of age • Initiation in patients who are hospitalized due to COVID-19 • Pre-exposure or post-exposure prophylaxis for prevention of COVID-19 Use for longer than 5 consecutive days

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Family Planning Considerations	None	None	None	Ritonavir may reduce the efficacy of combined hormonal contraceptives. Patients should use an effective alternative contraceptive method or an additional barrier method of contraception	Not recommended for use during pregnancy because may cause fetal harm when given to pregnant individuals based on animal reproduction studies. Authorized for use in pregnancy only if benefits would outweigh risks for the individual patient; documentation requirements apply Females of childbearing potential should be advised of potential risk to a fetus and should use a reliable method of contraception correctly and consistently, as applicable, for the duration of treatment and for 4 days after the last dose of Lagevrio Males of reproductive potential who are sexually active with females of childbearing potential should use a reliable method of contraception correctly and consistently during treatment and for at least 3 months after the last dose
Contraindications	Individuals with previous severe hypersensitivity reactions, including anaphylaxis, to any component of Evusheld	Individuals with previous severe hypersensitivity reactions, including anaphylaxis, to any component of bebtelovimab	Individuals with a history of clinically significant hypersensitivity reactions, including anaphylaxis, to Veklury or any components of the product Consider discontinuing Veklury if ALT levels increase to greater than 10 times the upper limit of normal. Discontinue Veklury if ALT elevation is accompanied by signs or symptoms of liver Inflammation	Individuals with significant hypersensitivity reactions, including anaphylaxis, to any component of Paxlovid Co-administration with drugs highly dependent on CYP3A[7] for clearance and for which elevated concentrations are associated with serious and/or life-threatening reactions Co-administration with potent CYP3A inducers where significantly reduced nirmatrelvir or ritonavir plasma concentrations may be associated with the potential for loss of virologic response and possible resistance	Individuals with significant hypersensitivity reactions, including anaphylaxis, to any component of Lagevrio
Administration Route(s)	IM Injection	IV Injection	IV Infusion	Oral	Oral

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Dosage	• **Initial Dose:** 300 mg of tixagevimab and 300 mg of cilgavimab administered as two separate consecutive intramuscular injections (preferably one in each of the gluteal muscles, one after the other) • **Repeat Dose**: The repeat dosage of Evusheld in adults and pediatric individuals (12 years of age and older weighing at least 40 kg) is 300 mg of tixagevimab and 300 mg of cilgavimab administered as two separate consecutive intramuscular (IM) injections every 6 months if ongoing protection is needed. Repeat dosing should be timed from the date of the most recent Evusheld dose	175 mg/2 mL (87.5 mg/mL) administered via IV injection over at least 30 seconds	**For adults and pediatric patients weighing at least 40 kg:** 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 IV infusion *For other non-hospitalized populations, see below*	300 mg nirmatrelvir (two 150 mg tablets) with 100 mg ritonavir (one 100 mg tablet) with all three tablets taken together orally twice daily for 5 days, can be taken with or without food [see Clinical Pharmacology (12.3)]. The tablets should be swallowed whole and not chewed, broken, or crushed *For patients with renal impairment, see below*	800 mg (four 200 mg capsules) taken orally every 12 hours for 5 days, with or without food
Dosage for Special Populations	**Pediatric patients at least 12 years or older, and weighing at least 40 kg:** No dosage adjustment **Pregnancy or Lactation:** No dosage adjustment **Geriatrics:** No dosage adjustment **Renal:** No dosage adjustment **Hepatic:** Not specified	**Pediatric patients at least 12 years or older, and weighing at least 40 kg:** If eligible, no dosage adjustment **Pregnancy or Lactation:** No dosage adjustment **Geriatrics:** No dosage adjustment **Renal:** No dosage adjustment **Hepatic:** No dosage adjustment for mild hepatic impairment	**Pediatric patients 28 days of age and older and weighing at least 3 kg to less than 40 kg:** a single loading dose of Veklury 5 mg/kg on Day 1 via intravenous infusion followed by once-daily maintenance doses of Veklury 2.5 mg/kg from Day 2 via intravenous infusion **Renal:** Not recommended in patients with eGFR less than 30 mL/min	**Pediatric patients at least 12 years or older, and weighing at least 40 kg:** No dosage adjustment **Pregnancy or Lactation:** No dosage adjustment **Renal**: No dosage adjustment is needed in patients with mild renal impairment Dose reduction for moderate renal impairment (eGFR ≥30 to <60 mL/min): 150 mg nirmatrelvir (one 150 mg tablet) with 100 mg ritonavir (one 100 mg tablet), with both tablets taken together twice daily for 5 days Paxlovid is not recommended in patients with severe renal impairment (eGFR <30 mL/min) **Hepatic:** No dosage adjustment for mild or moderate hepatic impairment Paxlovid is not recommended for use in patients with severe hepatic impairment	**Pediatrics under 18 years old:** Not eligible, as it may affect bone and cartilage growth **Pregnancy or Lactation:** Not recommended for use during pregnancy. Breastfeeding not recommended during treatment or for 4 days after final dose **Renal:** No dosage adjustment **Hepatic:** No dosage adjustment

