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Background. Severe sepsis is associated with high mortality and readmission rates. Infectious diseases (ID) consultations (IDC) improve clinical outcomes in patients with severe infections. In March 2016, a mandatory ID consultation (MIDC) policy for this patient population was implemented. This study's goal was to determine the impact of MIDC on clinical outcomes.

Methods. In efforts to reduce mortality and complications from sepsis at our institution, multidisciplinary intervention led to a policy for MIDC for patients with sepsis. This intervention was monitored daily by the clinical initiatives team to ensure compliance. We conducted a retrospective chart review of patients with severe sepsis from all sources in Pre-MIDC group from January 2015 to February 2016 and Post-MIDC group from March 2016 to December 2017. The primary endpoint of the study was to evaluate the impact of MIDC on all-cause inpatient mortality (ACIM) and 30-day readmission in patients with severe sepsis. Secondary endpoint focused on the impact of MIDC on time to IDC and patient seen by ID physician. Subgroup analysis evaluated the impact of early vs. late IDC on ACIM.

Results. There was a total of 511 patients in Pre-MIDC and 635 patients in Post-MIDC groups. No differences were seen in the demographics between the groups. Overall a difference was not seen in ACIM between the two groups (9.2% vs. 8%, P = 0.52); however, Post-MIDC group had lower rates of 30-day readmission due to sepsis/infection (12.1% vs. 4.9%, P = 0.01) and shorter length of stay (8.5 vs. 6.7 days, P = 0.001). We did observe an association with early IDC from admission to a decrease in ACIM compared with late IDC (7.8% vs. 9.4%, P = 0.03). Times to IDC from admission (33.5 hours vs. 16.75 hours, P = 0.001) and patient seen by ID physician from time of IDC order (23 hours vs. 8.75 hours, P = 0.0001) was faster in Post-MIDC group. A decline was observed in sepsis mortality by 16% since MIDC implementation compared with Pre-MIDC.

Conclusion. Implementation of MIDC led to faster time to IDC and patients seen by ID physicians which was directly associated with a decrease in ACIM. MIDC did not show a difference in overall ACIM; however, it decreased 30-day readmission due to sepsis/infection and shorter LOS. We also observed a consistent decline in overall sepsis mortality through this intervention.

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889. Impact of an Infectious Disease Telehealth (IDt) Service on S. aureus Bacteremia (SAB) Outcomes in 15 Small Community Hospitals

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Background. Infectious diseases (ID) consultation improves SAB readmission rates, compliance with care bundles and mortality. Small community hospitals (SCHs) (which comprise 70% of US hospitals) often lack access to on-site ID physicians. IDt is one way to overcome this barrier, but it is unknown if IDt provides similar clinical benefits to traditional ID consultation. Our study aims to evaluate the impact of IDt on patient outcomes at 15 SCHs (bed range: 16–146) within the Intermountain Healthcare system in Utah.

Methods. Baseline demographics, Charlson Comorbidity Index (CCI), hospital length of stay (LOS), and mortality (in-hospital, 30- and 90-day) were collected using an electronic health record database and health department vital records on all patients with a positive *S. aureus* blood culture from January 1, 2009 through December 31, 2018. Data from January 2014 through Sep 2016 were excluded to avoid potential influence of a concurrent antimicrobial stewardship study. Starting in October 2016 an IDt program (staffed by an ID physician and pharmacist) provided consultation for SCH providers and patients using electronic consultation and encrypted two-way audiovisual communication.Statistical analyses were performed using Fisher's exact test or χ^2 test for categorical variables and Mann–Whitney U test for nonparametric continuous data.

Results. In total, 625 patients with SAB were identified: 127 (20%) received IDt and 498 (80%) did not (non-IDt). The two groups (IDt vs. non-IDt) were similar in median age (66 vs. 62 years; P = 0.76), percent male (62% vs. 58%; P = 0.35), and median baseline CCI (4 vs. 4; P = 0.54). There were no statistically significant differences in median LOS (5 vs. 5 days; P = 0.93) or in-hospital mortality (2% in both groups). The IDt group had a lower 30-day (9% vs. 15%; P = 0.049) and 90-day mortality (13% vs. 21%; P = 0.034).

