

Table 1. Needs/Resources for the identified Infection Prevention and Control Gaps.

Identified Gap* (Gap Frequency)	Top 3 Cited/Most Requested Resource**
Absence of a drug diversion program (78%)	<ul style="list-style-type: none"> <li>A policy/protocol template inclusive of steps to follow in an investigation of drug tampering</li> <li>An educational resource to train personnel on drug diversion</li> <li>A guide for creating and implementing a drug diversion program</li> </ul>
Lack of audits and feedback for safe injection practices (74%)	<ul style="list-style-type: none"> <li>Standardized safe injection practice audit tool (template or mobile app to assist audits)</li> <li>Educational resources to train personnel on how to provide and receive feedback</li> <li>Educational resources to train personnel to perform audits</li> </ul>
Lack of audits and feedback for insertion and maintenance for Central Venous Catheters (CVCs) (74%)	<ul style="list-style-type: none"> <li>Standardized CVC insertion and maintenance audit tool (template or mobile app to assist audits)</li> <li>Educational resources to train personnel on how to provide and receive feedback</li> <li>Educational resources to train personnel to perform audits</li> </ul>
Failure to conduct a risk assessment for the laboratory, identify what tests can safely be offered in order to provide appropriate clinical care for a Person Under Investigation (PUI) (74%)	<ul style="list-style-type: none"> <li>Risk Assessment Template</li> <li>Mitigation toolkit</li> <li>Stable workforce (e.g., mitigation strategies for staff turnover)</li> <li>Access to ongoing equipment readiness guidance</li> </ul>
Lack of audits and feedback for insertion and maintenance of (indwelling) urinary catheters (69%)	<ul style="list-style-type: none"> <li>Standardized urinary catheter insertion and maintenance audit tool</li> <li>Educational resources to train personnel on how to provide and receive feedback</li> <li>Educational resources to train personnel to perform audits</li> </ul>
Lack of audits and feedback on adherence to reprocessing procedures for critical devices (58%)	<ul style="list-style-type: none"> <li>Standardized audit tool for reprocessing critical devices (template or mobile app to assist audits)</li> <li>Educational resources to train personnel on how to provide and receive feedback</li> <li>Educational resource to train personnel on how to receive feedback</li> </ul>
Lack of audits and feedback on adherence to recommended IC practices for Surgical Site Infection (SSI) prevention (58%)	<ul style="list-style-type: none"> <li>Standardized audit tool for IP practices related to SSI prevention</li> <li>Educational resource to train personnel on how to provide and receive feedback</li> <li>Dedicated FTE for performing audits</li> </ul>
Lack of audits and feedback on adherence to cleaning and disinfection procedures (56%)	<ul style="list-style-type: none"> <li>Standardized cleaning and disinfection procedure audit tool (template or mobile app to assist audits)</li> <li>Educational resource to train personnel on how to perform audits provide and receive feedback</li> <li>Dedicated FTE for performing audits</li> </ul>
Lack of audits and feedback on adherence to reprocessing procedures for semi-critical devices (56%)	<ul style="list-style-type: none"> <li>Standardized audit tool for reprocessing semi-critical devices (template or mobile app to assist audits)</li> <li>Dedicated FTE for performing audits</li> </ul>
Facility procedures lacking consultation with the Infection Prevention program upon purchase of new equipment or products (53%)	<ul style="list-style-type: none"> <li>A tool or database for storing audit and feedback data</li> <li>A procedure template for new products/purchases that incorporates IP program consultation</li> <li>Focus of regulatory authorities during surveys</li> <li>Leadership buy-in</li> </ul>
Lack of audits and feedback on adherence to recommended infection control practices for <i>Clostridioides difficile</i> infection (CDI) prevention (51%)	<ul style="list-style-type: none"> <li>Standardized audit tool for IP practices related to CDI prevention</li> <li>Educational resource to train personnel on how to perform audits and provide and receive feedback</li> <li>Dedicated FTE for performing audits</li> </ul>

Note: FTE, full-time equivalent; IP, infection prevention.  
 \*Identified gaps refer to those infection prevention and control practices that were marked "Not" & "Not Sure" by >50% of the respondents.  
 \*\*The top 3 cited/most requested resources are based on the responses provided by CAHs that do not have a procedure/process in place.

