Penn Center for Public Health Initiatives

2016-2017 Senior and Associate Fellow Features
The University of Pennsylvania's Center for Public Health Initiatives' mission is to educate and train public health leaders and practitioners, foster multi-disciplinary collaboration, and promote excellence in public health research and community partnerships. To achieve this mission, we:

- Enhance public health visibility and focus, and provide an institutional home for public health in the University
- Support and foster growth of our world-class, multidisciplinary Master of Public Health (MPH) degree program
- Provide high quality learning opportunities, seminars and institutes for students, faculty, alumni, and practitioners
- Foster the application of evidence-based approaches and experiences in public health, emphasizing translation of science into sustainable health improvements in communities
- Facilitate collaboration for public health related research, involving faculty in multiple existing centers, institutes, and departments across the university

CPHI Fellows serve as leaders and help advance the field of public health. Fellows are engaged in various ways depending on their affiliation. This booklet serves as a way to highlight the work of many of our accomplished fellows. Please use this as an opportunity to learn about the work that others are involved in, and to network and collaborate on public health both within and outside the University.
Designing and testing an inventory for measuring social media competency of Certified Health Education Specialists
Julia M Alber, MPH, PhD; Jay M Bernhardt, MPH, PhD; Michael Stellefson, PhD; Robert M Weiler, MPH, PhD; Charkarra Anderson-Lewis, MPH, PhD; M David Miller, PhD; Jann MacInnes, PhD

Background: Social media can promote healthy behaviors by facilitating engagement and collaboration among health professionals and the public. Thus, social media is quickly becoming a vital tool for health promotion. While guidelines and trainings exist for public health professionals, there are currently no standardized measures to assess individual social media competency among Certified Health Education Specialists (CHES) and Master Certified Health Education Specialists (MCHES). Objective: The aim of this study was to design, develop, and test the Social Media Competency Inventory (SMCI) for CHES and MCHES. Methods: The SMCI was designed in three sequential phases: (1) Conceptualization and Domain Specifications, (2) Item Development, and (3) Inventory Testing and Finalization. Phase 1 consisted of a literature review, concept operationalization, and expert reviews. Phase 2 involved an expert panel (n=4) review, think-aloud sessions with a small representative sample of CHES/MCHES (n=10), a pilot test (n=36), and classical test theory analyses to develop the initial version of the SMCI. Phase 3 included a field test of the SMCI with a random sample of CHES and MCHES (n=353), factor and Rasch analyses, and development of SMCI administration and interpretation guidelines. Results: Six constructs adapted from the unified theory of acceptance and use of technology and the integrated behavioral model were identified for assessing social media competency: (1) Social Media Self-Efficacy, (2) Social Media Experience, (3) Effort Expectancy, (4) Performance Expectancy, (5) Facilitating Conditions, and (6) Social Influence. The initial item pool included 148 items. After the pilot test, 16 items were removed or revised because of low item discrimination (r<.30), high interitem correlations (P>.90), or based on feedback received from pilot participants. During the psychometric analysis of the field test data, 52 items were removed due to low discrimination, evidence of content redundancy, low R-squared value, or poor item infit or outfit. Psychometric analyses of the data revealed acceptable reliability evidence for the following scales: Social Media Self-Efficacy (alpha=.98, item reliability=.98, item separation=6.76), Social Media Experience (alpha=.98, item reliability=.98, item separation=6.24), Effort Expectancy(alpha =.74, item reliability=.95, item separation=4.15), Performance Expectancy (alpha =.81, item reliability=.99, item separation=10.09), Facilitating Conditions (alpha =.66, item reliability=.99, item separation=16.04), and Social Influence (alpha =.66, item reliability=.93, item separation=3.77). There was some evidence of local dependence among the scales, with several observed residual correlations above .20. Conclusions: Through the multistage instrument-development process, sufficient reliability and validity evidence was collected in support of the purpose and intended use of the SMCI. The SMCI can be used to assess the readiness of health education specialists to effectively use social media for health promotion research and practice. Future research should explore associations across constructs within the SMCI and evaluate the ability of SMCI scores to predict social media use and performance among CHES and MCHES.

Notes from the Field: Outbreak of Cryptosporidiosis Among Veterinary Medicine Students
Lauren N. Drinkard, MPH; Ashlee Halbritter, MPH; Giang T. Nguyen, MD; Patricia L. Sertich, VMD; Max King, PhD; Sallyann Bowman, MD; Rebecca Huxta, MPH; Mary Guagenti

On February 20, 2015, a northeastern university’s student health center was notified of five veterinary medicine students with gastrointestinal symptoms. An investigation was conducted to establish the existence of an outbreak, determine the etiology, evaluate risk factors, and recommend control measures.
Independent Contractors in Public Mental Health Clinics: Implications for Use of Evidence-Based Practices

OBJECTIVES: Community mental health clinics are increasingly utilizing independent contractors to provide clinical services. At the same time, many organizations are participating in initiatives intended to increase implementation of evidence-based practices (EBPs). The primary aim of this study was to understand the associations of utilizing independent contractors with clinician knowledge and attitudes toward EBPs and organizational culture and climate. The study also sought to understand the potential impact of using independent contractors on mental health services delivery from the perspective of organizational leadership.

METHODS: Quantitative data were collected from 130 therapists in 23 organizations; qualitative data were collected from executive administrators in nine of the 16 organizations participating in EBP initiatives sponsored by the City of Philadelphia. Regression with random effects was used to estimate the associations between worker status (contractor or employee) and clinician attitudes toward EBPs, knowledge of EBPs, and organizational culture and climate. Qualitative inquiry was used to understand the impact of reliance on independent contractors on organizational participation in EBP initiatives.

RESULTS: Independent contractors endorsed less positive attitudes toward EBPs and scored lower on knowledge of EBPs. Interviews revealed four main themes: reasons for using independent contractors, general consequences of using independent contractors, specific impact of independent contractors on participation in EBP initiatives, and suggestions for alternatives.

CONCLUSIONS: A growing number of community mental health clinics rely on independent contractors. There may be consequences of this shift that deserve exploration.

Leveraging Behavioral Insights to Promote Vaccine Acceptance: One Year After Disneyland
Buttenheim AM, Asch DA

An outbreak of measles originating in Disneyland in December 2014 that ultimately led to more than 100 cases has been attributed to parents who chose not to vaccinate their children. One year later, the United States remains vulnerable to outbreaks of vaccine-preventable diseases because parents continue to bypass the recommended childhood immunization schedule through exemptions from state-mandated immunizations at school entry. These personal choices affect everyone by weakening the herd immunity conferred by widespread vaccination. Conventional approaches to increasing vaccine acceptance assume that educating parents about the evidence-based benefits of vaccination will change their minds. Unfortunately, this view of human behavior is a poor model for explaining vaccination decisions and an even poorer model for behavior change interventions. One reason education has little potency is that it requires a rational mindset in which new information informs actions, which may make sense for economists but rarely does for other people. Recent insights from behavioral economics recognize that human behavior is influenced by deep-seated cognitive biases and heuristics resistant to rational influence. Those same biases can help to reengineer behavior change strategies. This Viewpoint describes several approaches to increasing vaccination acceptance based on how people actually think, rather than on how they ought to think.
Infant Feeding Beliefs and Day-to-Day Feeding Practices of NICU Nurses
Cricco-Lizza R

The purpose is to examine the infant feeding beliefs and day-to-day feeding practices of NICU nurses with the goal of identifying ways to improve breastfeeding promotion.

DESIGN AND METHODS: An ethnographic approach incorporated 14 months of participant observation and interviewing. General informants consisted of 114 purposively selected NICU nurses from a northeastern, level-IV NICU, pediatric hospital. From this group, 18 nurses served as key informants. There was an average of 13 interactions with each key informant and 3.5 with each general informant. Audio taped interviews and observational field notes were gathered for descriptions of beliefs and practices. Data were coded and analyzed for patterns and themes with the aid of NUD*IST.

RESULTS: 1. The nurses identified health benefits of breastfeeding, but spoke in greater detail and with more emotion about day-to-day challenges of breastfeeding in the NICU. 2. Formula feeding evoked less emotion and most nurses viewed it as safe and convenient. 3. Despite infant feeding challenges in the NICU, nurses who had breastfeeding continuing education and/or some positive experiences with breastfeeding: identified evidence based breastfeeding benefits for mothers and babies; emphasized the health-based differences between breast milk and formula; and were more committed to working through difficulties with breastfeeding.

CONCLUSIONS: Breastfeeding promotion interventions should include every NICU nurse and incorporate both evidence-based and affective components to overcome day-to-day feeding practice challenges.

PRACTICE IMPLICATIONS: Breastfeeding promotion interventions must address conflicting and emotionally evocative infant feeding beliefs of NICU nurses. Effective interventions must be integrated within the realities of bedside feeding practices.

