GHCE

Global Health Clinical Elective
CONJ 625

PERU

Country Manual 2015-16

Prepared by the Global Health Resource Center (GHRC)
University of Washington Department of Global Health

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CONTACT INFORMATION

Peru:

Dra. **Sylvia Montano** is your main point of contact in Peru. Please contact her with your flight information and any logistical questions you may have.

	Name	Address	Telephone	Email or Website
Local Program Coordinator	Dra. Silvia Montano	Av. Venezuela S/N, Callao. (Centro Médico Naval) (NAMRU-6)	Phone: 011-511-614-4163 Cell: 011-511-995746927	silvia.montano@med.navy.mil silvia.montano@movistar.pe.blackberry.com montanosm@hotmail.com
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Drs. Montano's Assistant	Srta. Zoila Pretell			Zoila.Pretell@med.navy.mil
Local Physician Contacts (Lima)	Dra. Doris Chunga	Jr. Manuel Raygada 515, Callao. (Centro de Salud Barton)	511-5617144 511-996549968 511-985376780	dorischunga@hotmail.com
Local Physician Contacts (Lima)	Dr. Eduardo Ticona	Parque "Historia de la Medicina Peruana" s/n, Cercado de Lima. (Hospital Dos de Mayo)	511-3282451	eticonacrg@gmail.com
Local Physician Contacts (Lima)	Dra. Pilar Mazzeti	Jr. Ancash 1271, Barrios Altos, Lima. (Instituto Nacional de Ciencias Neurológicas)	511-4117700 511-4117702 511-4117708	peru.neurogenetica@gmail.com
Local Physician Contacts (Trujillo)	Dra. Violeta Celis	Bolivar 350, Trujillo (Hospital Belén)	511-976929883	violetacelis@hotmail.com
U.S. Embassy	U.S. Embassy, Lima	Avenida Encalada, Cuadra 17 Monterrico, Lima	511-434-3000 or 511- 618-2000 or 51-1-618-2936	http://lima.usembassy.gov

			(after hours)	
Police		Pasaje Belen 106, Cercado de Lima	105 (Emergency#) 511-424-2053	
Local Taxi (Lima)	Taxi Mobil		511-422-3322	
Local Taxi (Lima)	Sr. Omar Maguiña		511-988184272	

ADDITIONAL PERU CONTACTS:

Iquitos:

Tourist Police (Policia de Tourismo) 065-232-453
Dr. Ernesto Salazar has worked with former UW students. Don't know if he is still there.

Moyobamba:

Dr. Markel Williams Vasquez Carbajal: general surgeon and current hospital director at Moyobamba MINSA Hospital; very willing to let students observe.

Wuilman and Mery Perez: local contacts and coordinators for **Foundation Yantalo**. They live and own a pharmacy in Moyobamba (Botica Kenya).
Wuilman: 942-993-7193; wuilmanpv@yantalo.org;
Botica Kenya: 420564-443

Veronica Perez: school nurse in Yantalo school; very knowledgeable and helpful resource for volunteers.
Email: eli_2083@hotmail.com (she rarely checks this; best way to contact her prior to arrival would be through Dr. Vasquez- see below)

Dr. Luis Vasquez: lives in the U.S. but runs Foundation Yantalo.
LVasquez@yantalo.org; 1-877-220-7378

Cusco:

The **U.S. Consular Agent** in Cuzco may be reached at 51-84-231-474; or by email at CoresES@state.gov. The Consular Agency can provide information and assistance to U.S. citizen travelers who are victims of crime or need other assistance in Cuzco.

U.S.A.

	Name	Address	Telephone	Email or Website
UW International Emergency #	-	-	**+1-206-632-0153**	www.washington.edu/globalaffairs/emergency/
GHCE Director	Dr. Scott McClelland	Harris Hydraulics Building, Room #315 1510 San Juan Road Seattle, WA 98195	+206-473-0392 (cell) 001-254-731-490115 (Kenya)	mcclell@uw.edu
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Peru Faculty Liaison	Joseph Zunt Coordinator: Mallory Erickson, emallory@uw.edu (great contact)	Harborview Medical Center 325 Ninth Avenue, Room 3EH70, Seattle, WA 98104	+206-744-3251 (office)	jzunt@uw.edu
Insurance	OnCall International		call 1.855.464.8971 or collect +1.603.328.1358	http://student.uwsearchlightportal.com studentclaims@oncallinternational.com
Hall Health Travel Clinic	Anne Terry, MN, ARNP	315 E. Stevens Circle Box 354410 Seattle, WA 98195	+1-206-543-8915 +1-206-685-1011	travel@uw.edu
Post-Exposure Prophylaxis	Harborview Madison Clinic	325 Ninth Ave Box 359930 Seattle, WA 98104	1-888-448-4911 (CDC hotline) +1-206-744-5100 (clinic)	http://depts.washington.edu/madclin/providers/guidelines/pep_occ.html
Peruvian Embassy	Embassy of Peru	1700 Massachusetts Ave., N.W Washington D.C. 20036	Telephone: (202) 833-9860 to 9869 Fax: (202) 659-8124	www.peruvianembassy.us/en.html Email: webadmin@embassyofperu.us

ENTRY REQUIREMENTS

Peru tourist visa is not required for citizens of United States for a stay up to 183 days. Upon entering Peru, your passport and white immigration form will be stamped and a number written on them, indicating validity for 30, 60, or 90 days as a tourist visa. Usually you will be given 90 days, although the process is sometimes random. If you are given less than 90 days, kindly request a 90 day stamp. *Make sure that you keep the white immigration form* with your passport! When exiting the country, you will be asked to provide this form. *There is a fine for not presenting this form* when departing from Peru.

- You need to have a passport valid for at least 6 months from the date of your intended travel.
- You need to have a round-trip ticket, so bring your receipt if using an e-ticket.
- There are no immunization requirements, but yellow fever is recommended.
- Visas *are* required for business travel or those entering as students. Since you are not enrolled in a Peruvian educational institution, you should enter as a "tourist."
- More information available on the Peruvian Embassy website: www.peruvianembassy.us/do.php?p=102.

COUNTRY OVERVIEW:

Preparing for your elective…

- Once you are accepted for the Global Health Clinical Elective (GHCE) course (CONJ 625), and are assigned to Peru contact both Dr. Zunt and Dra. Montano to discuss rotation options and specifics.

Traveling to Lima

Transportation:

The **traffic** is among the biggest downsides of Lima. Since the city is so sprawled out, it can take quite a long time to get from home to work or other destinations. Unfortunately, there is no train or subway system in the city. If you do not have a car (and most students and fellows do not), then you have to rely on taxis and buses to get around. Be careful crossing the streets!

Taxis:

There are an abundance of taxis that will transport you just about anywhere you want to go. Taxis do not have meters and are negotiated prior to embarking. They are relatively inexpensive. There are also numerous buses, commonly referred to as "combis". They are cheap (around s/.1.20) but can get really packed during rush hour.

There is also a public transit system, Metropolitano, with modern buses that stop near the office. These require a fare card, which can be obtained at each station.

When traveling to or from the airport, we generally recommend what are referred to as "secure" taxis. Since you are generally traveling with personal possessions when going to or from the airport, these taxis offer an additional level of security since they are known and reputable companies. One such company is Taxi Real, but they should be reserved ahead of time. They charge about $20 for a trip to the airport from Barranco.

When departing the airport, you will generally see three-levels of taxis: Level I – You encounter this area just outside of customs. It consists of several taxi stands and these tend to be about $50 for travel to Barranco; Level II – The next area that you enter, when leaving the first set of taxi stands, you will encounter a single taxi stand called Green Taxi. They are considered moderately priced at about $20 for travel to Barranco; Level III – There are street taxis just outside of the airport terminal. We generally recommend that you avoid these at the airport unless you are a very experienced traveler to and from Lima, or have little or no luggage. They are the least expensive.

There have been reports of robberies of tourists in traffic or at stoplights while traveling to or from the airport. It is advised to lock your doors and raise the windows (unless you need air) and put all of your possessions in the trunk of the taxi. Taxi drivers know this and will usually insist that you put all of your bags in the trunk, including purses and small bags. This is not meant to scare you, but just meant to provide you with information to take appropriate precautions. Generally, you will be fine.

Always lock the doors while in a taxi and keep the windows rolled up, especially when going to areas that are known for theft. Also, if you have a bag containing a laptop or other valuables, put it on the floor behind your legs, not on the seat or your lap – thieves are known to break car windows and snatch bags

While most taxi drivers are friendly and will take you to your destination without a problem, there have been reports of theft involving taxi drivers – especially in and around the airport. So, it's a good idea to go with a taxi driver who looks reputable – ask to see his taxi driver ID (a blue/purple card that has his photo and DNI number), look for a SETAME sticker in the front windshield, etc.

Taxis are ubiquitous in Lima and quite cheap compared to taxis in North America and Europe. For example, a ride in a taxi hailed off the street from Miraflores to NMRCD (about 20 minutes) will cost 10-14 soles. A ride within Miraflores will cost 3-4 soles.

There are no meters in taxis in Lima - prices have to be negotiated before starting; bargaining is very common.

Buses:

****DO NOT TAKE A BUS BETWEEN CUSCO AND LIMA OR VICE VERSA; SECURITY AND SAFETY ARE COMPROMISED****

The costs of taking a taxi to and from work every day can add up, so some may want to consider buses instead. All buses in Lima are run by private companies – there is no municipal bus system, and no map of all the bus routes. It takes some time to figure out where the various buses go. There are 3 basic forms of buses you will see:

1) Large buses similar to U.S. school buses. All buses that go along the Vía Expresa are of this type;

2) Big combis, which are the size of big vans or mini-buses;

3) Small combis, which are similar in size to mini-vans (though they have seating for about 17 people and sometimes some standing passengers!)

On the sides of buses and combis you will see the names of main avenues the vehicles travel along. However, you may not know along which streets it travels on in between. Ask someone who has been in Lima which bus or combi to take to your destination. Keep in mind that some combis take more direct routes than others, and that drivers and cobradores (the people to whom you pay the fare) are trying very hard to fill their vehicle, so they may not be upfront in telling you which exact route they are taking. Also, be careful when getting on and off the combis as the drivers often do not bring the vehicle to a complete stop when passengers are getting on/off. A ride on a bus or combi typically costs 1.00-1.50 soles. So, much cheaper than taxis, but the ride may take longer. For example, a 20-25 minute door-to-door taxi ride from Miraflores to NMRCD takes 45-60 minutes on a combi/bus, plus a few minutes walking to and from the bus stop and waiting for the bus.

Train:

A newly opened elevated rail line is now in operation and is called "Linea 1". This, similarly, requires a fare card (different from the Metropolitano card). It is fast, reliable, and affordable, but it likely will only be helpful if you are at Hospital Dos De Mayo.

Living in Lima

Housing Resources

The Impacta Barranco Site is located in the Barranco District. Barranco is a small, but quaint neighborhood and is commonly referred to as "bohemian" and "artsy". It contains many old buildings, but does not have many choices for temporary housing, other than hostels.

The Miraflores District is another popular neighborhood that is nearby and is more "touristy". There are many places for rent here and most can be found on the Internet. There are other neighborhoods that are convenient to work and can be found on the Internet.

It is important to focus on finding something that has all of the amenities that you would like, such as Internet, furniture, kitchen, etc. You also want to feel safe. Both of these neighborhoods are considered safe, but "safe" is a relative term. Like most major cities (cities in the U.S. are no exception), there is always the risk for crime. Exercise judgment and ask questions about security measures in the housing facility that you are considering.

You can find apartments listed on the following websites:
www.lima-roommate.com
www.expatperu.com
www.limaeasy.com
www.livinginperu.com
Airbnb may be a good option, though possibly slightly more expensive than other options.

IMMIGRATION
When you arrive in the Lima airport, you will receive a tourist VISA, generally for 90 days. However, depending on the Immigrations Officer, they could give you as little as 30 days, or as much as 183 days. If you have only 30 days, you have to leave the country prior to your VISA expiration, then re-enter to get another 30 days, 90 days, etc. Most people just take a short trip to an adjoining country (Chile, Bolivia, or Ecuador [Brazil requires Americans to apply for a VISA prior to travel and to also pay $$]).

FOOD
There are plenty of convenient restaurants that serve local cuisine (referred to as "criolla") that are tasty and inexpensive. They generally cost around 10 soles (about $3) and include an appetizer and a main dish. Lunch is usually the biggest meal of the day. In addition, there are plenty of fast food restaurants and other restaurants that generally cater to tourists. These tend to be slightly more expensive. There are also

many major grocery stores conveniently located in Barranco and Miraflores. Food is relatively inexpensive by U.S. standards. Ceviche is a popular delicacy. It is best to eat this for lunch, not dinner, as it will be fresher and safer at that time.

HEALTH

There are no special vaccinations required for travel to Lima, other than routine vaccinations that you should already have, though yellow fever is recommended. To be sure, you can visit the US CDC Travel website for more information, and follow the recommendation of your travel health provider. You should also have health insurance and bring any special medications with you that you might need. Most common medications (i.e., antibiotics, cold & allergy medicines) are available without a prescription. Quality medical care is readily available and relatively inexpensive. However, it is wise to have adequate medical coverage in the event of a major illness or accident. Make sure that your medical coverage outlines coverage outside of the U.S. and how to access care if needed. Perhaps the "best" hospitals if needed are called "clinicas." (this does NOT mean outpatient)

MONEY

The official currency in Peru is the Nuevo Sol. As of 12/5/15, the exchange rate is $1.00 = s/3.38. The US dollar is accepted in most places and you will be given change in soles using the current exchange rate. ATMs are in abundance, but will charge fees in addition to the fees that you US bank may charge. Scotiabank generally does not charge a transaction fee (this may depend on your US bank). It may be a good idea to check with your bank before departure. Also, some US banks have restrictions on withdrawals outside of the US. Again, check with your bank to make sure.

Generally, you will see several men and women standing outside of banks wearing greenish/blue vests with $$ signs on them. They will exchange dollars for soles, soles for dollars and are generally dependable for fair exchange rates. The banks give the worst rates of exchange.

Counterfeiting is apparently a big problem here; so do not be offended when an attendant carefully inspects any bill that you present to them. You should probably do the same, at least with large bills that you receive, but there is no need for paranoia; just something to be aware of.

Housing

The best thing to do regarding housing is to contact Joe Zunt, Sylvia Montano, and past students from the GHIP and GHCE programs for information. Past students have had various housing options depending on their site. In Lima, students would frequently rent an apartment in one of the suburbs. In other cities, (Cusco and

Iquitos), students often would often live with the families of one of the local physicians. In Moyobamba, last year's student stayed in a guest house with other visiting students.

