NDSU | CENTER FOR COLLABORATION AND ADVANCEMENT IN PHARMACY

Infectious Disease Prescribing Reference Guide

March 2026

Guideline Based Treatment for

- Cold Sores
- SARS-CoV-2 (COVID-19)
- HIV PEP
- Influenza
- Lice
- Lyme Disease Prophylaxis
- Strep Throat

Cold Sores (Herpes Labialis)

Diagnosis

- Appearance of lesions, usually as clusters of vesicles on the lip
- May have erythematous base
- May ulcerate and form a crust

Treatment

- Oral treatments are more effective than topical treatments
- Episodic treatment is most effective when started at the onset of symptoms
- For cold sores located near the eye, refer to a provider

Episodic Oral Treatment	
Drug	Dose
Acyclovir	200 mg by mouth five times per day OR 400 mg three times per day for five days
Famciclovir	One time dose of 1,500 mg by mouth
Valacyclovir	2 g by mouth twice daily for one day

Cold Sores Continued

Episodic Topical Treatment	
Drug	**Dose**
Acyclovir cream	Apply five times per day for four days
Docosanol cream (Available OTC)	Apply five times per day until healed
Penciclovir cream	Apply every two hours while awake for four days

Preventative Oral Treatment	
Drug	**Dose**
Acyclovir	400 mg twice per day (ongoing)
Valacyclovir	500 mg once per day (ongoing)

Counseling Tips

- Discard items like lip balm used during cold sores, as the virus can easily spread through contaminated products
- Lip balm with SPF 30 or higher may help prevent new cold sores as the sun can be a trigger for some people

Usatine RP, Tinitigan R. Nongenital herpes simplex virus. Am Fam Physician. 2010;82(9):1075-1082.

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

Diagnosis

A positive test for SARS-CoV-2 within 5 days of symptom onset

- Most common symptoms: cough, fever, shortness of breath
- Additional reported symptoms:
  - Chills, fatigue, muscle pain, headache, sore throat
  - New loss of taste or smell
  - Congestion or runny nose
  - Nausea, vomiting, diarrhea

Treatment

- Treatment depends on risk for progression to severe disease
- Refer to the guidelines for a full list of risk factors

High risk or multiple factors associated with increased risk	Recommend oral nirmatrelvir/ritonavir (Paxlovid®)
Increased but not high risk	Suggest oral nirmatrelvir/ritonavir (Paxlovid®)
Without risk factors	Recommend AGAINST oral nirmatrelvir/ritonavir (Paxlovid®)

SARS-CoV-2 Continued

Increased Risk for Progression

- Age 65-74 years
- ASCVD
- Asthma and chronic lung diseases
- Cirrhosis and chronic liver diseases
- Diabetes mellitus, obesity, and physical inactivity
- End-stage renal disease

High Risk for Progression

- Age ≥ 75 years
- HIV infection with CD4 < 200 cells/mm^3
- Solid organ transplant
- Immunosuppressive therapies (e.g., high dose corticosteroids, chemotherapy agents)

Renal Dosing	
eGFR	Dose
≥ 60 mL/min	300 mg (2 x 150 mg tablets) nirmatrelvir PLUS ritonavir 100 mg (1 tablet) every 12 hours for 5 days
≥ 30 to < 60 mL/min	150 mg (1 tablet) nirmatrelvir PLUS ritonavir 100 mg (1 tablet) every 12 hours for 5 days
< 30 mL/min or hemodialysis	300 mg (2 x 150 mg tablets) nirmatrelvir PLUS ritonavir 100 mg (1 tablet) daily for 1 day, THEN 150 mg (1 tablet) nirmatrelvir PLUS ritonavir 100 mg (1 tablet) daily for 4 days

Counseling Tips

- If a patient has or develops severe COVID-19 (e.g., hypoxia or requires oxygen/ventilatory support), instruct them to self-refer to a healthcare facility to consider alternative treatments and evaluate the need for hospitalization

COVID-19 Treatment Drug Interaction Checker

http://www.covid19-druginteractions.org/checker

Scan the QR code to visit the online interaction checker

Bhimraj A, Falck-Ytter Y, Baden LR, et al. IDSA guidelines on the treatment and management of patients with COVID-19. IDSA. October 14, 2025. Accessed March 3, 2026. https://www.idsociety.org/practice-guideline/covid-19-guideline-treatment-and-management/.

