Chi square, Binomial, Poisson and Cox proportional Hazard regression models were used to examine mortality risk and survival respectively.
Results: Of the 13,577 children with trauma, mortality prevalence was 1.73%, 95% CI, 1.36-2.14. Relative to commercial insurance, uninsured children were 77% more likely to die, RR =1.77, 95% CI (1.31-2.40). Compared to Whites, Blacks were 42.4% more likely to die as a result of the time from injury to arrival at ED, Hazard Ratio (HR) =1.42, 95% CI (0.94-2.15). The ISS 25-75 was highest among Blacks (29.8%) compared to Whites (21.9%). Relative to Whites, blacks were 70% more likely to die following trauma, RR=1.70, 95% CI (1.27-2.28). After adjustment for potential confounding, the excess mortality between Black and White decreased by 37% but clinically persisted although imprecise, adjusted risk ratio (aRR) =1.33 (0.83-2.15).
Conclusion: The PTM prevalence is marginal in Delaware relative to the Mid-Atlantic region albeit racial disparities, with survival disadvantage observed in Blacks, public insurance, and ISS.

Social Determinants of Health

The social and structural determinants of non-adherence to antihypertensive medication treatment

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Abstract: There is paucity in data on the social and structural determinants of non-adherence. Therefore, we aimed to identify the social and structural determinants of non-adherence to antihypertensive medications (AHM).
Methods: We linked the Centers of Disease Control and Prevention (CDC) Atlas of Heart Disease and Stroke (2014-2016 cycle) and the 2016 County Health Rankings (CHR) datasets for this analysis. County-level non-adherence to AHM is captured in the CDC Atlas dataset as the proportion of days covered (PDC) with AHM during a 365-day period using Medicare Part D claims data. PDC <80%, was considered as non-adherence to AHM. Both datasets contain >100 individual county-level variables classified into four domains of health factors by CHR: health behaviors, clinical care, social and economic factors and physical environment. To define SDH constructs from this large variable set, we applied principal component analysis (PCA). Hierarchical linear models (HLM) were used to quantify the variation in county-level non-adherence and to identify the social structural determinants of non-adherence.
Results: County-level non-adherence varied significantly between states (intraclass correlation coefficient=78%) and between 2,067 (out of 3,141) counties with data on AHM non-adherence and variables. Five constructs of social and structural health determinants accounted for more than half (53%) of the variation in AHM non-adherence between counties within states: stress (20%), socioeconomic disadvantage (18%), healthcare access (6%), housing and transit (5%) and safety (4%). All five constructs were independently correlated with AHM non-adherence after adjusting for each other and demographic factors ($\geq$65yrs, race, sex and rural/urban).
Conclusion: Social and structural factors are strong determinants of AHM non-adherence. Future research will interrogate how these contextual factors interact with patient and provider-level factors to influence non-adherence.

Impact of poverty status on prevalence of metabolic syndrome based on sex among African Americans in the United States: National Health and Nutrition Examination Survey 2001-2006

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Purpose: Metabolic syndrome (MetS) is an important risk factor for cardiovascular disease. Little evidence exists on the possible role of poverty on MetS among African Americans.

Methods: We used data from the National Health and Nutrition Examination Survey (NHANES) 2001-2006. MetS was defined as having any 3 of the following: elevated blood pressure, elevated triglycerides, lower high-density lipoprotein cholesterol, elevated fasting glucose, and elevated central obesity. Poverty was based on poverty income ratio (PIR): substantially above poverty (PIR >3-5) (referent group), above poverty (PIR 1-3), and below poverty (PIR<=1). Odds ratios (OR) and 95% confidence intervals (CI) were estimated using step wise survey-weighted multivariate logistic regression adjusting for demographic and lifestyle factors.
Results: There were 3455 African American participants,$\geq$18 years. Prevalence of MetS was 18% and 25% among men and women respectively (P<0.001). Overall, there was no association between poverty and MetS in the aggregate population. In fully adjusted models, as compared to men substantially above poverty (PIR>3), men both in above poverty group (PIR 1-3) (OR=1.56, 95% CI=0.98-2.49) and in lowest income group (PIR<1) (OR=1.65, 95% CI=1.03-2.63) were more likely to have MetS. No association of PIR and MetS was observed among women. Further we observed a positive trend between PIR and MetS among men and not women (p=0.05 for men, 0.08 for women).
Conclusions: We found an association between poverty status and MetS among African American men but not women. Further studies are needed to identify factors that impact high prevalence of MetS among AA women.

Women's Health

Association between sex hormones and cardiovascular health metrics in women

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Purpose: The American Heart Association (AHA) created a composite of modifiable metrics to define cardiovascular health (CVH) in an effort to promote prevention. The aims were to determine whether CVH metrics are associated with sex hormone in women, and if this association was stronger among post- menopausal women.
Methods: Data was obtained from the NHANES data, 2015-2016. AHA quantified CVH by seven metrics (diet, physical activity, smoking, BMI, glucose, cholesterol, and blood pressure) that are categorized as ideal, intermediate and poor. Outcome is the total number of metrics within the ideal range is and exposure is hormone levels (log10 transformed). The associations were evaluated using multinomial regression, and potential confounders were adjusted. Effect modifications were assessed.
Results: 1231 women were included, with average age 50 years, and 52% (n=641) of the women were post-menopausal. The average total ideal CVH metric score was 3. Higher levels of log 10 transformed SHBG were positively associated with high vs. low ideal metric score in overall women (OR=31.44, 95%CI: 9.82, 100.63). The association became stronger among postmenopausal (OR=511.15, 95% CI: 46.44, 999.99) vs. premenopausal women (OR= 6.00, 95% CI: 1.26, 28.50). There was no association between ideal CVH metrics score and estradiol or testosterone.
Conclusion: Higher level of SHBG was associated with higher ideal CVH metrics score in adult women in NHANES 2015-2016, especially among postmenopausal versus premenopausal women. This could provide insight into the pathway between hormone levels and CVH, and provide opportunities to design interventions targeting high risk groups to improve CVH.

A multiple-group confirmatory factor analysis of psychosocial stressors among Medicaid-covered pregnant women

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Purpose: Differential experiences of psychosocial stress during pregnancy may contribute to racial disparities in adverse outcomes such as preterm birth. It is important that measurement scales are valid and unbiased across comparison groups to assess the effect of psychosocial stress on pregnancy outcomes. This analysis examined the construct validity and measurement invariance of maternal stress, measured by self-reported factors such as depression, social support, and stressful life events, among Medicaid-covered pregnant women.