From Fogarty manual:

- **Peru sites:** note that in the past, FICRS trainees have stayed for brief periods at one or several primary sites in Peru, including Lima, Cusco, and Iquitos.
- **Neighborhoods of Lima**: A sprawling metropolis. Some compare its layout to that of Los Angeles - there are many distinct neighborhoods/municipalities within the metropolitan area. The most popular neighborhoods for foreign students and fellows to live in have been Miraflores, Barranco, and San Isidro.
- **Miraflores** is a bustling area with many shops, restaurants, and cafes, as well as pubs and clubs to frequent at night. Some businesses and embassies are also based in Miraflores. It is probably the most popular neighborhood among gringos and tourists in general – you will see many roaming the streets here. In Miraflores one has the conveniences of supermarkets, movie theaters, and public transportation all within easy walking distance. It is a relatively safe neighborhood, though petty theft does occur. Miraflores is right by the ocean, and there is a nice trail and parks along the ocean (the Malecon area) where many people run or bike. It tends to be a bit cooler and cloudier than some other parts of Lima during the winter months, but there is a nice ocean breeze to cool you down during the summer months. With so much activity in Miraflores, there's usually something to do, even if it's just wandering around.

Housing option:
Quincha House
Juan Fanning 644
Miraflores, Lima Peru
Phone: 994039685 / 989652746 / 444-2518

- **San Isidro** is a large municipality adjacent to Miraflores. It is home to some of Lima's elite. It is quieter than Miraflores, which has its pros and cons – on one hand, there is less noise in San Isidro; on the other hand, there is not as much activity, and it is not as easily walkable as Miraflores – supermarkets and other stores may be a bit farther to reach. San Isidro is home to many small parks and a huge golf course. There are many restaurants and some swanky pubs and clubs in this neighborhood. Many businesses (including the financial district) and embassies are based here. Public transportation is fairly accessible. Like Miraflores, it's a relatively safe area. In general, you may see more families living in San Isidro, whereas you may see more twenty- and thirty-somethings in Miraflores. San Isidro is much less "touristy" than Miraflores.
- **Barranco** is another nice neighborhood just south of Miraflores on the coast. It is fairly quiet and quite unique in Lima in that it maintains a bohemian feel. There aren't as many big chain stores here. Barranco comes alive at night as the home

of Lima's most vibrant nightlife – there are many pubs, clubs, and peñas frequented by Limeños. Some foreigners have found beautiful apartments and houses in Barranco. It is a tranquil haven within Lima; however, it's a bit farther than Miraflores and San Isidro from other parts of the city, and you may have to go to Miraflores to run errands.

- **San Miguel:** many Limeños live in this neighborhood, but you won't see many foreigners. There is a huge shopping complex – the Plaza San Miguel – and a movie theater but other than that not much to do in San Miguel. You will probably find yourself going to Miraflores, San Isidro, and Barranco in your free time. The advantages of San Miguel are that it's less expensive than other neighborhoods.
- **Other reasonable residential neighborhoods** include Surco, San Borja, Jesus Maria, and Pueblo Libre. Housing will likely be cheaper here, but your social life would be substantially facilitated by living in Miraflores, San Isidro, or Barranco.

Housing in Lima:

- **Types of Housing:** There are both apartments and houses in Lima, though most gringo students and fellows will end up living in hostels or apartments. Apartments come in many sizes, either furnished or unfurnished. In general, you can roughly divide apartment buildings into newer buildings and older buildings. The newer buildings have more modern apartments, though they tend to be smaller than the apartments in older buildings. You can choose to live by yourself in a 1-2 bedroom apartment, or you may wish to share an apartment with others.
- **Cost:** In Miraflores and San Isidro, a decent, furnished 1-bedroom apartment may cost $250-500 per month (excluding utilities), though there is great variety in prices. Apartments with a view of the ocean, or those on very posh streets may be more expensive. When quoting these prices to Peruvian colleagues, many will tell you that these prices are too expensive. However, keep in mind that locals may be able to find better deals than gringos because: 1) they may be thinking of neighborhoods that are less expensive than Miraflores and San Isidro, 2) they are in less of a rush to find an apartment and may have contacts who tip them off on good deals for apartments when the timing is right, 3) they generally look for unfurnished apartments, 4) they can get a better deal by signing a long-term lease. So don't get discouraged if you think that you'd spending more than what your Peruvian colleagues think you should be spending – talk to other gringos, in addition to Peruvians, to get their opinions and experiences with prices of housing.
- **Utilities:** The cost of utilities is not included in most apartment rents. Most apartment buildings will charge a "mantenimiento" fee, which goes to pay for doormen and general upkeep of the building. This fee can be anywhere from $20-

80 per month. Some places will ask you to pay municipal taxes, which go to the municipality for security, cleaners, etc. These "impuestos" may be about $10 per month. You will receive bills for Internet, phone, cable, and electricity in the mail. The bills can be paid at a variety of places, including banks, supermarkets and pharmacies, but must be paid in cash. Electricity ("luz") is usually not included in the rent. This can cost $10-20 per month for a person living solo, depending on usage.

- **Strategies for finding an apartment in Lima** o Finding an apartment in Lima can be a challenging endeavor, depending on what you are looking for. Before you arrive in Lima, contact people you know are there or have been there recently (previous or current students and fellows) to find out about possible openings. You can also check websites like Craig's List, Expatperu.com, www.livinginperu.com, and Airbnb.com
- Once in Lima, you can look at the classifieds section of the El Comercio newspaper. The Sunday edition is the best to research. Apartments for rent are also listed on El Comercio's website. Most of the contact information you see in the classifieds will be for corredores (real estate agents); a few will be for the owners of the apartments. The corredores and owners may also be showing, or about to show, other apartments that are not listed. Generally they will not charge you for their services if contacted in this way. There are some other real estate agents whom you could contact directly, and who would show you various apartments (often very nice apartments, though on the pricey side); these agents might charge a fee. Another approach is to walk around neighborhoods where you are interested in living, and look for signs saying "Se Aquila" on buildings (For Rent). You can also inquire with the doormen at some of the apartment buildings. Searching for apartments while in Lima is most effective. Therefore, securing temporary housing before arriving (through craigslist or another means) is a good strategy to create a stepping stone.
- **Deposit:** Once you've found a place that you like, it's a good idea to leave a deposit ("garantía") – can be any amount depending on what the corredor/owner wants, $20-200 – to hold the apartment. No amount of verbal assurance (saying that you really like the place and that you want to take it, etc.) will guarantee you will get the apartment. As in most cities, money talks in Lima. When you give the garantía, get a receipt. It's ideal to meet and to give the garantía to the owner rather than the corredor, because the owner may have hired several corredores to show the apartment, and it's possible that another tenant has already been found via one of the other corredores. However, if not possible to give the garantía directly to the owner, you can give it to the corredor provided you know the/she has spoken with the owner and the owner will agree to hold the apartment for you. If you change your mind later, you may not be able to get back the garantía, though it may be worth a try.

- **Lease:** After this, generally you will be asked to return to the apartment within a few days to meet with the owner and sign the lease. Remember: nothing is guaranteed until you sign the lease and are handed the keys. The garantía will usually suffice to hold the apartment until you sign the lease, so sign the lease as soon as possible if you are really interested in the place. Some have had experiences where the owner agreed to lease the apartment, but changed his/her mind after a day or two for whatever reason. This has only happened when a garantía wasn't provided. Most apartment owners will ask you to sign a lease. They may require a minimum length, such as 3, 6, 9, or 12 months. Sometimes, owners will allow you to have a shorter lease but will charge you more. Typically, they will ask for one month's rent in advance, as well as one or two months of rent as a security deposit. They should give you a copy of the lease to review and sign. You should review the lease with a native Spanish speaker just to make sure you don't miss anything.

Tips for the Hospital and for your Rotation

This depends on where your rotation takes place.

- Your specific rotation will vary depending on your elective choice, your medical team, fellow house officers, and residents. All students will be exposed to diseases and conditions vastly different than in their prior clinical education in Seattle. Also, facilities will not be similar to hospitals in the US. Make sure to take a step back and see the whole picture. Seek out support from friends, family, journal writing, or elsewhere in case you feel frustrated, overwhelmed, etc.

  For the following section – please help us complete this manual by filling in answers that may be helpful for future GHCE trainees.

  - **A variety of disease:**

  List what you might see.

  - **Depending on your rotation, your 'team' will include:**
    - *Medical students*
    - *Residents*
    - *Physician Specialist and Professor Physician:*

- **Where do you fit in?**
- **Introducing yourself:** Formality and proper introductions/
- **Clothing:** At Dos de Mayo, you should dress nicely the first day, but over time you may see residents wearing jeans, etc. and you can adjust accordingly
- **Hospital A&E:**
- **Where to eat:**
- **Language:**

PACKING TIPS

General:

Err on the side of packing light. Don't bring anything that you would be heartbroken if it were lost, stolen, or ruined. Take fewer clothes than you think you will need: you can usually purchase clothing locally: this helps make sure that they are more appropriate to local conditions, and help out the local economy

Documents and other Essentials:

Make copies of important documents and leave them with someone you trust. This includes the front and back of your credit cards. You may also wish to make scanned copies and email them to yourself. Consider bringing an extra set of passport photos with you: they can be handy if you need to replace your passport or get other types of documentation. A laminated, color copy of the first page of your passport can also come in handy.

<u>Be sure to bring</u>:

- Passport, valid for 6 months
- Travel itinerary, receipt, and copy of e-tickets
- Travel insurance documents

- Credit cards, including the one you used to purchase your airplane ticket
- Medications
- Course materials and textbook
- Back-up pair of glasses, if needed
- Sunscreen
- Mosquito repellent (if in the jungle)
- Power adapters
- Flash drive

Bags:

Aim for a single, sturdy, backpack or duffel bag that you don't mind having tied to the top of a bus. Be sure you are able to carry it, and that it doesn't look like you just joined the military. Bring a smaller carry-on for essentials that can double as a rucksack for daytrips. Avoid carrying bags around town.

Personal Medical Supplies:

Thermometer

Sunscreen (SPF 30 or higher)

Insect Repellent (at least 25% DEET or 20% Picardin) if in the jungle

Malaria prophylaxis if indicated

HIV post-exposure prophylaxis

Stand-by treatment for diarrhea

Medications you normally take

Band-Aids

Tweezers

<u>Suggested over-the counter medications</u>:

Acetaminophen (Tylenol)

Ibuprofen or Naproxen (Aleve)

Diphenhydramine (Benadryl)

Pseudoephedrine or phenylephrine (Sudafed)

Hydrocortisone cream

Antifungal cream

Antibiotic ointment

Supplies for the medical wards:

- White coat and scrubs
- Decent, comfortable shoes
- Penlight
- Stethoscope
- Reflex hammer
- Hand sanitizer (lots)
- Latex gloves
- N-95 Masks
- Medical Spanish dictionary

Other Suggestions:

- A laptop is highly recommended for doing your coursework. According to prior students, "it can be very handy to have a laptop. It will be safe if locked in a secure place. Laptops are commonly stolen items if not watched vigilantly, so do not leave them unattended in public places, even for a minute. Internet (including wireless) is widely available throughout Peru."
- One or two USB flash drives.
- Digital camera and charger
- Small notebooks
- Headlamp or flashlight
- MP3 music player
- Extra batteries or a battery charger
- Reading material

Additional recommendations from former students:

- Voltage transformer, if necessary. Peru runs on 220 volt electricity, as opposed to the 110 volt system used in the USA. You will need a voltage transformer if bringing any electronics that do not automatically function with different voltages. Most laptop and digital camera power adapters will work with 110 and 220 volt systems – you can look on the adapter to check.
- Outlet adapters: Most outlets in Peru will accommodate both North American style (flat prongs) and European style (round prongs) plugs, but you may want to bring 1-2 adapters just in case. Note: these *do not* convert voltage – for that you need a voltage transformer.
- Prescription medicines, including birth control. Some may not be available in Lima, or may be available in a different form. Be sure to bring enough to last

your stay in Peru. Don't count on being able to receive the medicines in the mail from the USA because they may get stuck in customs. You can purchase ciprofloxacin over the counter at most pharmacies – useful when that post-ceviche diarrhea and vomiting strike. Consider bringing altitude sickness medication if going into the Andes.

- Sunscreen with high SPF: finding a good sunscreen in Peru can be difficult and very expensive. The sun is VERY strong.
- Sleeping bag (for cold nights in Cusco) – or consider purchasing a nice alpaca blanket as a souvenir. There is usually no indoor heat.
- Battery charger
- Warm clothes/ jacket – especially if planning trips to the mountains. Or buy alpaca sweaters as souvenirs!
- Dark pants (light colored get quite dirty)
- Sturdy, comfortable shoes (large sizes can be hard to find in Peru)
- Sufficient underwear: *"Peruvian underwear is the worst"*
- Food: Most foods/snacks are available in Lima (the city has some really nice grocery stores). If you have a favorite brand of peanut butter, tea, snack, etc., you can consider bringing some along as it may either be unavailable or considerably more expensive in Lima. *Caveat*: there is a chance of confiscation by Peruvian customs if you get a "red light" during the customs screening process, though they will probably let most packaged foods pass.
- Water filter or SteriPen
- Rain gear: not needed if you will be mostly in Lima. It does rain during the rainy season in the mountains and year-round in the jungle.
- Books in English: They are expensive and there is not much selection in Lima.

What not to bring:

- Fancy jewelry and watches: Anything that looks expensive, even if it's not, can attract thieves. If you are going to wear jewelry or a watch, wear ones that are not too flashy.
- High current, common electronics: Hair dryers, straighteners, and similar items will burn out a voltage converter and likely burn themselves out in the process; better to buy them locally in Lima.
- Shampoo, deodorant, etc: easy to buy in Lima unless you are loyal to a specific brand.

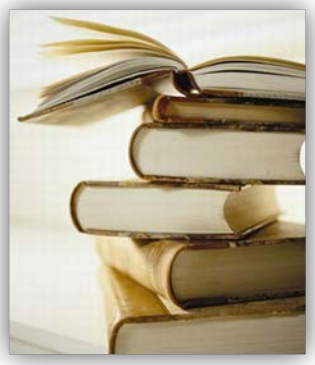
READING LIST:

Suggested Books

The Conquest of the Incas by John Hemming

The Peru Reader: History, Culture, Politics

Oxfam Country Profile by John Crabtree



Suggested Articles

"The Politics of Reproductive Health in Peru: Gender and Social Policy in Global South" by Stephanie Rousseau. Social Politics: International Studies in Gender, State, & Society. March 28, 2007.

Available online:

Peru: Improving Health Care for the Poor by Daniel Cotlear, World Bank. Latin American and the Caribbean Regional Office.

An Opportunity for a Different Peru: Prosperous, Equitable, and Governable. By Marcelo Guigale, Vicent Fretes-Cilbis, John Newman.

MONEY:

Local currency is **Nuevo soles** (PEN), divided into 100 **céntimos**.

Exchange rate as of 12/5/15: 1 US dollar is around 3.37 PEN (1 PEN = 35¢)

Traveler's cheques are difficult to cash in most cities and incur a large transaction fee – consider leaving home without them.

ATMs are abundant in Lima. Note you may be charged a transaction fee both your home bank and the ATM's bank (for example, some U.S. banks charge $5 for each transaction made at a foreign ATM, and Lima ATMs charge about 4-5 soles). At ATMs in Peru, you can withdraw money in either Soles or US dollars.

