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INSTRUCTIONS

1. After carefully reading this lesson, study each question and select the one answer you believe to be correct. For immediate results answer online at www.CanadianHealthcareNetwork.ca.
2. To pass this lesson, a grade of at least 70% (10 out of 15) is required. If you pass, your CEU(s) will be recorded with the relevant provincial authority(ies). (Note: some provinces require individual technicians to notify them.)

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HIV/AIDS: Engaging effectively with people living with HIV infection

by Deborah Kelly, BSc(Pharm), ACPR, PharmD, FCSHP, AAHIVP



Learning objectives

Upon successful completion of this lesson, the pharmacy technician will be able to do the following:

1. Be aware of latest trends in the epidemiology of HIV infection in Canada.
2. Describe the prognosis and treatment goals for patients living with HIV infection.
3. Discuss the principles of HIV treatment using antiretroviral medications and important patient counselling points.
4. Describe barriers to effective communication and ways to create a trusting relationship with patients in the pharmacy.
5. Suggest ways to support patients in achieving their optimal medication therapy goals and best health outcomes.

Overview

Once a devastating fatal illness, human immunodeficiency virus (HIV) infection is now a chronic manageable disease due to widespread availability of highly effective medica-

tions called antiretroviral therapy.⁽¹⁾ There is currently no cure for HIV infection, but it is preventable and highly treatable. The life expectancy for someone diagnosed early and who begins therapy is nearly the same as for

>> CONTINUED ON PAGE 3

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TABLE 1 - Antiretroviral medications used for the treatment of HIV infection, by drug class^(7, 14)

Generic name (Brand names; *Combination products)	Usual recommended dosage for adults	Food requirement/ restriction	Comments
Class: Nucleoside/nucleotide reverse transcriptase inhibitors			
Abacavir (Ziagen, generics; *component of: Kivexa, Triumeq, Trizivir)	300 mg po bid, or 600 mg po daily	None	<ul style="list-style-type: none"> • Generally well-tolerated • Should be avoided in patients who have the HLA-B5701 gene (which suggests a genetic predisposition to developing a hypersensitivity reaction), and those who have a history of abacavir hypersensitivity reaction
Didanosine (Videx EC)	400 mg po daily (250 mg po daily if patient weighs < 60 kg)	Take on empty stomach (30 min before or 2 hours after meals)	<ul style="list-style-type: none"> • Rarely used anymore • Poorly tolerated
Emtricitabine (*component of: Atripla, Complera, Descovy, Genvoya, Odefsey, Stribild, Truvada)	200 mg po daily	None	<ul style="list-style-type: none"> • Well-tolerated • Only available as a component of combination therapy in Canada
Lamivudine (3TC, generics; *component of: Combivir, Kivexa, Triumeq, Trizivir)	150 mg po bid, or 300 mg po daily	None	<ul style="list-style-type: none"> • Well-tolerated
Stavudine (Zerit)	40 mg po bid (30 mg po bid if patient weighs < 60 kg)	None	<ul style="list-style-type: none"> • Rarely used anymore • Poorly tolerated
Tenofovir alafenamide (*component of: Descovy, Genvoya, Odefsey)	10 mg or 25 mg po daily, depending on drug interactions with concomitant medications	None	<ul style="list-style-type: none"> • Newer formulation of tenofovir; will likely replace tenofovir disoproxil fumarate in future and has already replaced it in several combination products (see tables 2 & 3) • Associated with less long-term toxicity vs. tenofovir disoproxil fumarate
Tenofovir disoproxil fumarate (Viread; *component of: Atripla, Complera, Stribild, Truvada & generics)	300 mg po daily	None	<ul style="list-style-type: none"> • Generally well-tolerated • Associated with nephrotoxicity and reduced bone mineral toxicity long-term in some patients • Truvada (and generics) are the only antiretroviral medications that have been approved for the prevention of HIV infection in select patients; dose is one tablet po daily for HIV prevention, and must receive HIV testing every 3 months as part of a prevention program.
Zidovudine (Retrovir, generics; *component of Combivir & generics, Trizivir)	300 mg po bid	None	<ul style="list-style-type: none"> • Rarely used anymore • Poorly tolerated
Class: Non-nucleoside reverse transcriptase inhibitors			
Efavirenz (Sustiva, generics; component of Atripla & generics)	600 mg po daily	Take on empty stomach	<ul style="list-style-type: none"> • Best taken at bedtime to improve tolerability • Food can increase CNS adverse effects – dizziness, insomnia, vivid dreams • Many drug interactions
Etravirine (Intelence)	200 mg po bid, or 400 mg po daily	Take with food	<ul style="list-style-type: none"> • Usually well-tolerated • Many drug interactions
Nevirapine (Viramune, Viramune XR, generics)	Initial dose: 200 mg po daily x 14 days, then increase to 200 mg po bid or 400 mg po once daily	None	<ul style="list-style-type: none"> • Rarely used anymore in Canada • Many drug interactions
Rilpivirine (Edurant; *component of Complera, Odefsey)	25 mg po daily	Take with a meal	<ul style="list-style-type: none"> • Full absorption requires administration with at least 400 kcal meal • Acid-reducing medications will reduce absorption – space from antacids and H2 receptor antagonists (e.g., ranitidine); contraindicated with proton pump inhibitors (e.g., omeprazole)