Adverse Childhood Experiences: Expanding the Concept of Adversity

INTRODUCTION: Current knowledge of Adverse Childhood Experiences (ACEs) relies on data predominantly collected from white, middle- / upper-middle-class participants and focuses on experiences within the home. Using a more socioeconomically and racially diverse urban population, Conventional and Expanded (community-level) ACEs were measured to help understand whether Conventional ACEs alone can sufficiently measure adversity, particularly among various subgroups.

METHODS: Participants from a previous large, representative, community-based health survey in Southeast Pennsylvania who were aged ≥18 years were contacted between November 2012 and January 2013 to complete another phone survey measuring ACEs. Ordinal logistic regression models were used to test associations between Conventional and Expanded ACEs scores and demographic characteristics. Analysis was conducted in 2013 and 2014.

RESULTS: Of 1,784 respondents, 72.9% had at least one Conventional ACE, 63.4% at least one Expanded ACE, and 49.3% experienced both. A total of 13.9% experienced only Expanded ACEs and would have gone unrecognized if only Conventional ACEs were assessed. Certain demographic characteristics were associated with higher risk for Conventional ACEs but were not predictive of Expanded ACEs, and vice versa. Few adversities were associated with both Conventional and Expanded ACEs.

CONCLUSIONS: To more accurately represent the level of adversity experienced across various sociodemographic groups, these data support extending the Conventional ACEs measure.
Compliance With and Enforcement of Graduated Driver Licensing Restrictions
Allison E. Curry, PhD, Melissa R. Pfeiffer, MPH, Michael R. Elliott, PhD

Introduction: Graduated Driver Licensing (GDL) is the most effective strategy to reduce the burden of young driver crashes, but the extent to which young intermediate (newly licensed) drivers comply with, and police enforce, important GDL passenger and night-time restrictions is largely unknown. Population-level rates of intermediate drivers’ compliance were estimated as well as police enforcement among crash-involved drivers who were noncompliant. Methods: New Jersey’s statewide driver licensing and crash databases were individually linked. The quasi-induced exposure method’s fundamental assumption—that nonresponsible young intermediate drivers in clean (i.e., only one responsible driver) multivehicle crashes are reasonably representative of young intermediate drivers on the road—was borrowed. Incidence was then estimated among the 9,250 nonresponsible intermediate drivers who were involved in clean multivehicle crashes from July 2010 through June 2012. The proportion of crash-involved noncompliant intermediate drivers who were issued a GDL citation, by crash responsibility, was calculated. Data were collected in 2013 and analyzed in 2015. Results: Overall, 8.3% (95% CI=7.8%, 8.9%) of intermediate drivers’ trips were noncompliant with New Jersey’s passenger restriction and 3.1% (95% CI=2.8%, 3.5%) with its night-time restriction; compliance was significantly lower among those residing in low-income and urban areas, among male drivers, on weekends, and in summer months. The proportion of crash-involved noncompliant intermediate drivers who were issued a GDL citation was low (nonresponsible drivers, 10.3%; responsible drivers, 19.0%). Conclusions: The vast majority of intermediate driver trips are in compliance with GDL restrictions. Outreach activities should consider focusing on higher-risk situations and groups with higher noncompliance rates.

Adolescent and young adult survivors of childhood brain tumors: Life after treatment in their own words

BACKGROUND: To date, there are few studies that examine the perspectives of older survivors of childhood brain tumors who are living with their families in terms of their sense of self and their role in their families. OBJECTIVE: The aim of this study was to describe how adolescent and young adult survivors of childhood brain tumors describe their health-related quality of life, that is, their physical, emotional, and social functioning. METHODS: This qualitative descriptive study included a purposive sample of 41 adolescent and young adult survivors of a childhood brain tumor who live with their families. Home interviews were conducted using a semistructured interview guide. Directed content analytic techniques were used to analyze data using health-related quality of life as a framework. RESULTS: This group of brain tumor survivors described their everyday lives in terms of their physical health, neurocognitive functioning, emotional health, social functioning, and self-care abilities. Overall, survivors struggle for normalcy in the face of changed functioning due to their cancer and the (late) effects of their treatment. CONCLUSIONS: Neurocognitive issues seemed most compelling in the narratives. The importance of families went beyond the resources, structure, and support for functioning. Their families provided the recognition that they were important beings and their existence mattered to someone. IMPLICATIONS FOR PRACTICE: The value and complexity of care coordination were highlighted by the multifaceted needs of the survivors. Advocacy for appropriate and timely educational, vocational, and social support is critical as part of comprehensive cancer survivorship care.
Implementing a Trauma-Informed Approach in Pediatric Health Care Networks
Marsac ML, Kassam-Adams N, Hildenbrand AK, Nicholls E, Winston FK, Leff SS, Fein J

Pediatric health care networks serve millions of children each year. Pediatric illness and injury are among the most common potentially emotionally traumatic experiences for children and their families. In addition, millions of children who present for medical care (including well visits) have been exposed to prior traumatic events, such as violence or natural disasters. Given the daily challenges of working in pediatric health care networks, medical professionals and support staff can experience trauma symptoms related to their work. The application of a trauma-informed approach to medical care has the potential to mitigate these negative consequences. Trauma-informed care minimizes the potential for medical care to become traumatic or trigger trauma reactions, addresses distress, provides emotional support for the entire family, encourages positive coping, and provides anticipatory guidance regarding the recovery process. When used in conjunction with family-centered practices, trauma-informed approaches enhance the quality of care for patients and their families and the well-being of medical professionals and support staff. Barriers to routine integration of trauma-informed approaches into pediatric medicine include a lack of available training and unclear best-practice guidelines. This article highlights the importance of implementing a trauma-informed approach and offers a framework for training pediatric health care networks in trauma-informed care practices.

Trial of Financial and Social Incentives to Increase Older Adults’ Walking
Kristin A. Harkins, BA, Jeffrey T. Kullgren, MD, MS, MPH, Scarlett L. Bellamy, ScD, Jason Karlawish, MD, Karen Glanz, PhD, MPH

Introduction: Despite evidence that regular physical activity confers health benefits, physical activity rates among older adults remain low. Both personal and social goals may enhance older adults’ motivation to become active. This study tested the effects of financial incentives, donations to charity, and the combined effects of both interventions on older adults’ uptake and retention of increased levels of walking. Study design: RCT comparing three interventions to control. Data collection occurred from 2012 to 2013. Analyses were conducted in 2013–2016. Participants: Ninety-four adults aged ≥65 years from Philadelphia-area retirement communities. Intervention: All participants received digital pedometers, walking goals of a 50% increase in daily steps, and weekly feedback on goal attainment. Participants were randomized to one of four groups: (1) Control: received weekly feedback only; (2) Financial Incentives: received payment of $20 each week walking goals were met; (3) Social Goals: received donation of $20 to a charity of choice each week walking goals were met; and (4) Combined: received $20 each week walking goals were met that could be received by participant, donated to a charity of choice, or divided between the participant and charity. Main outcome measures: Mean proportion of days walking goals were met during the 16-week intervention and 4-week follow-up period. Results: After adjusting for baseline walking, the proportion of days step goals were met during the 16-week intervention period was higher in all intervention groups versus controls (relative risk, 3.71; 95% CI=1.37, 10.01). During the 4-week follow up period, the proportion of days step goals were met did not differ in intervention groups compared to control (relative risk, 2.91; 95% CI=0.62, 13.64). Conclusions: Incentive schemes that use donations to a charity of choice, personal financial incentives, or a combination of the two can each increase older adults’ initial uptake of increased levels of walking.
Screening for Parental Depression in Urban Primary Care Practices: A Mixed Methods Study

We sought to determine feasibility and acceptability of parental depression screening in urban pediatric practices. We recruited seven practices to participate. Patient Health Questionnaire-2, a validated two-item screening tool, was used to screen for depressive symptoms at 1-3 year old well visits. We conducted semi-structured interviews with clinicians to identify barriers and facilitators to screening. Of 8,621 eligible parents, 21.1% completed screening with site-specific rates ranging from 10.1% to 48.5%. Among those screened, 8.1% screened positive for depressive symptoms with site-specific rates ranging from 1.2% to 16.9%. Electronic alerts improved screening rates from 45 / month to 170 / month. Fifteen clinicians completed interviews and endorsed screening to provide help for families, build stronger ties with parents, and improve outcomes for children. However, insufficient time, need to complete activities with higher priority, lack of mental health availability, few resources for parents with limited English proficiency, and discomfort addressing depression were thought to limit screening.