Notes

Any questions, contact the CAP Center at
NDSU.CAPCenter@ndsu.edu

Human Immunodeficiency Virus (HIV) Postexposure Prophylaxis for Nonoccupational Exposure (nPEP)

nPEP Recommended:

- An exposure occurred within the past 72 hours that presents a substantial risk for HIV transmission AND
- The source has HIV without sustained viral suppression or their viral suppression information is not known

nPEP NOT Recommended:

- The exposure presents no substantial risk for HIV transmission
- Treatment is sought > 72 hours after exposure

Initial Recommended Laboratory Testing

- HIV test
- Serum creatinine
- Serum liver enzyme tests (ALT/AST)
- Pregnancy testing
- Hepatitis B virus

Do not withold antivirals while waiting for test results

HIV nPEP Continued

All nPEP regimens have a duration of 28 days		
Group	**Preferred/ Alternative**	**Oral Regimen**
Adults and adolescents ≥ 12 years	Preferred	BIC / FTC / TAF
		DTG PLUS (TAF OR TDF) PLUS (FTC OR 3TC)
	Alternative	DRV and COBI OR DRV and RTV PLUS (TAF OR TDF) PLUS (FTC OR 3TC)
Children ≥2 to 12 years	Preferred	BIC / FTC / TAF
		DTG PLUS (TAF OR TDF) PLUS (FTC OR 3TC)

Refer to the guidelines for pregnant women and children < 2 years old

BIC - Bictegravir
COBI - Cobicistat
DRV - Darunavir
DTG - Dolutegravir
FTC - Emtricitabine
3TC - Lamivudine
RTV - Ritonavir
TAF - Tenofovir alafenadmide
TDF - Tenofovir disoproxil fumarate

HIV nPEP Continued

Combination Products	
Standard Dose	Renal Function Considerations
BIC 50 mg/FTC 200 mg/TAF 25 mg (Biktarvy®) once daily	Not recommended for CrCl < 30 mL/min
DRV 800 mg/COBI 150 mg/FTC 200 mg/TAF 10 mg (Symtuza®) once daily	Not recommended for CrCl < 30 mL/min
DRV 800 mg/COBI 150 mg (Prezcobix®) once daily	Do not co-administer with TDF for CrCl < 70 mL/min
FTC 200 mg/TAF 25 mg (Descovy®) once daily	Not recommended for CrCl < 30 mL/min
FTC 200 mg/TDF 300 mg (Truvada®) once daily	Dose adjust required for CrCl 30-49 mL/min; Not recommended for CrCl < 30 mL/min
TDF 300 mg/3TC 300 mg (Cimduo®) once daily	Not recommended for CrCl < 50 mL/min

HIV nPEP Continued

Single-Drug Products	
Standard Dose	Renal Function Considerations
DRV (Prezista®) 800 mg (with RTV 100 mg once daily	Use standard dose
DTG (Tivicay®) 50 mg once daily	Use standard dose
FTC (Emtriva®) 200 mg once daily	Dose adjustment required for CrCl < 30 mL/min
3TC (Epivir®) 300 mg once daily OR 150 mg twice daily	Dose adjustment required for CrCl < 30 mL/min
RTV 100 mg (Norvir®) with each dose of DRV	Use standard dose
TAF 25 mg (Vemlidy®) once daily	Not recommended for CrCl < 15 mL/min
TDF 300 mg (Viread®) once daily	Dose adjustment required for CrCl < 50 mL/min Not recommended for CrCl < 10 mL/min