- **Citibank** has branches and ATMs in Lima. You can open an account at a Citibank branch in the USA. With this account, transactions at Citibank ATMs in Peru are free of charge, while those at non-Citibank ATMs in Peru incur a 3% transaction fee. However, with a Citibank USA account one can use only the ATMs at Citibanks in Lima and not the branch services for making deposits, withdrawals, etc.

- Beware that small towns may not have any ATMs.
- When traveling, carry enough money to get to the next town and pay for any immediate needs. You never know when a mid-size town will have 2 broken ATMs and a bank under construction!
- You may find a credit card useful. **Visa** and **MasterCard** are the most widely accepted in Peru. Many USA banks charge a fee for transactions made abroad. CapitalOne does not charge a foreign transaction fee for some of its credit cards
- Write down your card's 1-800 number for emergency cancellation on a separate, safe piece of paper in case of theft; unfortunately, credit card number theft is common – so best to use a credit card infrequently.
- Prior to leaving your home country, call your banks to inform them you will be using your card in Peru and inquire about fees for foreign transactions. Without prior notification, some banks will freeze accounts, as a safety precaution, when a transaction is made in another country.
- Most prices can be negotiated.

HEALTH AND SAFETY:

Crime is a growing problem in Peru's cities, and Peru's National Police report that a crime in Lima occurs every three minutes. Use extreme caution when traveling in urban areas, and avoid political demonstrations, which have the potential to turn violent. A money belt is recommended.

Water is potable in most hotels and hostels in Lima, but elsewhere you should use a SteriPen, filtration, boiling, or drinking bottled water.

Consider purchasing travel insurance with theft insurance for electronics or other valuables.

There is a lot of specific safety information on the U.S. State Department website: http://travel.state.gov/travel/cis_pa_tw/cis/cis_998.html. Here are some tips from that site:

- The Shining Path (Sendero Luminoso) terrorist group is still active in rural provinces.
- The Peru/Colombia border is very dangerous as a result of narcotics trafficking and armed Colombian guerrillas.
- Political demonstrations, strikes, and marches regularly occur and at times escalate into violence.
- Avoid night-time road travel outside of major urban areas due to unsafe road conditions and risk of robbery.
- Avoid the bus between Lima and Cusco, as safety and security are compromised.
- Violent crime, including carjacking, assault, sexual assault, and armed robbery is common in Lima and other large cities. The Embassy is aware of reports of women being sexually assaulted in their place of lodging. Women travelling alone should be especially careful to avoid situations in which they are vulnerable due to impaired judgment or isolation. Resistance to violent crime often provokes greater violence, while victims who do not resist usually do not suffer serious physical harm. "Express kidnappings," in which criminals kidnap victims and seek to obtain funds from their bank accounts via automatic teller machines, occur frequently. Thieves often smash car windows at traffic lights to grab jewelry, purses, backpacks, or other visible items from a car. This type of assault is very common on main roads leading to Lima's Jorge Chavez International Airport, specifically along De la Marina and Faucett Avenues and Via de Evitamiento, but it can occur anywhere in congested traffic, particularly in downtown Lima. Travelers are encouraged to put all belongings, including purses, in the trunk of a car or taxi.

- Avoid wearing jewelry or carrying purses of handbags in public places.
- Avoid large crowds, as these tend to attract pickpockets.
- It is safer to use telephone-dispatched radio taxis or car services associated with major hotels.
- Travelers should guard against the theft of luggage and other belongings, particularly U.S. passports, at the Lima airport. Upon exiting the airport, travelers may be approached by persons seeming to know them, or who claim that a pre-arranged taxi has been sent to take them to their hotel. Some travelers have been charged exorbitant rates or taken to marginal hotels in unsafe parts of town. Travelers who are not being met by a known party or by a reputable travel agent or hotel shuttle are advised to arrange for a taxi inside the airport.
- Visitors are advised not to carry their U.S. passports if they are not needed. If the police request identification, a copy of the passport is acceptable. A copy of the data page, the page with the Peruvian visa, and a copy of the page with the Peruvian entry stamp should be carried.
- Counterfeit U.S. currency is a growing and serious problem in Peru. In many areas of the city, moneychangers openly change money on the street. These individuals should be avoided as they are a conduit for counterfeit currency and in many cases, work in leagues with pickpockets by pointing out potential victims.
- Incidents of credit card fraud are on the rise. Travelers should keep their credit card within their sight while making transactions.
- Avoid purchasing pirated CDs and DVDs. It is illegal to bring these back into the US.

COMMUNICATION:

Cell phone use: The prices of calling to and from mobile phones is surprisingly expensive in Peru. However, many people still find mobile phones to be useful; Dra. Montano often has cellphones available for students to use – these are pre-paid "pre-pago"; you can purchase additional minutes at most grocery or gas stations.

Recommended carriers: The two major providers are Claro and Movistar (Telefónica). They are competitors and often have special offers, such as a certain amount of money in free calls when you sign up. Despite the competition, prices are still quite high.

Plans and costs: There are two basic types of plans to choose from. In the prepaid ("prepago") plans, you add credit to your account, from which money is deducted each time you make a call or send a message. Most gringos have opted

for these prepaid plans. In an example of one prepaid plan from Claro, calls to other Claro mobile phones cost S./1.40 per min, calls to land lines cost S./2.30 per min, and calls to non-Claro mobile phones cost S./2.60 per min (these are approximate prices for Lima phones). Text messages nationwide cost 10 céntimos per message. So, many people use the phones primarily for text messaging and only occasionally for calls. There is no charge for incoming calls or messages, and no difference in cost by time of day or day of week. Movistar price plans are similar. You may want to find out what company your friends/colleagues use.

The other type of plan is the postpaid ("postpago"). Here, you are charged a fixed amount each month and get a reduced rate for calls. The initial cost of the phone is usually less if you sign up for a postpaid plan. This may be a good option if you are going to be making LOTS of calls. However, if you think you won't be making many calls and will primarily use text messages, the prepaid plans are probably a better option. Also, there is more red tape involved in signing up for a postpaid plan – non-Peruvian citizens have to present a variety of documents, and you may have to sign a 12-month minimum contract

Landlines:

Telefónica provides the majority of land telephone lines. Some gringos have chosen to have a line, while others have declined (remember that you have to have an active line in order to get the Speedy Internet service through Telefónica). Currently, the cheapest phone plan – the Super Económico – costs about 47 soles per month, and includes 120 minutes of call time per month to other land lines in Lima, as well as free incoming calls, and a voicemail service. If you surpass your monthly minutes, you can still use a prepaid phone card like the 147 from your land phone; this card is also useful for calling to mobile phones or phones outside of Lima, as well as for calling from public phones. Because of the prohibitively expensive cost of calls made from and to mobile phones, you may find it useful to have a land phone in your apartment.

Time difference with Seattle:

Seattle is 2 to 3 hours behind Lima time – depending on daylight savings.

Internet availability:

There are plenty of Internet cafés with high-speed connections around **Lima**.

Iquitos and Moyobamba: internet cafes are available but very slow.

Food

Most foods/snacks are available in Lima (the city has some really nice grocery stores). If you have a favorite brand of peanut butter, tea, snack, etc., you can consider bringing some along as it may either be unavailable or considerably more expensive in Lima. Caveat: there is a chance of confiscation by Peruvian customs if you get a "red light" during the customs screening process, though they will probably let most packaged foods pass.

Gastronomy has always been, since the days of the Spanish vice royalty, an essential aspect of life in Lima. During the last few years, however, the city's dining reputation has experienced a huge leap in the eyes of the world due to the fact that experts gathered in the Fourth International Summit of Gastronomy Madrid Fusión 2006 and formally declared Lima to be the "Gastronomy Capital of the Americas". The offerings in Lima are nowadays most varied and cover a wide range of types and cuisines, both regional and international.

Despite the wide range of choice in Lima's many restaurants, ceviche is surely number one on the list of dishes you must get to know, not only because it happens to be the "Peruvian national dish", but because of its unparalleled delicious taste. With the increasing interest in the Peruvian cuisine, ceviche is quickly making its way onto tables all over the world. But if you want to enjoy the real thing, don't miss it during your stay here in ceviche's Mecca. There is at least one cevichería in every neighbourhood, so it won't be hard to find one. Moreover, most criollo restaurants include ceviche on their menus; indeed, many restaurants do, even the more upscale nouveau-cuisine.

Warning-when to eat ceviche
The locals make it a rule not to eat ceviche late in the day since doing so may upset one's stomach (which is why you will not easily find a cevicheria open after 5PM). Western stomachs in particular can sometimes react badly to this acidic dish and eating it late in the day apparently increases that risk. Drinking Pisco Sour with a plate of Ceviche makes the meal even more acidic. Beginners may want to choose a different type of drink with their Ceviche.

A second must goes to Asian cuisine, both Chinese and Japanese, which predictably, have a strong Peruvian influence. Chifas -that is, Chinese restaurants, which can be counted by the hundreds if not thousands, are usually down-to-earth neighborhood eateries, offering a fare rich in seafood and chicken. Japanese restaurants, on the contrary, are less widespread, and more upscale and

expensive. Their forte is, of course, a year-round supply of the freshest and most varied seafood.

Peruvian food tends to be spicy and heavy. Try it and ask if any dish is picante (spicy), and if you are not fond of that, avoid it since it may be really picante. A full meal may be really heavy and cause problems even if it's perfectly nice and well prepared with fresh ingredients.

Travelers longing for a delicious falafel or shwarma sandwich will be pleased to learn there is an excellent cafe along Parque Kennedy that serves these type of Middle Eastern foods at reasonable prices.

There is a heavy presence of Western fast-food chains such as KFC, Pizza Hut, Domino's Pizza, McDonald's, Subway and Starbucks Coffee all over the city if you'd rather not try anything new to you. Places such as Burger King, Chili's and Friday's are scarce, but can be easily found around Miraflores. Also, you shouldn't miss Peruvian-style hamburgers at Bembos, traditional Peruvian sandwiches in Pasquale and fusion pizza over at D'nnos Pizza if you want to give your everyday fast-food a local twist.

Lima is home to around 220,000 restaurants, cafes, juice bars and runs a program (Restaurante Saludable) to recognize clean and healthy restaurants. Only around 800 or 1.2% of venues have received this award, so keep your eyes open for the logo Restaurante Saludable.

Food Safety

Water is potable in most hotels and hostels in Lima, but if you prefer more secure water, consider using a SteriPen, filtering, boiling, or drinking bottled water.

Entertainment

Gyms: Lima has several gym chains with modern equipment. In Miraflores, options include Gold's Gym, Energym, and Sportlife. Each has branches in other parts of the city – some membership plans allow you to use any branch at any time, while others limit you to one branch with only occasional visits to other branches. Gold's Gym in Miraflores (at the intersection of Larco and Benavides) opened in December 2005 and has very modern equipment in a spacious setting. There are free weights, weight machines, cardiovascular machines, a myriad of aerobics/step/spinning classes, free monthly nutritional and progress consults, and trainers available to assist while working out. The trainers can design a personal workout for you each month. There are also personal trainers if you wish to pay for this service – they stay with you during the entire length of your workout. The general memberships, which include basically everything except personal trainers, can cost anywhere from $25 to $75 per month, depending on

the length of the contract you sign and any special offers available at that time. Keep in mind that bargaining does sometimes occur with regard to gym memberships. Most gyms will allow you a free trial period, so you can visit them and then decide which one you like the best.

- Sportlife offers the same services as Gold's Gym. Prices are similar, staff is professional and it comes highly recommended. In San Isidro it is one of the only options as far as gyms go and is located next to the Sonesta Posada del Inca hotel at Parque de Los Olivos.
- Energym: located in San Miguel.

• **Spanish Classes:** Spanish classes are available for those at beginner, intermediate, or advanced levels. Classes can be taken privately or with a group, either at a language school or at your home. Classes in Arequipa and Cusco are significantly cheaper but in Lima, El Sol (http://elsol.idiomasperu.com/), is one of the more popular language schools in Lima. $420 for one week of 20 hours/ semi-intensive classes. Idiomas Catolica (http://www.idiomas.pucp.edu.pe/) is also very good and less expensive. Private teachers who come to your house are usually around 35-50 soles/hour. Ask around when you arrive.

• **Salsa:** There are a variety of salsa dance classes available to beginners, intermediates, and advanced dancers. Some places offer private lessons either at a club or at your home. If you decide to take this route, you'll likely be asked to pay in advance for a set of classes. If you do this, ask for a receipt and be sure to make note of the number of classes you have taken. Some locales offer group classes. One such place is Cohiba, located on cuadra 6 of Avenida del Ejército in Miraflores. The head instructor is named Julio Mendoza and his email is salsaschool@speedy.com.pe (website http://www.salsa-school.com/index.htm). The beginner course includes 10 classes on Saturdays from 5:30-7pm or from 7-8:30pm. There are also free guided practice sessions for students on Thursdays from 9-10pm. The cost of the beginner course is $60 for an individual and $70 for a couple.

• **South American Explorers:** (http://www.saexplorers.org/club/home) They have a clubhouse at Calle Piura 135 in Miraflores. This is an organization with English-speaking employees who provide lots of information about travel around Peru and offer discounts to members on hotels, restaurants, and other travel services around the country. They also have a book exchange and various travel books for sale.

GENERAL TIPS FROM FORMER STUDENTS:

Packing

- Bring warm clothes and a sleeping bag!
- Bring a hiking backpack for weekend trips.
- A water filter or sterilizing pen is very useful.

Housing

- If you stay in a hostel your first couple nights you get to see the hip parts of town, and I guarantee you will find cheap housing quickly if you ask around with the docs and nurses at the hospital. The family I'm staying in Iquitos (Dr. Ernesto Salazar) is fun, has great food, and is close to downtown. I highly recommend it.
- Consider living with other Peruvians.

Culture

- If people comment on your weight, race or clothing it's not personal. Calling people by physical attributes (e.g. "flaco" or "gordita") is common.
- Don't expect a lot of personal space.
- Bargaining: vendors always want to make money, but most are willing to bargain on prices.
- There are lots of beggars, so have a strategy for how you want to handle them.
- People aren't expecting you to be Peruvian, so don't worry too much about trying to follow all the local customs.

Work and Projects:

- A laptop is invaluable for reading literature at your own pace, without paying for the time.
- Be very clear from the start what you want to get out of your summer.
- Don't be frustrated if things run on a different time schedule than you are used to in the U.S., things take longer in Peru. It often takes several meetings with someone before they will agree to help you or to do something for you; you must have a relationship before you can ask for something!
- Be proactive with your project.

Make the most of your experience!

CULTURAL ADJUSTMENT

- Look for a cultural broker, someone who has and understanding of both U.S. culture and the local culture. An expatriate who has spent many years living in the host country, or a local who has lived in the U.S. can be invaluable in helping you negotiate and understand your host country.

- Learn as much as you can about your host country's history, values, language, culture and norms.