Cardboard Commentary: A Qualitative Analysis of the Signs From America’s Streets
A. Golinkoff, MPH, BFA, Moriah Hall, MPH, Willie Baronet, MFA, Carolyn Cannuscio, ScD, and Rosemary Frasso, PhD, MSc, CPH

"Need food. Please help." "Need shelter, work, money, beer." These are some of the messages delivered on cardboard signs held by people struggling with poverty, and sometimes also with homelessness, on our cities’ streets. We stop sometimes, we pass sometimes, we help sometimes. But Willie Baronet, a Dallas artist realized that as a collection, these cardboard signs provide a glimpse into a phenomenon greater than each individual’s plea for assistance. To share his vision, he has carefully curated moving and powerful art exhibits to get people talking about poverty and homelessness. In 2014, Baronet was interviewed on National Public Radio about his work. He shared stories from his 20 years of collecting signs across the United States and his goal of raising awareness of the homeless experience. After hearing this segment, Rosemary Frasso, a qualitative researcher, saw an opportunity to weave together art and research to better understand and explore the experiences of those soliciting assistance on our streets. Frasso approached Baronet to propose a collaboration and assembled a team to begin a qualitative analysis of a sample of his signs. Frasso and the team analyzed the signs collected by Baronet over the summer of 2014 in 24 cities across the United States for a project entitled " We Are All Homeless." Baronet shared photographs of all signs (n = 292) and the team transcribed the text verbatim. They then conducted a qualitative content analysis and double-coded all signs. Thematic analysis revealed a set of themes that underscore the challenges faced by those experiencing poverty and homelessness. Here we share representative photographs of some of those themes: substance abuse, family homelessness, food and hunger, and military service. Our findings humanize and reinforce results from traditional academic research about the issues facing people living on the streets. This project highlights opportunities for artists, public health practitioners, and academics to forge alliances, recognizing valuable sources of data we encounter every day, and identifying new venues for disseminating public health messages.
Evaluating the Impact of Florida’s “Stand Your Ground” Self-defense Law on Homicide and Suicide by Firearm
David K. Humphreys, PhD; Antonio Gasparrini, PhD; Douglas J. Wiebe, PhD

Importance: In 2005, Florida amended its self-defense laws to provide legal immunity to individuals using lethal force in self-defense. The enactment of “stand your ground” laws in the United States has been controversial and their effect on rates of homicide and homicide by firearm is uncertain. Objective: To estimate the impact of Florida’s stand your ground law on rates of homicide and homicide by firearm. Design, Setting, and Participants: Using an interrupted time series design, we analyzed monthly rates of homicide and homicide by firearm in Florida between 1999 and 2014. Data were collected from the Wide-ranging Online Data for Epidemiologic Research (WONDER) web portal at the Centers for Disease Control and Prevention. We used seasonally adjusted segmented Poisson regression models to assess whether the onset of the law was associated with changes in the underlying trends for homicide and homicide by firearm in Florida. We also assessed the association using comparison states without stand your ground laws (New York, New Jersey, Ohio, and Virginia) and control outcomes (all suicides and suicides by firearm in Florida). October 1, 2005, the effective date of the law, was used to define homicides before and after the change. Main Outcomes and Measures:

Monthly rates of homicide, firearm-related homicide, suicide, and suicide by firearm in Florida and the 4 comparison states. Results: Prior to the stand your ground law, the mean monthly homicide rate in Florida was 0.49 deaths per 100 000 (mean monthly count, 81.93), and the rate of homicide by firearm was 0.29 deaths per 100 000 (mean monthly count, 49.06). Both rates had an underlying trend of 0.1% decrease per month. After accounting for underlying trends, these results estimate that after the law took effect there was an abrupt and sustained increase in the monthly homicide rate of 24.4% (relative risk [RR], 1.24; 95% CI, 1.16-1.33) and in the rate of homicide by firearm of 31.6% (RR, 1.32; 95% CI, 1.21-1.44). No evidence of change was found in the analyses of comparison states for either homicide (RR, 1.06; 95% CI, 0.98-1.13) or homicide by firearm (RR, 1.08; 95% CI, 0.99-1.17). Furthermore, no changes were observed in control outcomes such as suicide (RR, 0.99; 95% CI, 0.94-1.05) and suicide by firearm (RR, 0.98; 95% CI, 0.91-1.06) in Florida between 2005 and 2014. Conclusions and Relevance: The implementation of Florida’s stand your ground self-defense law was associated with a significant increase in homicides and homicides by firearm but no change in rates of suicide or suicide by firearm.

Are Social Networking Sites Making Health Behavior Change Interventions (HBCIs) More Effective? A Meta-Analytic Review
Qinghua Yang, PhD

The increasing popularity of social networking sites (SNSs) has drawn scholarly attention in recent years and a large amount of efforts have been made in applying SNSs to health behavior change interventions. However, these interventions showed mixed results, with a large variance of effect sizes in Cohen’s d ranging from -1.17 to 1.28. To provide a better understanding of SNS-based interventions’ effectiveness, a meta-analysis of 21 studies examining the effects of health interventions using SNS was conducted. Results indicated that health behavior change interventions using SNS are effective in general, but the effects were moderated by health topic, methodological features, and participant features. Theoretical and practical implications of findings are discussed.
Nonfatal Gun Use in Intimate Partner Violence: A Systematic Review of the Literature
Sorenson SB, Schut RA

Guns figure prominently in the homicide of women by an intimate partner. Less is known, however, about their nonfatal use against an intimate partner. Following Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, we searched eight electronic databases and identified 10 original research articles that reported the prevalence of the nonfatal use of firearms against an intimate partner. Results indicate that (1) there is relatively little research on the subject of intimate partners' nonfatal gun use against women. (2) The number of U.S. women alive today who have had an intimate partner use a gun against them is substantial: About 4.5 million have had an intimate partner threaten them with a gun and nearly 1 million have been shot or shot at by an intimate partner. Whether nonfatal gun use is limited to the extreme form of abuse (battering) or whether it occurs in the context of situational violence remains to be seen. Regardless, when it comes to the likely psychological impact, it may be a distinction without a difference; because guns can be lethal quickly and with relatively little effort, displaying or threatening with a gun can create a context known as coercive control, which facilitates chronic and escalating abuse. Implications for policy, practice, and research are discussed, all of which include expanding an implicit focus on homicide to include an intimate partner's nonfatal use of a gun.

Measures of Retail Food Store Environments and Sales: Review and Implications for Healthy Eating Initiatives
Karen Glanz, PhD, MPH, Lauren Johnson, BSN, Amy L. Yaroch, PhD, Matthew Phillips, MPH, Guadalupe X. Ayala, PhD, MPH, Erica L. Davis, BA

Objective: This review describes available measures of retail food store environments, including data collection methods, characteristics of measures, the dimensions most commonly captured across methods, and their strengths and limitations. Methods: Articles were included if they were published between 1990 and 2015 in an English-language peer-reviewed journal and presented original research findings on the development and/or use of a measure or method to assess retail food store environments. Four sources were used, including literature databases, backward searching of identified articles, published reviews, and measurement registries. Results: From 3,013 citations identified, 125 observational studies and 5 studies that used sales records were reviewed in-depth. Most studies were cross-sectional and based in the US. The most common tools used were the US Department of Agriculture's Thrifty Food Plan and the Nutrition Environment Measures Survey for Stores. The most common attribute captured was availability of healthful options, followed by price. Measurement quality indicators were minimal and focused mainly on assessments of reliability. Implications for Research and Practice: Two widely used tools to measure retail food store environments are available and can be refined and adapted. Standardization of measurement across studies and reports of measurement quality (eg, reliability, validity) may better inform practice and policy changes.
The Preparation of Community/Public Health Nurses: Amplifying the Impact
Joyce BL, Harmon MJ, Pilling LB, Johnson RH, Hicks VL, Brown-Schott N

In summary, improved population health, population focused care, and community-based networks are the objectives of health care delivery systems. Community/public health nursing education, practice, and research must be re-examined, re-focused, and re-designed to address the challenges of an expanding 21st century health care delivery to populations and communities. Common standards are in place to be utilized by academia, practice and research. With a unified front, C/PHN can collectively play an important transformative role and go forward to meet the ever expanding challenges of the 21st century populations and communities. The Association of Public Health Nurses (APHN) and the Association of Community Health Nurse Educator (ACHNE) have a joint meeting planned in June 2016 in Indianapolis. Please bring your colleagues, stakeholders, and community partners to join the voices of C/PHN to make a positive impact on the changing health care environment through our education, practice and work.

The Case for Extran genital Screening of Chlamydia trachomatis and Neisseria gonorrhoeae in the College Health Setting
Drinkard, L., Huxta, R., Halbritter, A., Nguyen, G., Malebranche D.

