Little is known about treatment costs for American Indian and Alaska Native (AI/AN) adults with dementia who access services through the Indian Health Service (IHS) and Tribal health programs. This study analyzed IHS/Tribal treatment costs for AI/AN aged 65+ years with dementia and a matched sample without dementia. The mean total treatment cost for adults with dementia were found to be higher than those without dementia, primarily due to hospital inpatient costs. The authors underscored the fact that knowing treatment costs for AI/ANs with dementia can guide enhancements to policies and services for treating dementia and effectively using health resources.
Public Acceptance of and Willingness to Pay for Mosquito Control, Texas, USA
Dickinson KL; Banacos N; Carbajal E; Dacko N; Fredregill C; Hinojosa S; Juarez JG; Weldon C; Hamer GL
Emerging Infectious Diseases

Mosquito control is essential to reduce vectorborne disease risk. This study surveyed residents in Harris, Tarrant, and Hidalgo Counties, Texas, USA, to estimate willingness-to-pay for mosquito control and acceptance of control methods. Results showed an unmet demand for expanded mosquito control that could be funded through local taxes or fees.

Non-Targeted Dried Blood Spot-Based Metabolomics Analysis Showed Rice Bran Supplementation Effects Multiple Metabolic Pathways during Infant Weaning and Growth in Mali
Pfluger BA; Smith HV; Weber AM; Ibrahim H; Doumbia L; Bore A; Cissoko A; Douyon S; Kone K; Sangare L; Maiga A; Koita OA; Goodman K; Evans AM; Ryan EP
Nutrients

Rice bran contains essential nutrients, antioxidants, and bioactives with anti-inflammatory and diarrheal protective properties important for infants. This randomized controlled trial investigated the effects of heat-stabilized rice bran supplementation during Malian infant weaning. Six-month-old infants were randomized to a rice bran intervention, where they received dose-escalating rice bran supplementation for six months, or a non-intervention control group. Monthly infant dried blood spot and anthropometric measurements were collected and analyzed. Supplementation resulted in favorable weight changes. Rice bran supplementation during infant weaning significantly modulated the metabolites involved in antioxidant defenses and with neuroactive properties including reduced glutathione, glycine, glutamate, cysteinylglycine, tryptophan betaine, and choline. These findings support rice bran as a weaning ingredient to meet infant nutritional requirements and with the potential to reduce oxidative stress and improve cognitive outcomes. This study provides evidence for dried blood spots as a cost-effective tool to detect infant biomarkers of nutritional and metabolic status.

School-related Promotive Factors Related to Cannabis Use Among American Indian Adolescents
Henry KL; Crabtree MA; Swaim RC; Stanley LR
Journal of Youth and Adolescence

Reservation-dwelling American Indian adolescents are at exceedingly high risk for cannabis use. Prevention initiatives to delay onset and escalation of use are needed. School engagement and student's positive experiences at school have been identified as key promotive factors against cannabis use in the general population of adolescents, but little work has examined these factors among American Indian youth. Seven school-related promotive factors were examined as predictors of past 30-day cannabis use. Models were tested using adolescents in 6th or 7th grade at the start of the study from two reservation-based schools in the US. Students were surveyed three times, with 6 months in between each survey. American Indian youth who reported greater school bonding, academic aspirations, proclivity to endeavor in their studies, and interest in school at Wave 2 reported less 30-day cannabis use at Wave 3. Given substantial deterioration of these school-related promotive factors over time, and the effect of the school-related promotive factors on subsequent cannabis use, efforts to design and test interventions to promote school engagement as a protective measure against cannabis use is warranted.
**Associations between child filaggrin mutations and maternal diet with the development of allergic diseases in children**

Venter C; Palumbo MP; Sauder KA; Glueck DH; O’Mahony L; Yang I; Davidson EJ; Brough HA; Holloway JW; Fleischer DM; Ben-Abdallah M; Dabelea D

*Pediatric Allergy and Immunology*

Filaggrin (FLG) loss-of-function mutations in children and maternal diet in pregnancy have been implicated in child allergy outcomes. This paper studies the questions: “do FLG mutations modify the effect of maternal diet on the odds of development of allergic diseases?” and “which factor leads to the highest rate of diagnosis allergic diseases over time, maternal diet, or FLG mutations?”. Rates of allergic disease development were compared between three groups: (1) children with FLG mutation, (2) children without FLG mutation whose mothers did not eat an allergy preventive diet, and (3) children without FLG mutation whose mothers ate an allergy preventive diet. The authors found that children with FLG mutation had similar risk of atopic dermatitis, asthma, and wheeze as children without an FLG mutation whose mothers did not eat an allergy preventive diet during pregnancy. Child FLG mutation did not modify the effect of maternal diet. The results suggest that maternal diet in pregnancy, a modifiable risk factor, could be a target for preventive interventions.