- Resist the urge to assume that people are just "doing things wrong" in your host country, and that you know better. Try to understand the reasons why things might be handled differently.

- Remember that, in general, developing countries tend to be more formal than the U.S. and communication is more likely to be indirect. Value is placed on respecting social hierarchies, "saving face" and avoiding embarrassment.

- Be aware that needing to re-learn even simple routines in a foreign culture is stressful. Give yourself time to adapt, and don't be afraid to make mistakes.

In her book, *Foreign to Familiar*, (2000, McDougal Publishing), Sarah Lanier discusses the differences between "Hot-Climate" and "Cold-Climate" cultures. Although this distinction is a vast oversimplification, they do represent spectrums of cultural norms that can provide a useful framework for understanding cultural differences. The chart below is loosely adapted from her work.

	"Cold-Climate" Cultures	**"Hot-Climate" Cultures**
Social Interactions	Efficiency is valued. It is acceptable to be businesslike with people you don't know, and personal questions are to be avoided.	Relationships are valued more than efficiency. It is important to acknowledge people and not rush interactions. Getting to the point too quickly is rude, and personal questions are welcome.
Emotions	Logic, restraint and objectivity are valued, and displays of emotion are rare.	People are emotionally demonstrative. Subjective feelings and intuition are given

		credibility.
Communication	Accurate, truthful information is valued. Communication is direct, words are to be taken at face value, and people say what they mean. "No" means "no," and things are not meant to be taken personally.	Maintaining harmony is important, and disagreeing, complaining or causing offense or embarrassment is to be avoided. Indirect methods of communication are frequently used. It is impolite to directly say "no" or not give the answer a person expects to hear.
Individuality	Individuality, autonomy, personal initiative and self-reliance are valued. Individual likes and dislikes are important. People are expected to speak their opinions, and look after their own needs. People see themselves as "free to do as they please."	Community cohesion and group identity are valued over individuality. ("I belong, therefore I am.") The needs of the community are more important than personal desires. A person's opinions should reflect those of the group. One's actions should reflect well on the group.
Hierarchy	Society is fluid. People generally see themselves as equals, and authority is earned and can be openly questioned. What you know is more important than who you know, and the value of an idea depends on its utility, not its source. "Low-power distance"	Society is hierarchical. Class and social distinctions are maintained, acknowledged and deferred to. Authority is not to be questioned, and the value of one's opinion increases with social rank. "High-power distance"
Formality	Interactions are casual. First names are used. Clothing choices reflect personal tastes and comfort. "Low context"	Interactions are formal, and it is important to follow protocols and demonstrate respect for elders and superiors. People are referred to by their titles. Greetings carry great importance, and clothing should reflect one's place in society. "High context"
Privacy	People have a "right to privacy," their own personal space and time to themselves.	People have a right to be included. Privacy is considered rude. Plans and conversations should include all.
Property	Personal property is considered sacred. People pay their own way, are responsible for their own things, and there is no obligation or expectation to	Property is communal and belongs to the group. This is particularly true for food, which is expected to be shared by all.

	share.	
Planning Planning Continued	Planning is expected, and schedules are adhered to except in extreme circumstances.	Spontaneity is preferred. Schedules are always subject to change. Flexibility and patience are valued. It is acceptable to show up unannounced or not follow through on plans.
Hospitality	Visitors are expected to make arrangements for their own food, housing and transportation, and payments are negotiated ahead of time. When people are invited out, it is expected that they will all pay their own way. Social events usually take place at public establishments.	Hospitality is important. Visitors need to be taken care of, and it is not appropriate to ask them to pay, although it is expected that they will leave gifts in exchange. When people are invited out, it is expected that the person who gave the invitation will pay. Social events usually take place in the home.
Gender	Gender differences are minimized. Women are judged on the same criteria as men. Traditional roles are less respected.	Gender differences are important, and women are expected to be submissive to men. Traditional roles are respected.
Time	Time is a linear phenomenon, measured by clocks. Punctuality and planning are valued. It is important to respect someone's time: Time is money. "Monochromic time"	Time is relative, and is measured by events. It is important to be living in the moment and to deal with things as they come up. Attending to people's needs is valued, regardless of how long it takes. "Polychromic time"

Culture Shock

"Culture shock" is real, and it is important to be prepared for it and to recognize when it is occurring. What people generally mean by culture shock is the stress that occurs from being away from familiar surroundings and continually having to struggle to understand what is going on around you. What begins as discomfort and confusion can subtly progress to frustration, anxiety, irritability, loneliness and withdrawal. More often than not, anger is the result, and it is not uncommon for this to lead to unprofessional behavior and lashing out at the local community. When you find your frustration mounting, be sure to take a step back and find productive and healthy ways to manage your stress. Remember, you are ultimately just a guest in their country. Above all, try and keep a sense of humor. Be aware that you will likely have some reverse culture shock upon returning to the U.S.

Guidelines for the Management of Body Fluid Exposure

Background:

When working in clinical environments, there exists the possibility for exposure to bloodborne pathogens, particularly in environments where universal precautions and sharps disposal practices may not be followed with the same rigor as in the US. Exposure to blood and other bodily fluids can transmit Hepatitis B, hepatitis C, and HIV, as well as other illnesses such as viral hemorrhagic fevers, including dengue. Transmission of malaria can also occur through needlestick, as can transmission of other parasitic diseases such as trypanosomiasis and visceral leischmaniasis.

Pre-departure advice:

PREVENTION: Obviously, the most important aspect of blood and body fluid exposure is prevention. Students should use gloves and other personal protective equipment if there exists the possibility of contact with a patient's blood. All students should bring with them a box of non-sterile gloves. You are also encouraged to bring some form of eye protection and face masks.

VACCINATION: Hepatitis B is highly transmissible through needlestick injuries (1 in 3 people exposed will seroconvert) - all students should have completed their hepatitis B vaccination series before leaving for GHIP (IHOP). You should be sure you are protected against measles, mumps, rubella, hepatitis A, tetanus, diphtheria, typhoid, and varicella, and polio. Depending on location, yellow fever and/or meningitis may be appropriate as well. Although there is no efficacious vaccine for hepatitis C or HIV, it may be worth knowing your status before leaving for your host site. Students should be on malaria prophylaxis if in a malarial area.

POST-EXPOSURE PROPHYLAXIS: You are required to purchase and bring with you two different HIV prophylactic medications. The exact number of pills will depend on where you are going. If you are in a country where we have identified someone who will be responsible for treating you in the event of an exposure, 1-2 days of medications may be enough. If you are in a remote area and would need to return to the U.S. to obtain treatment, then a 5-day supply may be prudent.

In the event of a needle-stick or other significant exposure, you would generally begin taking treatment right away, while arranging for the patient to have HIV testing. If the patient is HIV positive, you should then need to complete a full 30 days of medications. This would involve obtaining an additional supply of medications and arranging for follow-up evaluation and monitoring. In many cases, it may be best to return to the U.S. to ensure proper care.

Specific prophylactic regimens should be discussed during your Travel Clinic visit, and you should ask for a prescription during your visit for a 2-5 day supply.

What to do in the event of a body fluid exposure:

1. **Don't Panic**.

   The vast majority of exposures result in no harm. For example, the seroconversion rate of an untreated needlestick injury from an HIV positive patient is less than 0.3%, and from a mucosal exposure less than 0.09%. With prompt initiation of antiretroviral medications, this risk is further reduced 85% or more.

2. **Wash the exposed area**.

   Remove all soiled clothing. Wash skin and wounds with soap and water. Irrigate wounds copiously with water. Flush eyes or mucous membranes with water or sterile saline.

3. **Let someone know**.

   Inform your clinical supervisor that you had an exposure. Contact a medical provider with experience in post-exposure prophylaxis (CDC Post-Exposure Prophylaxis Hotline, Harborview Madison Clinic, Dr. McClelland, etc.)

4. **Decide if you need to start medications**.

   This will depend on the severity of the exposure and the HIV status of the patient. If the patient is HIV positive or of unknown status in a high-prevalence area, *antiretroviral medications should be started as soon as possible* in the event of a needlestick injury, or if visibly bloody fluid is splashed into your eyes or mouth. (See the attached CDC algorithm for specifics). Do not wait for the source patient's blood testing to come back before starting meds. If the patient has suspicion for *P. falciparium*, consider taking a presumptive treatment of malaria if you are not on malaria prophylaxis.

5. **Arrange for testing**.

   If possible, arrange for HIV testing of the source patient and a malaria smear (if in an endemic area). If serologies for hepatitis B surface antigen and hepatitis C antibody are readily available, send these too. If you do not know your own HIV, hepatitis C, or pregnancy status, these should be checked. It is helpful to get a CBC, chemistry panel, and hepatic panel if you are going to be starting medications. This will allow your physician to have baseline labs in the event you develop side effects from your antiretroviral medications.

6. **Decide if you need to come home**.

   If the source patient tests **negative** for HIV, and you think it unlikely that the patient contracted HIV in the past few months, you can *stop treatment*. If the patient is HIV **positive**, cannot be tested, or is felt to be at high risk of HIV despite a negative test result, continue treatment. *It is generally recommended to arrange for medical evacuation back home* for proper evaluation and monitoring while on

prophylaxis. However, many countries now have doctors and facilities that are experts in treating patients with antiretroviral medications. The decision to stay at your post or return home is a serious one that should be discussed with a qualified medical provider. The GHRC is happy to work with you on ways to fulfill your GHIP/III requirements in the event an evacuation is needed.

7. **Get support.**

   Having a body fluid exposure is often a deeply unsettling experience. It is recommended that you talk it over with someone to help put things in perspective. Most people feel extremely frightened and vulnerable right after an exposure. The CDC's "PEPline" is an excellent resource. This is a national hotline that provides around-the-clock expert guidance in managing healthcare worker exposures to HIV and hepatitis B and C. Callers receive immediate post-exposure prophylaxis recommendations and counseling. The phone number is +1-888-448-4911. You may also call Dr. McClelland at +1-206-473-0392.

Recommended HIV PEP

Percutaneous injuries					
	Infection status of the source				
Exposure type	**HIV-positive, Class 1*** Asymptomatic HIV infection or known low viral load (e.g., <1,500)	**HIV-positive, Class 2*** Symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load	**Source of unknown HIV status** (e.g., deceased source person with no samples available for HIV testing)	**Unknown source** (e.g., a needle from a sharps disposal container)	**HIV-negative**
Less severe (e.g., solid needle, superficial injury)	Recommend basic 2-drug PEP	Recommend expanded 3-drug PEP	Generally, no PEP§ warranted	Generally, no PEP§ warranted	No PEP warranted
More severe (e.g., large-bore hollow needle, deep puncture, visible blood on device, or needle used in patient's artery or vein)	Recommend expanded 3-drug PEP	Recommend expanded 3-drug PEP	Generally, no PEP§ warranted	Generally, no PEP§ warranted	No PEP warranted
Mucous membrane exposures and non-intact skin¶ exposures					
	Infection status of the source				
Exposure type	**HIV-positive,Class 1*** Asymptomatic HIV infection or known low viral load (e.g., <1,500)	**HIV-positive, Class 2*** Symptomatic HIV infection, AIDS, acute seroconversion, or known high viral load	**Source of unknown HIV status** (e.g., deceased source person with no samples available for HIV testing)	**Unknown source** (e.g., splash from inappropriately disposed blood)	**HIV-negative**
Small volume (e.g., few drops)	Consider basic 2-drug PEP†	Recommend basic 2-drug PEP	Generally, no PEP§ warranted	Generally, no PEP§ warranted	No PEP warranted
Large volume (e.g., major blood splash)	Recommend basic 2-drug PEP	Recommend expanded 3-drug PEP	Generally, no PEP§ warranted	Generally, no PEP§ warranted	No PEP warranted

* If drug resistance is a concern, obtain expert consultation. Initiation of PEP should not be delayed pending expert consultation and, because expert consultation alone cannot substitute for face-to-face counseling, resources should be available to provide immediate evaluation and follow-up care for all exposures.

† The designation, "consider PEP," indicates that PEP is optional and should be based on an individualized decision between the exposed person and the treating clinician. However, consider basic 2-drug PEP for a source with HIV risk factors, or occurs in a setting where exposure to HIV-infected persons is likely.

§ If PEP is offered and taken, and the source is later determined to be HIV negative, PEP should be discontinued.

¶ For skin exposures, follow-up is indicated only if there is evidence of compromised skin integrity (e.g., dermatitis, abrasion, or open wound).

2-drug regimen:
emtricitibine/tenofovir (Truvada) - 1 tablet (200mg/300mg) po once daily **or**
zidovudine/lamivudine (Combivir) - 1 tablet (300mg/150mg) po twice daily **or**
efavirenz (Sustiva) - 1 tablet (600mg) at bedtime

Expanded 3-drug regimen:
add lopinavir/RTV (Kaletra) - 2 tablets (400mg/100mg) po twice daily

MAP OF PERU


Boundary representation is not necessarily authoritative
COLOMBIA
ECUADOR
BRAZIL
BOLIVIA
CHILE
Pacific Ocean
Quito
Manta
Ambato
Guayaquil
Cuenca
Tumbes
TUMBES
Loja
Talara
Sullana
PIURA
Piura
Paita
AMAZONAS
Chachapoyas
Yurimaguas
Moyobamba
Tarapoto
LAMBAYEQUE
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Ayacucho
Pisco
Ica
ICA
Nazca
APURÍMAC
Abancay
AYACUCHO
Quillabamba
CUSCO
Machupicchu (ruins)
Cusco
Puerto Maldonado
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Arequipa
Desaguadero
MOQUEGUA
Matarani
Moquegua
Ilo
TACNA
Tacna
Arica
La Paz
Guaqui
Oruro
Lago Poopo
Machu Picchu
Peru
International boundary
Department boundary
National capital
Department capital
Railroad
Road
Callao is the capital of the Constitutional Province of Callao which has the status of a department but is too small to be shown on this map.
0 100 200 Kilometers
0 100 200 Miles
Transverse Mercator Projection, CM 71°W

US PUBLIC HEALTH SERVICE GUIDELINE

Updated US Public Health Service Guidelines for the Management of Occupational Exposures to Human Immunodeficiency Virus and Recommendations for Postexposure Prophylaxis

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This report updates US Public Health Service recommendations for the management of healthcare personnel (HCP) who experience occupational exposure to blood and/or other body fluids that might contain human immunodeficiency virus (HIV). Although the principles of exposure management remain unchanged, recommended HIV postexposure prophylaxis (PEP) regimens and the duration of HIV follow-up testing for exposed personnel have been updated. This report emphasizes the importance of primary prevention strategies, the prompt reporting and management of occupational exposures, adherence to recommended HIV PEP regimens when indicated for an exposure, expert consultation in management of exposures, follow-up of exposed HCP to improve adherence to PEP, and careful monitoring for adverse events related to treatment, as well as for virologic, immunologic, and serologic signs of infection. To ensure timely postexposure management and administration of HIV PEP, clinicians should consider occupational exposures as urgent medical concerns, and institutions should take steps to ensure that staff are aware of both the importance of and the institutional mechanisms available for reporting and seeking care for such exposures. The following is a summary of recommendations: (1) PEP is recommended when occupational exposures to HIV occur; (2) the HIV status of the exposure source patient should be determined, if possible, to guide need for HIV PEP; (3) PEP medication regimens should be started as soon as possible after occupational exposure to HIV, and they should be continued for a 4-week duration; (4) new recommendation—PEP medication regimens should contain 3 (or more) antiretroviral drugs (listed in Appendix A) for all occupational exposures to HIV; (5) expert consultation is recommended for any occupational exposures to HIV and at a minimum for situations described in Box 1; (6) close follow-up for exposed personnel (Box 2) should be provided that includes counseling, baseline and follow-up HIV testing, and monitoring for drug toxicity; follow-up appointments should begin within 72 hours of an HIV exposure; and (7) new recommendation—if a newer fourth-generation combination HIV p24 antigen–HIV antibody test is utilized for follow-up HIV testing of exposed HCP, HIV testing may be concluded 4 months after exposure (Box 2); if a newer testing platform is not available, follow-up HIV testing is typically concluded 6 months after an HIV exposure.

