The Impact of Migration on Viral Hepatitis Prevalence and Elimination Among 30 European Nations: A modeling approach*

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OBJECTIVES/GOALS: Hepatitis B and C virus causes inflammation of the liver and can lead to cirrhosis, liver failure, and hepatocellular carcinoma. The aim of this study is to generate a modeled estimate of changes in hepatitis B and C prevalence, and future sequelae, that accounts for recent mass migration to the European Union stemming from 50 high-emigration countries. METHODS/STUDY POPULATION: Total migrant population from 2013-2017 was obtained from the Eurostat population database. Demographics including country-of-origin, sex, and age distributions were used to determine migrant contributions to HBV and HCV prevalence where available. Undocumented migration estimates were obtained from the Institute of Migration database. Country-of-origin HBV and HCV prevalences were obtained for the select 50 country-of-origin nations from the Polaris Observatory and from systematic reviews. Disease progression was estimated using HBV and HCV outcome data for total populations from treatment guideline publication from the European Association for the Study of the Liver. RESULTS/ANTICIPATED RESULTS: Between 2013 and 2017, a total of 11,030,786 documented migrants born outside the EU arrived to the 30 nations. Germany, United Kingdom, and Spain received the greatest influx of persons and the majority of migration stemmed from countries in West Asia, the Middle East, and Africa. A significant proportion of total migration was driven by conflict-related crisis in Syria, and East and North Africa. The most significant increases in estimated total hepatitis case numbers, national prevalence increases, and future sequelae were seen in Germany and Sweden. DISCUSSION/SIGNIFICANCE OF IMPACT: Mass migration has significantly changed HBV and HCV disease burden in Europe over the past 5 years. Consequently, long-term outcomes of cirrhosis and HCC are also expected to increase. These increases are likely to disproportionally impact individuals of the migrant and refugee communities. HBV and HCV surveillance and management programs must strategically focus on individuals from high-burden age cohorts and nations. Screening and treatment would aid WHO elimination efforts while benefiting both the vulnerable individuals and host nations through reduction of morbidity, mortality, and associated healthcare expenses.

THE IMPACT OF SURGEON AND HOSPITAL VOLUME ON 30-DAY OUTCOMES AND COST FOR RENAL CANCER SURGERY

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OBJECTIVES/GOALS: Provider and hospital factors influence quality, but granular data is lacking to assess their impact on renal cancer surgery. The Maryland Health Service Cost Review Commission (HSCRC) is an independent state agency that promotes cost containment, access to care and accountability. Within HSCRC, we aimed to assess the impact of surgeon and hospital volume on 30-day outcomes after renal cancer surgery. METHODS/STUDY POPULATION: Data on renal surgery were abstracted from the Maryland HSCRC from 2000-2018. We excluded patients younger than 18, patients without a diagnosis of renal cancer, and patients concurrently receiving another major surgery. Volume categories were derived from the distribution of mean cases performed per year. We used adjusted multivariable logistic and linear regression models to identify associations of surgeon and hospital volume with the length of stay, days in intensive care, cost, 30-day mortality, readmission, and complications. RESULTS/ANTICIPATED RESULTS: A total of 10,590 surgeries, completed by 669 surgeons at 48 hospitals, met criteria. The 25th percentile for cases per year was 1, the 50th percentile was 1.2, and the 75th percentile was 2.6. After adjusting for patient factors and cumulative surgeon experience, high volume surgeons had the greatest decrease in length of stay (β: -1.65, P<0.001) and mortality risk (OR: 0.27, 95% CI: 0.10-0.71) compared to rare volume surgeons. Low volume surgeons had the greatest cost decrease (β: -$7,300, P<0.001) compared to rare volume surgeons. Medium volume hospitals had statistically lower average costs than rare volume hospitals (β: $-2,862, P = 0.005). There were no other clinically and statistically significant relationships between volume and measured outcomes. DISCUSSION/SIGNIFICANCE OF IMPACT: Almost half of the urologists studied performed an average of one renal cancer case per year. Greater surgeon volume was associated with shorter length of stay and decreased mortality risk. Hospital volume did not have a meaningful relationship to outcomes. Other factors such as tumor, surgeon, and hospital characteristics or case-mix may associate with outcomes and could be confounders.

The Impact of the 2014 Kidney Allocation System on Waitlisting Rates at the Dialysis Facility Level

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OBJECTIVES/GOALS: The new Kidney Allocation System (KAS) was implemented in 2014 and it is not fully understood how its changes to patient incentives may have impacted dialysis facility waitlisting rates. We examine differences in facility performance and how such differences may have been impacted by this policy change. METHODS/STUDY POPULATION: We used Dialysis Facility Report data from 2011 to 2017 to study waitlisting rates at 3,392 dialysis facilities in the US, using waitlisting counts in the numerator, and the total number of ESRD patients in a facility as the denominator. We examined changes in waitlisting rates over by year at the facility, regional, and national level, and report national trends in waitlisting pre- and post-KAS. Facilities were stratified based on waitlisting rate in 2011 and then we examined whether each facility moved into a higher or lower quartile or stayed in the same quartile in 2017. RESULTS/ANTICIPATED RESULTS: Among n = 3,392 dialysis facilities, the average change in dialysis facility waitlisting rates from 2011 to 2017 was −4.74 percentage points (range -54.4% to 42.3%). Average change in dialysis facility waitlisting rates

from 2011 to 2014 was −0.57 percentage points while the average change in dialysis facility waitlisting rates from 2014 to 2017 was −4.17 percentage points. Half of facilities in the 2011 lowest quartile remained in the lowest quartile in 2017; 45% of facilities in the top 2011 quartile dropped into a lower quartile. The middle 2 quartiles were fairly evenly split between worsening, improving, and not changing. DISCUSSION/SIGNIFICANCE OF IMPACT: Average waitlisting rates have declined since KAS implementation. Many facilities switched quartiles from 2011-17 suggesting that facility waitlisting rates are unstable over time. The decline in waitlisting rates post-KAS suggests that new allocation rules may be discouraging patients and/or providers from getting ESRD patients waitlisted.