>> TABLE #1 Cont.

Generic name (Brand names; *Combination products)	Usual recommended dosage for adults	Food requirement/restriction	Comments
Class: Protease Inhibitors			
Atazanavir (Reyataz)	400 mg po daily, or 300 mg po daily when co-administered with ritonavir	Take with food	<ul style="list-style-type: none"> • Avoid use of or space administration from acid-reducing medications (antacids, H2 receptor antagonists, proton pump inhibitors) • Many drug interactions
Darunavir (Prezista; *component of Prezcofix)	800 mg po once daily (with ritonavir 100 mg po once daily), or 600 mg po bid (with ritonavir 100 mg po bid)	Take with food	<ul style="list-style-type: none"> • Generally well-tolerated, although some patients have GI side effects • Many drug interactions
Fosamprenavir (Telzir)	1400 mg po bid, or 700 mg po bid (with ritonavir 100 mg po bid), or 1400 mg po daily (with ritonavir 100–200 mg po daily)	Take with food	<ul style="list-style-type: none"> • Rarely used anymore • Many drug interactions
Lopinavir (*component of Kaletra)	Four tablets po once daily (=800 mg lopinavir + ritonavir 200 mg), or two tablets po bid (=400 mg lopinavir + ritonavir 100 mg)	Take with food	<ul style="list-style-type: none"> • Rarely used anymore • GI adverse events (nausea, vomiting, diarrhea) common • Many drug interactions
Nelfinavir (Viracept)	1250 mg po bid or 750 mg po tid	Take with food	<ul style="list-style-type: none"> • Rarely used anymore • Diarrhea occurs commonly • Many drug interactions
Tipranavir (Aptivus)	500 mg po bid	Take with food	<ul style="list-style-type: none"> • Rarely used • Many drug interactions
Class: Integrase Strand Transfer Inhibitors			
Dolutegravir (Tivicay; *component of Triumeq)	50 mg po daily or bid	None	<ul style="list-style-type: none"> • Generally well-tolerated • May cause insomnia
Elvitegravir (*component of: Genvoya, Stribild)	150 mg po daily (with cobicistat 150 mg po daily)	Take with food	<ul style="list-style-type: none"> • Food improves absorption • Generally well-tolerated
Raltegravir (Isentress, Isentress HD)	Isentress: 400 mg po bid Isentress HD: 1200 mg (2 x 600 mg tablets) po once daily	None	<ul style="list-style-type: none"> • Generally well-tolerated
Class: CCR5 Receptor Antagonist			
Maraviroc (Celsentri)	150–600 mg po bid (varies depending on concomitant medications/drug interactions)	None	<ul style="list-style-type: none"> • Generally well-tolerated • Many drug interactions
Class: Fusion Inhibitor			
Enfuvirtide (Fuzeon)	90 mg subcutaneous injection bid	None	<ul style="list-style-type: none"> • Rarely used • May cause injection site reactions; rotating injection sites very important

