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Authors

Budak, Jehan

Sears, David

Wood, Brian

et al.

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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; 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

Amy Chang, MD PharmD<sup>1</sup>; Stan Deresinski, MD<sup>1</sup>; Aruna Subramanian, MD<sup>2</sup>; Bruno Medeiros, MD<sup>2</sup>; Emily Mui, PharmD, BCIDP<sup>3</sup>; Lina Meng, PharmD<sup>3</sup>; Michaela Liedtke, MD<sup>4</sup>; Marisa Holubar, MD, MS<sup>5</sup>; <sup>1</sup>Stanford University, Menlo Park, California; <sup>2</sup>Stanford Medicine, Stanford, California; <sup>3</sup>Stanford Health Care, Stanford, California; <sup>4</sup>Stanford University Cancer Center, Stanford, California; <sup>5</sup>School of Medicine, Stanford University, Stanford, California

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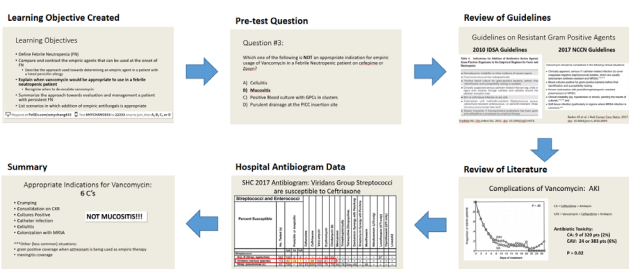
**Background.** In a retrospective chart review of 211 first episodes of febrile neutropenia (FN) in in-patients with acute myelogenous leukemia evaluating rates of appropriate vs. inappropriate management, we identified frequent noncompliance with national guidelines for the management of FN. We utilized 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 antibiogram (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-positive 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.

**Figure 1. Select Powerpoint Slides Demonstrating Lecture Material: Example Using Indications for Empiric Vancomycin**



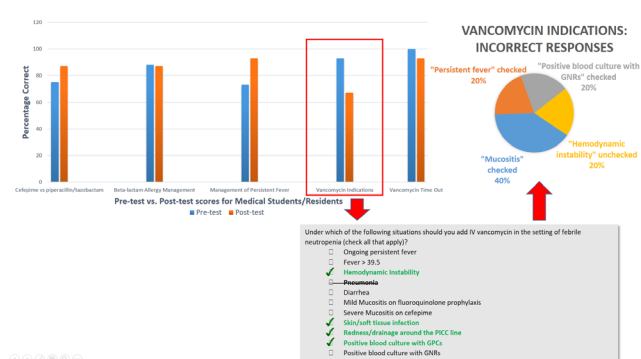
**Figure 2. Identification of learning objectives: proportions of appropriate vs. inappropriate behavior**

	Total (%)	Appropriate (%)	Inappropriate (%)
Number of patients with alteration of empiric agent at least once during admission	154 (73)	96 (45)	58 (27)
Switch to piperacillin/tazobactam	88 (42)	48 (23)	40 (19)
Switch to meropenem	91 (43)	70 (33)	21 (10)
Switch to cefepime	4 (2)	3 (1)	1 (0)
Addition of fluoroquinolone or aminoglycoside	36 (17)	34 (16)	2 (1)
Resistant gram positive agent use			
Initiation	160 (76)	124 (59)	36 (17)
Continued use at 72h	98 (46)	71 (34)	27 (13)
Aztreonam use	24 (11)	18 (8)	6 (3)

**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.

### 2533. HIV Training Pathways in Residency: A National Survey of Curricula and Outcomes

Jehan Budak, MD<sup>1</sup>; David Sears, MD<sup>1</sup>; Brian Wood, MD<sup>2</sup>; Shireesha Dhanireddy, MD<sup>2</sup>; Shireesha Dhanireddy, MD<sup>2</sup>; Arianne Teherani, PhD<sup>1</sup>; Brian Schwartz, MD<sup>1</sup>; Brian Schwartz, MD<sup>1</sup>; <sup>1</sup>University of California, San Francisco, San Francisco, California; <sup>2</sup>University of Washington, Seattle, Washington

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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 reported as currently providing primary care to ≥ 20 PWH (the majority in the West and Northeast

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 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.

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

Jehan Budak, MD<sup>1</sup>; Cristina Brickman, MD<sup>1</sup>; Emily Abdoler, MD<sup>2</sup>; Erika Wallender, MD, MPH<sup>1</sup>; Jennifer S. Mulliken, MD<sup>3</sup>; Andrew D. Kerkhoff, MD, PhD<sup>1</sup>; Harry Lampiris, MD<sup>1</sup>; Jennifer M. Babik, MD, PhD<sup>4</sup>; Catherine Koss, MD<sup>1</sup>; Brian Schwartz, MD<sup>1</sup>; Brian Schwartz, MD<sup>1</sup>; <sup>1</sup>University of California, San Francisco, San Francisco, California; <sup>2</sup>University of Michigan, San Francisco, California; <sup>3</sup>University of California, San Francisco Medical Center, San Francisco, California; <sup>4</sup>University of California, San Francisco, San Francisco, California

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**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. Topic areas and interventions are described in Table 1. Fellows were sent a qualitative survey to evaluate the impact of the well-being interventions to date.