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Preventing exposures to blood and body fluids (ie, primary prevention) is the most important strategy for preventing occupationally acquired human immunodeficiency virus (HIV) infection. Both individual healthcare providers and the institutions that employ them should work to ensure adherence to the principles of Standard Precautions,[1] including ensuring access to and consistent use of appropriate work practices, work practice controls, and personal protective equipment. For instances in which an occupational exposure has occurred, appropriate postexposure management is an important element of workplace safety. This document provides updated recommendations concerning the management of occupational exposures to HIV.

The use of antiretrovirals as postexposure prophylaxis (PEP) for occupational exposures to HIV was first considered in guidelines issued by the Centers for Disease Control and Prevention (CDC) in 1990.[2] In 1996, the first US Public Health Service (PHS) recommendations advocating the use of PEP after occupational exposure to HIV were published; these recommendations have been updated 3 times.[3-6] Since

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publication of the most recent guidelines in 2005, several new antiretroviral agents have been approved by the Food and Drug Administration (FDA), and additional information has become available regarding both the use and the safety of agents previously recommended for administration for HIV PEP.

As a direct result of 7 years' experience with the 2005 guidelines, several challenges in the interpretation and implementation of those guidelines have been identified. These challenges include difficulties in determining levels of risk of HIV transmission for individual exposure incidents, problems determining the appropriate use of 2 versus 3 (or more) drugs in PEP regimens, the high frequency of side effects and toxicities associated with administration of previously recommended drugs, and the initial management of healthcare personnel (HCP) with exposures to a source patient whose HIV infection status was unknown. The PHS working group has attempted to address both the new information that has been developed and the challenges associated with the practical implementation of the 2005 guidelines in this update.

This report encourages using HIV PEP regimens that are optimally tolerated, eliminates the recommendation to assess the level of risk associated with individual exposures to determine the number of drugs recommended for PEP, modifies and expands the list of antiretroviral medications that can be considered for use as PEP, and offers an option for concluding HIV follow-up testing of exposed personnel earlier than 6 months after exposure. This report also continues to emphasize the following: (1) primary prevention of occupational exposures; (2) prompt management of occupational exposures and, if indicated, initiation of PEP as soon as possible after exposure; (3) selection of PEP regimens that have the fewest side effects and that are best tolerated by prophylaxis recipients; (4) anticipating and preemptively treating side effects commonly associated with taking antiretroviral drugs; (5) attention to potential interactions involving both drugs that could be included in HIV PEP regimens and other medications that PEP recipients might be taking; (6) consultation with experts on postexposure management strategies (especially determining whether an exposure has actually occurred and selecting HIV PEP regimens, particularly when the source patient is antiretroviral treatment experienced); (7) HIV testing of source patients (without delaying PEP initiation in the exposed provider) using methods that produce rapid results; and (8) counseling and follow-up of exposed HCP.

Recommendations concerning the management of occupational exposures to hepatitis B virus and/or hepatitis C virus (HCV) have been published previously[5,7] and are not included in this report. Recommendations for nonoccupational (eg, sexual, pediatric, and perinatal) HIV exposures also have been published previously.[8-10]

METHODS

In 2011, the CDC reconvened the interagency PHS working group to plan and prepare an update to the 2005 *Updated U.S. Public Health Service Guidelines for the Management of Occupational Exposures to HIV and Recommendations for Postexposure Prophylaxis*.[6] The PHS working group was comprised of members from the CDC, the FDA, the Health Resources and Services Administration, and the National Institutes of Health. Names, credentials, and affiliations of the PHS working group members are listed as the byline of this guideline. The working group met twice a month to monthly to create a plan for the update as well as draft the guideline.

A systematic review of new literature that may have become available since 2005 was not conducted; however, an initial informal literature search did not reveal human randomized trials demonstrating superiority of 2-drug antiretroviral medication regimens versus those with 3 (or more) drugs as PEP or an optimal PEP regimen for occupational exposures to HIV. Because of the low risk of transmission associated with occupational exposures (ie, approximately 0.3% per exposure when all parenteral exposures are considered together),[11] neither the conduct of a randomized trial assessing efficacy nor the conduct of trials assessing the comparative efficacy of 2- versus 3-drug regimens for PEP is practical. In light of the absence of such randomized trials, the CDC convened a meeting of the interagency PHS working group and an expert panel of consultants in July 2011 to discuss the use of HIV PEP and develop the recommendations for this update. The expert panel consisted of professionals in academic medicine considered to be experts in the treatment of HIV-infected individuals, the use of antiretroviral medications, and PEP. Names, credentials, and affiliations of the expert panel of consultants are listed in "Expert Panel Consultants" at the end of this guideline.

Prior to the July 2011 meeting, the meeting participants were provided an electronic copy of the 2005 guidelines and asked to review them and consider the following topics for discussion at the upcoming meeting: (1) the challenges associated with the implementation of the 2005 guidelines, (2) the role of ongoing risk stratification in determining the use of 2-drug PEP regimens versus those with 3 or more drugs, (3) updated drug choices for PEP, (4) the safety and tolerability of antiretroviral agents for the general population and for pregnant or lactating HCP, and (5) any other topics in the 2005 guideline that needed to be updated.

At the July 2011 meeting, a CDC representative presented a review of the 2005 guideline recommendations, surveillance data on occupational exposures from the National Surveillance System for Healthcare Workers,[12] and data from the National Clinicians' Post-Exposure Prophylaxis Hotline (PEPline) on the number of occupational exposures to HIV managed annually, PEP regimens recommended, and challenges experienced with implementation of the 2005 guidelines. An FDA representative presented a review of the new medications that have become available since 2005 for the treatment of HIV-infected individuals, information about medication tolerability and toxicity, and the use of these medications during pregnancy. These presentations were followed by a discussion of the topics listed above.

Among the challenges discussed regarding implementation of the 2005 guidelines were the difficulties in determining level of risk of HIV transmission for individual exposure incidents, which in turn determined the number of drugs recommended for HIV PEP. The consensus of the meeting participants was to no longer recommend exposure risk stratification (discussed in detail in "Recommendations for the Selection of Drugs for HIV PEP" below). To update the drug choices for PEP, all drugs available for the treatment of HIV-infected individuals were discussed with regard to tolerability, side effects, toxicity, safety in pregnancy and lactation, pill burden, and frequency of dosing. A hierarchy of recommended drugs/regimens was developed at the meeting and utilized in creating the PEP regimen recommendations (Appendixes A and B) in these guidelines. Among other topics identified as needing an update were the acceptable HIV testing platforms available for source patient and follow-up testing of exposed HCP; the timing of such testing, depending on the platform used; and the potential utility of source patient drug-resistance information/testing in PEP regimens.

After the expert consultation, the expert panelists received draft copies of these guidelines as they were updated and provided insights, information, suggestions, and edits and participated in subsequent teleconferences with the PHS working group, to assist in developing these recommendations. Proposed recommendation updates were presented to the Healthcare Infection Control Practices Advisory Committee in November 2011[13] and June 2012[14] during public meetings. The PHS working group considered all available information, expert opinion, and feedback in finalizing the recommendations in this update.

DEFINITION OF HCP AND EXPOSURE

The definitions of HCP and occupational exposures are unchanged from those used in 2001 and 2005.[5,6] The term HCP refers to all paid and unpaid persons working in healthcare settings who have the potential for exposure to infectious materials, including body substances (eg, blood, tissue, and specific body fluids), contaminated medical supplies and equipment, and contaminated environmental surfaces. HCP might include but are not limited to emergency medical service personnel, dental personnel, laboratory personnel, autopsy personnel, nurses, nursing assistants, physicians, technicians, therapists, pharmacists, students and trainees, contractual staff not employed by the healthcare facility, and persons not directly involved in patient care but potentially exposed to blood and body fluids (eg, clerical, dietary, housekeeping, security, maintenance, and volunteer personnel). The same principles of exposure management could be applied to other workers with potential for occupational exposure to blood and body fluids in other settings.

An exposure that might place HCP at risk for HIV infection is defined as a percutaneous injury (eg, a needlestick or cut with a sharp object) or contact of mucous membrane or nonintact skin (eg, exposed skin that is chapped, abraded, or afflicted with dermatitis) with blood, tissue, or other body fluids that are potentially infectious. In addition to blood and visibly bloody body fluids, semen and vaginal secretions are also considered potentially infectious. Although semen and vaginal secretions have been implicated in the sexual transmission of HIV, they have not been implicated in occupational transmission from patients to HCP. The following fluids are also considered potentially infectious: cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. The risk for transmission of HIV infection from these fluids is unknown; the potential risk to HCP from occupational exposures has not been assessed by epidemiologic studies in healthcare settings. Feces, nasal secretions, saliva, sputum, sweat, tears, urine, and vomitus are not considered potentially infectious unless they are visibly bloody.[11]

Any direct contact (ie, contact without barrier protection) to concentrated virus in a research laboratory or production facility requires clinical evaluation. For human bites, clinical evaluation must include the possibility that both the person bitten and the person who inflicted the bite were exposed to bloodborne pathogens. Transmission of HIV infection by this route has been reported rarely, but not after an occupational exposure.[15-20]

RISK FOR OCCUPATIONAL TRANSMISSION OF HIV

Factors associated with risk for occupational transmission of HIV have been described; risks vary with the type and severity of exposure.[4,5,11] In prospective studies of HCP, the average risk for HIV transmission after a percutaneous exposure to HIV-infected blood has been estimated to be approximately 0.3% (95% confidence interval [CI], 0.2%–0.5%)[11] and that after a mucous membrane exposure to be approximately 0.09% (95% CI, 0.006%–0.5%).[21] Although episodes of HIV transmission after nonintact skin exposure have been documented, the average risk for transmission by this route has not been precisely quantified but is estimated to be less than the risk for mucous membrane exposures. The risk for transmission after exposure to fluids or tissues other than HIV-infected blood also has not been quantified but is probably considerably lower than that for blood exposures.

Epidemiologic and laboratory studies suggest that multiple factors might affect the risk of HIV transmission after an occupational exposure.[22] In a retrospective case-control study of HCP who had percutaneous exposure to HIV, increased risk for HIV infection was associated with exposure to a larger quantity of blood from the source person as indicated by (1) a device (eg, a needle) visibly contaminated with the patient's blood, (2) a procedure that involved a needle being placed directly in a vein or artery, or (3) a deep injury. The risk also was increased for exposure to blood from source persons with terminal illness, likely reflecting the higher titer of HIV in blood late in the course of acquired immunodeficiency syndrome (AIDS). Taken together, these factors suggest a direct inoculum effect (ie, the larger the viral inoculum, the higher

the risk for infection). One laboratory study that demonstrated that more blood is transferred by deeper injuries and hollow-bore needles lends further credence to the observed variation in risk related to inoculum size.[23]

Exposure to a source patient with an undetectable serum viral load does not eliminate the possibility of HIV transmission or the need for PEP and follow-up testing. While the risk of transmission from an occupational exposure to a source patient with an undetectable serum viral load is thought to be very low, PEP should still be offered. Plasma viral load (eg, HIV RNA) reflects only the level of cell-free virus in the peripheral blood; persistence of HIV in latently infected cells, despite patient treatment with antiretroviral drugs, has been demonstrated,[24,25] and such cells might transmit infection even in the absence of viremia. HIV transmission from exposure to a source person who had an undetectable viral load has been described in cases of sexual and mother-to-child transmissions.[26,27]

ANTIRETROVIRAL AGENTS FOR PEP

Antiretroviral agents from 6 classes of drugs are currently available to treat HIV infection.[28] These include the nucleoside and nucleotide reverse-transcriptase inhibitors (NRTIs), nonnucleoside reverse-transcriptase inhibitors (NNRTIs), protease inhibitors (PIs), a fusion inhibitor (FI), an integrase strand transfer inhibitor (INSTI), and a chemokine (C-C motif) receptor 5 (CCR5) antagonist. Only antiretroviral agents approved by the FDA for treatment of HIV infection are included in these guidelines, although none of these agents has an FDA-approved indication for administration as PEP. The rationale for offering antiretroviral medications as HIV PEP is based on our current understanding of the pathogenesis of HIV infection and the plausibility of pharmacologic intervention in this process, studies of the efficacy of antiretroviral chemoprophylaxis in animal models,[29,30] and epidemiologic data from HIV-exposed HCP.[22,31] The recommendations in this report provide guidance for PEP regimens comprised of 3 (or, when appropriate, more) antiretrovirals, consonant with currently recommended treatment guidelines for HIV-infected individuals.[28]

TOXICITY AND DRUG INTERACTIONS OF ANTIRETROVIRAL AGENTS

Persons receiving PEP should complete a full 4-week regimen.[5] However, previous results show that a substantial proportion of HCP taking an earlier generation of antiretroviral agents as PEP frequently reported side effects,[12,32-40] and many were unable to complete a full 4-week course of HIV PEP due to these effects and toxicities.[32-37] Because all antiretroviral agents have been associated with side effects (Appendix B),[28] the toxicity profile of these agents, including the frequency, severity, duration, and reversibility of side effects, is a critical consideration in selection of an HIV PEP regimen. The majority of data concerning adverse events has been reported primarily for persons with established HIV infection receiving prolonged antiretroviral therapy and therefore might not reflect the experience of uninfected persons who take PEP. In fact, anecdotal evidence from clinicians knowledgeable about HIV treatment indicates that antiretroviral agents are tolerated more poorly by HCP taking HIV PEP than by HIV-infected patients on antiretroviral medications. As side effects have been cited as a major reason for not completing PEP regimens as prescribed, the selection of regimens should be heavily influenced toward those that are best tolerated by HCP receiving PEP. Potential side effects of antiretroviral agents should be discussed with the PEP recipient, and, when anticipated, preemptive prescribing of agents for ameliorating side effects (eg, antiemetics and antispasmodics) may improve PEP regimen adherence.

