Students (CIS). HPV-related cancers are common in China and the HPV vaccine was only recently introduced to the Chinese population. CIS in the United States have low HPV vaccination rates upon arrival. Once these students become aware of the affordability and the accessibility of the vaccine, they often contact a provider to start the vaccination series. The HPV vaccine is available to all eligible students at the USC student health center and is free of charge to students with Aetna Student Health Insurance. We examined the impact of a peer-to-peer education program about HPV disease and vaccination amongst CIS and assessed the impact of the program via an analysis of HPV immunization rates amongst CIS.

Methods. The study was IRB approved. Mandarin-speaking USC students volunteered to serve as peer educators in response to an inquiry from academic advisors. 18 CIS were trained by MiOra as Immunization Community Health Educators (ICHE) on HPV disease and vaccination as well as sexually transmitted infections and prevention. CIS educated peers at tables set up throughout USC.

Results. Initial data from 100 CIS students who were surveyed and educated in April 2019 were analyzed. 59 out of 99 (59.6%) students reported that they have either received or are in the process of receiving the HPV vaccine. 93 out of 99 (93.9%) indicated "no knowledge" or "some knowledge" about HPV and HPV vaccine while only 6 students (6.1%) reported "a great deal of knowledge." 56 out of 99 (56.6%) thought that it is "unlikely" or "impossible" for them to acquire HPV. 92 out of 97 (94.9%) said they would be interested in getting vaccinated if it were free.

Conclusion. Many CIS have limited understanding of HPV risk factors and HPV vaccine efficacy. However, when informed, the majority of students indicated they would likely vaccinate if it was covered by insurance. Peer-to-peer education was very effective. Of the first 400 students educated, 80 visited the student health center. This is an ongoing project. We will continue to collect and report data on the impact of the peer-to-peer education and factors influencing.

Disclosures. All authors: No reported disclosures.

2532. Identifying Educational Needs and Improving Provider Knowledge Regarding the Management of Febrile Neutropenia
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Background. In a retrospective chart review of 211 first episodes of febrile neutropenia (FN) in in-patients with acute myelogenous leukemia evaluating rates of appropriate vs. inappropriate management, we identified frequent noncompliance with national guidelines for the management of FN. We utilized these data to develop an educational intervention targeting front-line providers.

Methods. Based on findings from our chart review, we developed and implemented an interactive, case-based didactic session for advanced practice providers (APPs) and medical students/residents rotating on hematology, targeting inappropriate antibiotic use. Pretest questions were embedded into the lecture, preceding content related to each learning objective. Lecture material included content from national guidelines, literature addressing misconceptions (e.g., vancomycin usage for persistent fever), and data from our institutional antiobiotic (Figure 1). A post-test was given directly after the lecture to evaluate knowledge gained.

Results. Five inappropriate behaviors were identified (Figure 2): (1) changing empiric therapy despite clinical stability, (2) misunderstanding piperacillin/tazobactam's spectrum of activity, (3) inappropriate initiation of antibiotics active against resistant Gram-positive organisms; (4) failure to de-escalate therapy at 72 hours and (5) failure to add Gram-negative coverage when using aztreonam. Lectures were provided to 13 APPs and 17 medical students/residents over 6 sessions. An improvement in knowledge was noted for most learning objectives except for the third, for which misconceptions remained, especially regarding need for vancomycin in the setting of mucositis (Figures 3 and 4). Higher baseline knowledge was noted for medical students/residents than APPs. 93% of learners rated the lecture very/extremely helpful. Learners recommended future content focus on antifungal therapy.

Conclusion. We utilized local practice data to develop educational content for front-line providers. We will convert this lecture into a video format to be incorporated into hematology rotations to reinforce key concepts. A prospective cohort study to evaluate the impact on prescribing behavior is underway.

Disclosures. All authors: No reported disclosures.

2533. HIV Training Pathways in Residency: A National Survey of Curricula and Outcomes
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Background. Despite dramatic advances in the care of people with HIV (PWH), the shortage of HIV providers is worsening. An approach to this workforce shortage has been integration of robust HIV training into residency. We created a national survey to describe curricula and outcomes of formal HIV training pathways and how this may impact the HIV workforce shortage.

Methods. We designed a cross-sectional study of Internal Medicine (IM) and Family Medicine (FM) Residency HIV pathways in the United States. We identified programs via literature review, internet search, and snowball sampling. A draft survey was piloted with two pathway directors, and in January 2019, the final survey was sent via email to all pathway directors. This survey included 33-items, predominantly quantitative, and focused on program organization, curricular content, graduate outcomes, and challenges. We used descriptive statistics to summarize numeric responses.

Results. Twenty-five residency programs with dedicated HIV pathways were identified; 11 IM and 15 FM. The majority of the programs are in the West and Northeast United States. Twenty-four (96%) of programs have completed the survey. Since the first program was established in 2006, 228 residents have graduated from HIV pathways in the United States (151 IM, 77 FM). Programs have varying goals, application procedures, clinical requirements, didactic structures, graduation requirements, and assessments of competency. Of graduates, 108 (47%) have American Academy of HIV Medicine (AAHIVM) certification. Ninety-two (42%) of graduates are currently providing primary care to ≥ 20 PWH (the majority in the West and Northeast

Figure 2. Identification of learning objectives: proportions of appropriate vs. inappropriate behavior

Figure 3. Pre-test vs. Post-test Scores for APPs

Figure 4. Pre-test vs. Post-test Scores for Medical Students/Residents

Disclosures. All authors: No reported disclosures.
United States). The most commonly cited reported barrier to graduates finding jobs caring for PWH are lack of job opportunities in their geographic area.