**Conclusion.** Major IPC gaps exist in CAHs with many of them related to implementing audit and feedback practices that are an essential component of a successful IPC program. Focus should be directed on developing resources to mitigate identified IPC gaps.

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**955. Trends in Top COVID-19 Questions Among a National Audience of Primary Care Clinicians**

Aylin Madore, MD; Margaret Oliverio, MD; Steven Nock, BS; DBC Pri-Med LLC, Boston, MA

**Session:** P-54. Infectious Diseases Medical Education

**Background.** As COVID-19 took the world by storm, primary care clinicians (PCCs) played a critical role in identification and management of this disease. Yet, knowledge around COVID-19 is constantly evolving, leaving clinicians with many unanswered questions. We sought to examine what questions PCCs had about COVID-19 and whether there were any trends over time.

**Methods.** We sought to examine what questions PCCs had about COVID-19 and whether there were any trends over time. We collected questions from PCCs during 4 live virtual 60-minute continuing medical education (CME) panel discussions on COVID-19 led by infectious disease experts from November 2020 to February 2021. Questions were independently sorted and analyzed by 2 MDs using constant-comparison and tie-break methodology.

**Results.** A total of 600 questions pertaining to COVID-19 were collected across 4 sessions. Top questions asked by PCCs ranked in descending order related to the following topics, with most common themes listed in parentheses: 1. Vaccines (efficacy, safety in pregnancy, indications/contraindications, timing of administration, side effects/adverse events) 2. Medication-Specific Treatment (monoclonal antibodies, ivermectin, steroids, convalescent plasma, supplements [vitamin D, zinc, vitamin c]) 3. Testing (false positive/false negatives, use in travel, quarantine, and gatherings) 4. Other Management (role of anticoagulation, use of chronic medications, guidelines) 5. Personal Protective Equipment (masks, eye protection, post-vaccination, use in travel). [Table 1] The percentage of questions around vaccination increased from 5% of total questions in October 2020 to 67% in February 2021. Questions related to Treatment declined from 20% to 6%, Testing declined from 21% to 3%, Other Management declined from 6% to 1% and PPE increased from 3% to 8% during this period.

Table 1. Top 5 topics of questions listed in descending order of frequency across all 4 COVID-19 panel sessions.

Question Topic	n value	Share of Questions
vaccine	234	39.0%
treatment	70	11.7%
testing	54	9.0%
management	46	7.7%
PPE	28	4.7%

Table 2. Percentage of questions in the top 5 topics for each of the 4 COVID-19 panel sessions, with associated trendline.

**Share of Asked Questions by Pri-Med Activity Date**

Red box = top 3 for the show (ties possible)  
 Red dot (sparkline) = high point across shows  
 Heat map shading = across all shows and all topics. Highest is darkest red.

Rank (all time)	Topic of Question	Pri-Med Activity Date:				Trends
		10/16/2020	11/13/2020	12/4/2020	2/19/2021	
1	vaccine	4.9%	18.3%	27.4%	66.9%	
2	Med-Specific treatment	20.4%	14.1%	13.7%	6.0%	
3	testing	21.4%	9.9%	10.3%	2.8%	
4	other management	5.8%	12.7%	16.6%	0.8%	
5	PPE	2.9%	2.8%	2.3%	7.6%	

**Conclusion.** PCCs nationally have gaps in knowledge around COVID-19 which can impact clinical decision-making. Based on our analysis of questions submitted by PCCs to infectious disease experts in a CME setting, the greatest gaps in knowledge were around vaccination, treatment, and testing with vaccination showing the greatest shift in interest over time.