Conclusion. IDt consultation was associated with a decrease in 30- and 90-day mortality for SCH SAB cases. Early transfer of critically ill patients might have affected LOS and in-hospital mortality. Post-discharge care factors might also contribute to 30- and 90-day mortality. While more work is needed to identify other factors associated with the effect of IDt on SAB, these data support the use of IDt to increase access to care and improve SAB outcomes in SCHs.

Disclosures. **All Authors:** No reported Disclosures.

890. Bridging the Gap to Help Address the Opioid Crisis: A Novel Model of Care to Integrate Substance Use, Mental Health, and Infectious Disease Services

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Background. There is a converging public health crisis as the opioid epidemic and increased injection drug use is driving rates of infectious diseases. Multidisciplinary care, integrating infectious diseases, substance use, and mental health services, is crucial to address this crisis. This study evaluated a novel rapid access care model to improve treatment access for opioid use, mental health, and related infectious diseases.

Methods. The Rapid Access Addiction Medicine (RAAM) clinic is a multidisciplinary, walk-in care model located in a mental health center in Ottawa, Canada. RAAM provides collaborative, inter-agency care, with rapid access to care facilitated through seamless care pathways (i.e., from the emergency department). RAAM offers substance use and mental health treatment, screening and care for infectious diseases, harm reduction, and connection to community services. RAAM patients (N = 411) presenting between April 2018 and January 2019 completed substance use and mental health measures upon intake and 30-day follow-ups. Clinical information was collected via chart review.

Results. Of the total sample, 20% (n = 83; 66% men) had problematic opioid use. Most patients reported high opioid dependence severity (97%), injection drug use (67%), and polysubstance use (97%), including cocaine (62%), alcohol (40%), and amphetamines (35%). Most patients reported anxiety (86%) and depression (75%). The number of patients tested for HIV, HCV, HBV, and other STIs was 29%, 27%, 28%, and 24%, respectively. Most patients tested (61%) were young adults (aged 16–29). Of those tested, 15% tested positive for HCV and treatment initiation was facilitated for 66% of patients (33% resolved spontaneously). At 30-day follow-up, patients showed significantly reduced substance use and improved depression and anxiety (Ps < 0.05).

Conclusion. Patients with problematic opioid use have multiple comorbidities, including undiagnosed infectious diseases; thus, highlighting the need for integrated care models like RAAM. Substance use treatment is an opportune setting to identify and treat infectious diseases in order to improve outcomes and reduce disease transmission. Leadership from infectious disease specialists is key to this successful integration.

Disclosures. **All Authors:** No reported Disclosures.

891. Epidemiology and Outcomes of Sepsis in Previously Healthy Patients

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Background. Devastating cases of sepsis in previously healthy patients have received widespread attention and helped catalyze state and national mandates to improve sepsis detection and care. It is unclear, however, what proportion of sepsis cases occur in previously healthy people and how their outcomes compare to patients with comorbidities.

Methods. We conducted a retrospective study of adults admitted from 2009 to 2015 to 373 US hospitals from 3 cohorts using detailed electronic health record data. We identified patients with community-onset sepsis using CDC Adult Sepsis Event criteria and reviewed patients' ICD-9-CM codes to identify major and minor comorbidities. Generalized linear mixed models were used to identify the association between healthy vs. comorbid status and short-term mortality (in-hospital death or discharge to hospice) among sepsis patients, controlling for demographics and clinical characteristics.