HIV nPEP Continued

Counseling Tips

- Common nPEP drug side effects include: nausea, GI upset, headache, myalgia
- Possible nPEP drug interactions: antacids, calcium, iron supplements
- Stress the importance of adherence to the nPEP regimen for 28 days, without interruption
- Recommend pre-exposure prophylaxis (PrEP) initiation immediately after completion of nPEP for patients with ongoing risk of HIV infection
- Recommend HIV follow-up testing to be conducted 4-6 weeks post-nPEP initiation
- Recommend testing for hepatitis C and other STIs—such as gonorrhea, chlamydia, and syphilis—based on the patient's clinical situation
- Recommend risk-reduction counseling and intervention services for patients at risk of frequent HIV exposures (e.g., injection drug use, sex without condoms)

Tanner MR, O'Shea JG, Byrd KM, et al. Morbidity and mortality weekly report (MMWR): Recommendations and reports / vol. 74 / no. 1, May 8, 2025. Centers for Disease Control and Prevention. May 8, 2025. Accessed March 4, 2026. https://stacks.cdc.gov/view/cdc/177225.

Influenza

Diagnosis

Test patients who:

- Have symptoms and are at high-risk of complications from influenza
- Have acute respiratory symptoms and either worsening chronic conditions (e.g., asthma, COPD, heart failure) or known influenza complications
- Are not at high risk for complications if symptoms began ≤ 2 days prior

Signs and symptoms of influenza include:

- Fever, chills, malaise, fatigue
- Headache, nasal congestion, rhinorrhea
- Sore throat/hoarseness
- Myalgia, arthralgia, weakness, chest pain
- Abdominal pain, vomiting, diarrhea
- Nonproductive cough, pleuritic chest pain

High Risk of Complications

- Children < 5 years
- Adults ≥ 65 years
- People with chronic pulmonary, cardiovascular, renal, hepatic, hematologic, or metabolic disorders
- People with immunosuppression
- Women who are pregnant or postpartum
- People with extreme obesity (BMI ≥ 40 kg/m^2)

Influenza Continued

Treatment

- If ≤ 2 days since symptom onset, may use oseltamivir, zanamivir, or baloxavir
  - Inhaled zanamivir is not recommended in patients with underlying respiratory disease (e.g. asthma, COPD)
- If > 2 days since symptom onset, oseltamivir is recommended

Treatment (Adults)		
Antiviral	Dose	Duration
Oral oseltamivir	75 mg **twice** daily	5 days
Inhaled zanamivir	10 mg (two 5-mg inhalations) **twice** daily	5 days
Oral baloxavir	Weight < 80 kg: one 40 mg dose Weight ≥ 80 kg: one 80 mg dose	1 day

Influenza Continued

Treatment (Children)		
Antiviral	Dose	Duration
Oral oseltamivir	If < 1 year: 3 mg/kg/dose **twice** daily If > 1 year the dose is weight based: <15 kg: 30 mg **twice** daily >15-23 kg: 45 mg **twice** daily >23-40 kg: 60 mg **twice** daily >40 kg: 75 mg **twice** daily	5 days
Inhaled zanamivir	For children ≥ 7 years: 10 mg (two 5-mg inhalations) **twice** daily	5 days
Oral baloxavir	For children ≥ 5 years: < 20 kg: single dose of 2 mg/kg by suspension 20 to < 80 kg: single dose of 40 mg by tablet or suspension ≥ 80 kg: single dose of 80 mg by tablet or suspension	1 day

Influenza Continued

Postexposure Chemoprophylaxis

- After household exposure to influenza, consider for asymptomatic individuals ≥ 3 months old who are:
  - At very high risk of complications AND
  - Unvaccinated
- For patients who do not meet the above chemoprophylaxis criteria, wait until symptom onset and initiate treatment within two days

Chemoprophylaxis (Adults)		
Antiviral	Dose	Duration
Oral oseltamivir	75 mg **once** daily	7 days
Inhaled zanamivir	10 mg (two 5-mg inhalations) **once** daily	7 days
Oral baloxavir (Dose for chemoprophylaxis is the same as treatment)	Weight < 80 kg: one 40 mg dose Weight ≥ 80 kg: one 80 mg dose	1 day

