

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

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

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

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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.

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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 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%)

Table 3: Completeness of rationale for specific recommendations provided in the sign-out (n=134)

	FULL	PARTIAL	NONE
Directed Evaluation	10 (7%)	46 (34%)	78 (58%)
Antimicrobial Recommendations	12 (9%)	70 (52%)	52 (39%)

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2537. #IDDailyPearl: A Twitter Tool to Enhance Literature Engagement on Busy Infectious Diseases Consult Services

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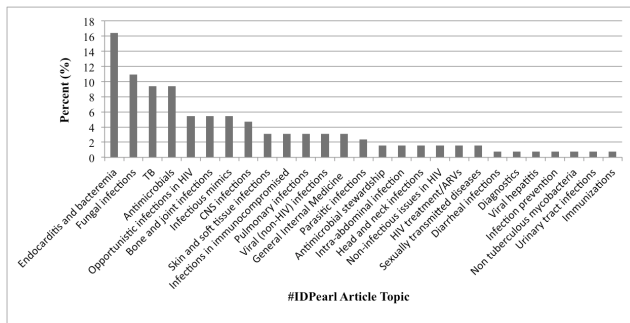
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Background. Social media platforms enable on-demand, open-access learning which is attractive for busy clinicians and trainees. Additionally, teaching that occurs in a clinically contextualized, case-based setting in real time has the potential to be more effective than traditional didactics. We piloted a teaching tool to enhance learning and engagement with the literature for fellows on the infectious diseases (ID) consult service.

Methods. During a clinical service rotation, ID faculty posted a brief daily teaching point on Twitter under the hashtag “#IDDailyPearl” with a link to the relevant article. Tweets were required to be related to a patient case, associated with an article, and could not include patient identifiers.

Results. Over a 3-month period, there were 134 tweets that fit our criteria, with 103 tweets posted by UCSD faculty and 45 by faculty from other institutions. The most common topic was endocarditis and bacteremia (16.4%), followed by fungal infections (11%), tuberculosis (9.4%), and antimicrobials (9.4%) (Figure 1). Article types included review articles (21.6%), retrospective cohort studies (20.2%), case reports (13.5%), randomized controlled trials (12.1%), prospective cohort studies (9.4%), and guidelines (8.8%). Most articles cited were published after 2015 (61.6%), and were from infectious diseases journals (58.2%). The average journal impact factor was 13 (range 0.07–79), with *Clinical Infectious Diseases* as the most commonly mentioned journal (20.2%). Tweets were “liked” 14.5 times (range 0–80) and re-tweeted 4.6 times (range 0–33). The twitter engagement rate per tweet was 6.3% (range 2.2 to 12%) and article links were clicked 19 times (range 3–164). We are currently identifying Tweet characteristics associated with increased engagement rates.

Conclusion. Our study provides a snapshot of the literature used to teach while on the ID clinical service and lays the groundwork for identifying teaching points that receive the most engagement. This tool enables teaching points and high-yield articles to be shared within and across institutions. Future studies will examine the impact that this tool has on fellow and faculty learning, and engagement with and knowledge of the current literature.



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2538. Directed Educational Intervention and Resident Physician Outpatient Antimicrobial Prescribing

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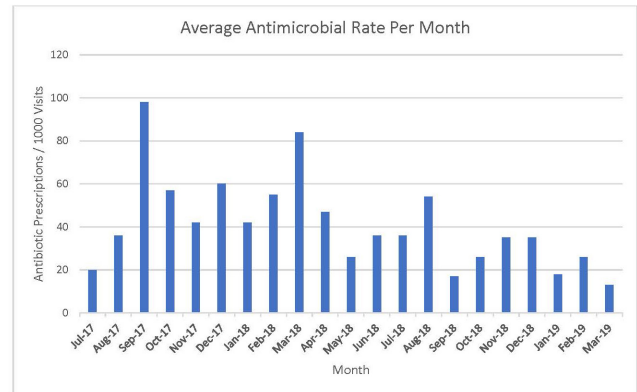
Background. Antimicrobial stewardship is the coordinated approach to optimal use of antimicrobials. Directed stewardship may benefit resident physicians and improve outpatient antimicrobial prescribing.