Results. The cohort included 6,715,286 adult hospitalizations, of which 337,983 (5%) met community-onset sepsis criteria. Most (329,052; 97.4%) sepsis patients had at least one comorbidity (96.1% major, 1.2% minor, 0.1% pregnant) whereas the minority (8,931; 2.6%) were previously healthy. Hospitalized patients without sepsis, by contrast, tended to be healthier (6.2%, Figure 1). Compared with sepsis patients with comorbidities, previously healthy sepsis patients were younger (mean 48.3 + 20 vs. 66.9 + 16.5 years, P < 0.001) and less likely to require ICU care on admission (30.9% vs. 50.5%, P < 0.001). Previously healthy patients were more likely to be discharged home vs. subacute facilities compared with sepsis patients with comorbidities but had higher short-term mortality rates (22.7% vs. 20.8%, P < 0.001) (Figure 2). The increased risk of short-term death in healthy patients persisted on multivariate analysis (adjusted odds ratios 1.36–1.79, P < 0.001).

Conclusion. The vast majority of patients who develop community-onset sepsis have pre-existing conditions. However, previously healthy patients may be at higher risk for death due to sepsis compared with patients with comorbidities. These findings provide context for high-profile reports about sepsis deaths in previously healthy people and underscore the importance of early sepsis recognition and treatment for all patients.

Figure 1. Prevalence of Comorbidities in Hospitalized Patients with and without Community–Onset Sepsis

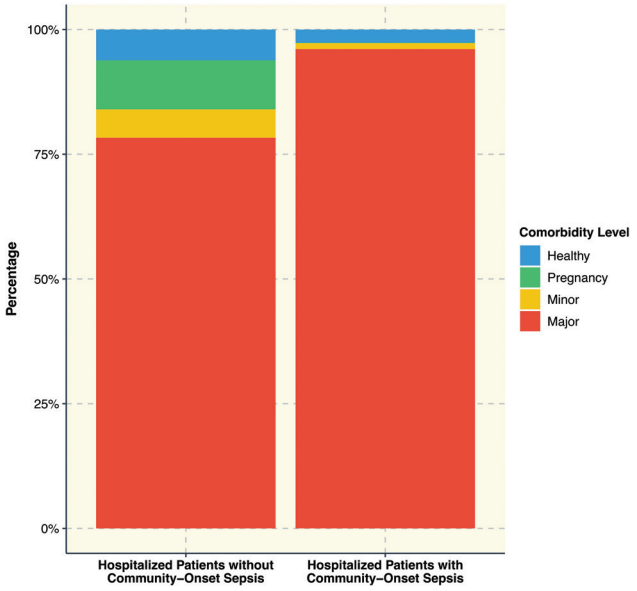
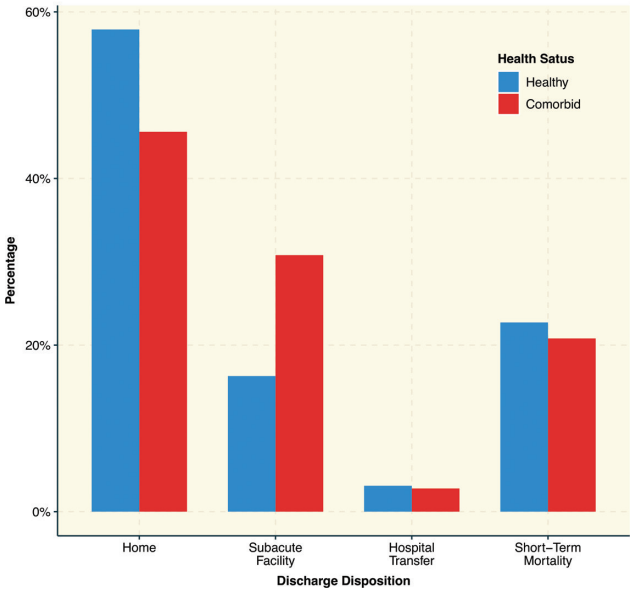


Figure 2. Discharge Disposition by Health Status for Patients with Community–Onset Sepsis (n=337,983)



Disclosures. **All Authors:** No reported Disclosures.

892. Risk Factors for Adverse Events in Children Receiving Outpatient Antibiotic Therapy

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Background. Outpatient parenteral antibiotic therapy (OPAT) can decrease the length of hospital stay but is associated with adverse events (AEs). The purpose of this study was to quantify and identify risk factors for OPAT-associated AEs in children.

