

specialties: cardiothoracic surgery, neurology, rheumatology, and oncology. These specialties were identified, in advance, as challenging in interprofessional communication. The notes reviewed were associated with in-person consultations at a medical network in the Midwest from 2016 to 2019, including internal and cross-institutional (i.e., external) referrals. The Quality of Consult Assessment tool was adapted to assess note quality and co-management facilitation. Two researchers reviewed all records independently. A consensus meeting was then held to discuss and resolve discrepancies. RESULTS/ANTICIPATED RESULTS: Medical records of ten patients with comorbidities were reviewed. The mean age was 67 (SD= 12 years); one patient was a child. All consultation notes contained clinical recommendations. Seventy percent of notes referred to explicit consultant responsibilities. Conversely, only one contained explicit responsibilities for referrers. Medical records denoted reliance on support staff to send messages among referrers, consultants, and patients via phone calls and facsimile. The use of fax machines to send medical records to referrers was more prominent after cross-institutional consultations. DISCUSSION/SIGNIFICANCE OF FINDINGS: Clinical documentation supported specialty referrals for transitions of care rather than co-management of care. Accessing medical records across institutions contributed to a lack of clinical context, and workflow inefficiencies, when attempting to co-manage clinical care.

59461

Underutilization of Program Services: Patterns, Sources, and Proposed Solutions

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ABSTRACT IMPACT: Investigators in clinical and translational research will be better supported by CTSA that reduce barriers to the efficient and effective utilization of their program services. OBJECTIVES/GOALS: Evidence from three CTSA show that investigators do not take advantage of all program services provided. This session will explore the patterns and sources of underutilization by sharing preliminary results from investigators and program managers. METHODS/STUDY POPULATION: Interviews with investigators at all three CTSA sites were conducted in Spring 2020. Investigators who had only used one program service and those who had used multiple program services across a span of three-years (2016 to 2018) were included in the sample. Investigators who had only used REDCap, were excluded. Interviews numbered about six interviews per site. Content analysis helped identify emerging themes and patterns. A survey with program managers at the three CTSA sites will be deployed in January 2021. Program managers across all programs will be included in the sample. Basic descriptive analysis will be used to analyze the data. RESULTS/ANTICIPATED RESULTS: Interviews with investigators at all sites illuminated ways different investigators use, learned about and leveraged services, as well as the barriers they encountered to using cross-program services. Investigators also provided thoughts on ways to address lack of program service use. Survey results are expected to clarify program managers' knowledge of other program services in their CTSA, programs' referral processes, and the barriers program managers face when recommending other services to users. DISCUSSION/SIGNIFICANCE OF FINDINGS: When investigators do not take

full advantage of all program services provided, investigators are put at risk of having longer, less successful projects. Knowing the sources of underutilization can help curb this trend and effectively address investigator needs throughout the research process.

66958

Team science training in an engineering design program improves psychological safety and self-efficacy within interdisciplinary teams

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ABSTRACT IMPACT: This project successfully implemented a promising team science model by introducing and facilitating best practices to develop high functioning teams working to accelerate health innovations from bench to bedside. OBJECTIVES/GOALS: The goal of this project was to improve the team science knowledge, skills, and attitudes of interdisciplinary engineering students (undergraduate and graduate) who were partnered with health professionals to develop technical solutions to translational health challenges during a year-long Engineering Innovation in Health (EIH) program. METHODS/STUDY POPULATION: We adapted, implemented, and evaluated team science training content and approaches in the EIH program at the University of Washington (UW). EIH faculty and the UW Institute of Translational Health Sciences' (ITHS) Team Science Core co-developed and delivered highly interactive team science training modules and evaluated their impact with biannual surveys. A student cohort was surveyed prior to the implementation of the team science trainings, which served as a baseline. Descriptive statistics were used to summarize student demographics and survey responses within and between years. Median and interquartile range of responses to Likert-type questions were calculated, and Mann-Whitney U Tests (independent samples Wilcoxon Rank Sum Tests) were used to test for differences within and between years. RESULTS/ANTICIPATED RESULTS: During both the baseline and the team training year, student demographics were similar in terms of gender and past experience working in teams. Team training during the first year of implementation was well-received. Post-implementation surveys of students demonstrated measurable improvement in team dynamics, communication, and effectiveness; including, students reporting higher levels of psychological safety and self-efficacy within their teams. Comparisons within the team training year and between the baseline and team training years identified numerous instances in which differences were statistically significant. DISCUSSION/SIGNIFICANCE OF FINDINGS: Tailored team science training in an interdisciplinary EIH program was successful at improving psychological safety and self-efficacy among undergraduate and graduate students and offers a promising model for similar settings and audiences.