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Post-Administration Observation Period	One hour	One hour	One hour	None	None
Adverse Events (from Clinical Trials)[8]	**Adverse events:** Headache (6%), fatigue (4%), and cough (3%) Injection site reactions (1%); One case of anaphylaxis; Insomnia (1%), dizziness (1%) Cardiac serious adverse events (SAE) were 0.6% vs 0.2% in the Evusheld and placebo groups, respectively	**Adverse reactions** were infusion-related reactions (0.3%), pruritus (0.3%), and rash (0.8%) **Most common adverse events**: nausea (0.8%) and vomiting (0.7%) **Infusion-related reactions may include** fever, difficulty breathing, reduced oxygen saturation, chills, fatigue, arrhythmia, chest pain or discomfort, weakness, altered mental status, nausea, headache, bronchospasm, hypotension, hypertension, angioedema, throat irritation, rash including urticaria, pruritus, myalgia, vasovagal reactions dizziness, and diaphoresis	**Adverse events**[4] (incidence ≥1%) were nausea (10.8%), headache (5.7%), cough (3.6%), diarrhea (3.9%), dyspnea (2.5%), fatigue (3.6%), ageusia (2.9%), anosmia (3.2%), dizziness (1.8%), and chills (2.2%) **Lab abnormalities**[4]: All grade 3 or higher (10.8%)	**Adverse events** (incidence ≥1% and ≥5 patient difference) were dysgeusia (6%), diarrhea (3%), hypertension (1%), and myalgia (1%) **Other reactions noted:** Allergic reactions, abdominal pain, nausea, and malaise (feeling generally unwell)[9]	**Adverse events** (incidence ≥1%) were diarrhea (2%), nausea (1%), and dizziness (1%) **Lab abnormalities***:* Selected Grade 3 and 4 laboratory abnormalities in chemistry (ALT, AST, creatinine, and lipase) and hematology (hemoglobin, platelets, and leukocytes) parameters all occurred at a rate ≤2% *Post-Authorization Experience:* Immune System Disorders: hypersensitivity, anaphylaxis, angioedema Skin and Subcutaneous Tissue Disorders: erythema, rash, urticaria
Potential for Drug-Drug Interactions	Unlikely	Unlikely	Low Fact Sheet [Drug Interactions Section (10)] [See Section (7)]	Moderate/High [see Fact Sheet Drug Interactions Section (7)]	Low No drug interactions have been identified based on the limited available data
Potential for Patient Non-Compliance	Minimal	Minimal	Moderate	Moderate	Moderate
Cost to Patients for USG-Procured Drug[10]	Medicare/Medicaid: $0 Private insurers: $0	Medicare/Medicaid: $0 Private insurers: $0 For information about coverage for commercially purchased product, refer to CMS COVID-19 Monoclonal Antibodies	Currently not procured by USG. For more information, refer to ASPR's Veklury homepage.	Medicare/Medicaid: $0 Private insurers: $0	Medicare/Medicaid: $0 Private insurers: $0
Provider Payment (Administration or Dispensing Fee)[10, 11, 12, 13]	**Medicare:** $150.50 (most settings); $250.50 (beneficiary's home or residence, in certain circumstances) **Medicaid/Private insurers:** Variable	**Medicare:** $350.50 (healthcare settings); $550.50 (beneficiary's home or residence, in certain circumstances) **Medicaid/Private insurers:** Variable	**Medicare:** For outpatient setting refer to Medicare FAQ Fee for Service Billing (ref Q30 on p.146) **Medicaid/Private insurers:** Variable	Provider may bill applicable insurance or program for dispensing fees **Medicare:** CMS encourages Part D sponsors to pay higher than the usual negotiated dispensing fees given the unique circumstances of the PHE and administrative requirements associated with dispensing US Government-procured oral antivirals	Provider may bill applicable insurance or program for dispensing fees **Medicare**: CMS encourages Part D sponsors to pay higher than the usual negotiated dispensing fees given the unique circumstances of the PHE and administrative requirements associated with dispensing US Government-procured oral antivirals
Product Availability	Variable by jurisdiction and healthcare facility; no supply constraints	Commercially available, not subject to USG allocation limits	Commercially available, not subject to USG allocation limits	Variable by jurisdiction and healthcare facility; no supply constraints	Variable by jurisdiction and healthcare facility; no supply constraints