Influenza Continued

Chemoprophylaxis (Children)		
Antiviral	**Dose**	**Duration**
Oral oseltamivir	If < 1 year : 3 mg/kg/dose **once** daily If ≥ 1 year, dosing is as follows: ≤ 15 kg: 30 mg **once** daily >15-23 kg: 45 mg **once** daily >23-40 kg: 60 mg **once** daily >40 kg: 75 mg **once** daily	7 days
Inhaled zanamivir	For children ≥ 5 years: 10 mg (two 5-mg inhalations) **once** daily	7 days
Oral baloxavir (Dose for chemoprophylaxis is the same as treatment)	For children ≥ 5 years: < 20 kg: single dose of 2 mg/kg by suspension 20 to < 80 kg: single dose of 40 mg by tablet or suspension ≥ 80 kg: single dose of 80 mg by tablet or suspension	1 day

Influenza antiviral medications: Summary for clinicians. Centers for Disease Control and Prevention. January 12, 2026. Accessed March 4, 2026. https://www.cdc.gov/flu/hcp/antivirals/summary-clinicians.html.

Uyeki TM, Bernstein HH, Bradley JS, et al. Clinical practice guidelines by the Infectious Diseases Society of America: 2018 update on diagnosis, treatment, chemoprophylaxis, and institutional outbreak management of seasonal Influenza. *Clinical Infectious Diseases*. 2018;68(6). doi:10.1093/cid/ciy866

Lice

Diagnosis

Head and Pubic Lice

- Identification of at least one live louse upon visual inspection
- Finding only nits (lice eggs) does not require treatment as they can remain on the hair for months after treatment

Body Lice

- Identification of lice or nits in the seams of clothing as lice lay their eggs in cloth fibers

Treatment

Head Lice

- First line: permethrin 1% lotion
- If treatment is unsuccesful after two courses of permethrin, use a different treatment agent

Pubic Lice

- First line: permethrin 1% lotion or pyrethrins 0.3%/piperonyl butoxide 4% shampoo
- Alternative: malathion 0.5% lotion

Body Lice

- No recommended pharmacologic treatment
- Launder clothing and bedding in hot water
- Bathe regularly

Lice Continued

Non-Ovicidal Treatments	
Permethrin 1% shampoo (Available OTC)	**Apply to damp hair, leave on for 10 minutes then rinse; repeat in 7 days**
Pyrethrins 0.3%/ piperonyl butoxide 4% shampoo or mousse (Available OTC)	Apply to dry hair, leave on for 10 minutes then rinse; repeat in 7 days
Dimethicone solution (Available OTC)	Spray all over dry hair, and massage until wet; let it sit for 30 minutes, then comb into hair; leave on overnight; wash out, and use a lice comb; repeat in 8-10 days
Ovicidal Treatments	
Ivermectin 0.5% lotion (Prescription Only)	Apply to dry hair and scalp, leave on for 10 minutes then rinse; one application is sufficient
Malathion 0.5% lotion (Prescription Only)	Apply to dry hair until hair and scalp are wet, allow to dry naturally, shampoo 8-12 hours later, rinse and use a lice comb; repeat after 7 to 9 days only if live lice are still present
Spinosad 0.9% suspension (Prescription Only)	Apply to dry hair, leave on for 10 minutes then rinse; repeat in 7 days only if live lice are present

Lice Continued

Nonpharmacologic Treatment Alternative

- Wet combing for head lice:
  - Wash hair with shampoo and apply leave-in conditioner
  - Comb the hair from root to tip with lice comb
  - Rinse the conditioner out and comb the hair with the lice comb again
- Repeat every 3 to 5 days until no lice are found on four to five consecutive occasions

Counseling Tips

- To help find lice in hair use a bright light, magnifying glass, or a lice comb
- If head lice are found in one person, their entire household should be examined
- If pubic lice are identified, any sexual partners from the previous month should also be treated
- Children can attend school during treatment, even with active infestation, because transmission risk is low
- Wash items that contacted the lice-infested area within two days before treatment; use a washer or dryer at ≥130°F (54°C)
  - Alternatively, items can be placed in a sealed plastic bag for two weeks

Gunning K, Kiraly B, Pippitt K. Lice and Scabies: Treatment Update. *Am Fam Physician*. 2019;99(10):635-642.

