

Development of an HIV Postexposure Prophylaxis (PEP) Protocol for Trainees Engaging in Academic Global Health Experiences

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Abstract

Problem

Global health (GH) education programs have become increasingly common in U.S. medical schools and graduate medical education programs, with growing numbers of medical students, residents, and fellows participating in clinical experiences in settings with high HIV prevalence and limited resources. However, there are no guidelines for provision of HIV postexposure prophylaxis (PEP) to trainees engaging in these academic GH experiences.

Approach

Faculty of the Global Health Education Programs (GHEP) at the David Geffen

School of Medicine at UCLA and GH partner institutions recognized the need for PEP access for trainees engaged in GH experiences. In 2013–2014, key UCLA faculty collaborated in the development of the UCLA GHEP PEP Protocol, which includes provision of PEP medications to trainees prior to departure, an on-call infectious disease/HIV specialist to advise trainees who have exposures, and a system for following up with exposed trainees while on the GH rotation and after their return.

Outcomes

Between February 2014 and September 2016, 112 medical students and 110

residents received education on the PEP protocol during their predeparture orientation. The protocol was used for 28 exposures (27 occupational, 1 nonoccupational), with PEP recommended in 3 occupational cases (all needlesticks) and the single nonoccupational case. There were no reported HIV seroconversions.

Next Steps

The authors plan to formally evaluate the PEP protocol, conduct a qualitative assessment with trainees and both UCLA and GH partner faculty, and discuss best practices with institutions across the United States and with GH partners.

Problem

Despite the rapid growth of global health (GH) education programs in U.S. medical schools and residency programs and the increasing numbers of U.S. trainees (medical students, residents, and fellows) engaging in GH experiences in high-HIV-prevalence settings, there are no existing guidelines for the provision of HIV postexposure prophylaxis (PEP) to these trainees. Questions exist around when and whether trainees should be provided

PEP, how the cost of medications should be covered, which institution (the U.S. medical school or the GH partner) should manage occupational exposures and advise trainees, and whether trainees who have exposures should be required to return home or be allowed to continue their rotations.

GH experiences have well-recognized benefits, including increased medical knowledge^{1,2}; improved resource utilization³; and strengthened skills in cross-cultural communication, professionalism, and humanism.^{2,4} A challenge of sending medical trainees abroad is ensuring their safety and designing rotations that minimize burden to the GH partner. Predeparture training curricula, such as those developed by the Consortium of Universities for Global Health⁵ and the American Academy of Pediatrics Section on International Child Health,⁶ help to support trainee health and safety. However, academic GH program policies to address HIV exposures while on GH rotations are lacking.⁷ In U.S. medical institutions, exposures are emergently referred to occupational health services, but worldwide, occupational health services and protocols for management of

exposures and delivery of PEP may not exist. PEP is most effective when given within 72 hours of exposure, which requires health care infrastructure and access to antiretroviral therapy (ART). In resource-constrained GH environments, ART supply is often limited, and the safest and best-tolerated formulations recommended for PEP in the United States may be unavailable.

In this article, we share the details of our PEP protocol, its development, and preliminary outcomes. We aim to raise awareness of the need to develop best practices for use of PEP in academic GH programs.

Approach

Background

The Global Health Education Programs (GHEP) offered through the Center for World Health at the David Geffen School of Medicine at UCLA have supported GH experiences for trainees since 2010. Approximately 15% of first-year and fourth-year UCLA medical students engage in GH rotations, and UCLA graduate medical education (GME) programs are increasingly incorporating GH into training.

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Medical student, resident, and fellow GH experiences occur predominately in resource-constrained settings with a high prevalence of HIV, including South Africa, Malawi, Mozambique, Peru, and Thailand.