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**956. Neurosurgical Infectious Disease Curriculum for Infectious Disease Fellows and Application of a Novel Surgical Infectious Disease Framework**

Jessica O'Neil, MD; Christian Larsen, MD; Molly L. Paras, MD; Massachusetts General Hospital, Boston, Massachusetts

**Session:** P-54. Infectious Diseases Medical Education

**Background.** Infectious disease (ID) consultations from surgical services account for 30-41% of all ID consults at academic medical centers. However, adult ID fellows in the United States complete residency training in Internal Medicine and may have limited prior exposure to patients on surgical services. We surveyed 16 first and second-year fellows of the combined Massachusetts General Hospital/Brigham and Women's Hospital ID Fellowship to evaluate their self-perceived ability to approach ID consults from surgical services. While 75% self-reported confidence in their ability to approach general surgery consultations, only 33% reported confidence with neurosurgical related consultations.

**Methods.** We created a novel framework for approaching surgical ID consult questions (Figure 1). We then developed two interactive case-based discussion sessions for first-year fellows to address common neurosurgical consult scenarios (post craniotomy/ craniectomy surgical site infections and cerebral spinal fluid shunt infections). The session materials, including images of common surgical approaches and risk factors for infection, were reviewed by a neurosurgeon content expert. An ID faculty member facilitated the discussions. Each discussion took place during a 30-minute teleconference. The learners then completed a self-assessment survey to evaluate the extent to which they could meet the educational objectives (Table 1) using a 1-5 Likert scale.

Figure 1. Surgical Infectious Diseases Framework

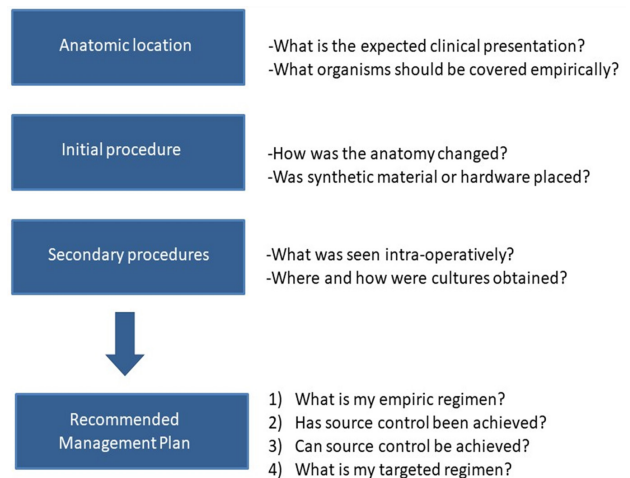


Table 1. Educational Objectives for Case 1 and 2

Case Discussion 1: Post-Craniotomy/Craniectomy Surgical Site Infection (SSI)
1. Describe the preferred craniotomy/ craniectomy incision site and shape to promote wound healing
2. List four risk factors for SSI after craniectomy or craniotomy
3. Define a neurosurgical SSI
4. Classify a neurosurgical SSI as superficial or deep
Case Discussion 2: Cerebrospinal Fluid (CSF) Shunt Infections
1. Describe the frontal and parieto-occipital approaches for CSF shunt placement
2. List three common pathogens in CSF shunt infections
3. List four risk factors for CSF shunt infections
4. Describe the two surgical approaches for CSF shunt removal and replacement (one stage removal and two stage removal)

**Results.** All sixteen learners (eight per case) completed the educational objective self-assessment surveys. The educational objectives were achieved with all questions reaching a mean response of 4 or greater indicating that the mean of learners agreed (4) or strongly agreed (5) that they were able to meet the outlined educational objectives after participating in the discussion session for Case 1 (Figure 2) and Case 2 (Figure 3).

