racial and ethnic groups. Race and ethnicity are determined by patient self-report in the EHR. Univariable and multivariable regression analyses will be used to assess the association of these outcomes with sociodemographic factors. Potential confounders that will be adjusted for include Charlson Co-morbidity Index, disease severity and likelihood of readmission. Using chi-square tests, we will assess differences in the race/ethnicity distributions between this cohort and those from the 2009 H1N1 Pandemic and the 2018-19 influenza season. RESULTS/ANTICIPATED RESULTS: Of the first 459 patients hospitalized for COVID-19 in March and April 2020, race/ethnicity were: 194 Hispanic (42.3%), 104 non-Hispanic Black (22.6%), 83 non-Hispanic white (18.1%), 43 Asian (9.4%), and 35 other or unknown race (7.6%). There were significant differences in the race/ethnicity distribution compared to the cohort of patients hospitalized for viral respiratory infection during the 2018-19 influenza season (n=254, p <0.001): 58 Hispanic (22.8%), 52 non-Hispanic black (20.4%), 116 non-Hispanic white (45.7%), 15 Asian (6%), and 13 other or unknown race (5.1%). Our anticipated results include further adjusted analyses and comparisons to the 2009 pandemic. We will compare COVID-19 prevalence and outcomes by race/ethnicity with other viral infection outbreaks, adjusting for confounders. DISCUSSION/SIGNIFICANCE OF FINDINGS: Initial hospitalizations for COVID-19 at our institution are notable for a high proportion of Hispanic patients and smaller proportion of non-Hispanic whites, in contrast to the prior year. Our study will demonstrate the extent to which racial and ethnic disparities are typical in viral respiratory outbreaks, which can guide future interventions.

Translational Science, Policy, & Health Outcomes Science

10351

Antibiotic Use for Respiratory Syncytial Virus in the Middle East: A Surveillance Study in Hospitalized Jordanian Children

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ABSTRACT IMPACT: Antibiotic stewardship guidelines should consider the barriers clinicians in low- and middle-income countries face due to limited biomarkers for determining the etiologic pathogen for viral infections like respiratory syncytial virus (RSV) that have a similar presentation to bacterial infections. OBJECTIVES/GOALS: We aimed to evaluate antibiotic administration practices in children who were hospitalized at a government-run hospital in Amman, Jordan, where point-of-care testing is limited. We hypothesized those with RSV are more likely to be administered antibiotics during their hospitalization than children without RSV. METHODS/STUDY POPULATION: We conducted a cross-sectional cohort study in Jordanian children hospitalized with history of acute respiratory symptoms and/or fever from 2010 to 2013. Admitting diagnoses were dichotomized into suspected viral- (e.g., bronchiolitis) and bacterial-like infection (e.g., sepsis, pneumonia). Stratifying by sex, we performed a polytomous logistic regression adjusting for age, underlying medical condition, maternal education, and region of residence to estimate prevalence odds ratios (PORs) and 95% confidence intervals for macrolides, broad-, and narrow-spectrum antibiotics during hospitalization. Sensitivity and specificity of admission diagnoses and laboratory results were compared. RESULTS/ANTICIPATED RESULTS: Children with a suspected viral-like admission diagnosis, compared to those with suspected bacterial-like, were 89% less likely to be administered a narrow-spectrum antibiotic (POR: 0.11; p<0.001). There were slight differences by sex with males having a lower prevalence than females of narrow-spectrum or broad-spectrum antibiotic administration; but they had a higher prevalence of macrolide administration. Overall, children with RSV had a 30% probability (sensitivity) of being assigned to a suspected viral infection; whereas RSV-negative children had an 85% probability (specificity) of being assigned to a suspected bacterial infection. DISCUSSION/SIGNIFICANCE OF FINDINGS: Children with a suspected viral-like infection were less likely to receive an antibiotic; however, when evaluating the accuracy of admission diagnosis to RSV-laboratory results there were considerable misclassifications. These results highlight the need for developing antibiotic interventions for Jordan and the rest of the Middle East.

