Publications

FY 2015 - Present
It is estimated that prenatal exposure to illicit drugs and alcohol (prenatal substance exposure, or PSE) affects 400,000 newborns annually in the United States (Young et al., 2009). Most of the concern regarding maternal substance use focuses on drugs such as methamphetamine, crack cocaine, and, recently, opioids. Although alcohol is the “primary cause of intellectual and developmental disorders worldwide” with lifelong consequences (Pomeroy, Parrish, Nonaka, & Anderson, 2016), it has mostly been excluded from the discussion on substances that can harm the developing fetus. This article presents information on the effects, legislation, and current efforts on prenatal alcohol exposure and the child welfare system. There is a special focus on the current needs and potential solutions for child welfare social workers, children, and their families.

PSE educational requirements for social workers could be useful to ensure knowledge of current understanding and best practices regarding children with PSE and their families. Considering the limited to nonexistent formal training of staff that was found in the exploratory study, and taking into account the CARA legislation, child welfare agencies could consider offering PSE training with a special focus on alcohol. This could help equip agencies to better meet the medical, educational, and psychosocial needs of this vulnerable population. Generally, well-informed approaches on PSE could help guide social workers to provide services that lead to positive outcomes.
Examining effects of depression on hospital cost of breast cancer among women.

2018 May 1;10(5)

Husaini B, Tiriveedhi V, Miller O, Novotny M, Zoorob R, Levine R

Abstract

Objective: While depression prevails up to 20 - 50% in breast cancer (BC) patients, the effect of depression on hospital costs for BC remains unknown. In this paper we describe: (i) the prevalence of BC, depression, and associated risk factors among women discharged from hospitals in Tennessee; and (ii) the effects of depression on BC hospital costs.

Methods: We extracted cross-sectional data from the 2008 Tennessee Hospital Discharge Data System (HDDS). Breast cancer and depression were identified from the patient’s ICD-9 codes. The BC sample (n = 2,522) had an average age of 63 years and was mostly white (83%). We computed age-adjusted BC prevalence per CDC methodology, and compared the hospital costs for BC patients with depression (BC+D) and without depression (BCND).

Results: The overall age-adjusted BC prevalence at discharge was 52.5 per 100,000 populations. Prevalence was higher among whites than blacks (43.3 vs. 9.2, p < 0.001). In our cohort, 23% of BC patients were depressed. The depression rates were higher among whites than blacks (25% vs. 14%, p < 0.01). The hospital costs for BC were 26% higher compared to non-BC patients ($46,609 vs. $35,974, p < 0.001). The hospital costs for depressed patients (BC+D) were 44% higher than BCND patients ($64,439 vs. $41,344, p < 0.001). Higher hospital costs were found among both blacks and whites with a co-prevalence of depression (BC+D) compared to non-depressed (BCND) peers.

Conclusion: Depression was associated with higher hospital costs among women with BC, regardless of race. These descriptive data are consistent with the hypotheses that screening and treating depression among BC patients before hospitalization might attain considerable cost savings. Analytic epidemiologic study would be required to develop appropriate treatment regimens for BC patients with depression.

Keywords: Depression; Breast cancer; Race; Hospital cost

Differential changes in mortality from Sickle Cell Disorders by age in the United States.

2018 Jun


Abstract

Background: Improvements in the medical management of a chronic disease may lengthen life expectancy (and hence duration of illness). Increases in mortality, in turn, may reflect increasing incidence of associated risk factors, including the frequency of parents with sickle cell trait. We therefore sought to describe changes in overall and age-sex-specific mortality from sickle cell disorders among blacks and African Americans (blacks) in the United States (US) from 1979-1988 to 2007-2016.

Methods: Overall and age-adjusted, sex-specific mortality rates and 95% Confidence Intervals (95% CI) for sickle cell disorders as underlying cause of death were obtained from the Compressed Mortality Files as presented on the public Wide-Ranging Online Data for Epidemiologic Research (WONDER) internet site of the US Centers for Disease Control and Prevention.