Background: Although the Centers for Disease Control and Prevention does not recommend routine oropharyngeal and anorectal screening for C. trachomatis and Neisseria gonorrhoeae in the general population, they do recommend it for men who have sex with men. However, risk-based extragenital screening of men may not have been adopted at all college health centers, and existing research has not focused on the college population. Methods: We examined health records of men at a college health center in a large urban university over 6 years to evaluate effectiveness of C. trachomatis and N. gonorrhoeae screening. We also evaluated the proportion of C. trachomatis and N. gonorrhoeae infections that would have been missed if risk-based extragenital screening were not performed. Decisions to screen at extragenital sites were based on patient-reported risk behavior. Results: For 4093 male college students screened, 7.6% of the screening visits used extragenital screening in response to self-reported risk behaviors. The case positivity rate for C. trachomatis was 3.1% with urogenital-only screening and 3.7% with risk-prompted extragenital screening. The case positivity rate for N. gonorrhoeae was 0.7% with urogenital-only screening and 3.3% with risk-prompted extragenital screening. If the college health center had relied solely on urogenital screening rather than risk-based extragenital screening, 26.4% of C. trachomatis infections and 63.2% of N. gonorrhoeae infections would have been missed. Conclusions: One out of four C. trachomatis infections and 2 of 3 N. gonorrhoeae infections would have been missed without extragenital screening in this analysis of college men. This study reinforces Centers for Disease Control and Prevention recommendations for risk-based extragenital screening and is the first report to focus on college men. Because guidelines exist only for men, future studies should focus on extragenital screening in college women to build evidence for another group of patients that may benefit from this practice, given the high risk in young adults.
The Ethics of Behavioral Health Information Technology Frequent Flyer Icons and Implicit Bias
Michelle Joy, MD; Timothy Clement, MPH; Dominic Sisti, PhD

A subpopulation of individuals with serious mental health conditions makes repeated and frequent visits to emergency departments and psychiatric crisis centers. These so-called super utilizers often have financial problems and present with chronic or untreated comorbid psychiatric and substance use disorders.1 These patients are often well known to clinical staff and are sometimes colloquially labeled “frequent flyers.” A pejorative branding, “frequent flyers” are often assumed to be problem patients. In psychiatric settings, these patients are sometimes said to be “borderlines,” “drug seekers,” “malingeringers,” or “treatment resistant.” These patients can be identified in different ways. Some emergency departments maintain lists or files of patients with frequent visits. One electronic medical record system provides an airplane icon, which system administrators may elect to configure so that clinicians can identify a patient as a high utilizer. The icon appears near the patient’s name and various colors indicate strata of utilization.

This iconography is ethically and clinically inappropriate for 2 interdependent reasons. First, the icon reinforces and encourages the use of disrespectful and stigmatizing terminology. Second, the icon may frame the initial clinical interaction in a way that inhibits good diagnostic judgment, potentially placing the patient at increased risk of a poor outcome. More broadly, the icon offers an example of how potentially harmful biases may be built into and reinforced by well-intentioned but ill-conceived information technologies, such as those deployed widely across all sectors of health care, and particularly in psychiatric treatment settings where clinical interactions are often more interpersonally sensitive.

Nursing Students as Epidemiologists: A Simulation Approach
Harriet Okatch, PhD, Timothy Joseph Sowicz, MSN, Helen Teng, MSN, Lucille Pilling, EdD, Monica Harmon, MSN, Christine Brewer, MSN, Alison Buttenheim, PhD, MBA

Simulation is commonly used in nursing education to teach clinical skills. Here, we describe the development processes, implementation, and evaluation of an epidemiology simulation used in a community and public health nursing undergraduate clinical course at the University of Pennsylvania. The simulation was designed to teach students the principles and concepts of outbreak investigation and was based on the 2003 Severe Acute Respiratory Syndrome outbreak in Toronto, Canada. The simulation places students in the role of a public health nurse in the outbreak investigation team, working in groups of five to seven students to complete analyses and make recommendations under time and information constraints. Since piloting in spring 2014, we have run the simulation three times (summer and fall 2014 and summer 2015). Student evaluations show high levels of engagement and interest and substantial increase in the skills and expertise required in an outbreak investigation. We share key lessons learned, including resources required for simulation development and delivery, revisions to the simulation format and content in response to student feedback, and transferability and sustainability of the simulation. Overall, simulation was a feasible and effective modality to teach epidemiology and should be considered in community and public health nursing courses.
Characterization of Occupational Blood and Body Fluid Exposures beyond the Needlestick Safety and Prevention Act
Judith Green-McKenzie, Ronda B McCarthy, Frances S Shofer

Objective: To describe the use of mandated safety engineered sharps devices (SESDs) and personal protective equipment in healthcare workers (HCWs) with occupational body fluid exposures (BFE) since the Needlestick Safety and Prevention Act. Methods: Two questionnaires were administered, over 3 years, to HCWs who reported sharps or splash BFEs. Descriptive statistics and chi-square analysis were used. Results: Of the 498 questionnaires completed, nurses completed 262 (53%), house staff 155 (32%), technicians 63 (13%) and phlebotomists 11 (2%). Four (1%) completers reported ‘other’ and three (1%) reported unknown. Sharps injuries accounted for 349 (70%) of the BFEs. SESDs were utilised 43% (128/299) of the time with a 54% (70/130) activation rate. Phlebotomists (80% 8/10) and nurses (59% 79/267) used SESDs more than doctors (27% 31/86) and technicians (26% 10/39) (P <0.0001). Fifty-four percent (185/207) of HCWs reported having had training on SESD use; nurses (64% 98/154) and phlebotomists (70% 7/8) significantly more so than house staff (44% 59/133) and technicians (44% 21/48) (P <0.05). Most splash BFEs were to the eyes 73% (91/149). Five percent (4/79) of HCWs used protective eyewear. Conclusions: Systematic regular training, appropriate protocols and iteratively providing the safest SESDs based on HCW experience and technological advances will further reduce the physical and emotional toll of BFEs.

Resident Engagement in the Patient-Centered Medical Home

BACKGROUND AND OBJECTIVES: This study's objectives were to assess resident understanding and engagement with the patient-centered medical home (PCMH) model and to assess the impact of participation in a PCMH transformation collaborative on residents’ experiences and perceptions related to their training environment. METHODS: Residents from practices participating in the largest state-wide PCMH learning collaborative were asked to complete surveys describing their experiences with the collaborative and the PCMH transformation process. Residents from four representative participating residencies were recruited to participate in focus groups designed to provide qualitative data to augment our understanding of the quantitative survey results. RESULTS: We had a reasonable average response rate (39%) with a total of 100 completed resident surveys. Quantitative data illustrated high levels of residents' endorsement of PCMH awareness, engagement, and PCMH-related skills acquisition. The analyses suggested higher levels of PCMH engagement, understanding, and sense of adequacy of preparation among residents who attended learning collaborative sessions compared to those who did not. While qualitative data validated many of the quantitative findings, they also illustrated a somewhat detached and peripheral description of resident experiences with the transformation process. CONCLUSIONS: The presented data describe the complexities of preparing the next generation of providers for practice. Our mixed-methods study illustrated the strengths of participating in the learning collaborative but also areas of focus necessary for improving the experience and educational benefits of PCMH-related curricula involving residents.
The association of layperson characteristics with the quality of simulated cardiopulmonary resuscitation performance
Marion Leary, David G. Buckler, Daniel J. Ikeda, Daiane A. Saraiva, Robert A. Berg, Vinay M. Nadkarni, Audrey L. Blewer, and Benjamin S. Abella

BACKGROUND: Few studies have examined the association of layperson characteristics with cardiopulmonary resuscitation (CPR) provision. Previous studies suggested provider characteristics, including age and gender, were associated with CPR quality, particularly chest compression (CC) depth. We sought to determine the association of subject characteristics, including age and gender with layperson CPR quality during an unannounced simulated CPR event. We hypothesized shallower CC depth in females, and older-aged subjects.

METHODS: As part of a larger multicenter randomized controlled trial of CPR training for cardiac patients’ caregivers, CPR skills were assessed 6 months after training. We analyzed associations between subject characteristics and CC rate, CC depth and no-flow time. Each variable was analyzed independently; significant predictors determined via univariate analysis were assessed in a multivariate regression model.

RESULTS: A total of 521 laypersons completed a 6-month CPR skills assessment and were included in the analysis. Mean age was 51.8±13.7 years, 75% were female, 57% were Caucasian. Overall, mean CC rate was 88.5±25.0 per minute, CC depth was 50.9±2.0 mm, and mean no-flow time was 15.9±2.7 sec/min. CC depth decreased significantly in subjects >62 years (P<0.001). Male subjects performed deeper CCs than female subjects (47.5±1.7 vs. 41.9±0.6, P<0.001).

CONCLUSION: We found that layperson age >62 years and female gender are associated with shallower CC depth.