In addition, the majority of approved antiretroviral agents might have potentially serious drug interactions when used with certain other drugs, thereby requiring careful evaluation of concomitant medications, including over-the-counter medications and supplements (eg, herbals), used by an exposed person before prescribing PEP and close monitoring for toxicity of anyone receiving these drugs.[28] PIs and NNRTIs have the greatest potential for interactions with other drugs. Information regarding potential drug interactions has been published, and up-to-date information can be found in the *Guidelines for the Use of Antiretroviral Agents in HIV-1-Infected Adults and Adolescents*.[28] Additional information is included in manufacturers' package inserts. Consultation with a pharmacist or physician who is an expert in HIV PEP and antiretroviral medication drug interactions is strongly encouraged.

SELECTION OF HIV PEP REGIMENS

Guidelines for treating HIV infection, a condition typically involving a high total body burden of HIV, recommend the use of 3 or more drugs. Although the applicability of these recommendations to PEP is unknown, newer antiretroviral agents are better tolerated and have preferable toxicity profiles than agents previously used for PEP.[28] As less toxic and better-tolerated medications for the treatment of HIV infection are now available, minimizing the risk of PEP noncompletion, and the optimal number of medications needed for HIV PEP remains unknown, the PHS working group recommends prescribing 3 (or more) tolerable drugs as PEP for all occupational exposures to HIV. Medications included in an HIV PEP regimen should be selected to optimize side effect and toxicity profiles and a convenient dosing schedule to encourage HCP completion of the PEP regimen.

RESISTANCE TO ANTIRETROVIRAL AGENTS

Known or suspected resistance of the source virus to antiretroviral agents, particularly to 1 or more of those that might be included in a PEP regimen, raises concerns about reduced PEP efficacy.[41] Drug resistance to all available antiretroviral agents has been reported, and cross-resistance within drug

classes occurs frequently.[42] Occupational transmission of drug-resistant HIV strains, despite PEP with combination drug regimens, has been reported.[43-45] If a source patient is known to harbor drug-resistant HIV, expert consultation is recommended for selection of an optimal PEP regimen. However, awaiting expert consultation should not delay the initiation of HIV PEP. In instances of an occupational exposure to drug-resistant HIV, administration of antiretroviral agents to which the source patient's virus is unlikely to be resistant is recommended for PEP.

Information on whether a source patient harbors drug-resistant HIV may be unclear or unavailable at the time of an occupational exposure. Resistance should be suspected in a source patient who experiences clinical progression of disease, a persistently increasing viral load, or a decline in $CD4^+$ T cell count despite therapy and in instances in which a virologic response to therapy fails to occur. However, resistance testing of the source virus at the time of an exposure is impractical because the results will not be available in time to influence the choice of the initial PEP regimen. If source patient HIV drug resistance is suspected in the management of an occupational exposure to HIV, consultation with an expert in HIV management is recommended so that antiretroviral agents to which the source patient's virus is unlikely to be resistant may be identified and prescribed. However, awaiting expert consultation should, again, not delay initiation of HIV PEP. If drug resistance information becomes available later in a course of PEP, this information should be discussed with the expert consultant for possible modification of the PEP regimen.

ANTIRETROVIRAL DRUGS DURING PREGNANCY AND LACTATION

The decision to offer HIV PEP to a pregnant or breast-feeding healthcare provider should be based on the same considerations that apply to any provider who sustains an occupational exposure to HIV. The risk of HIV transmission poses a threat not only to the mother but also to the fetus and infant, as the risk of mother-to-child HIV transmission is markedly increased during acute HIV infection during pregnancy and breast-feeding.[46] However, unique considerations are associated with the administration of antiretroviral agents to pregnant HCP, and the decision to use antiretroviral drugs during pregnancy should involve both counseling and discussion between the pregnant woman and her healthcare provider(s) regarding the potential risks and benefits of PEP for both the healthcare provider and her fetus.

The potential risks associated with antiretroviral drug exposure for pregnant women, fetuses, and infants depend on the duration of exposure as well as the number and type of drugs. Information about the use of newer antiretroviral agents, administered as PEP to HIV-uninfected pregnant women, is limited. For reasons including the complexities associated with appropriate counseling about the risks and benefits of PEP as well as the selection of antiretroviral drugs in pregnant women, expert consultation should be sought in all cases in which antiretroviral medications are prescribed to pregnant HCP for PEP.

In general, antiretroviral drug toxicity has not been shown to be increased during pregnancy. Conflicting data have been published concerning the risk of preterm delivery in pregnant women receiving antiretroviral drugs, particularly PIs;[47] in studies that have reported a positive association, the increase in risk was primarily observed in women who were receiving antiretroviral drug regimens at the time of conception and continued during pregnancy. Fatal[48] and nonfatal[49] lactic acidosis has been reported in pregnant women treated throughout gestation with a combination of stavudine and didanosine. Prescribing this drug combination for PEP is not recommended. Physiologic changes that occur during pregnancy may alter antiretroviral drug metabolism and, therefore, optimal drug dosing. The clinical significance of these changes is not clear, particularly when used for PEP in HIV-uninfected women. For details on antiretroviral drug choice and dosing in pregnancy, see *Recommendations for Use of Antiretroviral Drugs in Pregnant HIV-1-Infected Women for Maternal Health and Interventions to Reduce Perinatal HIV Transmission in the United States.*[10]

Prospective data from the Antiretroviral Pregnancy Registry do not demonstrate an increase in overall birth defects associated with first-trimester antiretroviral drug use. In this population, the birth defect prevalence is 2.9 per 100 live births, similar to the prevalence in the general population in the CDC's birth defect surveillance system (ie, 2.7 per 100 live births).[50] Central nervous system defects were observed in fetal primates that experienced in utero efavirenz (EFV) exposure and that had drug levels similar to those representing human therapeutic exposure; however, the relevance of in vitro laboratory and animal data to humans is unknown.[10] While human data are reassuring,[51] 1 case of meningomyelocele has been reported among the Antiretroviral Pregnancy Registry prospective cases, and data are insufficient to conclude that there is no increase in a rare outcome, such as neural tube defect, with first-trimester EFV exposure.[50] For these reasons, we recommend that pregnant women not use EFV during the first trimester.[10] If EFV-based PEP is used in women, a pregnancy test should be done to rule out early pregnancy, and nonpregnant women who are receiving EFV-based PEP should be counseled to avoid pregnancy until after PEP is completed. HCP who care for women who receive antiretroviral drugs during pregnancy are strongly advised to report instances of prenatal exposure to the Antiretroviral Pregnancy Registry (http://www.APRegistry.com/). The currently available literature contains only limited data describing the long-term effects (eg, neoplasia and mitochondrial toxicity) of in utero antiretroviral drug exposure. For this reason, long-term follow-up is recommended for all children who experience in utero exposures.[10,52,53]

Antiretroviral drug levels in breast milk vary among drugs,

with administration of some drugs resulting in high levels (eg, lamivudine), while other drugs, such as PIs and tenofovir (TDF), are associated with only limited penetration into milk.[54,55] Administration of antiretroviral triple-drug regimens to breast-feeding HIV-infected women has been shown to decrease the risk of transmission to their infants and infant toxicity has been minimal. Prolonged maternal antiretroviral drug use during breast-feeding may be associated with increased infant hematologic toxicity,[56,57] but limited drug exposure during 4 weeks of PEP may also limit the risk of drug toxicity to the breast-feeding infant. Breast-feeding should not be a contraindication to use of PEP when needed, given the high risk of mother-to-infant transmission with acute HIV infection during breast-feeding.[46] The lactating healthcare provider should be counseled regarding the high risk of HIV transmission through breast milk should acute HIV infection occur (in a study in Zimbabwe, the risk of breast milk HIV transmission during the 3 months after seroconversion was 77.6 infections per 100 child-years).[58] To completely eliminate any risk of HIV transmission to her infant, the provider may want to consider stopping breast-feeding. Ultimately, lactating women with occupational exposures to HIV who will take antiretroviral medications as PEP must be counseled to weigh the risks and benefits of continued breast-feeding both while taking PEP and while being monitored for HIV seroconversion.

MANAGEMENT OF OCCUPATIONAL EXPOSURE BY EMERGENCY PHYSICIANS

Many HCP exposures to HIV occur outside of occupational health clinic hours of operation and at sites at which occupational health services are unavailable, and initial exposure management is often overseen by emergency physicians or other providers who are not experts in the treatment of HIV infection or the use of antiretroviral medications. These providers may not be familiar with either the PHS guidelines for the management of occupational exposures to HIV or the available antiretroviral agents and their relative risks and benefits. Previous focus groups conducted among emergency department physicians who had managed occupational exposures to blood and body fluids in 2002[59] identified 3 challenges in occupational exposure management: evaluation of an unknown source patient or a source patient who refused testing, inexperience in managing occupational HIV exposures, and counseling of exposed workers in busy emergency departments. For these reasons, the PHS working group recommends that institutions develop clear protocols for the management of occupational exposures to HIV, indicating a formal expert consultation mechanism (eg, the in-house infectious diseases consultant or PEPline), appropriate initial source patient and exposed provider laboratory testing, procedures for counseling the exposed provider, identifying and having an initial HIV PEP regimen available, and a mechanism for outpatient HCP follow-up. In addition, these protocols must be distributed appropriately and must be readily available (eg, posted on signs in the emergency department, posted on a website, or disseminated to staff on pocket-sized cards) to emergency physicians and any other providers who may be called on to manage these exposure incidents.

RECOMMENDATIONS FOR THE MANAGEMENT OF HCP POTENTIALLY EXPOSED TO HIV

Exposure prevention remains the primary strategy for reducing occupational bloodborne pathogen infections. However, when occupational exposures do occur, PEP remains an important element of exposure management.

HIV PEP

The recommendations provided in this report apply to situations in which a healthcare provider has been exposed to a source person who has HIV infection or for whom there is reasonable suspicion of HIV infection. These recommendations reflect expert opinion and are based on limited data regarding safety, tolerability, efficacy, and toxicity of PEP. If PEP is offered and taken and the source is later determined to be HIV negative, PEP should be discontinued, and no further HIV follow-up testing is indicated for the exposed provider. Because the great majority of occupational HIV exposures do not result in transmission of HIV, the potential benefits and risks of PEP (including the potential for severe toxicity and drug interactions, such as may occur with oral contraceptives, H_2-receptor antagonists, and proton pump inhibitors, among many other agents) must be considered carefully when prescribing PEP. HIV PEP medication regimen recommendations are listed in Appendix A, and more detailed information on individual antiretroviral medications is provided in Appendix B. Because of the complexity of selecting HIV PEP regimens, these recommendations should, whenever possible, be implemented in consultation with persons who have expertise in the administration of antiretroviral therapy and who are knowledgeable about HIV transmission. Reevaluation of exposed HCP is recommended within 72 hours after exposure, especially as additional information about the exposure or source person becomes available.

Source Patient HIV Testing

Whenever possible, the HIV status of the exposure source patient should be determined to guide appropriate use of HIV PEP. Although concerns have been expressed about HIV-negative sources who might be in the so-called window period before seroconversion (ie, the period of time between initial HIV infection and the development of detectable HIV antibodies), no such instances of occupational transmission have been detected in the United States to date. Hence, investigation of whether a source patient might be in the window period is unnecessary for determining whether HIV PEP is

indicated unless acute retroviral syndrome is clinically suspected. Rapid HIV testing of source patients facilitates timely decision making regarding the need for administration of HIV PEP after occupational exposures to sources whose HIV status is unknown. FDA-approved rapid tests can produce HIV test results within 30 minutes, with sensitivities and specificities similar to those of first- and second-generation enzyme immunoassays (EIAs).[60] Third-generation chemiluminescent immunoassays, run on automated platforms, can detect HIV-specific antibodies 2 weeks sooner than conventional EIAs[60] and generate test results in an hour or less.[61] Fourth-generation combination p24 antigen–HIV antibody (Ag/Ab) tests produce both rapid and accurate results, and their p24 antigen detection allows identification of most infections during the window period.[62] Rapid determination of source patient HIV status provides essential information about the need to initiate and/or continue PEP. Regardless of which type of HIV testing is employed, all of the above tests are acceptable for determination of source patient HIV status. Administration of PEP should not be delayed while waiting for test results. If the source patient is determined to be HIV negative, PEP should be discontinued, and no follow-up HIV testing for the exposed provider is indicated.

Timing and Duration of PEP

Animal studies have suggested that PEP is most effective when begun as soon as possible after the exposure and that PEP becomes less effective as time from the exposure increases.[29,30] PEP should be initiated as soon as possible, preferably within hours of exposure. Occupational exposures to HIV should be considered urgent medical concerns and treated immediately. For example, a surgeon who sustains an occupational exposure to HIV while performing a surgical procedure should promptly scrub out of the surgical case, if possible, and seek immediate medical evaluation for the injury and PEP. Additionally, if the HIV status of a source patient for whom the practitioner has a reasonable suspicion of HIV infection is unknown and the practitioner anticipates that hours or days may be required to resolve this issue, antiretroviral medications should be started immediately rather than delayed.

Although animal studies demonstrate that PEP is likely to be less effective when started more than 72 hours after exposure,[30,63] the interval after which no benefit is gained from PEP for humans is undefined. If initiation of PEP is delayed, the likelihood increases that benefits might not outweigh the risks inherent in taking antiretroviral medications. Initiating therapy after a longer interval (eg, 1 week) might still be considered for exposures that represent an extremely high risk of transmission. The optimal duration of PEP is unknown; however, duration of treatment has been shown to influence success of PEP in animal models.[30] Because 4 weeks of PEP appeared protective in in vitro, animal,[29,30,63,64] and occupational[22] studies, PEP should be administered for 4 weeks, if tolerated.

Recommendations for the Selection of Drugs for HIV PEP

The PHS no longer recommends that the severity of exposure be used to determine the number of drugs to be offered in an HIV PEP regimen, and a regimen containing 3 (or more) antiretroviral drugs is now recommended routinely for all occupational exposures to HIV. Examples of recommended PEP regimens include those consisting of a dual NRTI backbone plus an INSTI, a PI (boosted with ritonavir), or a NNRTI. Other antiretroviral drug combinations may be indicated for specific cases (eg, exposure to a source patient harboring drug-resistant HIV) but should be prescribed only after consultation with an expert in the use of antiretroviral agents. No new definitive data exist to demonstrate increased efficacy of 3-drug HIV PEP regimens compared with the previously recommended 2-drug HIV PEP regimens for occupational HIV exposures associated with a lower level of transmission risk. The recommendation for consistent use of 3-drug HIV PEP regimens reflects (1) studies demonstrating superior effectiveness of 3 drugs in reducing viral burden in HIV-infected persons compared with 2 agents,[28,65,66] (2) concerns about source patient drug resistance to agents commonly used for PEP,[67,68] (3) the safety and tolerability of new HIV drugs, and (4) the potential for improved PEP regimen adherence due to newer medications that are likely to have fewer side effects. Clinicians facing challenges such as antiretroviral medication availability, potential adherence and toxicity issues, and others associated with a 3-drug PEP regimen might still consider a 2-drug PEP regimen in consultation with an expert.