Results: From 1979-88 to 2007-2016, overall mortality from sickle cell disorders among blacks increased from 1.16 per 100,000 (95% Confidence Interval 1.11, 1.20) to 1.22 (1.18, 1.25). Concurrently, there was a right-shift in mortality according to age among both women and men, with declining age-adjusted mortality between 1979-1988 and 2008-2016 at ages 1 to 24 years (Figure 1) and increasing age-adjusted mortality from 25 to 74 years (Figure 2). As shown by 95% Confidence Intervals, the decline in mortality from ages 1 to 24 years was statistically significant among both sexes, while the increase in mortality at ages 25 to 74 years was statistically significant among women.

Conclusions: These descriptive results are consistent with the hypotheses that while improvements in medical care may have led to longer lives for persons with sickle cell disorders, primary prevention to reduce incidence (for example, by genetic counseling) may have been less successful. Analytic epidemiologic studies, including incidence estimates from newborn screening programs would be needed to test these and other hypotheses derived from these data.
Homicide in the south: Higher rates among whites and less racial disparities

017 Winter;109(4):246-251

August E, Aliyu MH, Mbah A, Okwechine I, Adegoke KK, de la Cruz C, Berry EL, Salihu HM.

Abstract
Objectives: To examine the impact of the Central Hillsborough Healthy Start Project (CHHS) on human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) diagnosis rates in women in Hillsborough County, Florida.

Methods: Project records were linked to hospital discharge data and vital statistics (Florida, 1998-2007; N = 1,696,221). The \(\chi^2\) test was used to compare rates for HIV/AIDS and pregnancy-related complications for mothers within the CHHS service area with mothers in Hillsborough County and the rest of Florida.

Results: During a 10-year period, HIV/AIDS diagnosis rates among women in the CHHS service area declined by 56.3% \((P = 0.01)\). The observed decline was most evident among black women. HIV/AIDS diagnosis rates in the rest of Hillsborough County and Florida remained unchanged \((P = 0.48)\).

Conclusions: Lessons learned from the CHHS Project can be used to develop effective and comprehensive models for addressing the HIV epidemic.

Depression effects on hospital cost of California heart failure.

018 Jan-Mar;43(1):9-22

Husaini B, Gudlavalleti L, Cain V, Levine R, Moonis M.

Abstract
Aims: To examine the variation in risk factors and hospitalization costs among four elderly dementia cohorts by race and gender.

Materials and Methods: The 2008 Tennessee Hospital Discharged database was examined. The prevalence, risk factors and cost of inpatient care of dementia were examined for individuals aged 65 years and above, across the four race gender cohorts - white males (WM), black males (BM), white females (WF), and black females (BF).

Results: 3.6% of patients hospitalized in 2008 had dementia. Dementia was higher among females than males, and higher among blacks than whites. Further, BF had higher prevalence of dementia than WF; similarly, BM had a higher prevalence of dementia than WM. Overall, six risk factors were associated with dementia for the entire sample including HTN, DM, CKD, CHF, COPD, and stroke. These risk factors varied slightly in predicting dementia by race and gender. Hospital costs were 14% higher among dementia patients compared to non-dementia patients.

Conclusions: There exist significant race and gender disparities in prevalence of dementia. A greater degree of co-morbidity, increased duration of hospital stay, and more frequent hospitalizations, may result in a higher cost of inpatient dementia care. Aggressive management of risk factors may subsequently reduce stroke and cost of dementia care, especially in the black population. Race and gender dependent milestones for management of these risk factors should be considered.

Keywords: Cost; dementia; race-gender cohort
Examining the sustainability potential of a multisite pilot to integrate alcohol screening and brief intervention within three primary care systems.

2018 Jan 23 [Epub ahead of print]
King DK, Gonzalez SJ, Hartje JA, Hanson BL, Edney C, Snell H, Zoorob RJ, Roget NA.

Abstract
The U.S. Preventive Services Task Force recommends that clinicians adopt universal alcohol screening and brief intervention as a routine preventive service for adults, and efforts are underway to support its widespread dissemination. The likelihood that healthcare systems will sustain this change, once implemented, is under-reported in the literature. This article identifies factors that were important to postimplementation sustainability of an evidence-based practice change to address alcohol misuse that was piloted within three diverse primary care organizations. The Centers for Disease Control and Prevention funded three academic teams to pilot and evaluate implementation of alcohol screening and brief intervention within multiclinic healthcare systems in their respective regions. Following the completion of the pilots, teams used the Program Sustainability Assessment Tool to retrospectively describe and compare differences across eight sustainability domains, identify strengths and potential threats to sustainability, and make recommendations for improvement. Health systems varied across all domains, with greatest differences noted for Program Evaluation, Strategic Planning, and Funding Stability. Lack of funding to sustain practice change, or data monitoring to promote fit and fidelity, was an indication of diminished Organizational Capacity in systems that discontinued the service after the pilot. Early assessment of sustainability factors may identify potential threats that could be addressed prior to, or during implementation to enhance Organizational Capacity. Although this study provides a retrospective assessment conducted by external academic teams, it identifies factors that may be relevant for translating evidence-based behavioral interventions in a way that assures that they are sustained within healthcare systems.