Policing and public health: Not quite the right analogy
Anderson, Evan D. and Burris, Scott

Policing matters to public health, and it makes sense to consider how greater cooperation and even integration between health and law enforcement systems might lead to new and better approaches to chronic problems at the intersection of health and security. The fact that policing is important to public health does not mean, however, that police work is ‘like’ public health work, let alone that police agencies and public health agencies share important features in culture and methods that might support better alignment. It may be more useful to focus on the similarities between policing and medicine. Medicine and policing devote most of their energies to addressing the acute needs of individuals, and have relatively little capacity to change upstream structural factors. Each is source of considerable incidental harm. Past and current efforts to align public health and medicine provide useful insights into work at the intersection of policing and public health. In this paper, we pursue analogies between policing and patient-centred care, preventing medical error, reducing overutilisation, and focusing care on high-risk patients. We conclude with an exploration of what a ‘culture of health’ would add to current police culture.
A behavioral economics intervention to encourage epinephrine carrying among food-allergic adults: a randomized controlled trial

BACKGROUND: Adolescents and young adults with food allergies are at increased risk of adverse events, including death from anaphylaxis. Epinephrine is the cornerstone of emergency response, yet few individuals with serious food allergies consistently carry their emergency medication. Behavioral economics offers promising, previously untapped opportunities for behavior change in this arena. OBJECTIVE: To test the effectiveness of modest financial incentives in promoting the carrying of epinephrine and to evaluate the acceptability of text messaging for delivering reminders and key health messages to young adults with food allergies. METHODS: A mixed-methods randomized controlled trial in young adults with food allergies investigated the carrying of epinephrine auto-injectors using financial incentives plus text message reminders vs text message reminders alone. Epinephrine carriage was assessed 10 times during the 49-day intervention using rapid-reply cell phone photographs plus daily code words. RESULTS: The intervention (financial incentive) group had their epinephrine auto-injectors at 54% of check-ins vs 27% of check-ins in the control (text-only) group (P = .023). Participants in the 2 groups consistently reported favorable impressions of text messaging as a desirable, unobtrusive way to receive information and support for food allergy management. CONCLUSION: Although the intervention and control groups reported favorable impressions of text message-based reminder systems, the intervention group performed significantly better than the control group on a photograph-based measurement of epinephrine carriage. There remained ample room for improvement in the 2 groups given the goal of consistent, uninterrupted epinephrine carriage by people with potentially life-threatening food allergies.

LVAD-DT: Culture of Rescue and Liminal Experience in the Treatment of Heart Failure
Barg FK, Kellom K, Ziv T, Hull SC, Suhail-Sindhu S, Kirkpatrick JN

The purpose of this article is to investigate how cultural meanings associated with the left ventricular assist device (LVAD) inform acceptance and experience of this innovative technology when it is used as a destination therapy. We conducted open-ended, semistructured interviews with family caregivers and patients who had undergone LVAD-DT procedures at six U.S. hospitals. A grounded theory approach was used for the analysis. Thirty-nine patients and 42 caregivers participated. Participants described a sense of obligation to undergo the procedure because of its promise for salvation. However, once the device was implanted, patients described being placed into a liminal state of being neither sick nor healthy, with no culturally scripted role. Consideration of end-of-life decisions was complicated by the uncertainties about how patients with LVADs die. Pre-implantation communications among patient, family, and clinicians should take into account the impact of the technology on meaning, identity, and patient experience.

Frances Barg, PhD, MEd
Associate Professor,
Perelman School of Medicine
Associated Faculty,
Anthropology
Evaluating the Impact of Healthy Food Product Offerings and Tastimals Marketing at the Zoo
Allison Karpyn, Ph.D, Michael Allen, MBA, Susan Johnson, Ph.D,

With funds from the ACCEL program, researchers at the University of Delaware, mentored by faculty at the Medical University of South Carolina and working in close collaboration with community partner, the Brandywine Zoo, seek to achieve the following aims: AIM 1) To evaluate the effects of healthy food offerings at the zoo concession on total sales, visitor perceptions of the zoo and purchase of specific healthier snack and meal items. AIM 2) To evaluate the impact of pairing a Tastimals animal character with healthier items on menu boards and through window cling advertisements at the concession stands.

Firearm violence as a disease - "hot people" or "hot spots"?
Charles C. Branas, PhD; Sara Jacoby, PhD; Elena Andreyeva, PhD

In this opinion piece and journal review, Branas and colleagues propose that best efforts to reduce firearm violence in the United States should invest in ideas and interventions that focus on both people and places. Rejecting the idea that epidemiology, medicine, and public health have no place in the prevention of firearm violence, a disease process that affects roughly 100, 000 people in the United States each year, Branas highlights both recent and past reports confirming this idea. For example, Green and colleagues (2006 to 2014) show how violence is transmitted by social interaction through networks of people. Additional prior studies have documented ecological transmission between neighborhoods or other groups of people (eg, gangs and peer groups). Further, the transmission of firearm violence does not necessarily result from another person who has experienced violence. Two people who both experience firearm violence, says Branas, "may simply be drawn from the same environment or group, which increases their general exposure to firearm violence." Experts have distinguished interventions focusing on high-risk individuals as “hot people,” from interventions focusing on high-risk locations, or “hot spots.” It is now commonly thought that changing the environmental context within which health problems occur is essential and at times may be more effective than focusing only on individuals. Therefore, the paper concludes that "a sole focus on hot people as part of firearm violence prevention programs, although potentially fruitful in the short-term, may not produce sustained success."
Determinants of willingness to eat insects in the USA and India
M.B. Ruby, P. Rozin, C. Chan

One of the major, if not the major impediment to large scale increases of human insect consumption, is the strong rejection of insects as food by most of the world's population. In an effort to understand this aversion, we surveyed online samples of adults living in the USA and India to participate in a study on ‘attitudes toward food’. A substantial proportion of both Americans (72%) and Indians (74%) were at least willing to consider eating some form of insect food. Men were more willing to try eating insects than were women, especially in the USA. Disgust seems to be the most common reaction of both groups at the prospect of eating insects. The most common perceived benefits of eating insects were related to nutrition and environmental sustainability, and the most common risks related to risk of disease and illness. Both groups find ants the most palatable of a set of seven possible insects, and cockroaches the most unpalatable. In both samples, participants were most amenable to eating low levels of insect flour in a favourite food, and most averse to consuming whole insects. The best predictors of insect acceptance were disgust at the thought of eating insects, beliefs about the benefits of eating insects, sensation seeking, and the enjoyment of telling others about consumption of unusual foods.

“Chasing a Ghost”: Factors that Influence Primary Care Physicians to Follow Up on Incidental Imaging Findings
Zafar HM, Bugos EK, Langlotz CP, Frasso R

Purpose: To explore provider and patient characteristics that influence how primary care providers (PCPs) communicate and manage incidental imaging findings. Materials and Methods: This HIPAA-compliant study was approved by the institutional review board. Through semistructured interviews, researchers explored concerns and perspectives of 30 PCPs on receiving and acting on incidental imaging findings. Open-ended questions were designed to elicit a range of responses rather than quantifiable data. Thematic codes were developed and explicitly defined. Three research assistants independently coded all 30 deidentified transcripts and resolved discrepancies (κ = 0.85). Codes pertaining to PCP and patient characteristics were organized into an explanatory model. Results: Some PCPs felt compelled but frustrated to pursue costly follow-up for incidental imaging findings of limited clinical importance. Other PCPs did not act on findings that were unfamiliar or occurred in an unusual clinical context when follow-up recommendations were not given; the challenges of researching the clinical importance of these findings or seeking specialist consultation led to inaction. Some PCPs reported using a uniform approach to communicate and manage incidental findings, while others adapted their approach to the patient and the finding. Sometimes PCP characteristics such as follow-up style superseded patient characteristics. At other times patient characteristics such as health literacy superseded PCP characteristics. Conclusion: PCPs cited a variety of objective and subjective factors that influence how they communicate and manage incidental imaging findings. These results suggest that some patients may receive inappropriate follow-up of incidental imaging findings and present an opportunity for radiologists to help PCPs and patients to best use the information conveyed in imaging reports. © RSNA, 2016 Online supplemental material is available for this article.
Vascularity assessment of thyroid nodules by quantitative color Doppler ultrasound
Sultan LR, Xiong H, Zafar HM, Schultz SM, Langer JE, Sehgal CM

Our objective was to assess the role of quantitative Doppler vascularity in differentiating malignant and benign thyroid nodules. Color Doppler images of 100 nodules were analyzed for three metrics: vascular fraction area, mean flow velocity index and flow volume index in three regions (nodule center, nodule rim and surrounding parenchyma). Vascular fraction area and flow volume index were higher in malignant than benign nodules in both the central and rim regions, whereas flow velocity index was equivalent in both regions. Of the three vascularity metrics studied, the vascular fraction area of the central region was most effective in predicting malignancy, with a sensitivity of 0.90 ± 0.05, specificity of 0.88 ± 0.13, positive predictive value of 0.84 ± 0.14, negative predictive value of 0.92 ± 0.03 and accuracy of 0.89 ± 0.08. Quantitative Doppler vascularity of the nodule center yielded a high level of discrimination between benign and malignant nodules and, thus, has the greatest potential to contribute to gray-scale assessment of thyroid cancer.