The drug regimen selected for HIV PEP should have a favorable side effect profile as well as a convenient dosing schedule to facilitate both adherence to the regimen and completion of 4 weeks of PEP. Because the agents administered for PEP still can be associated with severe side effects, PEP is not justified for exposures that pose a negligible risk for transmission. Expert consultation could be helpful in determining whether an exposure constitutes a risk that would warrant PEP. The preferred HIV PEP regimen recommended in this guideline should be reevaluated and modified whenever additional information is obtained concerning the source of the occupational exposure (eg, possible treatment history or antiretroviral drug resistance) or if expert consultants recommend the modification. Given the complexity of choosing and administering HIV PEP, consultation with an infectious diseases specialist or another physician who is an expert in the administration of antiretroviral agents is recommended whenever possible. Such consultation should not, however, delay timely initiation of PEP.

The PHS now recommends emtricitabine (FTC) plus TDF (these 2 agents may be dispensed as Truvada, a fixed-dose combination tablet) plus raltegravir (RAL) as HIV PEP for occupational exposures to HIV. This regimen is tolerable, potent, and conveniently administered, and it has been associated with minimal drug interactions. Additionally, al-

Box 1: Situations for Which Expert Consultation for Human Immunodeficiency Virus (HIV) Postexposure Prophylaxis (PEP) Is Recommended

Delayed (ie, later than 72 hours) exposure report
- Interval after which benefits from PEP are undefined

Unknown source (eg, needle in sharps disposal container or laundry)
- Use of PEP to be decided on a case-by-case basis
- Consider severity of exposure and epidemiologic likelihood of HIV exposure
- Do not test needles or other sharp instruments for HIV

Known or suspected pregnancy in the exposed person
- Provision of PEP should not be delayed while awaiting expert consultation

Breast-feeding in the exposed person
- Provision of PEP should not be delayed while awaiting expert consultation

Known or suspected resistance of the source virus to antiretroviral agents
- If source person's virus is known or suspected to be resistant to 1 or more of the drugs considered for PEP, selection of drugs to which the source person's virus is unlikely to be resistant is recommended
- Do not delay initiation of PEP while awaiting any results of resistance testing of the source person's virus

Toxicity of the initial PEP regimen
- Symptoms (eg, gastrointestinal symptoms and others) are often manageable without changing PEP regimen by prescribing antimotility or antiemetic agents
- Counseling and support for management of side effects is very important, as symptoms are often exacerbated by anxiety

Serious medical illness in the exposed person
- Significant underlying illness (eg, renal disease) or an exposed provider already taking multiple medications may increase the risk of drug toxicity and drug-drug interactions

Expert consultation can be made with local experts or by calling the National Clinicians' Post-Exposure Prophylaxis Hotline (PEPline) at 888-448-4911.

though we have only limited data on the safety of RAL during pregnancy, this regimen could be administered to pregnant HCP as PEP (see the discussion above). Preparation of this PEP regimen in single-dose "starter packets," which are kept on hand at sites expected to manage occupational exposures to HIV, may facilitate timely initiation of PEP.

Several drugs may be used as alternatives to FTC plus TDF plus RAL. TDF has been associated with renal toxicity,[69] and an alternative should be sought for HCP who have underlying renal disease. Zidovudine could be used as an alternative to TDF and could be conveniently prescribed in combination with lamivudine, to replace both TDF and FTC, as Combivir. Alternatives to RAL include darunavir plus ritonavir (RTV), etravirine, rilpivirine, atazanavir plus RTV, and lopinivir plus RTV. When a more cost-efficient alternative to RAL is required, saquinivir plus RTV could be considered. A list of preferred alternative PEP regimens is provided in Appendix A.

Some antiretroviral drugs are contraindicated as HIV PEP or should be used for PEP only under the guidance of expert consultants (Appendixes A and B). Among these drugs are nevirapine, which should not be used and is contraindicated as PEP because of serious reported toxicities, including hepatotoxicity (with 1 instance of fulminant liver failure requiring liver transplantation), rhabdomyolysis, and hypersensitivity syndrome.[70-72] Antiretroviral drugs not routinely recommended for use as PEP because of the higher risk for potentially serious or life-threatening adverse events include didanosine and tipranavir. The combination of didanosine and stavudine should not be prescribed as PEP due to increased risk of toxicity (eg, peripheral neuropathy, pancreatitis, and lactic acidosis). Additionally, abacavir should be used as HIV PEP only in the setting of expert consultation, due to the need for prior HLA B57-01 testing to identify individuals at higher risk for a potentially fatal hypersensitivity reaction.[28] The FI enfuvirtide (Fuzeon, T20) is also not generally recommended as PEP, unless its use is deemed necessary during expert consultation, due to its subcutaneous route of administration, significant side effects, and potential for development of anti-T20 antibodies that may cause false-positive HIV antibody tests among uninfected patients.

When the source patient's virus is known or suspected to be resistant to 1 or more of the drugs considered for the PEP regimen, the selection of drugs to which the source person's virus is unlikely to be resistant is recommended; again, expert consultation is strongly advised. If this information is not immediately available, the initiation of PEP, if indicated, should not be delayed; the regimen can be modified after PEP has been initiated whenever such modifications are deemed appropriate. For HCP who initiate PEP, reevaluation of the exposed person should occur within 72 hours after exposure, especially if additional information about the exposure or source person becomes available.

Regular consultation with experts in antiretroviral therapy and HIV transmission is strongly recommended. Preferably,

Box 2: Follow-Up of Healthcare Personnel (HCP) Exposed to Known or Suspected Human Immunodeficiency Virus (HIV)–Positive Sources

Counseling (at the time of exposure and at follow-up appointments). Exposed HCP should be advised to use precautions (eg, use of barrier contraception and avoidance of blood or tissue donations, pregnancy, and, if possible, breast-feeding) to prevent secondary transmission, especially during the first 6–12 weeks after exposure.

For exposures for which postexposure prophylaxis (PEP) is prescribed, HCP should be informed regarding the following:

- Possible drug toxicities (eg, rash and hypersensitivity reactions that could imitate acute HIV seroconversion and the need for monitoring)
- Possible drug interactions
- The need for adherence to PEP regimens

Early reevaluation after exposure. Regardless of whether a healthcare provider is taking PEP, reevaluation of exposed HCP within 72 hours after exposure is strongly recommended, as additional information about the exposure or source person may be available.

Follow-up testing and appointments. Follow-up testing at a minimum should include the following:

- HIV testing at baseline and at 6 weeks, 12 weeks, and 6 months after exposure; alternatively, if the clinician is certain that a fourth-generation combination HIV p24 antigen–HIV antibody test is being utilized, then HIV testing could be performed at baseline, 6 weeks after exposure, and 4 months after exposure
- Complete blood counts and renal and hepatic function tests (at baseline and 2 weeks after exposure; further testing may be indicated if abnormalities are detected)

HIV testing results should preferably be given to the exposed healthcare provider at face-to-face appointments.

a process for involvement of an expert consultant should be formalized in advance of an exposure incident. Certain institutions have required consultation with a hospital epidemiologist or infectious diseases consultant when HIV PEP use is under consideration. At a minimum, expert consultation is recommended for the situations described in Box 1.

Resources for consultation are available from the following sources:

- PEPline at http://www.nccc.ucsf.edu/about_nccc/pepline/; telephone: 888-448-4911.
- Antiretroviral Pregnancy Registry at http://www.apregistry.com/index.htm; address: Research Park, 1011 Ashes Drive, Wilmington, NC 28405; telephone: 800-258-4263; fax: 800-800-1052; e-mail: registies@kendle.com.
- FDA (for reporting unusual or severe toxicity to antiretroviral agents) at http://www.fda.gov/medwatch/; telephone: 800-332-1088; address: MedWatch, The FDA Safety Information and Adverse Event Reporting Program, Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20852.
- The CDC's Cases of Public Health Importance (COPHI) coordinator (for reporting HIV infections in HCP and failures of PEP) at telephone number 404-639-2050.
- HIV/AIDS Treatment Information Service at http://aidsinfo.nih.gov/.

FOLLOW-UP OF EXPOSED HCP

Importance of Follow-Up Appointments

HCP who have experienced occupational exposure to HIV should receive follow-up counseling, postexposure testing, and medical evaluation regardless of whether they take PEP. Greater emphasis is placed on the importance of follow-up of HCP on HIV PEP within 72 hours of exposure and improving follow-up care provided to exposed HCP (Box 2). Careful attention to follow-up evaluation within 72 hours of exposure can (1) provide another (and perhaps less anxiety-ridden) opportunity to allow the exposed HCP to ask questions and for the counselor to make certain that the exposed HCP has a clear understanding of the risks for infection and the risks and benefits of PEP, (2) ensure that continued treatment with PEP is indicated, (3) increase adherence to HIV PEP regimens, (4) manage associated symptoms and side effects more effectively, (5) provide an early opportunity for ancillary medications or regimen changes, (6) improve detection of serious adverse effects, and (7) improve the likelihood of follow-up serologic testing for a larger proportion of exposed personnel to detect infection. Closer follow-up should in turn reassure HCP who become anxious after these events.[73,74] The psychological impact of needlesticks or exposure to blood or body fluid should not be underestimated for HCP. Exposed personnel should be advised to use precautions (eg, use of barrier contraception and avoidance of blood or tissue donations, pregnancy, and, if possible, breast-feeding) to prevent secondary transmission, especially during the first 6–12 weeks after exposure. Providing HCP with psychological counseling should be an essential component of the management and care of exposed HCP.

Postexposure Testing

HIV testing should be used to monitor HCP for seroconversion after occupational HIV exposure. After baseline testing at the time of exposure, follow-up testing should be performed at 6 weeks, 12 weeks, and 6 months after exposure. Use of fourth-generation HIV Ag/Ab combination immunoassays allow for earlier detection of HIV infection.[60,62,75] If a provider is certain that a fourth-generation combination

HIV Ag/Ab test is used, HIV follow-up testing could be concluded earlier than 6 months after exposure. In this instance, an alternative follow-up testing schedule could be used (eg, testing at baseline and 6 weeks after exposure, then concluding testing at 4 months after exposure). Extended HIV follow-up (eg, for 12 months) is recommended for HCP who become infected with HCV after exposure to a source who is coinfected with HIV and HCV. Whether extended follow-up is indicated in other circumstances (eg, for exposure to a source coinfected with HIV and HCV in the absence of HCV seroconversion or for exposed persons with a medical history suggesting an impaired ability to mount an antibody response to acute infection) is unknown. Although rare instances of delayed HIV seroconversion have been reported,[76,77] adding to an exposed person's anxiety by routinely extending the duration of postexposure follow-up is not warranted. However, decisions to extend follow-up in a particular situation should be based on the clinical judgment of the exposed person's healthcare provider and should not be precluded because of HCP anxiety. HIV tests should also be performed for any exposed person who has an illness compatible with an acute retroviral syndrome, regardless of the interval since exposure. A person in whom HIV infection is identified should be referred to a specialist who has expertise in HIV treatment and counseling for medical management. Healthcare providers caring for persons who have occupationally acquired HIV infection should report these cases to their state health departments and to the CDC's COPHI coordinator at telephone number 404-639-2050.

Monitoring and Management of PEP Toxicity

If PEP is used, HCP should be monitored for drug toxicity by testing at baseline and again 2 weeks after starting PEP. In addition, HCP taking antiretrovirals should be evaluated if any acute symptoms develop while receiving therapy. The scope of testing should be based on medical conditions in the exposed person and the known and anticipated toxicities of the drugs included in the PEP regimen. Minimally, laboratory monitoring for toxicity should include a complete blood count and renal and hepatic function tests. If toxicities are identified, modification of the regimen should be considered after expert consultation. In addition, depending on the clinical situation, further diagnostic studies may be indicated (eg, monitoring for hyperglycemia in a diabetic whose regimen includes a PI).

Exposed HCP who choose to take PEP should be advised of the importance of completing the prescribed regimen. Information should be provided about potential drug interactions and prescription/nonprescription drugs and nutritional supplements that should not be taken with PEP or require dose or administration adjustments, side effects of prescribed drugs, measures (including pharmacologic interventions) that may assist in minimizing side effects, and methods of clinical monitoring for toxicity during the follow-up period. HCP should be advised that evaluation of certain symptoms (eg, rash, fever, back or abdominal pain, pain on urination or blood in the urine, dark urine, yellowing of the skin or whites of the eyes, or symptoms of hyperglycemia [eg, increased thirst or frequent urination]) should not be delayed. Serious adverse events should be reported to the FDA's MedWatch program.

REEVALUATION AND UPDATING OF HIV PEP GUIDELINES

As new antiretroviral agents for treatment of HIV infection and additional information concerning early HIV infection and prevention of HIV transmission become available, the interagency PHS working group will assess the need to update these guidelines. Updates will be published periodically as appropriate.

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Information included in these recommendations might not represent US Food and Drug Administration (FDA) approval or approved labeling for the particular product or indications in question. Specifically, the terms "safe" and "effective" might not be synonymous with the FDA-defined legal standard for product approval.

APPENDIX A

TABLE A1. Human Immunodeficiency Virus (HIV) Postexposure Prophylaxis (PEP) Regimens

Preferred HIV PEP Regimen

Raltegravir (Isentress; RAL) 400 mg PO twice daily
Plus
Truvada, 1 PO once daily
(Tenofovir DF [Viread; TDF] 300 mg + emtricitabine [Emtriva; FTC] 200 mg)

Alternative Regimens

(May combine 1 drug or drug pair from the left column with 1 pair of nucleoside/nucleotide reverse-transcriptase inhibitors from the right column; prescribers unfamiliar with these agents/regimens should consult physicians familiar with the agents and their toxicities)[a,b]

Raltegravir (Isentress; RAL)	Tenofovir DF (Viread; TDF) + emtricitabine (Emtriva; FTC); available as Truvada
Darunavir (Prezista; DRV) + ritonavir (Norvir; RTV)	Tenofovir DF (Viread; TDF) + lamivudine (Epivir; 3TC)
Etravirine (Intelence; ETR)	Zidovudine (Retrovir; ZDV; AZT) + lamivudine (Epivir; 3TC); available as Combivir
Rilpivirine (Edurant; RPV)	Zidovudine (Retrovir; ZDV; AZT) + emtricitabine (Emtriva; FTC)
Atazanavir (Reyataz; ATV) + ritonavir (Norvir; RTV)	
Lopinavir/ritonavir (Kaletra; LPV/RTV)	

The following alternative is a complete fixed-dose combination regimen, and no additional antiretrovirals are needed: Stribild (elvitegravir, cobicistat, tenofovir DF, emtricitabine)

Alternative Antiretroviral Agents for Use as PEP Only with Expert Consultation[b]

Abacavir (Ziagen; ABC)
Efavirenz (Sustiva; EFV)
Enfuvirtide (Fuzeon; T20)
Fosamprenavir (Lexiva; FOSAPV)
Maraviroc (Selzentry; MVC)
Saquinavir (Invirase; SQV)
Stavudine (Zerit; d4T)

Antiretroviral Agents Generally Not Recommended for Use as PEP

Didanosine (Videx EC; ddI)
Nelfinavir (Viracept; NFV)
Tipranavir (Aptivus; TPV)

Antiretroviral Agents Contraindicated as PEP

Nevirapine (Viramune; NVP)

NOTE. For consultation or assistance with HIV PEP, contact the National Clinicians' Post-Exposure Prophylaxis Hotline at telephone number 888-448-4911 or visit its website at http://www.nccc.ucsf.edu/about_nccc/pepline/. DF, disoproxil fumarate; PO, per os.