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Other Considerations	May be prescribed for an individual patient by physicians, advanced practice registered nurses, and physician assistants that are licensed or authorized under state law to prescribe drugs in the therapeutic class to which Evusheld belongs (i.e., anti-infectives) Trained staff in IM administration; immediate access to resuscitation meds	May be prescribed for an individual patient by physicians, advanced practice registered nurses, and physician assistants that are licensed or authorized under state law to prescribe drugs in the therapeutic class to which bebtelovimab belongs (i.e., anti-infectives) Infusion supplies; trained staff in IV administration; IV access; immediate access to resuscitation meds; ability to activate EMS	May be prescribed for an individual patient by physicians, advanced practice registered nurses, and physician assistants that are licensed or authorized under state law to prescribe drugs in the therapeutic class to which Veklury belongs (i.e., anti-infectives) Infusion supplies; trained staff in IV administration; IV access; immediate access to resuscitation meds; ability to activate EMS in outpatient settings	May be prescribed for an individual patient by physicians, pharmacists, advanced practice registered nurses, and physician assistants that are licensed or authorized under state law to prescribe drugs in the therapeutic class to which Paxlovid belongs (i.e., anti-infectives) **May be prescribed by a state-licensed pharmacist under the following conditions:** • Sufficient information is available, such as through access to health records less than 12 months old or consultation with a health care provider in an established provider-patient relationship with the individual patient, to assess renal and hepatic function; and • Sufficient information is available, such as through access to health records, patient reporting of medical history, or consultation with a health care provider in an established provider-patient relationship with the individual patient, to obtain a comprehensive list of medications (prescribed and non-prescribed) that the patient is taking to assess for potential drug interaction **The state-licensed pharmacist should refer an individual patient for clinical evaluation (e.g., telehealth, in-person visit) with a physician, advanced practice registered nurse, or physician assistant licensed or authorized under state law to prescribe drugs, if any of the following apply:** • Sufficient information is not available to assess renal and hepatic function • Sufficient information is not available to assess for a potential drug interaction • Modification of other medications is needed due to a potential drug interaction	May be prescribed for an individual patient by physicians, advanced practice registered nurses, and physician assistants that are licensed or authorized under state law to prescribe drugs in the therapeutic class to which Lagevrio belongs (i.e., anti-infectives)

[1] For more details on Therapeutic Management, see Therapeutic Management of Nonhospitalized Adults With COVID-19

[2] For more details on clinical trial results, see Section 18 of each respective product's Fact Sheet for Health Care Providers.

[3] The placebo-controlled phase 2 data are limited by enrollment of only subjects without risk factors for progression to severe COVID-19, and the trial was not powered or designed to determine a difference in the clinical outcomes of hospitalization or death between the placebo and bebtelovimab treatment arms [EUA Section 14.4].

[4] For more details, see Early Remdesivir to Prevent Progression to Severe Covid-19 in Outpatients

[5] For more details, see NCATS open data website.

[6] For more details, see each product's Fact Sheet for Health Care Providers for additional details and criteria for identifying high risk patients/individuals. CDC also maintains a listing underlying medical conditions associated with higher risk for severe COVID-19.

[7] For more details, see Paxlovid Patient Eligibility Checklist

[8] For more details on adverse events from clinical trials, see Section 6 of each respective product's Fact Sheet for Health Care Providers. For more details on clinical worsening after administration, see Section 5.

[9] For more information on Paxlovid EUA, see FAQs on the Emergency Use Authorization for Paxlovid for Treatment of COVID-19.

[10] For more details on Medicaid resources, see Medicaid Coronavirus Disease 2019. For more details on Medicare FAQ Fee for Service, Medicare FAQ Fee for Service Billing.

[11] For more details, see the CMS COVID-19 Monoclonal Antibodies Infographic and CMS COVID-19 Monoclonal Antibodies.

[12] Some patients/individuals may be responsible for co-pays, deductibles, and/or other charges.

[13] For more details on CMS Part B, see CMS billing codes, Medicare allowances, and effective dates for COVID-19 vaccines and monoclonal antibodies.