Methods. Internal medicine residents as of July 1, 2017 (n = 37) with continuity clinic at the Minneapolis Veterans Affairs Health Care System were eligible. Antimicrobial prescriptions and number of patient visits per month were extracted from the Computerized Patient Record System. Antimicrobial rate was calculated for 9 baseline months (July 1, 2017–March 31, 2018) and 12 intervention months (April 1,

2018–March 31, 2019). Residents were divided into high and low prescribing groups based on baseline antimicrobial rate. The low prescribing group received one email with links to antimicrobial stewardship resources. The high prescribing group received the same email and one in person meeting with an infectious disease fellow to discuss antimicrobial prescribing.

Results. Prescription and visit data were available for 37 residents. The low and high prescribing interventions were administered to 17/17 (100%) and 12/20 (60%) participants, respectively. Remaining high prescribing participants (8, 40%) graduated and did not complete the intervention. During the intervention period, there were a total of 171 prescriptions and 4,018 visits, for an average antimicrobial rate of 43 prescriptions/1,000 visits compared with baseline rate of 51 (P = 0.09). Antimicrobial rate per month is shown in Figure 1.

Conclusion. An educational intervention did not significantly change antimicrobial prescribing rates in a VA resident clinic. Antimicrobial prescribing rates were much lower than expected, suggesting that weekly continuity clinic may not be an optimal setting for learning how to manage outpatient antimicrobials. Our study was small and conducted at a single site without evaluation of antimicrobial appropriateness. Further studies should explore the optimal setting for residents to gain outpatient antimicrobial prescribing experience.



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2539. Characterization of Infectious Diseases Advanced Pharmacy Practice Experiences at United States Colleges of Pharmacy

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Background. Antimicrobial resistance is a public health crisis. Experiential education about the appropriate use of antimicrobials is necessary to prevent the post-antibiotic era. The purpose of this study was to describe the learning experiences during infectious diseases (ID) advanced pharmacy practice experiences (APPEs) offered by ID pharmacy faculty.

Methods. A 18-item, cross-sectional, multi-center, electronic survey was distributed via e-mail to ID pharmacy faculty at 124 schools and colleges of pharmacy in the United States. Programs were identified via the Accreditation Council for Pharmacy Education directory. Data related to student learning experiences, preceptor credentials, and teaching opportunities offered to pharmacy students were collected.

Results. Seventy-two (58%) ID faculty responded to the survey and 64 (89%) offered an ID APPE. Forty-three (67%) preceptors completed a PGY-2 ID pharmacy residency and 17 (27%) completed an ID pharmacy fellowship. ID physicians served as co-preceptors for 52% of rotations but only 34% had other ID pharmacists as co-preceptors. Of the 64 APPEs offered, 45% were at an academic medical center. The majority of students participated in antimicrobial stewardship activities (84%) and ID consults (80%) in adults. Greater than 90% of APPEs included learning experiences related to bone and joint, cardiovascular, central nervous system, *Clostridioides difficile*, fungal, intra-abdominal, lower respiratory, skin and soft-tissue, and urologic infections. Viral hepatitis (39%), travel medicine (13%), ophthalmologic (39%), parasitic (33%), and rickettsial (31%) infections were less commonly offered. Most students were required to present patient cases (92%), lead topic discussions (91%), present journal clubs (89%), conduct medication use evaluations (56%) and work on research projects (53%).

Conclusion. Pharmacy ID APPEs provide students with a broad range of experiences, particularly in adult populations. Students commonly participated in the management of core infectious syndromes. ID APPEs provide students additional training on the appropriate use of antimicrobials.

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