CNS—central nervous system; GI—gastrointestinal

someone who does not have HIV infection.⁽²⁾ However, patients still face many challenges including lifelong adherence to their medications and medical comorbidities. Stigma surrounding HIV infection and the real or perceived social behaviours that may have placed patients at risk of infection (such as injecting drugs and sexual activity) can be a significant barrier for patients to access and

remain engaged in care.^(1,3) Pharmacists and pharmacy technicians can provide optimal care when they are informed and sensitive to patients' holistic needs.

Epidemiology

Latest statistics estimate that 65,000 Canadians were living with HIV in 2014.⁽⁴⁾ The number of new cases has remained

about the same or decreased slightly; however, there are more people living with HIV in Canada now than ever before.⁽⁵⁾ This is because new infections continue to occur, but importantly it is also a result of the highly effective treatment for HIV infection.

HIV transmission occurs via infected blood and body fluids, primarily through sexual activity and via sharing needles for

TABLE 2 - Single tablet regimens for the treatment of HIV infection^(7, 12)

Brand name (component medications)	Dosage strength	Usual recommended dose	Food requirement/restriction
Atripla, generics (efavirenz/emtricitabine/tenofovir disoproxil fumarate)	600 mg/ 200 mg/ 300 mg	One tablet once daily	Take on empty stomach
Complera (rilpivirine/emtricitabine/tenofovir disoproxil fumarate)	25 mg/200 mg/ 300 mg	One tablet once daily	Take with food (400 kcal minimum)
Genvoya (elvitegravir/cobicistat/emtricitabine/tenofovir alafenamide)	150 mg/ 150 mg/ 200 mg/10 mg	One tablet once daily	Take with food
Odefsey (rilpivirine/emtricitabine/tenofovir alafenamide)	25 mg/200 mg/ 10 mg	One tablet once daily	Take with food (400 kcal minimum)
Stribild (elvitegravir/cobicistat/emtricitabine/tenofovir disoproxil fumarate)	150 mg/ 150 mg/ 200 mg/300 mg	One tablet once daily	Take with food
Triumeq (dolutegravir/lamivudine/abacavir)	50 mg/300 mg/ 600 mg	One tablet once daily	None
Trizivir (abacavir/lamivudine/zidovudine)	300 mg/150 mg/ 300 mg	One tablet bid	None

TABLE 3 - Combination antiretroviral medications, usually combined with at least one other antiretroviral medication for the treatment of HIV infection^(7,12)

Brand name (component medications)	Dosage strength	Usual recommended dose	Food requirement/restriction
Combivir, generics (zidovudine/lamivudine)	300 mg/150 mg	One tablet twice daily	None
Descovy (tenofovir alafenamide/emtricitabine)	10 mg/200 mg, 25 mg/200 mg	One tablet once daily	None
Kaletra (lopinavir/ritonavir)	200 mg/50 mg	Four tablets once daily or two tablets bid	Take with food
Kivexa, generics (abacavir/lamivudine)	600 mg/300 mg	One tablet once daily	None
Prezcobix (darunavir/cobicistat)	800 mg/100 mg	One tablet once daily	Take with food
Truvada, generics (tenofovir disoproxil fumarate/emtricitabine)	300 mg/200 mg	One tablet once daily	None

injection drug use. More than 50% of HIV infections in Canada occur in men who have sex with men; 30% are believed to occur through heterosexual sex and 20% through injection drug use.⁽⁵⁾ Certain ethnic groups are disproportionately affected, including First Nations people and those

born in HIV-endemic areas (e.g., sub-Saharan Africa, Caribbean), who now live in Canada.⁽⁵⁾ The number of older adults living with HIV has also increased due to improved treatment, but also because the number of people diagnosed later in life is also increasing.⁽⁶⁾