11010

The diagnostic accuracy of procalcitonin for urinary tract infection in hospitalized older adults

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ABSTRACT IMPACT: This work seeks to improve the diagnostic accuracy of urinary tract infection among hospitalized older adults and mitigate antibiotic overuse in this population. OBJECTIVES/GOALS: Primary objective: To determine the diagnostic accuracy of serum procalcitonin (PCT) for the diagnosis of symptomatic urinary tract infection (UTI) in hospitalized older adults. Secondary objectives: (1) To develop a predictive model for the diagnosis of UTI; (2) To determine the ability of PCT in discriminating between lower and upper UTI. METHODS/STUDY POPULATION: We performed a prospective observational cohort study of 228 participants from a single institution. The study population included older adults (age 65 or older) who were hospitalized on the general medicine wards with a possible or suspected urinary tract infection (UTI). Upon obtaining informed consent, serum procalcitonin (PCT) was processed on remnant blood samples collected from the emergency department. We performed additional data collection through the electronic health record to obtain demographic information, clinical characteristics, and other laboratory and imaging results. Clinicians were surveyed for the diagnosis of UTI and charts were adjudicated by independent reviews of the medical record by infectious diseases experts to determine the primary endpoint of symptomatic UTI. RESULTS/ANTICIPATED RESULTS: We anticipate that serum procalcitonin predicts the presence of symptomatic urinary tract infection (UTI) by demonstrating an area under the receiver operating characteristic curve of at least 0.85. A predictive model developed in our cohort for the diagnosis of symptomatic UTI will be improved by the addition of serum PCT to the prediction model. Finally, we anticipate the serum PCT will accurately discriminate between upper and lower UTI. DISCUSSION/SIGNIFICANCE OF FINDINGS: Diagnosis of symptomatic UTI in hospitalized older adults is challenging and may lead to overuse of antibiotics and the development of antibiotic resistance in this vulnerable patient population. Serum procalcitonin offers a novel diagnostic strategy

in the diagnosis of symptomatic UTI to enable more appropriate antibiotic therapy.

15017

Monoclonal antibody use in rheumatoid arthritis: an evaluation of medical expenditure

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ABSTRACT IMPACT: Younger patients receiving biologics for rheumatoid arthritis have higher medical expenditure. OBJECTIVES/GOALS: TNF inhibiting biologic disease modifying antirheumatic drugs are among the most highly regarded treatment options for rheumatoid arthritis (RA). We aimed at evaluating the medical and prescription costs associated with monoclonal antibody use vs. other RA treatment options in subjects diagnosed with RA. METHODS/STUDY POPULATION: Records from the Medical Panels Expenditure Survey (MEPS) database made available by the Agency for Healthcare Research and Quality were used to identify all RA subjects (n=_____). Demographics and MEPS-provided flags for RA were abstracted from the medical condition files for all the subjects surveyed (2008-2018). Prescribed biologics were identified based on generic and brand names following a manual review to detect any misspellings. Total medical expenses and prescription expenses were abstracted for all identified RA subjects. Subject were surveyed for two consecutive years, thus expenses were assessed for each of the two surveyed years. Costs were adjusted for inflation and expressed in 2018 dollars. The relationship between biologics use, cost and age or gender was evaluated by Fisher's exact test. RESULTS/ANTICIPATED RESULTS: Most RA subjects did not use biologics. RA was more prevalent in women than in men with no significant correlation between sex and the use of biologics in year 1, year 2, or the combined years (p=.44, p=.63, and p=.65, respectively). Biologics users were found to be significantly younger (p<.001), with a mean of 52.8 years compared to 59 years in those who did not use biologics. The 95% confidence interval was 3.7 to 8.6 years younger than non-users. Total medical and prescription costs were higher for biologics users (p<.001) in all analyses. The mean prescription cost difference was $24,038 more per year for biologics users, and $26,296 more total medical expenses, CI $20,502-$27,230 and CI $21,947-$30,646, respectively. There was a trend for biologics users to have higher non-prescription medical expenses (p=.05). DISCUSSION/SIGNIFICANCE OF FINDINGS: Interestingly, biologics non-users had some extreme outliers with expenses far higher than any biologics users, possibly due to poorly controlled RA due to age and/or comorbidities. Yet, our most interesting findings are the higher use of biologics among younger RA subjects and the elevated costs of care being driven mainly by prescriptions cost.