**Identifying Value-Added Population Health Capabilities to Strengthen Public Health Infrastructure**

Hogg-Graham R; Graves E; Mays GP

*The Milbank Quarterly*

While the coronavirus pandemic has underscored the important role of public health systems in protecting community health, it has also exposed weaknesses in the public health infrastructure that stem from chronic underfunding and fragmentation in delivery systems. Data from the National Longitudinal Survey of Public Health Systems were used to examine longitudinal and geographic trends in the delivery of population health capabilities and their impact on system strength across communities in the United States. Those communities with the strongest classification of public health system structure in both urban and rural areas were found to implement the largest set of population health capabilities. The results of this study suggest that the public health system structure can be strengthened through the targeted implementation of high-value population health capabilities. Prioritizing the delivery of value-added population health capabilities can help communities efficiently use limited time and resources and identify the most effective pathways for building a stronger public health system and improving health outcomes over time.
Fair Play as an Injury Prevention Intervention: Do Yellow Card Accumulation Policies Reduce High School Soccer Injuries?
Kriz PK; Yang J; Arakkal A; Keeley T; Comstock RD
Clinical Journal of Sport Medicine

Soccer remains a popular sport among American high school (HS) athletes, with 450,000 boys and nearly 400,000 girls participating during the 2017/18 school year. Contact/collision sports such as soccer have higher injury rates than noncontact sports due to risks associated with athlete–athlete contact. In high school soccer, yellow cards are given for minor offenses, including unsporting behavior, dissent by word or action, or a series of fouls, among others. Some states have enacted high school yellow card accumulation policies (YCPs) in which players and/or coaches can be suspended or disqualified if they exceed a yellow card foul threshold. The objective of this study was to retrospectively evaluate the effectiveness of YCPs in reducing athlete–athlete contact injuries during competition. This was accomplished by using High School Reporting Information Online, a national sports injury surveillance database. The study found that yellow card policies were ineffective in lowering high school soccer athlete–athlete competition contact injury rates, although injuries resulting in >3 weeks’ time loss were less prevalent in states with YCPs. Implementation of YCPs alone, without proper enforcement, may not be a sufficient injury prevention strategy.

Fostering Resilience Among Mothers Early (FRAME): using growth mixture modeling to identify resources that mitigate perinatal depression
Farewell CV; Thayer Z; Paulson J; Nicklas J; Walker C; Waldie K; Morton S; Leiferman JA
Archives of Women’s Mental Health

The primary objective of this study was to delineate classes of individuals based on depression trajectories from the antenatal period through 54-month postpartum and internal and external resources that are associated with low depression risk. Participants came from the Growing Up in New Zealand (GUiNZ) study, which is a pregnancy cohort study and is nationally representative of the ethnic and socioeconomic diversity of contemporary New Zealand births. More positive parenting-related attitudes, better pre-pregnancy self-reported health, informal social supports, and community belonging were significantly associated with greater odds of being in the “low-risk” class, after controlling for socioeconomic factors. These findings suggest that targeting internal and external resources for individuals across the perinatal and early childhood periods is important to mitigating maternal depression.
Leveraging an Implementation Science Framework to Measure the Impact of Efforts to Scale Out a Total Worker Health® Intervention to Employers
Tenney L; Huebschmann AG; Brown CE; Schwatka NV; Newman LS
International Journal of Environmental Research and Public Health

The role of dissemination and implementation (D&I) science is critical to the translation of Total Worker Health® into practice and to the success of interventions in addressing current and future implications for worker safety, health, and well-being. D&I frameworks can guide researchers to design Total Worker Health ("TWH") delivery approaches that use flexible implementation strategies. To date, there have been very few examples of applying implementation frameworks for the translation and delivery of interventions into organizational settings that require adoption and implementation at the business level to benefit the working individuals. This paper presents a TWH case study, Health Links™, to illustrate an approach to applying an existing implementation framework, RE-AIM, to plan, design, build, and then evaluate TWH implementation strategies. The case study also highlights key concepts for scaling-out TWH evidence-based interventions where they are implemented in new workplace settings, new delivery systems, or both. This example provides strong support of key implementation planning constructs including early and consistent stakeholder engagement, tailored messaging and marketing, flexibility, and adaptations in implementation strategies to maximize adoption, implementation, and maintenance among participating businesses.