HIV Infection

The human immunodeficiency virus attacks the immune system, making people susceptible to infections and other complications. The principal target of HIV is CD4 lymphocytes, also called helper T-cells, which are an important part of the immune system's response to fighting infections. The lower a person's CD4 count is, the more immune-suppressed they are. The term AIDS, or acquired immune deficiency syndrome, is used when a person with HIV has developed an AIDS-associated condition, such as certain types of infections or cancers.⁽¹⁾

Treatment is aimed at inhibiting HIV replication; therefore, the goal of therapy is to reduce the HIV viral load, or amount of virus present in the person's blood, to as low as possible.⁽⁷⁾ It is not possible to cure HIV once someone has the infection, but treatment can suppress the virus to levels undetectable by lab assays. An undetectable HIV viral load is associated with an increase in CD4 cells, a reduced risk of complications and improved mortality. In addition, it is now widely accepted that people on antiretroviral therapy who have an undetectable viral load are unable to transmit the infection to their sex partners.^(8,9) Therefore, treatment has important benefits to the person taking it as well as to others.

Even with effective therapy, patients remain at risk of certain comorbidities. Diseases typically associated with aging, such as cardiovascular, renal and bone disease, occur at a younger age in people with HIV infection.⁽¹⁰⁾ Mental health issues like depression and anxiety are also prevalent.⁽¹⁾ Co-infection with hepatitis C or B, other sexually transmitted or bloodborne infections may also occur.⁽¹⁾ Therefore, it is important that patients see their family physician and/or HIV specialist team regularly for ongoing health monitoring. Management of comorbidities and risk factors for cardiovascular disease, such as smoking cessation and treatment of hypertension and dyslipidemia, is recommended to help patients live long, healthy lives.⁽⁹⁾

Treatment of HIV Infection

Treatment of HIV infection always consists of combination therapy. HIV should never be treated with a single antiretroviral agent; occasionally dual therapy may be used for select patients, but the standard is a combination of three antiretroviral medications



from at least two different drug classes used together.⁽⁷⁾ HIV can develop resistance to antiretrovirals very quickly when monotherapy is used, or if multiple doses are missed and serum drug levels fall below levels required to inhibit viral replication.⁽⁷⁾

Fortunately, many commonly used drug combinations have been co-formulated into single tablet regimens, or into combination tablets that can be combined with one or two other medications to create a complete regimen while reducing the pill burden for patients. A complete list of antiretroviral medications categorized by class is presented in Table 1. Table 2 lists the currently available single tablet regimens in Canada, while Table 3 lists combination tablets that are normally combined with another antiretroviral medication.

Doses provided in these tables are based on the most commonly prescribed regimens; however, these may vary to manage interactions with concomitant medications. When in doubt, verify doses with the prescriber to avoid therapy failure (if doses are too low) or toxicity (if doses are too high). Two medications, ritonavir and cobicistat, may be co-administered as pharmacokinetic “boosters” for some antiretroviral medications (i.e., protease inhibitors and elvitegravir). These two booster medications can

interact by affecting the metabolism of other medications as well.

Drug interactions with antiretroviral agents are very common. Patients may take medications to prevent or treat complications of their HIV infection, such as bacterial, fungal or viral infections. As people live longer with HIV, they may develop other medical conditions unrelated to their HIV infection, which require therapy. Most newer antiretroviral medications used to treat HIV infection are well tolerated, although adverse effects occasionally occur that require treatment with over-the-counter or prescription medications. Some natural health products and supplements may also interact with antiretroviral therapy. Therefore, a thorough medication history consisting of all prescription, over-the-counter, supplement and natural health products should be maintained and reviewed at each visit in order to screen for drug interactions.⁽¹¹⁾

Interactions with food are also prevalent, with some antiretrovirals requiring administration with food and others necessitating administration on an empty stomach for optimal absorption. Auxiliary labelling of food instructions and counselling to ensure understanding are important to ensure patients receive optimal therapy.