20201

Validating an in-car telemetry system for detecting frequency and severity of driving errors in patients with glaucoma.

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ABSTRACT IMPACT: The car telemetry system may be an ideal method to accurately and reliably evaluate and compare at-risk driving errors between older drivers with and without glaucoma. OBJECTIVES/GOALS: Our project aims to determine whether an in-car telemetry system used during an on-road driving evaluation can accurately and reliably evaluate driving errors in lane maintenance and visual scanning and objectively quantify the frequency and severity of these errors in glaucoma patients. METHODS/STUDY POPULATION: This is a single center, cross-sectional study of 180 participants (125 with glaucoma and 55 controls), ages 55 or older, who underwent a comprehensive clinical assessment, including vision, cognition, motor function, followed by an on-road evaluation by a trained occupational therapist. Driving errors were recorded through a dual method including: 1. An in-car trained occupational therapist 2. In-car telemetry system. The frequency and severity of errors in lane maintenance and visual scanning from the in-car telemetry will be assessed and compared between participants with varying severity of glaucoma and normal controls. In addition, we will compare the frequency and severity of errors in lane maintenance and visual scanning to those recorded by the in-car driving evaluator. RESULTS/ANTICIPATED RESULTS: We anticipate (or predict) that the in- car telemetry system will be able to detect frequency and severity of driving errors in lane maintenance and visual scanning in glaucoma participants. We also predict that participants with worsening glaucoma severity will commit more driving errors. In addition, the in-car telemetry will detect a similar frequency and severity of driving errors as the in-car driving evaluator. DISCUSSION/SIGNIFICANCE OF FINDINGS: The type and frequency of vision-related driving errors that place individuals at risk for a car accident is not well known. Without this critical information, it is extremely challenging to help older adults with glaucoma to be safe drivers.

46942

Risk factors, prevention, and screening practices for human papilloma virus associated cancers in Central-Eastern Puerto Rico

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ABSTRACT IMPACT: The impact of this study is that the results may lead to the development of effective educational programs and a comprehensive cancer control program while verifying patients and medical care providers adherence and compliance with cancer clinical guidelines. OBJECTIVES/GOALS: The objective of this study is to assess risk factors, preventive measures, and screening practices for human papilloma virus (HPV) associated cancers in a sub-population in Central-Eastern Puerto Rico (PR). METHODS/STUDY POPULATION: This is a sub-analysis from an annual descriptive cross-sectional questionnaire of risk factors, preventive measures, and screening practices for cancer in PR administered at a private hospital campus using a convenience sample of healthy and non-healthy adults. RESULTS/ANTICIPATED RESULTS: Out of 345 enrolled subjects in 2019 for the questionnaire, 67 were enrolled by the first author, from which 66 (19%) subjects qualified for this sub-analysis for completing the study: 79% females. When analyzing HPV risk factors, 5% of the participants were smokers. Eleven percent of the subjects received the preventive HPV vaccine. Among those non-vaccinated and eligible for vaccination, 95% were willing to get it. Seventy one percent of females 21-29 years old and 97% of 30-65 years olds had age-appropriate cervical cancer screening. DISCUSSION/SIGNIFICANCE OF FINDINGS: Despite the low prevalence of HPV vaccination, almost all of the subjects within