Nolt D, Moore S, Yan AC, Melnick L. Head lice. *Pediatrics*. 2022;150(4). doi:10.1542/peds.2022-059282

Antimicrobial Prophylaxis for Lyme Disease

Lyme disease is a vector-borne infection caused by the bacteria, *Borrelia burgdorferi*. It is spread to humans through a bite from an infected blacklegged (deer) tick (*Ixodes scapularis*) or western blacklegged tick (*Ixodes pacificus*).

Diagnosis

Prophylaxis can be given within 72 hours of removing an identified high-risk tick bite that meets the following criteria:

- The tick bite was from an identified *Ixodes spp.* vector species
- The tick bite occurred in a highly endemic area
  - Endemic areas map available at: https://www.cdc.gov/lyme/data-research/facts-stats/lyme-disease-case-map.html
- The tick was attached for ≥ 36 hours

Treatment

Adult Dosing	Pediatric Dosing
Doxycycline 200 mg as a single oral dose	Doxycycline 4.4 mg/kg as a single oral dose Max: 200 mg

Lantos PM, Rumbaugh J, Bockenstedt LK, et al. Clinical practice guidelines by the Infectious Diseases Society of America (IDSA), American Academy of Neurology (AAN), and American College of Rheumatology (ACR): 2020 guidelines for the prevention, diagnosis and treatment of lyme disease. *Clinical Infectious Diseases*. 2020;72(1). doi:10.1093/cid/ciaa1215

Group A Streptococcal (GAS) Pharyngitis (Strep Throat)

Diagnosis

Test if symptoms suggest GAS infection:

- Sudden onset of sore throat, pain with swallowing
- Patchy exudate on tonsils and/or pharynx
- Palatal petechiae
- Fever, headache
- Nausea, vomiting, abdominal pain

DO NOT test if symptoms suggest viral etiology:

- Conjunctivitis, rhinitis
- Cough, hoarseness
- Oral ulcers
- Diarrhea

Testing is not indicated for children <3 years old as strep throat is uncommon in this age group

Treatment

Consider reviewing a local antibiogram for local resistance trends prior to selecting treatment for a positive test

Clinical guidance for Group A streptococcal pharyngitis. Centers for Disease Control and Prevention. November 18, 2025. Accessed March 4, 2026. https://www.cdc.gov/group-a-strep/hcp/clinical-guidance/strep-throat.html.

Shulman ST, Bisno AL, Clegg HW, et al. Clinical practice guideline for the diagnosis and management of Group A streptococcal pharyngitis: 2012 update by the Infectious Diseases Society of America. *Clinical Infectious Diseases*. 2012;55(10). doi:10.1093/cid/cis629

Strep Throat Continued

First Line Treatment		
Oral Antibiotic	**Dose**	**Duration**
Amoxicillin	50 mg/kg once daily Max: 1000 mg/day	10 days
Penicillin V	Children: 250 mg twice daily or three times daily Adolescents and adults: 250 mg four times daily or 500 mg twice daily	10 days

Second Line Treatment (Options for Patients with a Penicillin Allergy)		
Oral Antibiotic	**Dose**	**Duration**
Azithromycin	12mg/kg once daily Max: 500 mg	5 days
Cefadroxil	30 mg/kg once daily Max: 1000 mg	10 days
Cephalexin	20 mg/kg/dose twice daily Max: 500 mg/dose	10 days
Clarithromycin	7.5 mg/kg/dose twice daily Max: 250 mg/dose	10 days
Clindamycin	7 mg/kg/dose three times daily Max: 300 mg/dose	10 days

Notes

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