Adherence HIV treatment must be taken lifelong, which can be challenging. Potential barriers to adherence include adverse effects, poor understanding of instructions, unstable social conditions, mental illness, drug addictions, and financial challenges due to the high costs of these medications (approximately \$1,200–1,500/month).⁽¹¹⁾ Poor adherence can result in failure of the current therapy and may lead to drug resistance, which can compromise future therapy options.^(7,11) Therefore, it is important to monitor adherence at each visit and help patients overcome their own specific challenges.⁽¹¹⁾ Patients should be encouraged to fill all their medications at one pharmacy to facilitate comprehensive medication monitoring, including screening for drug interactions and medication tolerability, as well as to streamline drug supply to ensure refills are ready on time.

Maintaining a flexible and customized approach to support patients’ unique challenges will optimize adherence. Compliance packaging can be useful to consolidate and organize all medications (HIV and non-HIV medications). Keep regimens as simple as possible and suggest linking the timing of medications to an activity performed at the same time every day, such as a specific mealtime, brushing their teeth, or at bed-

TABLE 4 - Pharmacy services and programs for patients living with HIV

Pharmacy Service	Who may benefit
Adherence packaging by pharmacy (e.g., blister packs)	<ul style="list-style-type: none"> • Patients who are confused or have difficulty remembering to take their medications • Patients on multiple medications or taking medications at several different times during the day
Adherence aids for at home use (e.g., pill organizers, phone alarms, reminder apps for phones, etc.)	<ul style="list-style-type: none"> • Patients who tend to forget whether they have taken their dose (especially if they only take one or two medications per day) may find a visual/auditory reminder helpful • Patients with busy schedules may benefit from alarms and reminder apps
Automatic refill service	<ul style="list-style-type: none"> • Pharmacies that do not maintain a stock of antiretroviral medications • Patients who forget to pick up refills on time or who call last-minute for refills • Patients who require medications to be mailed/shipped to them
Financial/insurance assistance	<ul style="list-style-type: none"> • All patients can benefit from assistance with coordination of benefits, explanation of special or prior authorization requirements and copayment calculations • Patients who travel or otherwise require more than a month's supply of medication will benefit from assistance with getting approval for dispensing an adequate supply of medication to prevent interruptions in therapy
Follow-up phone calls for patient monitoring	<ul style="list-style-type: none"> • Patients starting new medications, those with known or anticipated adverse effects, or who were recently in hospital or treated for a new condition can benefit from a follow-up call to assess tolerability of medications, provide education and adherence support
Harm reduction	<ul style="list-style-type: none"> • Patients who use injection drugs will benefit from education and support to reduce harms to themselves and others through sale of syringes/needles and naloxone kits • Patients who receive opioid substitution therapy (e.g., methadone) may benefit from offering directly observed therapy for their antiretroviral medications also to improve adherence, if indicated
Health promotion	<ul style="list-style-type: none"> • Annual flu shots are indicated for all patients • Pneumococcal vaccination is indicated for patients who have not already received it • Smoking cessation advice and support services should be offered to any patient who smokes • Travel advice, including administration of certain vaccines and/or preventative medications may be indicated for some patients (NOTE: patients with HIV infection who have low CD4 counts should not receive certain live, attenuated vaccines) • Pre-exposure prophylaxis (PrEP) programs, consisting of daily administration of tenofovir disoproxil fumarate/emtricitabine therapy for certain people at risk for HIV infection, may be offered through some pharmacies
Medication review	<ul style="list-style-type: none"> • Patients on multiple medications in addition to antiretrovirals and those who see multiple healthcare providers who prescribe medications for them • Patients who may be experiencing problems with their medications, such as adverse effects or adherence issues • Patients who have had recent or significant changes to their medications, especially those who have recently been in hospital, will benefit from a medication reconciliation to clarify medication changes and ensure medication records are up-to-date and accurate
Minor ailments management	<ul style="list-style-type: none"> • Management of common adverse events, such as nausea, vomiting, diarrhea, headache, heartburn etc., can often be managed through pharmacist prescribing for minor ailments (where permitted) and/or recommendations for over-the-counter therapies

time. Reminders such as cell phone alarms and apps can be useful.⁽¹¹⁾ Options for patients with unstable social conditions or those receiving treatment for addictions could include dispensing antiretroviral medications via directly observed therapy (DOT) with other daily medications (such as methadone), offering daily dispenses with carries, or in some cases daily delivery of medications and DOT to their residence.