[a] The alternatives regimens are listed in order of preference; however, other alternatives may be reasonable based on patient and clinician preference.

[b] For drug dosing information, see Appendix B.

APPENDIX B

TABLE B1. Information on Human Immunodeficiency Virus (HIV) Postexposure Prophylaxis (PEP) Medications

Drug name	Drug class	Dosing (dosage form)	Advantages	Disadvantages
Abacavir (Ziagen; ABC)	Nucleoside reverse-transcriptase inhibitor (NRTI)	ABC: 300 mg daily; available as 300-mg tablet Also available as component of fixed-dose combination Epzicom, dosed daily (300 mg of 3TC + 600 mg of ABC) Trizivir, dosed twice daily (150 mg of 3TC + 300 mg of ABC + 300 mg of AZT)	Take without regard for food	Potential for life-threatening ABC hypersensitivity reaction (rash, fever, nausea, vomiting, diarrhea, abdominal pain, malaise, respiratory symptoms) in patients with HLA-B*5701; requires patient testing prior to use, which may not be available or practical prior to initiating PEP

TABLE B1 (*Continued*)

Drug name	Drug class	Dosing (dosage form)	Advantages	Disadvantages
Atazanavir (Reyataz; ATV)	Protease inhibitor (PI)	ATV: 300 mg + RTV: 100 mg once daily (preferred dosing for PEP[a]) ATV: 400 mg once daily without RTV (alternative dosing—may not be used in combination with TDF) Available as 100-, 150-, 200-, and 300-mg capsules	Well tolerated	Indirect hyperbilirubinemia and jaundice common Rash Nephrolithiasis Potential for serious or life-threatening drug interactions that may affect dosing Absorption depends on low pH; caution when coadministered with H_2 antagonists, antacids, and proton pump inhibitors PR interval prolongation Caution in patients with underlying conduction defects or on concomitant medications that can cause PR prolongation Must be given with food
Darunavir (Prezista; DRV)	PI	DRV: 800 mg once daily + RTV: 100 mg once daily (preferred dosing for PEP[a]) DRV: 600 mg twice daily + RTV: 100 mg twice daily (alternative dosing) Available as 75-, 150-, 400-, and 600-mg tablets	Well tolerated	Rash (DRV has sulfonamide moiety) Diarrhea, nausea, headache Hepatotoxicity Potential for serious or life-threatening drug interactions that may affect dosing Must be given with food and with RTV
Efavirenz (Sustiva; EFV)	Nonnucleoside reverse-transcriptase inhibitor (NNRTI)	EFV: 600 mg daily; available as 50- and 200-mg capsules and 600-mg tablets Also available as component of fixed-dose combination Atripla, dosed daily (200 mg of FTC + 300 mg of TDF + 600 mg of EFV)	Available as a complete regimen dosed once per day	Rash Neuropsychiatric side effects (eg, dizziness, somnolence, insomnia, abnormal dreaming) common; severe psychiatric symptoms possible (dosing before bedtime might minimize these side effects); use with caution in shift workers Do not use during pregnancy; teratogen in nonhuman primates Potential for serious or life-threatening drug interactions that may affect dosing May cause false-positive results with some cannabinoid and benzodiazepine screening assays Take on an empty stomach
Elvitegravir (EVG)	Integrase strand transfer inhibitor (INSTI)	Available as a component of fixed-dose combination Stribild, dosed daily (150 mg of EVG + 150 mg of cobicistat + 300 mg of TDF + 200 mg of FTC)	Well tolerated Available as a complete regimen dosed once per day	Diarrhea, nausea, headache Nephrotoxicity; should not be administered to individuals with acute or chronic kidney injury or those with eGFR <70 Cobicistat is a pharmacokinetic enhancer to increase EVG exposures and has no antiviral activity but is a potent CYP3A inhibitor Potential for serious or life-threatening drug interactions Must be given with food

TABLE B1 (*Continued*)

Drug name	Drug class	Dosing (dosage form)	Advantages	Disadvantages
Emtricitabine (Emtriva; FTC)	NRTI	200 mg once daily; available as 200-mg capsule Also available as component of fixed-dose combination Atripla, dosed daily (200 mg of FTC + 300 mg of TDF + 600 mg of EFV) Complera, dosed daily (25 mg of RPV + 300 mg of TDF + 200 mg of FTC) Stribild, dosed daily (150 mg of EVG + 150 mg of cobicistat + 300 mg of TDF + 200 mg of FTC) Truvada, dosed daily (200 mg of FTC + 300 mg of TDF)	Well tolerated Minimal toxicity Minimal drug interactions Take without regard for food	Rash perhaps more frequent than with 3TC Hyperpigmentation/skin discoloration If the PEP recipient has chronic hepatitis B, withdrawal of this drug may cause an acute hepatitis exacerbation
Enfuvirtide (Fuzeon; T20)	Fusion inhibitor (FI)	T20: 90 mg (1 mL) twice daily by subcutaneous injection; available as single-dose vial, reconstituted to 90 mg/mL	...	Local injection-site reactions occur in almost 100% of patients Never studied among antiretroviral-naive or HIV-negative patients False-positive EIA HIV antibody tests might result from formation of anti-T20 antibodies that cross-react with anti-gp41 antibodies Twice-daily injection
Etravirine (Intelence; ETR)	NNRTI	200 mg twice daily; available as 100- and 200-mg tablets	Well tolerated and has not had the same frequency of CNS side effects reported as EFV	Rash (including SJS) and hypersensitivity (sometimes with organ dysfunction, including hepatic failure) Nausea Potential for serious or life-threatening drug interactions that may affect dosing Must be given with food
Fosamprenavir (Lexiva; FOSAPV)	PI	FOSAPV: 1,400 mg daily + RTV: 100 mg once daily (preferred dosing for PEP) FOSAPV: 1,400 mg twice daily without RTV (alternative dosing) Available as 700-mg tablet	Well tolerated	Diarrhea, nausea, vomiting, headache, rash (FOSAPV has sulfonamide moiety) Potential for serious or life-threatening drug interactions that may affect dosing Oral contraceptives decrease FOSAPV concentrations Take with food if given with RTV
Lamivudine (Epivir; 3TC)	NRTI	3TC: 300 mg once daily (preferred dosing for PEP) 3TC: 150 mg twice daily (alternative dosing) Available as 150- and 300-mg tablets Also available as component of fixed-dose combination generic lamivudine/zidovudine, dosed twice daily (150 mg of 3TC + 300 mg of AZT) Combivir, dosed twice daily (150 mg of 3TC + 300 mg of AZT) Epzicom, dosed daily (300 mg of 3TC + 600 mg of ABC) Trizivir, dosed twice daily (150 mg of 3TC + 300 mg of ABC + 300 mg of AZT)	Well tolerated Minimal toxicity Minimal drug interactions Take without regard for food	If the PEP recipient has chronic hepatitis B, withdrawal of this drug may cause an acute hepatitis exacerbation

TABLE B1 (*Continued*)

Drug name	Drug class	Dosing (dosage form)	Advantages	Disadvantages
Lopinavir/ritonavir (Kaletra; LPV/RTV)	PI	Kaletra: 400/100 mg = 2 tablets twice daily (preferred dosing for PEP) Kaletra: 800/200 mg = 4 tablets once daily (alternative dosing) Available as 200/50-mg tablets	Take without regard for food	GI intolerance, nausea, vomiting, diarrhea are common PR and QT interval prolongation have been reported; use with caution in patients at risk of cardiac conduction abnormalities or receiving other drugs with similar effect Potential for serious or life-threatening drug interactions that may affect dosing
Maraviroc (Selzentry; MVC)	CCR5 coreceptor antagonist	MVC: 300 mg twice daily (if on concomitant CYP3A inducers, dose may need adjustment by expert consultant); available as 150- and 300-mg tablets	Well tolerated	Abdominal pain, cough, dizziness, musculoskeletal symptoms, pyrexia, rash, orthostatic hypotension Hepatotoxicity that may present with an allergic reaction, including rash Requires HIV tropism testing of source virus before treatment to ensure CCR5-tropic virus and efficacy, which may not be available or practical prior to initiating PEP Potential for serious or life-threatening drug interactions that may affect dosing Dose adjustments for MVC required when given with potent CYP3A inhibitors or inducers
Raltegravir (Isentress; RAL)	INSTI	400 mg twice daily; available as 400-mg tablet	Well tolerated Minimal drug interactions Take without regard for food	Insomnia, nausea, fatigue, headache, and severe skin and hypersensitivity reactions have been reported
Rilpivirine (Edurant; RPV)	NNRTI	25 mg once daily; available as 25-mg tablet Also available as component of fixed-dose combination Complera, dosed daily (25 mg of RPV + 300 mg of TDF + 300 mg of FTC)	Well tolerated and fewer rashes and discontinuations for CNS adverse effects compared with EFV Available as a complete regimen dosed once per day	Depression, insomnia, rash, hypersensitivity, headache Potential for serious or life-threatening drug interactions that may affect dosing Caution when coadministered with H_2 antagonists and antacids Coadministration with proton pump inhibitors is contraindicated Use RPV with caution when coadministered with a drug having a known risk of torsades de pointes Must be given with food
Saquinavir (Invirase; SQV)	PI	SQV: 1,000 mg + RTV: 100 mg twice daily (preferred dosing for PEP); available as 500 mg tablet	Well tolerated, although GI events common	GI intolerance, nausea, diarrhea, headache Pretreatment ECG recommended SQV/r is not recommended for patients with any of the following: (1) congenital or acquired QT prolongation, (2) pretreatment ECG >450 msec, (3) receiving concomitant therapy with other drugs that prolong QT interval, (4) complete AV block without implanted pacemakers, and (5) risk of complete AV block PR and QT interval prolongations, torsades de pointes has been reported Potential for serious or life-threatening drug interactions that may affect dosing Must be given with food

TABLE B1 (*Continued*)

Drug name	Drug class	Dosing (dosage form)	Advantages	Disadvantages
Stavudine (Zerit; d4T)	NRTI	d4T: 40 mg twice daily if body weight is >60 kg d4T: 30 mg twice daily if body weight is <60 kg Available as 15-, 20-, 30-, and 40-mg tablets	Take without regard for food	GI side effects include diarrhea and nausea Hepatotoxicity, neurologic symptoms (eg, peripheral neuropathy), pancreatitis
Tenofovir DF (Viread; TDF)	NRTI	300 mg once daily; available as 300-mg tablet Also available as component of fixed-dose combination Atripla, dosed daily (200 mg of FTC + 300 mg of TDF + 600 mg of EFV) Complera, dosed daily (25 mg of RPV + 300 mg of TDF + 200 mg of FTC) Stribild, dosed daily (150 mg of EVG + 150 mg of cobicistat + 300 mg of TDF + 200 mg of FTC) Truvada, dosed daily (200 mg of FTC + 300 mg of TDF)	Well tolerated Take without regard for food	Asthenia, headache, diarrhea, nausea, vomiting Nephrotoxicity; should not be administered to individuals with acute or chronic kidney injury or those with eGFR <60 If the PEP recipient has chronic hepatitis B, withdrawal of this drug may cause an acute hepatitis exacerbation Drug interactions
Zidovudine (Retrovir; ZDV; AZT)	NRTI	AZT: 300 mg twice daily; available as 100-mg capsule or 300-mg tablet Also available as component of fixed-dose combination generic lamivudine/zidovudine, dosed twice daily (150 mg of 3TC + 300 mg of AZT) Combivir, dosed twice daily (150 mg of 3TC + 300 mg of AZT) Trizivir, dosed twice daily (150 mg of 3TC + 300 mg of ABC + 300 mg of AZT)	Take without regard for food	Side effects (especially nausea, vomiting, headache, insomnia, and fatigue) common and might result in low adherence Anemia and neutropenia

NOTE. This appendix does not provide comprehensive information on each individual drug. For detailed information, please refer to individual drug package inserts. AV, atrioventricular; CNS, central nervous system; ECG, electrocardiogram; eGFR, estimated glomerular filtration rate; EIA, enzyme immunoassay; GI, gastrointestinal; SJS, Stevens-Johnson syndrome.

[a] Certain antiretroviral agents, such as PIs, have the option of once- or twice-daily dosing depending on treatment history and use with ritonavir. For PEP, the selection of dosing and schedule is to optimize adherence while minimizing side effects where possible. This table includes the preferred dosing schedule for each agent, and in all cases with the exception of Kaletra the once-daily regimen option is preferred for PEP. Twice-daily administration of Kaletra is better tolerated with respect to GI toxicities compared with the once-daily regimen. Alternative dosing and schedules may be appropriate for PEP in certain circumstances and should preferably be prescribed by individuals experienced in the use of antiretroviral medications.

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ERRATUM

In the September 2013 issue of the journal, in the article by Kuhar et al (Kuhar DT, Henderson DK, Struble KA, Heneine W, Thomas V, Cheever LW, Gomaa A, Panlilio AL, US Public Health Service Working Group. Updated US Public Health Service guidelines for the management of occupational exposures to human immunodeficiency virus and recommendations for postexposure prophylaxis. *Infect Control Hosp Epidemiol* 2013;34(9):875–892), there are 3 errors. In Appendix Table B1, row 1 ("Abacavir"), column 3 ("Dosing (dosage form)"), "300 mg daily" is incorrect; the correct dosing is 600 mg daily. Also in Appendix Table B1, row 17 ("Tenofovir DF"), column 5 ("Disadvantages"), the text immediately following "Nephrotoxicity" ("should not be administered to individuals with acute or chronic kidney injury or those with eGFR <60") should be deleted. Finally, the correct affiliation for author Ahmed Gomaa is Division of Surveillance, Hazard Evaluation, and Field [*not* "Health"] Studies, National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention, Cincinnati, Ohio. The authors regret these errors.

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EMERGENCY

(In Case of Health Issue, Natural Disaster, or Other Emergency)

REQUIRED

1. NOTIFY LOCAL CONTACT(S)
2. CALL ONCALL INTERNATIONAL INSURANCE FOR CONSULT (+1 603-328-1926)
    1. FOLLOW UP WITH ONCALL INSURANCE RECOMMENDATIONS
3. NOTIFY UW EMERGENCY (+1 206-632-0153)

OPTIONAL

- NOTIFY UW MENTOR(S), PROGRAM FACULTY & STAFF
- FRIENDS & FAMILY

W GLOBAL HEALTH