Background. Diagnostic tests are a crucial part of clinical care. However, they can often result in unnecessary testing with no patient impact. Diagnostic stewardship seeks to modify the process of ordering, performing, and reporting diagnostic tests to improve resource utilization and patient outcomes. We identified infectious diseases viral molecular tests that are meant for outpatient management that are often ordered during a hospital stay. Our objective was to quantify how often these tests were ordered and acted upon, as well as the cost associated with them.

Methods. HIV quantitative PCR, HIV genotype and HCV genotype were selected as the target tests to be evaluated in this study. We measured the number of times these tests were ordered at Memorial Hermann Hospital TMC from January to December 2017. The individual and total cost of these tests were calculated. We sampled charts to determine whether the test had been ordered during or after the hospitalization. A kappa statistic was calculated to assess interobserver agreement.

Results. During the study period, a total of 512 HIV viral loads, 29 HCV genotypes, and 58 Hepatitis C genotypes were ordered. The total expense on the HIV viral load tests was $43,228, total expense on HCV genotypes was $8,669, and for Hepatitis C genotype was $43,055. Our chart sampling showed that HIV viral load was not acted on 65% of the time, HCV genotype was not acted on 62% of the time and HCV genotype was not acted on 50% of the time.

Conclusion. Three molecular viral tests that were acted upon less than 50% of the time they were ordered, collectively added an expense of $94,952 over the course of a year. A diagnostic stewardship program based on education and selective restriction of diagnostic testing may result in avoidance of unnecessary testing and substantial savings.

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191. Diagnostic Errors in Bacterial Osteomyelitis in Children
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Background. Delayed or erroneous diagnoses of bacterial infections may cause adverse outcomes in children. Bacterial osteomyelitis has a low incidence, is often infrequently encountered by primary care pediatricians, and has obscure symptoms in children that make an early and accurate diagnosis challenging. The aim of this study was to determine the incidence and causes of diagnostic errors in pediatric patients in whom bacterial osteomyelitis was finally diagnosed.

Methods. Children who received a definitive diagnosis of acute or chronic bacterial osteomyelitis were enrolled at Tokyo Metropolitan Children’s Medical Center between April 2010 and September 2017. The initial diagnoses were retrospectively reviewed by two pediatricians to evaluate the incidence of misdiagnosis and the types of diagnostic error involved, such as system-related and cognitive errors. Each type of error was subclassified into associated factors including patient, task, team, organizational/management, and individual factors, work conditions, and flaws in data gathering, information processing, and verification. The cumulative results for each diagnostic type were averaged. A kappa statistic was calculated to assess interobserver agreement.

Results. The total incidence of misdiagnosis of bacterial osteomyelitis was 36% (27/75), of which 33.3% (13/39) and 38.9% (14/36) were misdiagnoses of acute and chronic osteomyelitis, respectively. The main type of diagnostic error was cognitive (89.3%). The number of subclassified factors was 2.5 per diagnostic error. In cases of cognitive errors, the associated factors were flaws in data processing, data gathering, and verification, at 20 (30.2%), 15 (22.6%), and 17 (26.4%) cases, respectively. Interreviewer agreement was substantial, with kappa = 0.990 for the primary analysis and 0.805 for the subgroup analysis.

Conclusion. Cognitive errors were the primary cause of the misdiagnosis of bacterial osteomyelitis. Educational approaches focusing on improving data gathering, processing, and verification should improve diagnostic accuracy.

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1917. Diagnostic Errors in Bacterial Osteomyelitis in Children
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Background. Acute respiratory infection (ARI) diagnoses encompass syndromes such as pneumonia and bronchiolitis, and are among the leading causes of hospitalization. While outpatient care could present an opportunity to prevent subsequent hospitalization, few studies have measured healthcare utilization preceding hospitalization. We characterized outpatient visits in the 2 weeks prior to ARI hospitalization using commercial insurance and Medicaid claims in MarketScan from 2012 to 2014.

Methods. We included inpatients with an ICD9 discharge diagnosis for ARI (460–466), pneumonia (480–486), influenza (487–488) and evaluated outpatient records ≤14 days prior to admission, excluding the day of admission. We defined an outpatient visit as health encounters with a reasonable potential for medical care receipt (e.g., medical device delivery). We used the prevalence of ≥12 months of medical records to define patients’ Charlson Index and health care utilization, including any prior hospitalizations and preventive and ambulatory care sensitive condition (ACSC) visits. Severe outcomes were defined as intensive care unit admission or death. We used multivariable logistic regression stratified by age group to evaluate demographic, clinical, health utilization, and outcome factors associated with outpatient care prior to admission.