Capitalizing on Central Registries for Expanded Cancer Surveillance and Research
Bradley CJ; Entwistle J; Sabik LM; Lindrooth RC; Perraillon M
Medical Care

State central cancer registries are an essential component of cancer surveillance and research that can be enriched through linkages to other databases. This study identified and described state central registry linkages to external data sources and assessed the potential for a more comprehensive data infrastructure with registries at its core. Peer-reviewed papers describing linkages to state central cancer registries were identified and registrars were surveyed to learn about unpublished linkages. The authors identified 464 data linkages with state central cancer registries. These linkages demonstrate registries’ ability to contribute to a data infrastructure, but a coordinated and maintained approach is needed to leverage these data for research. Sparsely populated states reported the fewest linkages, suggesting possible gaps in our knowledge about cancer in these states. Many more linkages exist than have been reported in the literature, highlighting potential opportunities to further use the data for research purposes.
**Predictive Statistical Model of Early Cranial Development**
Porras AR; Keating RF; Lee JS; Linguraru MG
IEEE Transactions on Biomedical Engineering

This study presents a data-driven method to build a spatiotemporal statistical shape model predictive of normal cranial growth from birth to the age of 2 years. The model was constructed using a normative cross-sectional computed tomography image dataset of 278 subjects. The model achieved an accuracy of 1.54 ± 1.05 mm predicting development on an independent longitudinal dataset. The model was also used to calculate the cranial volume, cephalic index and cranial bone surface changes during the first two years of age, which were in agreement with clinical observations. To the authors' knowledge, this is the first data-driven and personalized predictive model of cranial bone shape development during infancy and it can serve as a baseline to study abnormal growth patterns in the population.

**Design and Effectiveness of the Youth Engaged Strategies for Changing Adolescent Norms! (YES-CAN!) Program for Reducing Skin Cancer Risk**
Asdigian NL; Whitesell NR; Bull S; Aalborg J; Barish EA; Crane LA
Journal of Cancer Education

Adolescence is a critical period for reducing skin cancer risks, yet the development of effective interventions for middle and high school youth has lagged behind those for younger children. The authors developed and implemented the "Youth Engaged Strategies for Changing Adolescent Norms!" (YES-CAN!) program, a school-based peer leader program that supports high school students in developing and delivering short narrative videos and related material about skin cancer prevention to middle school students. Participating middle and high school students completed pre- and post-program surveys assessing skin cancer attitudes, perceived norms, and behavioral intentions. Middle school students reported positive changes in future intentions to engage in sun protection. High school students reported positive changes on a smaller set of behavioral intentions, normative beliefs, and attitudes. These findings add to a growing body of support for youth-participatory, peer-led approaches to adolescent risk reduction in general and to skin cancer risks specifically. The YES-CAN! program fills a need for effective skin cancer prevention among adolescents, while at the same time addressing educational objectives to develop 21st Century Skills.

**Weight gain trajectories and obesity rates in intensive and conventional treatments of type 1 diabetes from the DCCT compared with a control population without diabetes**
Carlson NE; Horton KW; Hokanson JE; Cleary PA; Jacobs DR; Brunzell JD; Purnell JQ; DCCT/EDIC research group
Diabetic Medicine

Obesity is a significant health issue for participants with type 1 diabetes undergoing intensive diabetes management. The temporal pattern and factors associated with weight gain after treatment initiation remain poorly understood, including how weight gain in participants with and without type I diabetes compare. This study aimed to compare weight gain in those receiving intensive (INT) and conventional (CONV) type 1 diabetes treatment to a population without diabetes. Participants included men and women of 18 years and older in the Diabetes Control and Complications Trial (DCCT) randomized to INT or CONV and a prospective, observational cohort without diabetes from the Coronary Artery Development in Young Adults (CARDIA, controls) study. The study found that greater weight gain accompanying INT therapy occurs in two stages, leads to similar or greater obesity rates than controls after 2 years and is primarily modified by glucose control and family history, supportive of a therapeutic-genetic influence on weight trajectories.