**Conclusion.** HIV pathways in IM and FM programs are heterogeneous in their structure and curricula. Less than 50% of pathway graduates remain in the HIV provider workforce, and the majority of those who work in the West and Northeast United States. The impact of these programs might be enhanced by interventions to increase graduate retention in this workforce and to launch pathways in the areas of greatest need, such as the Southern United States.

**Disclosures. All authors:** No reported disclosures.

### 2534. Development of an Infectious Diseases Fellowship Well-Being Program

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**Session:** 266. Medical Education: Medical School to Practice

**Saturday, October 5, 2019: 12:15 PM**

**Background.** Burnout in graduate medical education is common and reported in ~70% of Internal Medicine (IM) residents. Most studies have described interventions focused on residency training, but fellowship training suffers from similar challenges and likely similar levels of burnout. After conducting a needs assessment amongst fellows within our Infectious Diseases (ID) fellowship program, we developed a wellness program to address these issues.

**Methods.** In Spring 2018, we reviewed the existing literature and consulted with local experts on trainee well-being. Based on our findings, we designed a multi-tiered approach to enhance wellness amongst fellows. An ID Fellowship Well-Being Committee (WBC) was created in September 2018 to lead the intervention. The WBC includes an even mix of fellows and faculty at multiple levels at all three main teaching hospitals associated with the program. Meetings occur every other month, and co-chairs (one faculty and one fellow) report back to the program director quarterly.

**Results.** Fellows cited the wellness retreat as a strength at our annual fellowship external program. Topic areas and interventions are described in Table 1. Fellows were sent a qualitative collection tool we developed. Data collected included patient’s primary reason for hospitalization, identification of fever, and care for fever. We performed a cross-sectional study of resident sign-outs on an inpatient Internal Medicine service between September 2018 and April 2019 using a data collection tool we developed. Data collected included patient’s primary reason for hospitalization, whether fever was an anticipated problem, whether a differential diagnosis for fever was included, evaluation and management instructions for fever, and any rationale provided for the instructions. We analyzed the data using descriptive statistics and chi-squared analysis.

**Conclusion.** While further studies are needed our results suggest that whiteboard animation videos may be an effective way to teach empiric antibiotic selection to medical students preparing for internship.

**Disclosures. All authors:** No reported disclosures.

### 2536. Evaluation of Anticipatory Guidance Provided by Internal Medicine Residents for the Care of Patients with Fever

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**Background.** Overnight fever is common in hospitalized patients. Past work has analyzed cross-covering resident practices regarding overnight fever, but little is known about how residents provide anticipatory guidance for overnight fever. We aimed to further our understanding of resident sign-out practices for overnight fever by analyzing the specific content of the guidance they provide and evaluating whether the presence of infection impacts the guidance provided.

**Methods.** We performed a cross-sectional study of resident sign-outs on an inpatient Internal Medicine service between September 2018 and April 2019 using a data collection tool we developed. Data collected included patient’s primary reason for hospitalization, whether fever was an anticipated problem, whether a differential diagnosis for fever was included, evaluation and management instructions for fever, and any rationale provided for the instructions. We analyzed the data using descriptive statistics and chi-squared analysis.

**Results.** Among 216 sign-outs reviewed, 38% indicated infection was the primary hospital diagnosis. Fever was an anticipated issue in 169 (78%) of sign-outs (Table 1). Of sign-outs recommending fever evaluation, 79% specified at least one diagnostic test but 34% still utilized a nonspecific phrase such as “full fever work-up” (Table 1). Only 62% of fever sign-outs included antibiotic guidance. In addition, rationales were provided for evaluation or management guidance in only 41% and 61% of sign-outs, respectively (Table 2). Chi-squared analysis did not show a statistically significant association between primary hospital problem and the sign-out including fever as an anticipated problem (P = 0.78), recommending in-person assessment (P = 0.11), or providing antibiotic guidance (P = 0.15).

**Conclusion.** Fever anticipatory guidance is commonly included in resident-written sign-out regardless of primary hospital problem. Specific evaluation instructions for fever are used more commonly than nonspecific fever work-up terms, but rationales for testing are given uncommonly. Future educational interventions around sign-out and evaluating fever overnight may lead to more effective anticipatory guidance and rationale testing and treatment.

| Table 1: Characteristics of fever sign-out (n=216) |
|--------------------------------------------------|
| **SIGN-OUT INCLUDES:** YES NO | **SIGN-OUT INCLUDES:** YES NO |
| Fever as anticipated problem | 163 (76%) 53 (26%) | 162 (76%) 54 (24%) |
| Associated problem (if fever not listed) | 162 (76%) 54 (24%) | 163 (76%) 53 (26%) |
| Fever (or associated problem) differential diagnosis | 168 (78%) 47 (22%) | 168 (78%) 47 (22%) |
| Fever evaluation recommendations | 168 (78%) 47 (22%) | 168 (78%) 47 (22%) |
| Antimicrobial recommendations | 134 (62%) 82 (38%) | 134 (62%) 82 (38%) |

**Fever as anticipated problem**

| Table 2: Characteristics of fever evaluation recommendations included in the sign-out (n=169) |
|--------------------------------------------------|
| **SIGN-OUT INCLUDES:** YES NO | **SIGN-OUT INCLUDES:** YES NO |
| Recommendation for at least one specific diagnostic test | 139 (79%) 35 (21%) | 139 (79%) 35 (21%) |
| Broad/nonspecific terms | 73 (44%) 96 (44%) | 73 (44%) 96 (44%) |
| Recommendation for in-person assessment | 43 (25%) 126 (75%) | 43 (25%) 126 (75%) |

**Disclosures. All authors:** No reported disclosures.