Typically, all antiretroviral medications should be administered simultaneously. If one medication is dosed twice daily and the others are once daily, advise patients to take one dose of the twice-daily medication with the once-daily medications, and the other dose 10–12 hours later. ⁽¹¹⁾ Weekly pill organizers can provide a visual reminder for patients who only take one pill a day if they have trouble remembering whether they took it. It is important that the pharmacy supports patients to ensure they receive an uninterrupted supply of medications.⁽¹¹⁾ Automatic refill programs are useful for patients who are stabilized on their medications. Encourage patients to request refills at least a week before they need their medication to avoid running out. Due to the high overhead associated with carrying antiretroviral medications, it is reasonable to order the next month's supply for a patient once they have picked up their current month's supply. When patients are admitted to an institutional setting (e.g., correctional, rehabilitation, or long-term care facility), it is especially important to ensure an uninterrupted drug supply and that accurate medication records are transferred to facilitate seamless care.

Prevention There has been growing interest in the use of antiretroviral medications for the prevention of HIV infection. Truvada (tenofovir disoproxil fumarate/emtricitabine) has been approved for daily use by individuals who do not have HIV infection but who are deemed to be at high risk of infection due to ongoing risk factors (e.g., partner is HIV positive, individual engages in sexual activity within a high-prevalence area or social network).⁽¹²⁾ Pharmacy technicians may receive questions from individuals inquiring about this use, particularly as

TABLE 5 - HIV drug information/interaction resources

Treatment guidelines	https://aidsinfo.nih.gov/guidelines
Drug information	http://hivclinic.ca/drug-information/
Drug interactions	https://www.hiv-druginteractions.org http://hivclinic.ca/drug-information/
Patient information	http://www.catie.ca

generic equivalent medication has made it more affordable and it is covered by some private and provincial insurance plans. It is important to be aware that Truvada should only be used as part of a comprehensive HIV prevention strategy known as pre-exposure prophylaxis (PrEP), which includes baseline and follow-up HIV testing, as well as testing for other sexually transmitted infections, every 3 months.⁽¹²⁾ The risk of taking Truvada alone if PrEP fails and the person contracts HIV infection is that the infection would be undertreated with only two medications, and the patient could develop drug resistance that would limit future treatment options. A complete review of PrEP is beyond the scope of this article but further information can be found in the Canadian guidelines.⁽¹³⁾

Communicating with Patients

Privacy and confidentiality are important for every patient. However, the stigma associated with HIV raises the level of concern for many patients.⁽³⁾ Antiretroviral medications are used solely for the treatment of HIV infection, with few exceptions. Therefore, patients may be reluctant to discuss any aspect of their medication therapy in open areas of the pharmacy for fear of their diagnosis being disclosed to others who may overhear the conversation. Sensitivity to privacy concerns is critical to establishing a trusting relationship where patients feel comfortable sharing information and receiving advice.⁽⁹⁾

Picking up on the patient's nonverbal cues can help technicians adjust their approach. Body language and tone of voice can offer reassurance to an anxious patient. Leaning toward the patient and speaking in a low voice when receiving prescriptions, avoidance of discussing antiretroviral medications across the dispensary when filling prescriptions, and inviting the patient to a private area of the dispensary when asking questions or providing information shows respect for their privacy. In-depth counsel-

ling or discussion of sensitive issues should take place in the private counselling room rather than in the dispensary or over the counter.

Inquiring about adherence should be done in a simple, routine, and nonjudgmental manner that normalizes less-than-perfect adherence to encourage patients to be upfront about any challenges they are experiencing.^(7,11) Rather than asking if they ever miss doses, ask, "How many doses did you miss in the last week, or last month?" to make it easier for patients to discuss any lapses in adherence. Try to identify patterns of non-adherence to provide helpful, individualized advice.⁽⁷⁾ Being nonjudgmental and supportive to patients' holistic needs, such as selling syringes and offering counselling about naloxone kits in case of opioid overdose for patients who use injection drugs, can help foster a trusting relationship.