**Results.** Four of 5 first year fellows responded to the survey, and all felt the retreat should be repeated yearly. Themes identified from the survey included benefits of having protected time together, convening in a low pressure and informal setting to provide feedback, and spending quality time in a non-clinical setting with co-fellows. Fellows cited the wellness retreat as a strength at our annual fellowship external program review.

**Conclusion.** Burnout is likely high among IM sub-specialty fellows, and interventions are needed to support the well-being of those trainees. We describe a roadmap for the development of a well-being program at a relatively large, academic ID fellowship program led by a mixed fellow and faculty committee. We will continue to monitor data on fellow burnout and make programmatic changes based on feedback. We are hopeful that our work will empower other programs to engage in developing their own well-being programs.

Table 1. Overview of ID Fellow Well-Being Aims and Programming

Pillars	Interventions
Reduction in Workload	<ul style="list-style-type: none"> <li>Increased clinical support on ID consult services at two busiest teaching hospitals</li> <li>Decreased number of ID Division Grand Rounds presentations required in first year of fellowship</li> </ul>
Education	<ul style="list-style-type: none"> <li>ID Division Grand Rounds by the Director of Well-Being for GME (September 2018)</li> </ul>
Enhancing Resilience	<ul style="list-style-type: none"> <li>Writing Exercise on Uncertainty in ID, October 2018</li> <li>First-Year Fellow Retreat, January 2019                             <ul style="list-style-type: none"> <li>Full-day retreat involving pager and service coverage, late-start, team-building activity, gratitude writing exercise, and community building activity with all fellow classes</li> </ul> </li> <li>Senior (2<sup>nd</sup>-4<sup>th</sup> year) Fellow Dinner Series                             <ul style="list-style-type: none"> <li>Twice annual dinners with faculty facilitator to decrease isolation, provide space for real-time peer mentorship, and give anonymous feedback about the program</li> </ul> </li> </ul>
Relaxation/Community Building	<ul style="list-style-type: none"> <li>First-Year Fellow Retreat, full-day, January 2019</li> <li>Senior Fellow Dinner Series, launch May 2019</li> </ul>

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

#### 2535. The Stairway to Antibiotic Heaven: Evaluating a Scaffolded Video Series on Empiric Antibiotic Selection

Jeffrey Larnard, MD<sup>1</sup>; Jason Zucker, MD, MS<sup>2</sup>; Rachel Gordon, MD, MPH<sup>1</sup>; <sup>1</sup>Columbia University Medical Center, New York, New York; <sup>2</sup>Columbia University Irving Medical Center, New York, New York

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**Background.** Inappropriate antibiotic use and spread of resistance is a well-known problem. In academic settings, house staff often make initial decisions

regarding antibiotic use. Recently, there has been increasing interest in using “whiteboard animations” as a way of delivering educational content. We introduced a supplemental series of short whiteboard animation videos on empiric antibiotic selection during a blended transition to residency course for fourth year medical students. Our aim was to determine whether the videos were an effective learning resource.

**Methods.** A total of eight whiteboard animation videos on empiric antibiotic selection were created using Camtasia. Learning was scaffolded using a pneumonia case and an antibiotic “ladder” to provide context for the antibiotics discussed. Questions were interspersed throughout the videos. Students completed an eight question pretest and then an eight question post-test after completing the modules. Qualtrics was used to randomly select questions for the pre- and post-tests from a common question bank. After each individual video module, students were also offered a post-module survey with Likert scaled questions evaluating student perception of the module. All tests and surveys were anonymous. Scores of pre- and post-tests were compared with unpaired t-tests.

**Results.** We received a total of 37 pre-tests and 14 post-tests. The average score on the pre-test was 66% compared with 93% on the post-test ( $P < 0.0001$ ). We also received seventy-four post-module surveys across the eight videos. When asked whether the particular video module was an effective way to learn about antibiotic coverage, 98% of responses responded “agree” or “strongly agree.” 90% of responses also answered “agree” or “strongly agree” when asked if they were more likely to remember the spectrum of activity of the presented antibiotics after watching the module.

**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

Luis Rubio, MD, MHS<sup>1</sup>; Emily Abdoler, MD<sup>2</sup>; Brian Schwartz, MD<sup>3</sup>; Brian Schwartz, MD<sup>3</sup>; <sup>1</sup>University of California, San Francisco, San Francisco, California; <sup>2</sup>University of Michigan, San Francisco, California; <sup>3</sup>University of California, San Francisco, San Francisco, California

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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 2). 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 3). Chi-squared analysis did not show a statistically significant association between primary hospital problem and the sign-out including fever anticipatory guidance ( $P = 0.78$ ), 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 signing-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
Fever as anticipated problem	163 (75%)	53 (25%)
Associated problem (if fever not listed)	162 (75%)	54 (25%)
Fever (or associated problem) differential diagnosis	169 (78%)	47 (22%)
Fever evaluation recommendations	169 (78%)	47 (22%)
Antimicrobial recommendations	134 (62%)	82 (38%)

Table 2: Characteristics of fever evaluation recommendations included in the sign-out (n=169)

SIGN-OUT INCLUDES:	YES	NO
Recommendation for at least one specific test	134 (79%)	35 (21%)
Broad/nonspecific terms	73 (34%)	96 (44%)
Recommendation for in-person assessment	43 (25%)	126 (75%)