Natural Supplements for H1N1 Influenza: Retrospective Observational Infodemiology Study of Information and Search Activity on the Internet
Shawndra Hill, PhD, Jun Mao, MD MSc, Lyle Ungar, PhD, Sean Hennessy, PharmD PhD, Charles E Leonard, PharmD, and John Holmes, PhD4

Background: As the incidence of H1N1 increases, the lay public may turn to the Internet for information about natural supplements for prevention and treatment. Objective: Our objective was to identify and characterize websites that provide information about herbal and natural supplements with information about H1N1 and to examine trends in the public’s behavior in searching for information about supplement use in preventing or treating H1N1. Methods: This was a retrospective observational infodemiology study of indexed websites and Internet search activity over the period January 1, 2009, through November 15, 2009. The setting is the Internet as indexed by Google with aggregated Internet user data. The main outcome measures were the frequency of “hits” or webpages containing terms relating to natural supplements co-occurring with H1N1/swine flu, terms relating to natural supplements co-occurring with H1N1/swine flu proportional to all terms relating to natural supplements, webpage rank, webpage entropy, and temporal trend in search activity. Results: A large number of websites support information about supplements and H1N1. The supplement with the highest proportion of H1N1/swine flu information was a homeopathic remedy known as Oscillococcinum that has no known side effects; supplements with the next highest proportions have known side effects and interactions. Webpages with both supplement and H1N1/swine flu information were less likely to be medically curated or authoritative. Search activity for supplements was temporally related to H1N1/swine flu-related news reports and events. Conclusions: The prevalence of nonauthoritative webpages with information about supplements in the context of H1N1/swine flu and the increasing number of searches for these pages suggest that the public is interested in alternatives to traditional prevention and treatment of H1N1. The quality of this information is often questionable and clinicians should be cognizant that patients may be at risk of adverse events associated with the use of supplements for H1N1.
Trends in Nutrient Content of Children’s Menu Items in U.S. Chain Restaurants
Alyssa J. Moran, MPH, Jason P. Block, MD, Simo G. Goshev, PhD, Sara N. Bleich, PhD, Christina A. Roberto, PhD

Introduction: Restaurant food is widely consumed by children and is associated with poor diet quality. Although many restaurants have made voluntary commitments to improve the nutritional quality of children’s menus, it is unclear whether this has led to meaningful changes. Methods: Nutrients in children’s menu items (n=4,016) from 45 chain restaurants were extracted from the nutrition information database MenuStat. Bootstrapped mixed linear models estimated changes in mean calories, saturated fat, and sodium in children's menu items between 2012 and 2013, 2014, and 2015. Changes in nutrient content of these items over time were compared among restaurants participating in the Kids LiveWell initiative and non-participating restaurants. Types of available children’s beverages were also examined. Data were analyzed in 2016. Results: There was a significant increase in mean beverage calories from 2012 to 2013 (6, 95% CI=0.8, 10.6) and from 2012 to 2014 (11, 95% CI=3.7, 18.3), but no change between 2012 and 2015, and no differences in nutrient content of other items over time. Restaurants participating in Kids LiveWell reduced entrée calories between 2012 and 2013 (~24, 95% CI=−40.4, −7.2) and between 2012 and 2014 (~40, 95% CI=−68.1, −11.4) and increased side dish calories between 2012 and 2015 (49, 95% CI=4.6, 92.7) versus non-participating restaurants. Sugar-sweetened beverages consistently constituted 80% of children’s beverages, with soda declining and flavored milks increasing between 2012 and 2015. Conclusions: Results suggest little progress toward improving nutrition in children’s menu items. Efforts are needed to engage restaurants in offering healthful children’s meals.

Early Blood Lead Levels and Sleep Disturbance in Preadolescence

STUDY OBJECTIVES: Little is known about the effect of lead exposure on children’s sleep. This study examined the association between blood lead levels (BLL) and sleep problems in a longitudinal study of children. SETTING: Four community-based elementary schools in Jintan City, China. PARTICIPANTS: 1,419 Chinese children. MEASUREMENT AND RESULTS: BLL were measured when children were aged 3-5 y, and sleep was assessed at ages 9-13 y. Sleep was assessed by both parents' report, using the Children's Sleep Habits Questionnaire (CSHQ), and children's report, using an adolescent sleep questionnaire. A total of 665 children with complete data on BLL and sleep at both ages were included in the current study. Mean age of the sample at BLL assessment was 4.74 y (standard deviation [SD] = 0.89) and at sleep assessment was 11.05 y (SD = 0.88). Mean BLL was 6.26 μg/dL (SD = 2.54). There were significant positive correlations between BLL and 3 CSHQ subscales: Sleep onset delay (r = 0.113, P < 0.01), sleep duration (r = 0.139, P < 0.001), and night waking (r = 0.089, P < 0.05). Excessive daytime sleepiness (EDS) (26.1% versus 9.0%, P < 0.001) and use of sleeping pills (6.5% versus 1.8%, P = 0.03) were more prevalent in children BLL ≥ 10.0 μg/dL than in those children BLL < 10.0 μg/dL. After adjusting for demographics, BLL ≥ 10.0 μg/dL was significantly associated with increased risk for insomnia symptoms (odds ratio [OR] = 2.01, 95% confidence interval [CI] = 1.03-3.95) and EDS (OR = 2.90, 95% CI = 1.27-6.61). CONCLUSION: The findings indicate that elevated blood lead levels in early childhood are associated with increased risk for sleep problems and excessive daytime sleepiness in later childhood.
Blood lead concentrations and children's behavioral and emotional problems: a cohort study

IMPORTANT: The association between lead exposure and children's IQ has been well studied, but few studies have examined the effects of blood lead concentrations on children's behavior. OBJECTIVE: To evaluate the association between blood lead concentrations and behavioral problems in a community sample of Chinese preschool children with a mean blood lead concentration of less than 10 µg/dL. DESIGN, SETTING, AND PARTICIPANTS: A prospective cohort study was conducted at 4 preschools in Jintan, Jiangsu province of China. Participants included 1341 children aged 3 to 5 years. EXPOSURES: Lead. MAIN OUTCOMES AND MEASURES: Blood lead concentrations were measured in children aged 3 to 5 years. Behavioral problems were assessed using Chinese versions of the Child Behavior Checklist and Caregiver-Teacher Report Form when children were aged 6 years. RESULTS: The mean (SD) blood lead concentration was 6.4 (2.6) µg/dL, with the 75th and 90th percentiles being 7.5 and 9.4 µg/dL, respectively. General linear modeling showed significant associations between blood lead concentrations and increased scores for teacher-reported behavioral problems. A 1-µg/dL increase in the blood lead concentration resulted in a 0.322 (95% CI, 0.058 to 0.587), 0.253 (95% CI, 0.016 to 0.500), and 0.303 (95% CI, 0.046 to 0.560) increase of teacher-reported behavior scores on emotional reactivity, anxiety problems, and pervasive developmental problems, respectively (P < .05), with adjustment for parental and child variables. Spline modeling showed that mean teacher-reported behavior scores increased with blood lead concentrations, particularly for older girls. CONCLUSIONS AND RELEVANCE: Blood lead concentrations, even at a mean concentration of 6.4 µg/dL, were associated with increased risk of behavioral problems in Chinese preschool children, including internalizing and pervasive developmental problems. This association showed different patterns depending on age and sex. As such, continued monitoring of blood lead concentrations, as well as clinical assessments of mental behavior during regular pediatric visits, may be warranted.