Role of the Pharmacy Technician

The pharmacy technician is well-positioned to support patients in achieving their health goals. Monthly visits to pick up prescriptions provide the opportunity to interact with patients, assess medication adherence and tolerability, and provide support between physician visits. Many pharmacy services can be beneficial to patients living with HIV and the technician may be the best person to identify these opportunities. Table 4 describes pharmacy services and how to identify patients who may benefit. Patients who do not refill antiretroviral prescriptions regularly, are experiencing potential adverse effects or drug interactions, or have concerns about their medications should be referred to the pharmacist for more in-depth consultation and advice. Persistent challenges with adherence or medication tolerability should be noted and communicated back to the HIV care team for additional support.

Health promotion services such as smoking cessation advice and flu shot clinics should be routinely offered.⁽¹⁾ Technicians can also provide invaluable

assistance with medication acquisition and insurance coverage, which is a big issue for many patients.⁽¹¹⁾ Explaining the details of their insurance coverage, copayments, and requirements for prior authorizations can often make the difference between patients choosing to fill their prescriptions or not. As previously mentioned, antiretrovirals are expensive, and many patients have difficulty even affording copayments each month. Suggesting less costly generic medications may be a reasonable option for some patients. Pharmacists and technicians can also assist with identifying alternate sources of medication coverage and acquisition, such as special access and copayment assistance programs.⁽¹¹⁾ Issues that cannot be resolved at the pharmacy level should be communicated back to the patient's HIV clinic team, where social workers and clinic pharmacists who are knowledgeable about alternate medication support options can assist.

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QUESTIONS

Please select the best answer for each question and answer online at eCortex.ca for instant results.

- Which statement regarding the prognosis of HIV infection is true?
 - HIV infection is a devastating fatal illness.
 - People who receive treatment for HIV infection have nearly the same life expectancy as someone without HIV infection.
 - People with HIV infection do not live long enough to experience diseases of aging, such as cardiovascular disease.
 - AIDS is a term used to describe patients who have HIV infection.
- Who is most affected by HIV infections in Canada?
 - Men who have sex with men
 - Men who have sex with women
 - Women who have sex with men
 - People who inject drugs
- People who have an undetectable HIV viral load due to receiving effective antiretroviral therapy are unable to transmit HIV infection to their sex partners:
 - True
 - False
- Which statement regarding the treatment of HIV infection is true?
 - One-pill-per-day regimens are used to treat all patients.
 - Antiretrovirals should be taken with food to improve absorption and tolerability.
 - Co-formulations of antiretroviral medications have reduced the risk of drug interactions.
 - Treatment normally consists of three antiretrovirals from two different classes.
- George comes into the pharmacy to pick up his refill of Atripla. Which of the following situations should prompt a referral to the pharmacist for further assessment?
 - George is taking Atripla on an empty stomach.
 - George is taking Atripla at bedtime every night.
 - George is experiencing insomnia and vivid dreams.
 - George requests an additional month's supply of medication as he is going on vacation.
- Jennifer has been taking Complera for two months. She presents to the dispensary counter to pick up her refill and you notice she is holding a box of ranitidine tablets. Which question(s) should the pharmacy technician ask Jennifer?
 - Have you been taking Complera with food?
 - Is the ranitidine for you or someone else?
 - Have you been taking any other medications besides Complera?
 - All of the above
- James started taking Genvoya one tablet daily one year ago. You notice that he has been picking up his refills approximately every 32–35 days over the past couple of months. He tells you that he sometimes forgets whether he has taken his pill or not as it is the only medication that he takes regularly. Which strategy would be most appropriate to suggest to James to help him improve adherence to Genvoya?
 - Offer to arrange automatic monthly refill reminders
 - Suggest he take it when he does something at the same time every day, such as with breakfast
 - Recommend that he use a weekly pill organizer so he can see whether he has taken his pill each day
 - B and C
 - All of A, B and C
- Brian presents to the pharmacy to request a refill of his Stribild; however, his insurance rejects the claim because his prior authorization approval has expired and requires annual renewal. He has been taking this medication for two years, has a valid prescription with refills on file, and still holds an active insurance card. It is Friday evening, and he needs his medication tonight. What is the most appropriate action for the pharmacy technician to take?
 - Tell Brian that you cannot fill his prescription until Monday when you can reach his prescriber to complete the prior authorization renewal.
 - Suggest that Brian pay for his medication upfront and submit his receipt to his insurance after the prior authorization renewal is complete.
 - Provide Brian with a 5-day supply of medication and call the insurance company on Monday to facilitate renewal of the prior authorization so he can pick up the balance of his prescription at that time.
 - Ask the pharmacist to extend the antiretroviral prescription (you are in a province where pharmacist prescribing is permitted).
- Darius was just discharged from hospital where he was admitted for 2 weeks for treatment of pneumonia secondary to a new HIV diagnosis. Prior to admission, he was taking several medications for thrush, diabetes and hypertension. Upon discharge from hospital, he has new prescriptions for antiretroviral medications and antibiotics. What pharmacy service(s) should be offered to Darius?
 - Adherence packaging
 - Medication reconciliation
 - Pharmacist consultation for in-depth medication review and counselling
 - All of the above
- Jacob has been getting his prescriptions filled at your pharmacy for many years. He has no known drug allergies, and is noted to smoke one pack of cigarettes per day. He is currently taking only Odefsey with no problems, and presents to the pharmacy today with a new prescription for rosuvastatin. Which pharmacy service(s) should be offered to Jacob?
 - Adherence packaging
 - Medication reconciliation
 - Smoking cessation counselling
 - All of the above
- Claire started taking Triumeq three months ago and she presents today to pick up her medication. She uses the