In preparation for GH rotations, trainees are required by the GHEP to complete an in-person predeparture orientation⁸ or an online course. The health and safety training includes information on prevention and management of common travel-related diseases, as well as exposures to HIV and other infectious diseases. Training on cultural humility, GH ethics, and expectations for conduct is also provided. In addition, trainees are required to have a predeparture travel clinic appointment and to identify a UCLA faculty mentor as an emergency contact in the case of illness or injury.

Early in the development of the GHEP, we recognized the challenges around ensuring availability of PEP for trainees in GH rotations. All GHEP rotations take place in collaboration with international academic health centers where GH partner faculty are involved in curriculum development, mentorship, and logistical support of U.S. trainees. GH partner faculty agreed that ensuring the health and safety of visiting trainees was essential. To ensure care for our trainees and minimize burden to the partner institution in cases of HIV exposure, GHEP faculty proposed providing a supply of PEP as well as step-by-step instructions on care immediately following an exposure and a plan for support and follow-up when the trainee returned to the United States.

Development of the UCLA GHEP PEP Protocol

To ensure consistency in PEP prescribing, monitoring, and follow-up, the development of the UCLA GHEP PEP Protocol, with related education and communication materials, was a collaborative effort of GHEP faculty, UCLA infectious disease/HIV specialists, and providers from UCLA Occupational Health Services, UCLA Ashe Student Health Center, and UCLA Travel Medicine Clinic. The PEP protocol was developed from October 2013 to January 2014, then reviewed by GH partner faculty and implemented for trainees in February 2014.

All of our GH partners had identified challenges in being able to provide PEP to visiting trainees within 72 hours of exposure, when PEP is most effective. These challenges included stock-outs of medication, storing PEP, and identifying a GH faculty specialist comfortable prescribing PEP. We therefore determined that our trainees should obtain PEP medications prior to departure, understand when and how to start PEP, and have access to expert input around the need for PEP.

Below, we describe the steps involved in the development of our innovative PEP protocol: identify key collaborators, secure a 28-day supply of PEP for trainees, create education and communication materials, and create a system for postexposure follow-up. These steps are also summarized in Supplemental Digital Appendix 1 at <http://links.lww.com/ACADMED/A443>.

1. Identify key collaborators. The first step in developing the PEP protocol was identifying key collaborators, including:

- physicians at the UCLA Ashe Student Health Center who prescribe PEP for medical students;
- physicians at the UCLA Travel Medicine Clinic who prescribe PEP for residents and fellows;
- a UCLA infectious disease/HIV specialist who provides PEP expertise; and
- two UCLA Occupational Health Services practitioners who provide follow-up for trainees with exposures upon their return to the United States (a physician who oversees care and a nurse who coordinates appointments and any further testing, if needed).

GHEP also identified a GHEP PEP faculty member (G.A.) to oversee, monitor, and evaluate the PEP protocol.

GHEP provides a stipend to the infectious disease/HIV specialist to serve as the PEP physician—the point person for the PEP protocol who is available around the clock for emergency PEP calls from trainees, relayed via the UCLA page operator. When unavailable, this individual ensures that another physician trained in PEP management is identified as the on-call PEP physician. The PEP physician provides initial risk stratification, makes a determination about whether PEP

is needed, and provides counseling on baseline testing of the trainee and source patient. The PEP physician follows up with the trainee 72 hours later (via e-mail, text, or telephone) to assess PEP medication tolerance, discuss initial testing results, and provide additional counseling and support. If the trainee is experiencing emotional distress related to the exposure, the PEP physician contacts the preidentified UCLA faculty mentor and/or the GHEP PEP faculty member to arrange for them to provide additional counseling.

To assist the PEP physician in the collection of important information for tracking exposures, we created a PEP provider form (see Supplemental Digital Appendix 2 at <http://links.lww.com/ACADMED/A444>). The PEP physician completes this form at the time of the initial call. It includes health information about the trainee, information about the occupational or nonoccupational exposure, and whether PEP has been recommended. With the trainee's consent, the PEP physician transmits this form confidentially to the GHEP PEP faculty member and the physician and nurse at UCLA Occupational Health Services.