69766

Bariatric surgery to achieve transplant in end-stage organ diseasepatients: A systematic review and meta-analysis

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ABSTRACT IMPACT: Many who suffer from end-stage organ disease do not qualify for solid organ transplantation because of obesity; however, bariatric surgery offers the potential to render select patients

transplant-eligible, and in some cases, may lead to weight loss that is sufficient to reverse end-stage organ disease. **OBJECTIVES/GOALS:** As obesity prevalence grows, more end-stage organ disease patients will be precluded from transplant. Numerous reports suggest bariatric surgery in end-stage organ disease may help patients achieve weight loss sufficient for transplant listing, though the published data are limited. **METHODS/STUDY POPULATION:** We performed a systematic review/meta-analysis of studies of bariatric surgery to achieve solid organ transplant listing. **RESULTS/ANTICIPATED RESULTS:** Among 82 heart failure patients, 40.2% lost sufficient weight for listing, 29.3% were transplanted, and 8.5% had sufficient improvement with weight loss they no longer required transplantation. Among 28 end-stage lung disease patients, 28.6% lost sufficient weight for listing, 7.1% were transplanted, and 14.3% had sufficient improvement following weight loss they no longer required transplant. Among 41 cirrhosis patients, 58.5% lost sufficient weight for listing, 41.5% were transplanted, and 21.9% had sufficient improvement following weight loss they no longer required transplant. Among 288 end-stage/chronic kidney disease patients, 50.3% lost sufficient weight for listing and 29.5% were transplanted. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Small sample size and publication bias are limitations; however, bariatric surgery may benefit select end-stage organ disease patients with obesity that precludes transplant candidacy.

72957

Rethinking reconstructive strategies for complex cranial defects: A 10 year review of cranioplasty outcomes

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ABSTRACT IMPACT: Up to 33% of patients of patients who undergo reconstruction have hostile defects with coexisting soft tissue and osseous defects due to prior radiation, prior failed cranioplasty or concurrent infections we seek to identify optimal strategies for these patients based on the experience of a southeastern tertiary referral center. **OBJECTIVES/GOALS:** Scalp and calvarial defects in patients may result from a number of etiologies including trauma, burns, tumor resections, infections, osteoradionecrosis, or congenital lesions. Our objective was to retrospectively evaluate the use of alloplastic reconstruction alongside autologous reconstruction for high risk cranial defects. **METHODS/STUDY POPULATION:** An IRB approved retrospective review of patients who underwent cranioplasty of a hostile site at a Southeastern tertiary referral center between January 2008 and December 2018 was performed. The patients were stratified into three groups based on the type of implant used: autogenous (bone), alloplastic (PEEK, Titanium, PMMA), or mixed (combination of both types of graft). The primary outcome metric was a complication in the year following cranioplasty, identified by flap or bone graft failure, necrosis, or infection. Statistical analysis included t-tests and chi-square tests where appropriate using SPSS. **RESULTS/ANTICIPATED RESULTS:** There were 43 total cases in this time period; 15 autogenous, 23 alloplastic, and 5 mixed. The purely autogenous group had the highest complication rate (85%) and the alloplastic group had the lowest complication rate (38%). When stratified by specific material used for reconstruction (15 bone, 14 PEEK, 10 titanium, and 5 PMMA), overall complication rate was statistically significant ($p=0.009$; chi square test) with PEEK implants having the lowest complication rate (21%). The analysis documented an overall complication rate that was statistically different between the three groups

($p=0.012$). **DISCUSSION/SIGNIFICANCE OF FINDINGS:** This analysis interestingly found that in the setting of hostile cranial defects, cranioplasties would benefit from the use of prosthetic implants instead of autologous bone grafts, not only for avoidance of donor site morbidity but also for decrease in overall complications.

Health Equity & Community Engagement *Clinical Epidemiology*

18722

Association between neighborhood overcrowdedness, multigenerational households, and COVID-19 in New York City

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ABSTRACT IMPACT: Patients living in overcrowded zip codes were at increased risk of contracting severe COVID-19 after controlling for confounding disease and socioeconomic factors **OBJECTIVES/GOALS:** This study sought to examine whether residences in over-crowded zip codes with higher reported over-crowding represented an independent risk factor for severe COVID-19 infection, defined by presentation to an emergency department. **METHODS/STUDY POPULATION:** In this zip code tabulated area (ZCTA)-level analysis, we used NYC Department of Health disease surveillance data in March 2020 merged with data from the CDC and ACS to model suspected COVID-19 case rates by zip code over-crowdedness (households with greater than 1 occupant per room, in quartiles). We defined suspected COVID-19 cases as emergency department reported cases of pneumonia and influenza-like illness. Our final model employed a multivariate Poisson regression models with controls for known COVID-19 clinical (prevalence of obesity, coronary artery disease, and smoking) and related socioeconomic risk factors (percentage below federal poverty line, median income by zip-code, percentage White, and proportion of multigenerational households) after accounting for multicollinearity. **RESULTS/ANTICIPATED RESULTS:** Our analysis examined 39,923 suspected COVID-19 cases across 173 ZCTAs in NYC between March 1 and March 30 2020. We found that, after adjusted analysis, for every quartile increase in defined over-crowdedness, case rates increased by 32.8% (95% CI: 22.7% to 34.0%, $P < 0.001$). **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Over-crowdedness by zip code may be an independent risk factor for severe COVID-19. Social distancing measures such as school closures that increase house-bound populations may inadvertently worsen the risk of COVID-19 contraction in this setting.