Methods. This is a retrospective, single-center study of patients aged ≤21 years discharged on OPAT from January 2016 to April 2019. Only patients with OPAT overseen by the infectious disease service were included. Medication AE's included: rash, neutropenia, hepatitis, diarrhea, *C. difficile* infection, increased serum creatinine, or others. Central line AEs included: central line dysfunction, infection, rash around line site, or other. Wilcoxon rank-sum test, Pearson's χ^2 test, Fisher's exact test, and multivariable logistic regression models were used for analyses.

Results. Demographic information can be found in Table 1. Among 176 patients included in the study, an AE occurred in 69 (39%). In a multivariable logistic regression model adjusting for age, county of residence, duration of OPAT, and duration line was in place, each additional day of antibiotics increased the odds of having a medication or line-related AE by 3% (OR 1.03; 95% CI 1.01–1.06; P = 0.005; Table 2). Medication AEs occurred in 30 patients (17%). The most frequent medication AEs were neutropenia (24%), rash (15%), and increased liver function tests (15%). Patients residing in a Large Fringe Metro area (suburb) had 33% lower odds of having a drug-related AE compared with those in a Large Central Metro area (OR 0.67; 95% CI 0.50 to 0.90; P = 0.008). Line AEs occurred in 46 patients (26%), with 10 patients (21%) experiencing >1 line AE. The most common line AEs were line malfunction (56.5%) and line infection (13%). Seven patients experienced both a medication AE and a central line AE. Of the 176 patients, 20 (11%) were readmitted to the hospital due to medication or line AE and an additional 25 (14%) had a healthcare visit for an AE although did not require admission.

Conclusion. In our region, nearly 40% of children experienced an OPAT-associated AE and line AEs were more common than medication AEs. Longer durations of IV therapy was an independent risk factor for AEs. Converting to oral antibiotic therapy as soon as feasible may reduce OPAT-associated AEs.

