Off-label Drug Use and Adverse Drug Events

Eguale and colleagues took advantage of the Medical Office of the XXIst Century electronic health record software to systematically evaluate the effect of off-label use on adverse drug events (ADEs). Out of 151,305 prescriptions written for 46,021 patients, 11.8% were prescribed for off-label use. Among off-label uses, 4 in 5 lacked strong scientific evidence. When compared with on-label use, off-label use without strong scientific evidence increased ADE risk by 54%. However, off-label use with strong scientific evidence did not increase ADE risk. These findings were adjusted for important patient-level and drug-level confounders, including patient age, sex, severity of illness, the number of drugs a patient was taking, drug class, and drug age.

Invited Commentary 63
Cost-effectiveness of Early Hepatitis C Treatment 65
Novel hepatitis C virus (HCV) treatments are highly effective but costly. Many insurers will approve treatment only after the onset of advanced fibrosis. Chahal and colleagues assessed the cost-effectiveness of treating all patients with HCV vs only those with advanced fibrosis and assessed the incremental cost-effectiveness of initiating treatment at each fibrosis stage. Chahal and colleagues used a decision-analytic model portraying the treatment of patients with HCV genotype 1 who were treatment-naïve and found that treating HCV at early fibrosis stages is likely to improve health outcomes and to be cost-effective but incurs substantial aggregate costs.
Invited Commentary 73

Adherence to HIV Preexposure Prophylaxis 75
In a US Preexposure Prophylaxis (PrEP) Demonstration Project conducted in sexually transmitted infection clinics and a community health center, Liu and colleagues found that the majority of men who have sex with men enrolled achieved high levels of adherence to PrEP. Adherence was higher among those reporting higher-risk behaviors, and was lower among African Americans and those with housing instability. Despite high rates of sexually transmitted infections, few participants became infected with HIV, and these infections occurred in the setting of low or no PrEP use.
Invited Commentary 85

Fitness in Youth and Outcomes in CARDIA 87
In this analysis of more than 25 years of data from the Coronary Artery Risk Development in Young Adults (CARDIA) study, Shah and colleagues investigated the relationship between cardiorespiratory fitness in early adults aged 18 to 30 years and the 7-year change in cardiorespiratory fitness on mortality, incident cardiovascular disease, coronary artery calcification, and left ventricular mass and systolic function on echocardiography. Cardiorespiratory fitness and change in cardiorespiratory fitness were associated with mortality and incident cardiovascular disease, as well as left ventricular mass and systolic function. However, fitness was not related to coronary artery calcification after 25 years, suggesting that the effect of fitness on cardiovascular disease may involve pathways different from those involved in coronary artery calcification.
Invited Commentary 95

Do-Not-Resuscitate Orders and Hospital Quality Comparisons 97
Despite the potential for do-not-resuscitate (DNR) orders to influence patient outcomes, patient DNR status is unaccounted for in current hospital quality measures. Among 90,000 adult patients with pneumonia hospitalized in California, Walkey and colleagues examined how analyses that account for between-hospital variation in patient DNR status might influence hospital mortality rankings and found that current methods of comparing hospitals penalize potentially high-quality hospitals admitting a larger proportion of patients who had chosen to forego resuscitation. Accounting for DNR status in programs that compare hospital mortality, outcomes may substantially affect publicly reportable hospital rankings and hospital reimbursements.
Invited Commentary 105