Figure 2. Educational Objective Self-Assessment Scores for Case 1

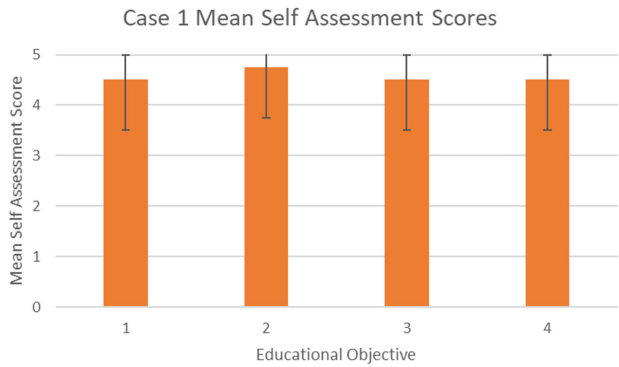


Figure 3. Educational Objective Self-Assessment Scores for Case 2



**Conclusion.** Based on self-assessment surveys, our educational objectives were achieved. In turn, these first-year fellows may be better prepared to address ID consults from neurosurgical services in the future. While the case-based discussions were designed to address specific neurosurgical ID cases, our standardized framework could be adapted to a variety of surgical ID cases.

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**957. Evaluation of Chagas Disease Knowledge Among Providers Caring for At-risk People with HIV**

Jessica Hayon, MD<sup>1</sup>; Jill E. Weatherhead, MD, MSc<sup>1</sup>; Eva Clark, MD, PhD<sup>1</sup>; <sup>1</sup>Baylor College of Medicine, Houston, Texas

**Session:** P-54. Infectious Diseases Medical Education

**Background.** Chagas disease (CD) is underdiagnosed in the United States due to limited healthcare provider awareness of the disease. Improving provider CD knowledge is important because >200,000 people living in the US are estimated to have CD, and 20-30% of those will develop related cardiac or gastrointestinal disease. People with HIV (PWH) and CD additionally are at risk for CD reactivation, which carries a >70% mortality rate.

**Methods.** The overall objective of this quality improvement project was to improve provider knowledge of CD prior to implementation of a CD screening initiative at a large HIV clinic in Houston, TX where >5,000 PWH are seen annually (~60% Latinx). We administered the survey to providers at this clinic before and

after a 1-hour CD educational session, which included information about CD epidemiology, risk factors, transmission, screening, diagnostic strategies, and available treatments.

**Results.** Of 33 providers who took the pre-survey (16 faculty, 14 fellows, and 3 medical students), 27 (81.8%) completed all questions. Of 21 providers who took the post-survey (12 faculty, 6 fellows, and 3 medical students), 19 (90.5%) completed all questions. We identified the following CD knowledge gaps (i.e., questions initially answered incorrectly by >25% in the pre-educational session survey): CD transmission, regions of CD endemicity, CD risk factors, organ systems impacted by CD in PWH, and CD testing/follow-up procedures. In the post-educational session survey, we observed significant improvement in providers' knowledge of CD epidemiology (correct selection of estimated number of people living with CD in the US improved from 26.7% to 90.5%, Fisher's exact p< 0.0001), transmission (correct selection of "mother-to-child" answer improved from 73.3% to 100%, p=0.0150), and selection of correct CD testing answers improved from 51.9% to 85%, p=0.0286.

Table 1. Comparison of healthcare provider knowledge of Chagas disease before and after a 1-hour educational session