From commodity surplus to food justice: food banks and local agriculture in the United States
Domenic Vitiello, Jeane Ann Grisso, K. Leah Whiteside, Rebecca Fischman

Amidst expanding interest in local food and agriculture, food banks and allied organizations across the United States have increasingly engaged in diverse gleaning, gardening, and farming activities. Some of these programs reinforce food banks’ traditional role in distributing surplus commodities, and most extend food banks’ reliance on middle class volunteers and charitable donations. But some gleaning and especially gardening and farming programs seek to build poor people’s and communities’ capacity to meet more of their own food needs, signaling new roles for some food banks in promoting community food security and food justice. This article reports the results of a national survey and in-depth case studies of the ways in which food banks are engaging in and with local agriculture and how this influences food banks’ roles in community and regional food systems. The patterns it reveals reflect broader tensions in debates about hunger relief and food security.
Changes in neural responsivity to highly palatable foods following roux-en-Y gastric bypass, sleeve gastrectomy, or weight stability: An fMRI study


OBJECTIVE: This prospective, observational fMRI study examined changes over time in blood oxygen level dependent (BOLD) response to high- and low-calorie foods (HCF and LCF) in bariatric surgery candidates and weight-stable controls. METHODS: Twenty-two Roux-en-Y gastric bypass (RYGB) participants, 18 vertical sleeve gastrectomy (VSG) participants, and 19 weight-stable controls with severe obesity underwent fMRI before and 6 months after surgery/baseline. BOLD signal change in response to images of HCF vs. LCF was examined in a priori regions of interest. RESULTS: RYGB and VSG participants lost 23.6% and 21.1% of initial weight, respectively, at 6 months, and controls gained 1.0%. Liking ratings for HCF decreased significantly in the RYGB and VSG groups but remained stable in the control group. BOLD response in the ventral tegmental area (VTA) to HCF (vs. LCF) declined significantly more at 6 months in RYGB compared to control participants but not in VSG participants. Changes in fasting ghrelin correlated positively with changes in VTA BOLD signal in both RYGB and VSG but not in control participants. CONCLUSIONS: Results implicate the VTA as a critical site for modulating postsurgical changes in liking of highly palatable foods and suggest ghrelin as a potential substrate requiring further investigation.

Effect of Free-Roaming Dogs Culling on the Control of Canine Rabies

Ricardo Castillo-Neyra , Michael Z. Levy, Cesar Náquira

In the Peruvian city of Arequipa, rabid dogs have been detected since March 2015, signaling the reintroduction of the rabies virus (RV) in this previously officially-declared rabies free zone. High dog density is considered one of the causes for the continuous transmission of the RV in the outbreak in the city of Arequipa, which seemingly lends support to the culling of dogs as a public health measure. However, the effectiveness of culling free-roaming dogs to control urban rabies has not been evaluated. Objective: To determine the effectiveness of free-roaming dog culling as a control measure of urban rabies. Source of data: We searched for articles on dog rabies control or urban rabies control in the databases of PubMed, Scopus and LILACS. The characteristics and results of the documents obtained were recorded. Eligibility criteria: We included original studies and reviews that have evaluated an effect of culling dogs in the transmission of RV. Data collection and evaluation: One of the authors (RCN) screened the articles found in the search based on their titles and abstracts. The data and results of the articles selected for full reading were evaluated by at least two authors. Results: 21 articles were eligible for full reading. 20 of 21 articles conclude that free-roaming dog culling is ineffective in reducing the transmission of RV and may even have unintended consequences that worsen the problem. We believe that the available evidence indicates that the sacrifice of free-roaming dogs is not effective to control urban rabies. In addition, the various negative consequences of free-roaming dog culling reported in other parts of the world suggest that the system of urban rabies is highly complex and all its components must be taken into account during the implementation of control activities.
Parent Perceptions on Transfers to Pediatric Emergency Departments and the Role of Telemedicine
Mollen CJ, Henien M, Jacobs LM, Myers S

OBJECTIVE: Real-time audiovisual consultation (telemedicine) has been proven feasible and is a promising alternative to interfacility transfer. We sought to describe caregiver perceptions of the decision to transfer his or her child to a pediatric emergency department and the potential use of telemedicine as an alternative to transfer. METHODS: Semistructured interviews of caregivers of patients transferred to a pediatric emergency department. Purposive sampling was used to recruit caregivers of patients who were transferred from varying distances and different times of the day. Interviews were conducted in person or on the phone by a trained interviewer. Interviews were recorded, transcribed, and analyzed using modified grounded theory. RESULTS: Twenty-three caregivers were interviewed. Sixteen (70%) were mothers; 57% of patients were transported from hospitals outside of the city limits. Most caregivers reported transfer for a specific resource need, such as a pediatric subspecialist. Generally, caregivers felt that the decision to transfer was made unilaterally by the treating physician, although most reported feeling comfortable with the decision. Almost no one had heard about telemedicine; after hearing a brief description, most were receptive to the idea. Caregivers surmised that telemedicine could reduce the risks and cost associated with transfer. However, many felt telemedicine would not be applicable to their particular situation. CONCLUSIONS: In this sample, caregivers were comfortable with the decision to transfer their child and identified potential benefits of telemedicine as either an adjunct to or replacement of transfer. As hospitals use advanced technology, providers should consider families’ opinions about risks and out-of-pocket costs and tailoring explanations to address individual situations.

Stakeholder conceptualisation of multi-level HIV and AIDS determinants in a Black epicentre
Brawner BM, Reason JL, Hanlon K, Guthrie B, Schensul JJ

HIV has reached epidemic proportions among African Americans in the USA but certain urban contexts appear to experience a disproportionate disease burden. Geographic information systems mapping in Philadelphia indicates increased HIV incidence and prevalence in predominantly Black census tracts, with major differences across adjacent communities. What factors shape these geographic HIV disparities among Black Philadelphians? This descriptive study was designed to refine and validate a conceptual model developed to better understand multi-level determinants of HIV-related risk among Black Philadelphians. We used an expanded ecological approach to elicit reflective perceptions from administrators, direct service providers and community members about individual, social and structural factors that interact to protect against or increase the risk for acquiring HIV within their community. Gender equity, social capital and positive cultural mores (e.g., monogamy, abstinence) were seen as the main protective factors. Historical negative contributory influences of racial residential segregation, poverty and incarceration were among the most salient risk factors. This study was a critical next step toward initiating theory-based, multi-level community-based HIV prevention initiatives.
Psychosocial Disparities Among Racial/Ethnic Minority Transgender Young Adults and Young Men Who Have Sex with Men Living in Detroit
Jose´ A. Bauermeister, Tamar Goldenberg, Daniel Connochie, Laura Jadwin-Cakmak, and Rob Stephenson

Purpose: Transgender populations in the United States experience unique inequities in health and social wellbeing; however, they continue to be categorized with men who have sex with men (MSM) in HIV surveillance. To illustrate the differences in the lived realities of young MSM and transgender youth, we compare psychosocial outcomes across a sample of transgender and MSM youth from Detroit. Methods: Data for this study come from a community-based cross-sectional survey of young adults (ages 18–29) living in Detroit who identify as transgender and/or as cisgender young men who have sex with men (YMSM). Using participants’ geographic location within the city of Detroit, we matched transgender participants (N = 26) to YMSM (N = 123) living in the same area, and compared the prevalence in risk and resilience indicators across the two groups. Results: Transgender participants were more likely than YMSM to experience socioeconomic vulnerability across several indicators, including lower educational attainment and workforce participation, greater residential instability, and higher lifetime experiences of transactional sex. Transgender participants were more likely than YMSM to report poorer health status, higher symptoms of depression and anxiety, and greater experiences of daily hassles and gender-related discrimination. Transgender participants did not differ from YMSM peers on healthpromotive factors, including self-esteem, coping mastery, purpose in life, or social support. Conclusions: Our findings underscore the importance of addressing the social and economic inequities experienced by transgender young adults. Local- and national-level programmatic and policy interventions are recommended to alleviate the psychosocial vulnerability experienced by transgender young adults and to improve their health and social well-being.

Building a patient navigation program for uninsured women to access breast cancer screening services
Andrea Nicholson, MPH; Carmen Guerra, MD, MSCE, FACP; Ari Brooks, MD

Patient navigation aims to reduce barriers to cancer care and has been advocated as an approach to eliminate disparities in cancer morbidity and mortality. Patient navigation has existed for over 25 years and shown evidence of increasing cancer screening rates, but has yet to demonstrate its impact across the cancer care continuum in addressing disparities. The Penn Medicine Breast Health Initiative (PMBHI) at the Abramson Cancer Center of the University of Pennsylvania was created in 2014 to provide free breast cancer screening and diagnostic services to un- and underinsured women in the Philadelphia area. The PMBHI aims to contribute to defining the field and its methods/goals by sharing best practices for building a breast cancer screening patient navigation program based on its early experience. The objective is to inform the development of patient navigation programs with the goal of building those that assess their impact on breast cancer disparities.
Using Systematic Observations to Understand Conditions that Promote Interracial Experiences in Neighbourhood Parks
Amy Hillier, Bing Han, Theodore S. Eisenman, Kelly R. Evenson, Thomas L. McKenzie, Deborah A. Cohen

We analysed observations from 31 neighbourhood parks, with each park mapped into smaller target areas for study, across five US cities generated using the System for Observing Play and Recreation in the Community (SOPARC). In areas where at least two people were observed, less than one-third (31.6%) were populated with at least one white and one non-white person. Park areas that were supervised, had one or more people engaged in vigorous activity, had at least one male and one female present, and had one or more teens present were significantly more likely to involve interracial groups (p < 0.01 for each association). Observations in parks located in interracial neighbourhoods were also more likely to involve interracial groups (p < 0.05). Neighbourhood poverty rate had a significant and negative relationship with the presence of interracial groups, particularly in neighbourhoods that are predominantly non-white. Additional research is needed to confirm the impact of these interactions. Urban planning and public health practitioners should consider the health benefits of interracial contact in the design and programming of neighbourhood parks.

