edema inducing processes. The precipitating factor for developing ALI involves direct or indirect insult to the lungs. Recent studies have described metalloproteinase-3 (MMP3) to be elevated in plasma samples of patients with lung injury and potentially affected by tobacco use. MMP3 can degrade extracellular matrix components contributing to lung edema and inflammation. This study was conducted to examine the utility of matrix metalloproteinase-3 (MMP3) as a biomarker of lung injury. METHODS/STUDY POPULATION: We conducted a single-center, retrospective cohort study of patients admitted to the medical ICU (MICU). De-identified bronchoalveolar fluid (BALF) samples were collected and stored at −80°C. Enzymatic activity of MMP3 was determined using a fluorescent resonance energy transfer (FRET) assay. Demographics, comorbidities, evidence of lung injury and patient outcomes were collected. Data were reported with descriptive statistics and data was analyzed with t-tests for statistical significance. RESULTS/ANTICIPATED RESULTS: 55 patient BALF samples were included in the final analysis (mean age 58.0 +/- 17.5 years, 58.2% male). 54.5% (n = 30) of patients were determined to have lung injury, 29% (n = 16) of patients had COPD and 45.5% (n = 25) of patients were smokers. MMP3 was higher in patients with lung injury (2363 vs 1052 maxV; p = 0.008). Smoking was associated with decreased MMP3 activity (1231 vs. 2215; p = 0.048). COPD was not associated with differences in MMP3 (1563 vs. 1852; p = 0.605). DISCUSSION/SIGNIFICANCE OF IMPACT: Lung Injury results in elevated MMP3 levels. Smoking was not shown to increase MMP3.

**DISCUSSION/SIGNIFICANCE OF IMPACT:** Lung Injury results in elevated MMP3 levels. Smoking was not shown to increase MMP3.

**OBJECTIVES/GOALS:** To characterize the various social and health trajectories of women released from jail, and how these trajectories influence women’s risky sexual and drug behaviors. To identify areas in which prevention programs and community interventions can be implemented to improve social and health outcomes. METHODS/STUDY POPULATION: The present study analyzes data collected as part of the sexual health empowerment (SHE Project) health literacy intervention. Participants were recruited from three county jails in the greater Kansas City area. At baseline, participants completed a survey that assessed participants’ sociodemographic characteristics and social histories prior to incarceration. Women were recruited between 2014-2016 and followed up annually after program completion to complete follow-up surveys to assess long-term health and social circumstances. The present study is a secondary analysis of baseline and follow-up data. Final analyses will include survey data from 126 women. RESULTS/ANTICIPATED RESULTS: In this study, we use Hobfoll’s Conservation of Resources (COR) Theory to conceptualize the impacts of stress on the social and health behaviors of justice-involved women in the years following release from jail. We hypothesize that “loss spirals,” a term coined by Stevan Hobfoll, creates psychological stress that drive justice-involved women to assume behaviors that will generate more resources and help to cope with the stress. We expect to find that women struggle to maintain ties to stable housing, employment, and support, which we believe to be central to “loss spirals.” Additionally, we expect to find that these “loss spirals” are associated with sexual and drug health risks. DISCUSSION/SIGNIFICANCE OF IMPACT: This study aims to define a succinct longitudinal timeline assessing biopsychosocial outcomes of women released from jail in order to improve prevention and intervention techniques for the improvement in social and health circumstances of women leaving jail and their reduction in recidivism.

**OBJECTIVES/GOALS:** The current proposal seeks to investigate the effect of early life antibiotic use in the development of functional gastrointestinal (GI) disorders. We propose that infants exposed to
antibiotics will present with gut microbial dysbiosis, changes in fecal bile acid concentrations and develop more GI symptoms compared to unexposed children. METHODS/STUDY POPULATION: We analyzed fecal samples from 174 subjects at 12 months of age, of whom 52 were exposed to antibiotics in their first year of life. Of these, 33 subjects were sampled again at 24 months of age. DNA from 200mg of frozen stool (~80C) was isolated with the Qiagen DNeasy PowerSoil kit. Shotgun libraries were generated using the NexteraXT kit and sequenced on the Illumina HiSeq 2500 using 2x125 bp chemistry. Sequence data were analyzed using the Sunbeam metagenomics pipeline. The abundance of bacteria was estimated using Kraken version 2.0.8. Fecal bile acids will be quantified by liquid chromatography–mass spectrometry (LC-MS). RESULTS/ANTICIPATED RESULTS: Overall bacterial community composition at 12 or 24 months was not associated with antibiotic exposure (PERMANOVA test, Bray-Curtis distance). An increase in Enterobacteriaceae, in particular Escherichia coli, is a signature of antibiotic-induced dysbiosis, but also of early infant gut. Children with antibiotic exposure had slightly higher abundance of Escherichia coli compared to those with no exposure (p = 0.03). At 24 months, the abundance of Bacteroides caccae, a commensal gut species, was decreased for children exposed to antibiotics in the first year of life (fdr = 0.02). We will perform further analysis of bile acid modifying bacteria, fecal bile acid concentrations and correlate to GI symptoms. DISCUSSION/SIGNIFICANCE OF IMPACT: Our findings suggest a significant but nuanced impact of early life antibiotic use on the composition of the gut microbiota. The association of antibiotic exposure with B. caccae and E. coli warrant further attention in the context of the rapidly developing early-life microbiome. CONFLICT OF INTEREST DESCRIPTION: The authors declare no conflicts of interest relevant to this work.

OBJECTIVES/GOALS: The goal of this study was to examine the change in the odds of being diagnosed with metastatic cancer after the Affordable Care Act (ACA) among low-income, privately insured patients, including those with Marketplace coverage. METHODS/STUDY POPULATION: Using Ohio cancer registry data linked with census tract-level income data, individuals aged 18-64 years diagnosed with one of the 15 leading cancers and reported being privately insured or uninsured were identified. Low-income patients were isolated using probability weighting, a process where the ratio of FIBTEM:EXTEM AUC at each dilution demonstrates a hypocoagulable trend as hemodilution increased. However, the samples analyzed by the FIBTEM assay trended toward decreases in FIBTEM AUC compared to EXTEM AUC, and the median CT was in the coagulopathic range (>80 seconds) at a dilution of 80%. FIBTEM (extrinsically activated assay) clotting time (CT) became prolonged at 65% hemodilution and above, and the median CT was in the coagulopathic range (>12 mm) at 55% hemodilution. The area under the curve (AUC), a marker of clot strength, for EXTEM and FIBTEM consistently declined as hemodilution increased. Greater decreases in FIBTEM AUC were seen compared to EXTEM AUC, with the ratio of FIBTEM:EXTEM AUC at each dilution demonstrating a statistically significant difference from baseline. DISCUSSION/SIGNIFICANCE OF IMPACT: All thromboelastometry values demonstrated a hypocoagulable trend as hemodilution increased. However, the samples analyzed by the FIBTEM assay trended toward a coagulopathy at a lower degree of hemodilution compared to the EXTEM assay. As FIBTEM tests analyze the role of fibrinogen in hemostasis and EXTEM tests analyze the role of platelets, our findings suggest that platelets may be able to withstand higher degrees of hemodilution before impairing hemostasis compared to fibrinogen. These findings support the growing body of literature that in early stages of severe obstetric hemorrhage, the prioritization of fibrinogen replacement may be critical in preventing further coagulopathy. CONFLICT OF INTEREST DESCRIPTION: All authors have no conflicts of interest to report.