

month of diagnosis. 72% of patients died with median time to death of 9 months (Q1=3, Q3=43). **DISCUSSION/SIGNIFICANCE OF IMPACT:** We successfully identified and described a cohort of 2909 older patients with incident HL from the SEER-Medicare data. This provides a unique opportunity to study this cohort in a large, representative dataset with nearly 15 years of follow up. Future analysis will help us to better understand treatment patterns of HL in older patients and factors associated with treatment. These results can then be used to help improve care decisions and clinical outcomes.

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Impact of Protein-Energy Malnutrition on Outcomes of Heart Failure Hospitalizations

Adeyinka Charles Adejumo¹ and Olumuyiwa Ogundipe

¹North Shore Medical Center

OBJECTIVES/SPECIFIC AIMS: Chronically elevated cytokines from un-abating low-grade inflammation in heart failure (HF) results in Protein-Energy Malnutrition (PEM). However, the impact of PEM on clinical outcomes of admissions for HF exacerbations has not been evaluated in a national data. **METHODS/STUDY POPULATION:** From the 2012-2014 Nationwide Inpatient Sample (NIS) patient's discharge records for primary HF admissions, we identified patients with concomitant PEM, and their demographic and comorbid factors. We propensity-matched PEM cohorts (32,771) to no-PEM controls (1:1) using a greedy algorithm-based methodology and estimated the effect of different clinical outcomes (SAS 9.4). **RESULTS/ANTICIPATED RESULTS:** There were 32,771 (~163,885) cases of PEM among the 541,679 (~2,708,395) primary admissions for HF between 2012 and 2014 in the US. PEM cases were older (PEM:76 vs. no-PEM:72 years), Whites (70.75% vs. 67.30%), and had higher comorbid burden, with Deyo-comorbidity index >3 (31.61% vs. 26.30%). However, PEM cases had lower rates of obesity, hyperlipidemia and diabetes. After propensity-matching, PEM was associated with higher mortality (AOR:2.48[2.31-2.66]), cardiogenic shock (3.11[2.79-3.46]), cardiac arrest (2.30[1.96-2.70]), acute kidney failure (1.49[1.44-1.54]), acute respiratory failure (1.57[1.51-1.64]), mechanical ventilation (2.72[2.50-2.97]). PEM also resulted in higher non-routine discharges (2.24[2.17-2.31]), hospital cost (\$80,534[78,496-82,625] vs. \$43,226[42,376-44,093]) and longer duration of admission (8.61[8.49-8.74] vs. 5.28[5.23-5.34] days). **DISCUSSION/SIGNIFICANCE OF IMPACT:** In the US, PEM is a common comorbidity among hospitalized HF subjects, and results in devastating health outcomes. Early identification and prevention of PEM in heart failure subjects during clinic visits and prompt treatment of PEM both in the clinic and during hospitalization are essential to decrease the excess burden of PEM.

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Informed Consent: Refining the Process

Courtney Perry¹ and Terrence Barrett

¹University of Kentucky

OBJECTIVES/SPECIFIC AIMS: -This study aims to evaluate our retention rate into our prospective clinical trial. We will be comparing the rate of withdrawal both before and after our revamped informed consent process. -We aim to assess patient satisfaction with our study and u **METHODS/STUDY POPULATION:** -The informed consent process for an observational prospective study at our institution has been modified to lengthen the recruitment