2. Securing PEP supply for trainees.

The second step in developing the protocol was securing a low- or no-cost 28-day supply of PEP for all UCLA trainees in GH rotations. GHEP faculty met with student health center and GME program leaders, who agreed to fund the supply of PEP if the prophylaxis would not otherwise be covered through trainees' personal health insurance. To minimize the cost of dispensing ART, a decision was made to provide a single supply of PEP to a group of two to three trainees working at the same site as part of the same rotation; however, trainees working in high-HIV-prevalence settings with a high frequency of procedures, such as emergency medicine or surgery, are required to have one full course of PEP per person. The ART regimen used for PEP (raltegravir and emtricitabine/tenofovir) is based on CDC guidelines.⁹ This PEP regimen is reviewed and updated annually by the PEP physician.

3. Create education and communication materials. The third step in the development of the PEP protocol was the creation of education and communication materials that include information on what constitutes an

occupational or nonoccupational exposure to HIV, when to start PEP, how to contact the on-call PEP physician at UCLA, side effects of ART, and psychosocial support. Trainees who have exposures are supported to return home should they desire; however, the PEP protocol provides trainees with medical and psychosocial support to enable them to remain in-country and complete their rotation even if the decision is made to initiate PEP. A one-page flowchart of the PEP protocol was developed (see Figure 1) and is provided to all trainees during their predeparture orientation. In addition, staff and faculty can access the protocol through the Center for World Health Web site and the GHEP online predeparture curriculum. These individuals have access to the PEP physician to discuss exposure, but they must coordinate their own ART and, if needed, medical evacuation, and follow up with their personal physician.

4. Create a system for postexposure follow-up. The final step in the protocol development was to create a system for follow-up of trainees who have exposures. As described above, follow-up is initially provided by the PEP physician via e-mail, text, or a phone call 72 hours after the initial conversation, and the UCLA faculty mentor and/or GHEP PEP faculty member are available to provide support or to coordinate medical evacuation.

Given the importance of monitoring while on ART and follow-up HIV testing after an exposure, the PEP protocol requires trainees to follow up with the UCLA Occupational Health Services physician or nurse within 72 hours of returning home. The confidential transmission of the PEP provider form, completed by the PEP physician at the time of the exposure, to UCLA Occupational Health Services ensures the transition of care from the PEP physician to UCLA Occupational Health

Services upon the trainee's return. The GHEP PEP faculty member also meets with the trainee to debrief and provide ongoing psychosocial support.

In the event of a nonoccupational exposure, the same protocol applies, but follow-up upon the trainee's return is provided by the UCLA Ashe Student Health Center or the individual's primary physician, rather than UCLA Occupational Health Services.

Outcomes

From the implementation of the UCLA GHEP PEP Protocol in February 2014 to the time of writing in September 2016, 112 medical students and 110 residents have received education on the PEP protocol during their in-person predeparture orientation.

During the same period, the PEP protocol has been used in 28 exposures, of which 27 were occupational exposures. PEP was recommended in 3 occupational cases (all needlesticks) and the single nonoccupational exposure. There have been no reported HIV seroconversions. The majority of exposures for which PEP was not recommended were exposures to intact skin or splashes with nonbloody fluid.

Next Steps

A continuing challenge is ensuring the sustainability of the UCLA GHEP PEP Protocol. We are fortunate to have the continued support of the UCLA Ashe Student Health Center and UCLA GME leaders to provide PEP medications to trainees at no cost; however, we meet annually with these partners to reassess protocol costs. In collaboration with our GH partners, we continue to discuss how UCLA-funded PEP medications could be made available at each international site for rotating trainees in cases of exposure. This would reduce the number of courses dispensed, as the PEP supply would only be replaced if the medication were used by a trainee or expired. Looking ahead, we plan to formally evaluate the implementation of the PEP protocol and its long-term outcomes and to monitor its use through surveys of trainees. We also plan for qualitative assessment of the experiences of trainees who have used the PEP protocol, focusing on ease of use and clarity and utility of education and communication materials.