Survey Question (abbreviated)	Pre-Educational Session Survey (n=33)	Post-Educational Session Survey (n=21)	P-value (Fisher's exact test)
Confident about CD knowledge?	No, n=10 (32.3%)	No, n=1 (4.8%)	0.0017
Correct identification of agent of CD as a parasite	30 (96.8%)	21 (100%)	>0.9999
Correct identification of CD transmission mode	Feces of triatomine vector 28 (93.3%)	20 (95.2%)	>0.9999
Mother-to-child	22 (73.3%)	21 (100%)	0.0150
Blood transfusion	25 (86.3%)	20 (95.2%)	0.3806
Organ transplantation	26 (86.7%)	19 (90.5%)	>0.9999
Correct identification of CD endemic regions	North America 5 (16.7%)	8 (38.1%)	0.1093
Latin America	30 (100%)	21 (100%)	>0.9999
Correctly estimated the number of people with CD living in the US	8 (26.7%)	19 (90.5%)	<0.0001
Correct identification of CD risk factors	Residence in rustic rural houses with thatched roofs 30 (100%)	19 (90.5%)	0.1647
Contact with the triatomine vector	30 (100%)	21 (100%)	>0.9999
Family members diagnosed with CD	23 (76.7%)	20 (95.2%)	0.1192
History of blood transfusion in an endemic region	24 (80%)	20 (95.2%)	0.2168
Correct identification of CD stages	Brain 28 (93.3%)	19 (95%)	>0.9999
Heart	12 (41.4%)	5 (25%)	0.3607
Lungs	27 (93.1%)	20 (100%)	0.5068
Gastrointestinal tract	26 (89.7%)	20 (100%)	0.6359
Electrocardiogram	26 (89.7%)	20 (100%)	0.2602
Correct identification of baseline procedure(s) recommended for people with suspected CD	25 (86.2%)	20 (100%)	0.1350
Correct identification of the earliest manifestations of CD cardiomyopathy	22 (81.5%)	16 (80%)	>0.9999
Correct identification of populations at risk for CD reactivation disease	People receiving immunosuppressive medications 27 (100%)	19 (95%)	0.4255
People with HIV/AIDS	26 (96.3%)	20 (100%)	>0.9999
Solid organ transplant recipients	26 (96.3%)	19 (95%)	>0.9999
Correct identification of CD diagnostic testing	14 (51.9%)	17 (85%)	0.0286
Correct identification of best next step for positive CD screening test	16 (59.3%)	15 (75%)	0.3547
Correctly chose that CD screening should be offered to family members of CD patients	26 (96.3%)	19 (95%)	>0.9999
Correct identification of populations for which CD screening should be prioritized	Women of child-bearing age 22 (81.5%)	20 (100%)	0.0627
Immunocompromised people	25 (92.6%)	20 (100%)	0.5005

**Conclusion.** Improved CD awareness among healthcare providers and reliable systematic screening protocols are important in at-risk populations. Through simple administration of a 1-hour educational session, we identified and improved several CD knowledge gaps. We noted significant improvement in providers' confidence in their CD knowledge, specifically in epidemiology, transmission, and diagnostic and screening testing.

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**958. A Required Infectious Diseases Rotation Improves Antimicrobial Stewardship Knowledge for Internal Medicine Interns**

Lee S. Gottesdiener, MD<sup>1</sup>; Kate Stoeckle, MD<sup>1</sup>; Angela Loo, PharmD<sup>1</sup>; Shawn Mazur, PharmD<sup>1</sup>; Kirana Gudi, MD<sup>2</sup>; Kristen Marks, MD<sup>2</sup>; Kristen Marks, MD<sup>2</sup>; Matthew Simon, MD, MS<sup>2</sup>; <sup>1</sup>New York-Presbyterian Hospital, New York, New York; <sup>2</sup>Weill Cornell Medicine, New York, New York

**Session:** P-54. Infectious Diseases Medical Education

**Background.** Exposure to Infectious Diseases (ID) education is highly variable in post-graduate medical training. We report our experience with a required one-week ID consult rotation for Internal Medicine (IM) interns with a focus on antimicrobial stewardship education.

**Methods.** Since 2018 all IM interns at our institution have participated in a required one-week ID consult rotation. Antimicrobial stewardship is a core feature of this rotation, with educational resources on antibiotic spectrum and decision-making, and interdisciplinary rounding with ID pharmacists. Between March 2020 and May 2021 we piloted an 11-item pre-rotation and post-rotation quiz with distinct but paired questions on key stewardship topics. The quiz was administered anonymously in SurveyMonkey. Mean pre/post rotation scores were compared using a paired T-test and the McNemar test of paired proportions was used to compare the pre/post change in percentage of correct responses for each topic.

**Results.** Among 47 interns who completed the rotation, 16 interns completed both pre- and post-rotation quizzes (response rate=34%). Mean scores on the pre-rotation quiz were 60%, compared to 77% on the post-rotation quiz (p=0.01), indicating significant improvement at the end of the rotation (Figure 1). Among 11 residents who scored below 65% on their pre-rotation quiz, all achieved an increased score on their