and consenting process. -In brief, the research protocol for this observational prospective aims to evaluate the role of steroids on ulcer healing in patients with ulcerative colitis. This study involves an initial standard of care colonoscopy with biopsies and photos. The areas biopsied are marked with a tattoo. The patients are started on steroids for management of their Ulcerative Colitis, and must return for two research colonoscopies at one week post- initial diagnostic visit, and at one month. Additional study biopsies are obtained at the one week visit and photo documentation is obtained. At the one month visit, only photos are obtained to document healing. -In addition to patients with active ulcerative colitis, this study recruits control groups of patients with UC in remission, as well as two groups of normal control patients (one group on steroids for non-IBD reasons, and one group not on steroids. -Prior to our informed consent intervention, patients were screened for eligibility on the day of their standard of care endoscopy. The study was explained to the patient prior to their endoscopy, often in the "pre-op" endoscopy suite. -Our intervention seeks to draw out the consent and recruitment process. All patients scheduled for upcoming endoscopies will be mailed a generic flyer announcing research studies occurring in the endoscopy suite. Patients will be pre-screened at least a week prior to endoscopy with the aid of the endoscopy scheduler. Patients interested in hearing about research will be contacted via phone by study personnel, and a copy of the consent as well as a brief summary will be mailed to the patient. -Patients potentially interested in study participation will be asked to arrive 30 minutes earlier than they typically would for their procedure, and they will be consented in a quiet and private consultation room. They will be given ample time to ask clarifying questions regarding the study. -At the conclusion of their participation, patients will receive an anonymous post-participation survey that seeks to assess their feelings regarding the study and their understanding of the research process. **RESULTS/ANTICIPATED RESULTS:** **DISCUSSION/SIGNIFICANCE OF IMPACT:** This study adds to the ongoing body of evidence suggesting that the informed consent process is more than the three key elements initially described by the Belmont Report 40 years ago. Several factors can impact patient's willingness to participate in research, and the amount of time it takes for patients to achieve all three elements of consent can vary from person to person. The traditional method of consent just prior to study entrance is one that needs to be revisited, and we propose that prolonging the consenting process will positively impact not only patients, but also the overall research process by ensuring that those who decide to participate remain adherent to study protocols.

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POET: A perioperative educational tool as an adjunct to enhanced recovery after surgery in patients undergoing minimally invasive gynecologic oncology surgery

Bing Mei Wang¹, Jocelyn Parrott¹, Jennifer Brunger¹, Pauline Beggs¹ and Jocelyn Chapman¹

¹University Of California, San Francisco

OBJECTIVES/SPECIFIC AIMS: The goal of this study was to determine the impact of an RN-guided preoperative educational intervention in a minimally invasive gynecologic oncology surgery cohort. Our specific objectives include: 1. To assess the impact of preoperative education on quality outcomes such as length of stay and discharge by noon rates. 2. To characterize the differential burden of post-operative communications on nursing staff in patients who received education versus those who did not. **METHODS/STUDY**

POPULATION: This was a retrospective cohort study. We identified thirteen gynecologic oncology patients scheduled for minimally invasive surgeries (laparoscopic and robot-assisted) between March 2017 and July 2017. These patients served as the pilot for a quality improvement project comprised of a preoperative teaching session by a gynecologic oncology registered nurse (RN). Patients also received an educational booklet, designed by gynecologic oncology care team members including nurses and physicians. Educational topics included expectations for pre-, intra-, and post-operation; guidelines for post-op care at home, important contact information, and postoperative medication instructions. Patients were also given a prescription for their post-operative medications and asked to fill them before their surgeries. Following their surgeries, patients were asked to take a voluntary and anonymous 8-item online survey assessing their satisfaction with the educational intervention, their procedure, and their hospital stay. We matched these patients in a one-to-two ratio, to patients not included in the pilot, on the basis of surgery type and age. All subjects and controls spoke English as their primary language. We abstracted data from the electronic medical record including pathologic diagnosis, number of postoperative communications (telephone and email), content of postoperative communications, and various clinical characteristics. Outcome measures include length-of-stay, discharge-by-noon rate, percentage of patients with postoperative questions, and number of postoperative concerns communicated via telephone or email. **RESULTS/ANTICIPATED RESULTS:** There were 39 patients in the final cohort; thirteen of whom who participated in the pilot project, POET (Perioperative Educational Tool). Thirty-nine percent of POET patients had questions regarding their surgery or post-op care as compared with 61.5% of controls ($P = 0.087$). Nineteen percent of controls had questions about their postoperative medications, compared with zero percent of POET patients ($P = 0.046$). POET patients had an average of 0.69 postoperative communications, compared with 1.12 in controls. The length of stay was 8 hours in POET patients and 26 hours in controls ($P = 0.317$). The discharge before noon rate was 20% in POET patients and 25% in controls ($P = 0.41$). Of the 10 POET patients who completed the anonymous online survey, 100% liked the approach to teaching; 100% felt that they received consistent information regarding surgery, hospital stay, and post-op care, 100% felt prepared at discharge, 100% picked up their postoperative medications without difficulty prior to surgery. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Patients uniformly had a positive response to their preoperative education. Although our primary outcomes were not statistically significant, the results of this unpowered, observational study suggest that anticipatory education such as we provided, may decrease the burden of postoperative communications related to surgical expectations. A preoperative teaching intervention may be especially valuable in educating patients about their postoperative medications. Although POET patients had significantly fewer questions about their postoperative medications, refilling their medications before their procedures did not seem to have an effect on discharge-by-noon rates. This may demonstrate that delays in disposition are not influenced by postoperative prescriptions. One limitation of our study is that we did not prospectively measure patient satisfaction with surgical care. Another limitation is that the pilot educational intervention was conducted entirely in English. To our knowledge, there exists no analysis of the effect of English language proficiency on outcomes such as patient satisfaction, length of stay, and discharge-by-noon rates, and other clinical outcomes in this surgical patient population. It is well-demonstrated in the literature that limited English proficiency contributes negatively to health care quality. Our next steps