Table 1. Demographic and clinical characteristics of children receiving OPAT

Variable	Total N (%) (N=176)	Any AE N (%) (N=69)[a]	No AE N (%) (N=106)[a]	p-value
Age [median (IQR)]	6.7 (1.7-13.5)	8.6 (0.9-14.8)	5.4 (2.4-12.9)	0.333[b]
Sex, Female	78 (44.3)	31 (44.9)	47 (44.3)	0.939[c]
County Code				0.718[c]
Urban (≥1,000,000 population)	31 (17.6)	15 (21.7)	16 (15.1)	
Suburban (≥1,000,000 population)	53 (30.1)	20 (29.0)	33 (31.1)	
Medium Metro (250,000-999,999 population)	21 (11.9)	9 (13.0)	11 (10.4)	
Small Metro (<250,000 population)	13 (7.4)	3 (4.3)	10 (9.4)	
Micropolitan (10,000-49,000 population)	32 (18.2)	12 (17.4)	20 (18.9)	
Rural	26 (14.8)	10 (14.5)	16 (15.1)	
English speaking[d]	167 (96.5)	65 (97.0)	101 (96.2)	0.774[c]
Antibiotic Allergy	32 (18.2)	14 (20.3)	18 (17.0)	0.580[c]
Antibiotic used				
Penicillin (includes penicillin, ampicillin, nafcillin, meropenem)	34 (19.3)	11 (15.9)	23 (21.7)	0.347[c]
Cephalosporin (includes ceftriaxone, cefepime, cefazolin)	84 (47.7)	29 (42.0)	54 (50.9)	0.248[c]
Aminoglycoside (includes amikacin, tobramycin, gentamicin	4 (2.3)	2 (2.9)	2 (1.9)	0.647[d]
Vancomycin	29 (16.5)	12 (17.4)	17 (16.0)	0.814[c]
Piperacillin/tazobactam	13 (7.4)	5 (7.2)	8 (7.6)	1.000[d]
Fluoroquinolones (includes ciprofloxacin, levofloxacin and moxifloxacin)	1 (0.6)	1 (1.4)	0 (0.0)	0.394[d]
Clindamycin	1 (0.6)	1 (1.4)	0 (0.0)	0.394[d]
Other (includes metronidazole, micafungin)	11 (6.2)	8 (11.6)	3 (2.8)	0.026[d]
Type of Line				0.959[d]
PICC	159 (90.3)	63 (91.3)	95 (89.6)	
Broviac	8 (4.5)	3 (4.3)	5 (4.7)	
Hickman	2 (1.1)	1 (1.5)	1 (0.9)	
Port	7 (4.0)	2 (2.9)	5 (4.7)	
Diagnosis[e]				
Bone and Joint Infection	41 (23.3)	22 (31.9)	19 (17.9)	0.033[c]
Skin and Soft tissue infection	30 (17.0)	15 (21.7)	14 (13.2)	0.138[c]
Central nervous system infection	44 (25.0)	19 (27.5)	25 (23.6)	0.556[c]
Blood stream infection	70 (39.8)	30 (43.5)	39 (36.8)	0.376[c]
Intra-abdominal infection	4 (2.3)	1 (1.5)	3 (2.8)	1.000[d]
Urinary tract Infection	20 (11.4)	6 (8.7)	14 (13.2)	0.468[d]
Pulmonary infection	18 (10.2)	5 (7.2)	12 (11.3)	0.442[d]
Endovascular infection	6 (3.4)	3 (4.3)	3 (2.8)	0.681[d]
Other	8 (4.5)	3 (4.4)	5 (4.7)	1.000[d]
Days Line in place [median (IQR)]	19 (11, 36)	24 (15, 40)	15 (10, 29)	0.001[b]
Days of IV antibiotic therapy [median (IQR)]	17 (12, 35)	27 (16, 39)	14.5 (12, 26)	<0.001[b]
Therapy with >1 antibiotic	25 (14.2)	8 (11.6)	17 (16.0)	0.412[c]
Type of Adverse Event				N/A
Medication-related only	23 (13.7)	23 (33.3)	N/A	
Line-related only	39 (22.2)	39 (56.5)	N/A	
Both	7 (4.0)	7 (10.1)	N/A	
# (%) with >1 adverse event	14 (7.9)	14 (20.3)	N/A	N/A
Completion of OPAT				0.000[d]
Successfully completed original IV course WITHOUT adverse event	114 (65.1)	9 (13.0)	105 (99.1)	
Completed original IV course but with ADVERSE EVENT	33 (18.9)	33 (47.8)	0 (0.0)	
Did not complete original IV course due to ADVERSE EVENT	28 (16.0)	27 (39.1)	1 (0.9)	
Final disposition				0.000[d]
No ED/Clinic/Hospital visits for adverse event	115 (66.1)	19 (27.5)	96 (91.4)	
Readmitted prior to completion of OPAT related to adverse event	20 (11.5)	20 (29.0)	0 (0.0)	
Readmitted prior to completion of OPAT UNRELATED to adverse event	14 (8.0)	5 (7.2)	9 (8.6)	
ED/Clinic visit for adverse event but not requiring admission	25 (14.4)	25 (36.2)	0 (0.0)	

[a] 1 subject with AE information missing
[b] Wilcoxon rank-sum test
[c] Pearson's Chi-squared test
[d] Fisher's exact test
[e] Some subjects had more than one diagnosis

Table 2. Multivariable Analysis for Total Adverse Events

	Odds Ratio	95% CI	p value
Age	1.00	0.95 -1.06	0.958
County code	0.91	0.755-1.11	0.352
Duration of antibiotics	**1.03**	**1.01-1.06**	**0.005**
Duration of line	1.00	0.99-1.01	0.302

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893. The SHIELD Orange County Project: A Decolonization Strategy in 35 Hospitals and Nursing Homes Reduces Multi-Drug-Resistant Organism (MDRO) Prevalence in a Southern California Region