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The Role of Suggestibility and Trait Anxiety in Young Adult Alcohol Use

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OBJECTIVES/GOALS: The purpose of this study was to investigate how suggestibility and social susceptibility relate to alcohol use in young adult non-dependent alcohol users, and the role of trait anxiety in this relationship. We hypothesized that greater trait anxiety would be associated with higher levels of alcohol misuse, and this would be mediated by suggestibility. METHODS/STUDY POPULATION: Study participants enrolled in the NIAAA screening and assessment protocol completed questionnaires on suggestibility, anxiety, and alcohol use. The Multidimensional Iowa Suggestibility Scale (MISS) is a 95-question self-report assessment of suggestibility. Trait anxiety is assessed with the State Trait Anxiety Inventory-Trait (STAI-T). Alcohol measures included the Alcohol Use Disorder Identification Test (AUDIT). Structured Clinical Interviews for DSM-IV or DSM-5 disorders were conducted, and non-dependent participants (N = 113) were considered. A median split was conducted (median age = 35.1 years), with the focus of this study on the younger individuals (N = 55). RESULTS/ANTICIPATED RESULTS: Initial analyses showed that suggestibility, alcohol misuse, and trait anxiety all had significant positive correlations with one another. To better understand the relationship of peer influence, specifically, with drinking and anxiety, MISS subscale of Peer Conformity was analyzed. MISS total score and Peer Conformity were positively correlated with AUDIT Total as well as STAI-T Score. STAI-T Score was additionally positively correlated with AUDIT Total (all $p^2 = 0.222$). We also looked at Peer Conformity in place of MISS Total ($R^2 = 0.213$). In both models, only suggestibility measures were significant predictors of harmful alcohol use (p<0.01). DISCUSSION/SIGNIFICANCE OF IMPACT: In young social drinkers, there were significant positive associations between suggestibility, risky alcohol use, and trait anxiety. These results suggest that suggestibility may be a modifiable risk factor for risky alcohol consumption. Future directions include using mediation models to explore the associations between suggestibility, anxiety, and alcohol misuse.

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Theory and Scale Development for Cancer-Related Self-Efficacy in Partners of Breast Cancer Survivors

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OBJECTIVES/GOALS: Specific aims are to: (Qualitative aim) Develop a new measure of cancer-related self-efficacy in partners (BCSES-P) and obtain feedback on the items (Quantitative) Evaluate the psychometric properties of the BCSES-P including: dimensionality, factor analysis, and construct validity assessing the relationships posited METHODS/STUDY POPULATION: 2-Phase Approach: 1) Item development and 1) Item testing Phase 1 Stage 1: Literature review to identify additional covariates Stage 2: Focus groups and individual interviews to determine partners' needs Sample size: 20 partners (18 years of age or older, identifying as being in a committed relationship with a BCS) Design: cross-sectional, qualitative interviews Stage 3: Develop candidate items Stage 4: Cognitive interviews Stage 5: Finalize items with research team Phase 2 Preliminary psychometric testing Dimensionality Internal consistency reliability Construct validity Sample size: 150 partners Design: cross-sectional, online survey RESULTS/ANTICIPATED RESULTS: The BCSES-P will be unidimensional as assessed by exploratory factor analysis. The BCSES-P will demonstrate an internal consistency coefficient of 0.70 or above. Construct validity of the BCSES-P will be demonstrated by support of the following theoretical relationships: Cancer-related self-efficacy will be positively related to marital satisfaction and sexual functioning (social well-being) and the distal outcome, overall QoL. Cancer-related self-efficacy will be negatively related to fatigue (physical well-being), fear of recurrence, depression, and anxiety (psychological well-being). DISCUSSION/SIGNIFICANCE OF IMPACT: Findings will guide intervention development to improve partners' quality of life The BCSES-P will be the first scale to measure partners' cancer-related self-efficacy. This study will highlight a holistic approach to studying the long-term effects of breast cancer on partners.

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Tools for Self-Management of Obstetric Fistula in Low and Middle-income Countries: A Qualitative Study Exploring Pre-implementation Barriers and Facilitators among Global Stakeholders

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OBJECTIVES/GOALS: Insertable devices (IDs) for obstetric fistula (OF) management are feasible, acceptable, but not accessible; implementation determinants in low and middle-income countries (LMICs) are unknown. Thus, the purpose of this study was to understand pre-adoption facilitators and barriers among global stakeholders for a therapeutic ID for OF in LMICs. METHODS/STUDY POPULATION: Stakeholders, including researchers (n = 11), clinicians (n = 4), government officials (n = 2), and administrators (n = 4), were purposefully identified from various sectors involved