involve establishing a prospective study to measure the effects of preoperative education on patient satisfaction with their procedure, post-operative communications, and discharge by noon rates. We also plan to administer POET to Spanish- and Chinese-language speakers, to better understand the effect of limited English proficiency on our outcome measures of interest.

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Poorer Outcomes Among Septic Patients with Protein Energy Malnutrition

Adeyinka Charles Adejumo¹, Olalekan Akanbi and Lydie Pani

¹North Shore Medical Center

OBJECTIVES/SPECIFIC AIMS: Protein Energy Malnutrition (PEM) could compromise the body's defense systems resulting in sepsis, which further depletes calorie stores. Among hospitalized patients, we investigate 1) the relationship between PEM and sepsis, 2) the impact of PEM on trends in mortality from sepsis, and 3) the influence of PEM on clinical outcomes of sepsis. **METHODS/STUDY POPULATION:** Using the 2014 Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (NIS) patient's discharge records, we identified patients with sepsis, PEM, and other clinical conditions with ICD-9-CM codes. After stratifying sepsis into two: uncomplicated (without shock) and complicated (with shock), we estimated the adjusted odds (aOR) of developing sepsis (total, uncomplicated and complicated) with PEM. Then, we selected hospitalizations with sepsis from 2007-2014 years of the HCUP-NIS, and calculated the trend in mortality from sepsis, stratified by PEM status, as an effect modifier. Finally, we matched PEM to no PEM (1:1) using a greedy algorithm-based propensity methodology and estimated the effect of having mortality, complicated sepsis and 10 other clinical outcomes and healthcare utilization (SAS 9.4). **RESULTS/ANTICIPATED RESULTS:** PEM was associated with higher odds for sepsis (aOR:3.97[3.89-4.05]), and complicated vs. uncomplicated sepsis (1.74[1.67-1.81]). Although mortality in sepsis has been trending down from 2007-2014 (-1.19%/year, p-trend<0.0001), the decrease was less pronounced among those with PEM vs. no-PEM (-0.86%/year vs. -1.29%/year, p-value < 0.0001). After propensity matching, PEM was associated with higher mortality (1.35[1.32-1.37]), cost (\$160,724[159,517-161,940] vs. \$86,650[85,931-87,375]), length of stay (14.76[14.68-14.84] vs. 8.49[8.45-8.56] days), and worse outcomes in general. **DISCUSSION/SIGNIFICANCE OF IMPACT:** PEM is a risk factor of sepsis and associated with poorer outcomes among septic patients. A concerted effort involving primary care physicians, nutritionists, nurses in identifying, preventing, and treatment of PEM in the community-dwelling individuals before hospitalization might mitigate against these devastating outcomes.

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Predicting Linkage-to-Care Outcomes Among Patients Screened for Hepatitis C in an Urban Academic Emergency Department

Joshua Blackwell¹, Joel Rodgers and Erik Hess

¹University of Alabama at Birmingham

OBJECTIVES/SPECIFIC AIMS: The purpose of the current study is to determine predictors of linkage-to-care (LTC) outcomes among patients screened for hepatitis C virus (HCV) infection in the emergency department (ED). The study is one of the first to report the