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. 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 ID and patient seen by ID physician. Subgroup analysis evaluated the impact of early vs. late ID 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. Over half of the patients in both groups (92.9% 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 ID from admission to a decrease in ACIM associated with lower death (7.8% vs. 3.7%) during the study. 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 ID 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 (ID) Service on S. aureus Bacteremia (SAB) Outcomes in 15 Small Community Hospitals

Althea D. Gabrellas, MD; 1 John J. Veillette, PharmD; 2 Brandon J. Webb, MD, EdD; 3 Ewa S. Stenhem, MD, MSc; 4 Nancy A. Greis; 5 Master of Public Administration; 6 and Todd J. Vento, MD, MPH; 7 University of Utah Hospital, Salt Lake City, Utah; 8 Intermountain Healthcare, Murray, Utah

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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. ID is one way to overcome this barrier, but it is unknown if ID provides similar clinical benefits to traditional ID consultation. Our study aims to evaluate the impact of ID 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, from January 1 through September 30 in 2019. SCHs were excluded to avoid potential confounders or influence of a concurrent antimicrobial stewardship study. Starting in October 2016 an ID program (staffed by an ID physician and pharmacist) provided consultation for SCH providers and patients using electronic consultation and encrypted two-way audio and video communication. Statistical analyses were performed using Fisher’s exact test or χ2 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 ID and 498 (80%) did not (non-ID). The two groups (ID vs. non-ID) 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 ID group had a lower 30-day (9% vs. 15%; P = 0.049) and 90-day mortality (13% vs. 21%; P = 0.034).

Conclusion. ID consultation was associated with a decrease in 30- and 90-day mortality for SAB SCH 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 ID on SAB, these data support the use of ID to increase access to care and improve SAB outcomes in SCHs.

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

Kimberly Corace, PhD; 1 Nicholas Schubert, MA; 2 Melanie Willows, MD; 3 Guy Herbert, MD, and Gary Garber, MD; 4 University of Ottawa/The Royal Ottawa Mental Health Centre, Ottawa, ON, Canada; 5The Royal Ottawa Mental Health Centre, Ottawa, ON, Canada; 6University of Ottawa/The Ottawa Hospital, Ottawa, ON, Canada; 7University of Ottawa/Public Health Ontario, Toronto, ON, Canada

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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. Prior models of care 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, 76% showed significantly reduced substance use and improved depression and anxiety (P < 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 use is an opportunity 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.

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891. Epidemiology and Outcomes of Sepsis in Previously Healthy Patients

Mohammad Alrawashdeh, PhD, MSN; 1 Michael Klopman, MD, MPH; 2 Steven Q. Simpson, MD; 3 Sameer S. Kadri, MD, MS; 4 Russell Poland, PhD; 5 Kenneth Sands, MD, MPH; 6 and Chanu Ribhe, MD, MPH; 7 Harvard Medical School and Harvard Pilgrim Health Care Institute, Boston, Massachusetts; 8University of Kansas Medical Center, Kansas City, Kansas; 9National Institutes of Health Clinical Center, Bethesda, Maryland; 10HCA Healthcare, Nashville, Tennessee

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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 comorbid 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 (48,931; 6.6%) 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. 55.0%, 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 1.16–1.79, 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 patient-severity reports about sepsis deaths in previously healthy people and underscore the importance of early sepsis recognition and treatment for all patients.