automated telephone refill system to request her refills and tries to avoid eye contact to discourage conversation when she picks up her medication. She also has 2 packages of OTC sleep aids to check in with her prescription, and you notice that she looks very tired and generally unwell. Which approach would be most appropriate for the pharmacy technician to take to offer Claire support?

- a) Recognize that Claire wants to get her medications and leave as quickly as possible so offer to check in her sleeping medication with her prescriptions today.
- b) Call Claire over when her prescription is ready and say, "Did you know that Triumeq can cause insomnia? Let me get the pharmacist to chat with you to see if you can take these sleeping pills with your antiretroviral medication."
- c) Approach with a smile, speak in a quiet voice and say, "I notice you have some sleeping pills there. Sometimes the medication you're taking can affect sleep. Can I ask the pharmacist to meet with you in the private counselling room to discuss any issues you might be having and offer advice?"

12. Brenda has hepatitis C and HIV infection, and regularly gets her prescriptions filled at your pharmacy. On occasion, you have seen Brenda come into the pharmacy to buy syringes, but depending on the pharmacy assistant who is working, sometimes they have refused to sell them to her. Today, Brenda approaches the pharmacy counter to request syringes, but the assistant refuses to sell them to her because she does not use insulin. Brenda looks frustrated and embarrassed. What is the most appropriate action to take?

- a) Say nothing. The assistant has dealt with the situation.
- b) Approach Brenda and explain that you cannot sell syringes/needles to people unless they have diabetes as it is a store policy.
- c) Approach Brenda and assist her with buying the syringes she has requested.
- d) Option C, plus speak with the pharmacist to suggest having a meeting with all pharmacy staff to discuss the practice of selling syringes to patients to promote harm reduction.

13. Which of the following patients would benefit most from a follow-up phone call in 3 days as a pharmacy service?

- a) Patient who has received a flu shot
- b) Patient who is receiving blister packaging on a weekly basis for their medications
- c) Patient for whom the pharmacist prescribed naproxen to treat recurrent headaches believed to associated with antiretroviral medication
- d) Patient for whom the pharmacist has called the doctor to increase the dose of antiretroviral medication to manage an interaction that would have resulted in subtherapeutic drug levels

14. Natural health products should never be taken with antiretroviral medications.

- a) True
- b) False

15. Which medication should be prescribed with another antiretroviral medication to create a complete HIV treatment regimen?

- a) Stribild
- b) Kivexa
- c) Complera
- d) Triumeq

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