Results. We identified 407,096 ARI hospitalizations, among which 60% of patients had ≥1 outpatient visit prior to admission; 36% of visits occurred ≤1 day prior to admission. Children aged <1 were more likely to have a preceding visit compared with other age groups (67% vs. 57% to 59%, P < 0.001). In all age groups, persons with preventive care and ACSC visits in the past year, a Charlson score ≥1, female sex, non-ospitalized health plans, and self-pay employment were more likely to have a preceding outpatient visit. Patients with severe outcomes were significantly less likely to have a preceding visit, while specific diagnoses varied by age group (figure).

Conclusion. In a population of insured individuals, only 60% received outpatient care in the 2 weeks prior to ARI hospital admission. A greater understanding of healthcare seeking behaviors for potentially preventable hospitalizations is needed.

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1920. Ocular Involvement in Candidemia Patients at an Urban Tertiary Care Center: Is Inpatient Ophthalmologic Consultation Essential? 
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Background. Visual loss is a feared consequence of candidemia. The IDSA recommends dilated eye examination for all patients diagnosed with candidemia, irrespective of symptoms. Approximately 1% of patients with candidemia have ocular involvement. Given the low incidence, we posit that inpatient ophthalmologic consultation may not be required for every candidemic patient.

Methods. We retrospectively reviewed records of all patients with candidemia from June 2015 to March 2017. Age, gender, comorbidities, time to initiation of antifungal treatment, Candida species and choice of antifungal medication were recorded. We also obtained time to ophthalmologic consultation and associated cost.

Results. A total of 120 patients with candidemia were identified (mean age 61; 62% male, 38% female). Seventy-nine percent had an indwelling venous catheter, 37% had DM, 24% were immunosuppressed, 16% had CKD, 14% were receiving TPN, and 15% were IVFDU. Fifty-nine percent of patients had received antibiotics in the previous 30 days. Twenty-six percent had undergone major surgery in the preceding 90 days. The median duration of candidemia was 4 days (range 1–18). Of the 120 patients, 73 (60%) underwent ophthalmologic evaluation. Two of those patients (2.7%) endorsed ocular symptoms, but only one had objective ocular involvement (retinitis without vitritis) which did not necessitate intravenous or oral antifungal therapy. The majority of our patients (68%) were treated with fluconazole. Initiation of antifungal therapy ranged from the day candidemia was diagnosed to 5 days later. Time to ophthalmologic consultation (from the time consult was requested) ranged from 1 to 9 days. Total cost for all ophthalmologic consultations approximated $22,000.

Conclusion. Ocular involvement was rare in our study. No change in short-term management was made based on ophthalmic findings. However, there was substantial cost associated with inpatient ophthalmologic consultation and probably length of stay in patients awaiting eye examination. Hence, we suggest that inpatient eye evaluation may be reserved for patients with ocular symptoms (and those unable to verbalize complaints) as long as outpatient ophthalmologic examination can be arranged.

Disclosures. All authors: No reported disclosures.

1921. Attributable Inpatient Costs of Hospital-Onset Clostridium difficile Infection: A Nationwide Case–Control Study in Japan
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Background. Hospital-onset Clostridium difficile infections (CDIs) have a considerable clinical and economic impact on both patients and payers. Quantifying the economic impact of CDIs can guide treatment strategies. However, previous studies have generally focused on acute care hospitals, and few have included cost estimates from nonacute care hospitals such as rehabilitation centres and long-term care facilities. The aim of this study was to quantify the hospital-onset CDI-attributable inpatient costs and length-of-stay durations in all healthcare institutions that provide inpatient care (including acute and nonacute care) in Japan.

Methods. Using national-level insurance claims data, we analyzed patients who had been hospitalized between April 2010 and December 2016. CDI case patients were identified and matched with non-CDI control patients using hospitalization year, treating hospital, age, sex, surgical procedure, comorbidities, and main diagnoses. Using multivariable regression analyses, we estimated the CDI-attributable inpatient costs and length-of-stay durations while adjusting for variations in factors such as age, sex, comorbidities, surgery, prescribed antibiotic, geographic region, and hospitalization year. We also analyzed the CDI-attributable inpatient costs and length-of-stay durations according to hospital type (acute care and rehabilitation-long-term care).