The Right to Health: Institutional Effects of Constitutional Provisions on Health Outcomes
Matthew M. Kavanagh

The “right to health” is increasingly enshrined in national constitutions around the world—present today in a slight majority of written constitutions. Whether this trend is good, bad, or meaningless is considerably debated. Contrary to skeptics’ worries, this study finds empirical evidence of a positive role of the right to health in the production of population health. Estimating the most widely promulgated theories of the economic and social determinants of health, and the role of electoral democracy, provides a foundation from which to evaluate the effect of the right to health. This study assembles and analyzes data for 144 countries between 1970 and 2010 and finds that, controlling for these factors, a constitutional right to health contributes significantly to wellbeing. Assembled quantitative and case-study evidence both support the idea that institutional environments shaped by a right to health encourage more and better delivery of health services, which in part account for positive impact on health outcomes. These results suggest that focusing research on political institutions primarily on democratic participation rights ignores important impacts of “entitlement” rights on norms and actors in health policy-making. Overall, the right to health is both an important contextual factor for health research and meaningful institutional innovation.
The digital hood: Social media use among youth in disadvantaged neighborhoods
Robin Stevens Stacia Gilliard-Matthews, Jamie Dunaev Marcus K Woods, Bridgette M Brawner

This study examines the role of social media in the lives of youth living in disadvantaged neighborhoods. Feminist Standpoint Theory, which privileges the voices of marginalized communities in understanding social phenomena, suggests that youth at the margins have specific knowledge that helps us understand social media more broadly. We conducted semi-structured interviews with 30 females and 30 males aged 13–24 years about their social worlds and neighborhoods, both online and offline. The findings reveal a dynamic and somewhat concerning interplay between the geographic neighborhood and the digital neighborhood, whereby negative social interactions in the geographic neighborhood are reproduced and amplified on social media.

Racial-Ethnic Disparities in Management and Outcomes Among Children With Type 1 Diabetes

BACKGROUND AND OBJECTIVES: Previous research has documented racial/ethnic disparities in diabetes treatments and outcomes. It remains controversial whether these disparities result from differences in socioeconomic status (SES) or other factors. We examined racial/ethnic disparities in therapeutic modalities and diabetes outcomes among the large number of pediatric participants in the T1D Exchange Clinic Registry. METHODS: The cohort included 10 704 participants aged <18 years with type 1 diabetes for ≥1 year (48% female; mean age: 11.9 ± 3.6 years; diabetes duration: 5.2 ± 3.5 years). Diabetes management and clinical outcomes were compared among 8841 non-Hispanic white (white) (83%), 697 non-Hispanic black (black) (7%), and 1166 Hispanic (11%) participants. The population included 214 high-income black and Hispanic families. RESULTS: Insulin pump use was higher in white participants than in black or Hispanic participants (61% vs 26% and 39%, respectively) after adjusting for gender, age, diabetes duration, and SES (P < .001). Mean hemoglobin A1c was higher (adjusted P < .001) in black participants than in white or Hispanic participants (9.6%, 8.4%, and 8.7%). More black participants experienced diabetic ketoacidosis and severe hypoglycemic events in the previous year than white or Hispanic participants (both, P < .001). There were no significant differences in hemoglobin A1c, diabetic ketoacidosis, or severe hypoglycemia between white and Hispanic participants after adjustment for SES. CONCLUSIONS: Even after SES adjustment, marked disparities in insulin treatment method and treatment outcomes existed between black versus Hispanic and white children within this large pediatric cohort. Barriers to insulin pump use and optimal glycemic control beyond SES should be explored in all ethnic groups.
Beyond Books: Public Libraries As Partners For Population Health

Public libraries are not usually included in discussions about improving population health. They are, however, well positioned to be partners in building a culture of health through programming that addresses the social determinants of health. The Healthy Library Initiative, a partnership between the University of Pennsylvania and the Free Library of Philadelphia (the public library system that serves the city), has undertaken such efforts in Philadelphia. In this article we report findings from an assessment of how ten highly subscribed programs address the social determinants of health, as well as results of interviews with community residents and library staff. Of the 5.8 million in-person Free Library visits in 2015, 500,000 included attendance at specialized programs that addressed multiple health determinants, such as housing and literacy. Library staff provided intensive support to vulnerable populations including homeless people, people with mental illness and substance use, recent immigrants, and children and families suffering from trauma. We found that public libraries are trusted institutions that have broad population reach and untapped potential to improve population health.

Engaging Urban Universities as Anchor Institutions for Health Equity
Harkavy I

The extreme poverty, persistent deprivation, and pernicious racism afflicting communities in the shadows of powerful, relatively wealthy urban universities raise troubling moral issues, as well as questions about higher education’s contribution to the public good. It is essential that universities as key anchor institutions significantly and effectively contribute to radically reducing the pervasive, ongoing, seemingly intractable problems of our inner cities, including the complex, multicausal problem of health inequity. A recent New York Times article highlighted conditions in Philadelphia, Pennsylvania, and Cleveland, Ohio, the sites of the 2016 Democratic and Republican National Conventions, respectively, as examples of a more general phenomenon of urban inequality: In 2014, Philadelphia had the highest poverty rate (26 percent) among cities with more than a million people, while Cleveland has the third-highest poverty rate (39.2 percent) among cities with more than 100,000 residents. The article goes on to note that “[t]oday, both cities rely on ‘eds and meds’—educational and medical institutions—as engines for jobs and growth.” Philadelphia, in fact, has one of the highest concentrations of anchor institutions, with “eds and meds” representing 12 of the 15 largest private employers, and the Philadelphia metropolitan area contains more than 100 colleges and universities.

Ira Harkavy, PhD
Founding Director and Associate Vice President, Barbara and Edward Netter Center for Community Partnerships, School of Arts and Sciences
**Childhood Sexual Abuse and Sociodemographic Factors Prospectively Associated with Intimate Partner Violence Perpetration Among South African Heterosexual Men**

Teitelman AM, Bellamy SL, Jemmott JB 3rd, Icard L, O'Leary A, Ali S, Ngwane Z, Makiwane M

**BACKGROUND:** Intimate partner violence directed at women by men continues to be a global concern. However, little is known about the factors associated with perpetrating intimate partner violence among heterosexual men.

**PURPOSE:** History of childhood sexual abuse and other sociodemographic variables were examined as potential factors associated with severe intimate partner violence perpetration toward women in a sample of heterosexual men in South Africa.

**METHODS:** Longitudinal logistic generalized estimating equations examined associations of childhood sexual abuse and sociodemographic variables at baseline with intimate partner violence perpetration at subsequent time points.

**RESULTS:** Among participants with a steady female partner, 21.81% (190/871) reported perpetrating intimate partner violence in the past year at baseline. Having a history of childhood sexual abuse (p < .001), binge drinking (p = .002), being employed (p = .050), and more difficulty controlling sexual impulses in order to use a condom (p = .006) at baseline were associated with self-reported intimate partner violence perpetration in the past year at subsequent time points.

**CONCLUSIONS:** With high levels of recent severe physical and/or sexual intimate partner violence perpetration in South Africa, comprehensive interventions are urgently needed. To more fully address gender-based violence, it is important to address associated factors, including exposure to childhood sexual abuse that could impact behavior later in life and that have long-lasting and deleterious effects on men and their female partners.

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**Youth-Targeted E-cigarette Marketing in the US**

Alisa A. Padon, PhD, Erin K. Maloney, PhD. Joseph N. Cappella, PhD

**Objectives:** The purpose of this project was to explore the extent to which e-cigarette advertisements use youth-appealing content. Methods: A sample of e-cigarette video ads (N = 154) were coded by 3 independent coders using the content appealing to youth (CAY) index, which measures over 40 youth-appealing features. To calculate a total CAY score for each ad, scores were normalized and summed such that a higher score represented the presence of more youth-appealing elements. Results: All ads included some youth-appealing content, with frequent use of emotional appeals, including happiness (68%), friendship (41%), sex (24%), and success (24%). Over half featured animation. However, product appeals, known to be disliked by youth, were also prevalent. Eighty-seven percent used a direct appeal to e-cigarettes’ value over tobacco cigarettes; 66% mentioned product composition; and 40% mentioned health. Conclusions: Given the unregulated context in the US, e-cigarette marketing currently contains many features that may be particularly appealing to youth.
Contact Us
3620 Hamilton Walk
Anatomy-Chemistry Building, Room 148
Philadelphia, PA 19104
215-746-3467
cphi.upenn@gmail.com

www.med.upenn.edu/cphi
publichealthatpenn.wordpress.com

@CPhiatUPenn

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