The following instructions are for David Geffen School of Medicine at UCLA students, residents, fellows, and faculty and UCLA Health staff in case of occupational and nonoccupational HIV exposure while traveling outside the United States on UCLA-related activities. If you have health concerns not related to HIV exposure, please contact your personal physician, travel medicine physician, or other health care provider.

Prior to your departure, it is recommended that you are seen by your personal or travel physician for pre-travel counseling, appropriate vaccinations, antibiotics, malaria prophylaxis, and PEP prophylaxis as well as baseline HIV, Hepatitis C, Hepatitis B testing.

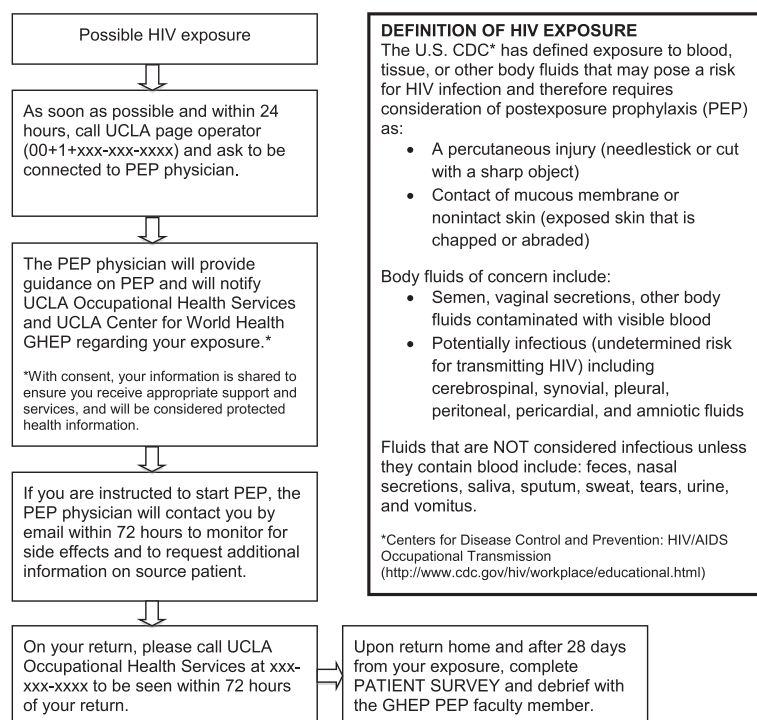


Figure 1 Flowchart of the UCLA Global Health Education Programs (GHEP) Postexposure Prophylaxis (PEP) Protocol. This one-page resource was created by GHEP and is provided to trainees during predeparture orientation sessions. It is also available online. The PEP physician is an infectious disease/HIV specialist who is available 24/7 for emergency PEP calls.

As an additional component, we plan to perform key informant interviews with UCLA faculty and GH partner faculty to better understand areas in which we can strengthen this protocol.

As noted above, we decided to include guidance for nonoccupational HIV exposures in the PEP protocol. Our pretravel orientation curriculum includes information about safety and steps to avoid risks such as sexual assault, as well as information about responsible conduct with regard to sexual relationships during electives. Each academic GH program that develops a PEP protocol will need to make an independent decision about whether to include nonoccupational exposures as part of their PEP program.

Protecting the health and safety of trainees in academically sponsored GH programs is of critical importance. While guidelines for GH programs recommend that the sending institution promote the safety of trainees,¹⁰ there are no clear recommendations on ensuring access to PEP for trainees. The UCLA GHEP PEP Protocol provides support to trainees participating in GH programs that is comparable to the protection available to them while working in U.S. health centers. As other academic GH programs develop their own protocols, we anticipate continuing discussions with

institutions across the United States and with GH partners on best practices for providing PEP to trainees engaging in GH experiences.

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