Results. The analysis was conducted using 3,768 matched pairs. Overall CDI-attributable inpatient costs and length-of-stay durations were US$3,213 and 11.96 days, respectively. Rehabilitation/long-term care hospitals had substantially higher inpatient costs and longer hospitalizations than acute care hospitals.

Conclusion. This study quantified the hospital-onset CDI-attributable inpatient costs and hospitalizations in both acute and nonacute care hospitals. The inclusion of nonacute care hospitals provides a more accurate representation of the economic burden of CDIs.

Disclosures. All authors: No reported disclosures.

1922. The Challenges of Caring for People Who Inject Drugs: An Opportunity for an Infectious Diseases Service
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Background. The Royal London Hospital is a tertiary public hospital in the eastern region of London, UK—an ethnically diverse area with high levels of poverty and homelessness. Since its inception in 2015 the Infectious Diseases (ID) service has cared for 229 inpatients—10% were people who inject drugs (PWID). Such patients have complex problems including homelessness, domestic violence and psychiatric illness which impact on their presentation to and discharge from the hospital.

Methods. To retrospectively evaluate the management and treatment of PWID managed by the ID team from April 2015 to June 2017 and identify strategies to improve care.

Patients were identified via electronic records. PWID not under the direct care of the ID team were excluded. Reason for admission, microbiological diagnosis, antibiotic choice, blood borne virus status, central venous access and other specialist input were noted.

Results. Twenty-two PWID were identified; 13 (59%) were male, median age was 39.5 years (IQR 32.5–46).

Table 1: Infectious Diagnoses of PWID

| Diagnosis                  | Number |
|----------------------------|--------|
| Complicated MSSA bacteremia| 12     |
| Complicated MRSA bacteremia| 2      |
| Complicated other bacteremia| 2      |
| Non-bacteremic presentations| 6      |
| Pulmonary TB                | 3      |
| Groin abscess               | 2      |
| Vertebral osteomyelitis     | 1      |

Eighteen patients (82%) received antibiotics via a central line. There was one case of line-related infection (Candida glabrata). Three patients (14%) left hospital against advice, eight attended follow-up after discharge. There were no deaths. The median length of stay was 39 days. Thirteen patients were identified as homeless and eight of these (62%) were discharged to a home.

Conclusion. The majority of PWID managed by the ID team had complicated bacteremia requiring long courses of intravenous antibiotics. Despite concern regarding central access, line associated infection was rare. Significant proportions also had blood borne virus infection (86%) and over 50% had psychiatric illness and/or are homeless. Together these factors represent major obstacles to providing the considered “gold standard” care. These findings highlight the currently unmet need for an integrated multidisciplinary approach to the care of PWID.

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1923. OPAT or No-PAT? Evaluation of Outpatient Parenteral Antimicrobial Therapy (OPAT) Patients Receiving Daptomycin or Ertapenem for “Ease of Administration”
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Background. Outpatient parenteral antimicrobial therapy (OPAT) allows for long-course intravenous treatment of infections without lengthy hospital stays. Upon discharge, antimicrobial therapy may be broadened to etrapenem or daptomycin for “ease of once-daily administration. Patients requiring subsequent readmission should be properly tailored to pre-OPAT regimens to minimize collateral damage and reduce cost. This study assessed the continuation of “ease of administration (EOA) regimens” upon hospital admission during or immediately following OPAT.

Methods. This was a single-center, retrospective review of adult patients enrolled in OPAT and discharged between January 1, 2014 and September 30, 2017 on ertapenem or daptomycin for “EOA regimens”. Patients with EOA regimens were identified through chart review of discharge summaries. Patients with EOA regimens were compared with those without EOA regimens for readmission within 90 days of OPAT discharge. The primary outcome was the percentage of patients who were readmitted within 90 days of OPAT enrollment.

Results. The 188 patients receiving an OPAT “EOA regimen,” were readmitted during or within 90 days of their OPAT course and maintained on an “EOA regimen” of antibiotics. Secondary outcomes included inpatient therapy cost, rates of Clostridium difficile infection, and adverse drug reactions. Demographics and outcomes were summarized using descriptive statistics.

Results. Of the 188 patients receiving an OPAT “EOA regimen,” 71 were readmitted during or within 90 days of their OPAT course and maintained on an “EOA regimen” of antibiotics. Patients were mostly male (81%) with a median age of 57 years. “EOA regimens” were continued in 27% of hospital