KEYWORDS: Adaptation; Alcohol prevention; Evidence-based practice; Maintenance; Public health; Sustainability

Association between obesity, surgical route, and perioperative outcomes in patients with uterine cancer.

Volume 2018, Article ID 5130856, 8 pates
Al Sawah E, Salemi JL, Hoffman M, Imudia AN, Mikhail E.

Abstract
Objective: To study temporal trends of hysterectomy routes performed for uterine cancer and their associations with body mass index (BMI) and perioperative morbidity. Methods. A retrospective review of the American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) 2005-2013 databases was conducted. All patients who were 18 years old and older with a diagnosis of uterine cancer and underwent hysterectomy were identified using ICD-9-CM and CPT codes. Surgical route was classified into four groups: total abdominal hysterectomy (TAH), total vaginal hysterectomy (TVH), laparoscopic assisted vaginal hysterectomy (LAVH), and total laparoscopic hysterectomy (TLH) including both conventional and robotically assisted. Patients were then stratified according to BMI. Results. 7199 records were included in the study. TLH was the most commonly performed route of hysterectomy regardless of BMI, with proportions of 50.9%, 48.9%, 50.4%, and 51.2% in ideal, overweight, obese, and morbidly obese patients, respectively. The median operative time for TAH was 2.2 hours compared to 2.7 hours for TLH (P < 0.01). The median length of stay for TAH was 3 days compared to 1 day for TLH (P < 0.01). The percentage of patients with an adverse outcome (composite indicator including transfusion, deep venous thrombosis, and infection) was 17.1% versus 3.7% for TAH and TLH, respectively (P < 0.01). Conclusion. During the last decade, TLH has been increasingly performed in women with uterine cancer. The increased adoption of TLH was seen in all BMI subgroups.
Identifying algorithms to improve the accuracy of unverified diagnosis codes for birth defects.

2018 May/Jun;133(3):303-310
Saleni JL, Rutkowski RE, Tanner JP, Matas JL, Kiby RS.

Abstract
Objectives: We identified algorithms to improve the accuracy of passive surveillance programs for birth defects that rely on administrative diagnosis codes for case ascertainment and in situations where case confirmation via medical record review is not possible or is resource prohibitive.

Methods: We linked data from the 2009-2011 Florida Birth Defects Registry, a statewide, multisource, passive surveillance program, to an enhanced surveillance database with selected cases confirmed through medical record review. For each of 13 birth defects, we calculated the positive predictive value (PPV) to compare the accuracy of 4 algorithms that varied case definitions based on the number of diagnoses, medical encounters, and data sources in which the birth defect was identified. We also assessed the degree to which accuracy-improving algorithms would affect the Florida Birth Defects Registry’s completeness of ascertainment.

Results: The PPV generated by using the original Florida Birth Defects Registry case definition (ie, suspected cases confirmed by medical record review) was 94.2%. More restrictive case definition algorithms increased the PPV to between 97.5% (identified by 1 or more codes/encounters in 1 data source) and 99.2% (identified in >1 data source). Although PPVs varied by birth defect, alternative algorithms increased accuracy for all birth defects; however, alternative algorithms also resulted in failing to ascertain 58.3% to 81.9% of cases.

Conclusions: We found that surveillance programs that rely on unverified diagnosis codes can use algorithms to dramatically increase the accuracy of case finding, without having to review medical records. This can be important for etiologic studies. However, the use of increasingly restrictive case definition algorithms led to a decrease in completeness and the disproportionate exclusion of less severe cases, which could limit the widespread use of these approaches.

Keywords: accuracy; birth defects; congenital malformations; positive predictive value; surveillance

An uncommon presentation of ovarian torsion.

2018 Apr 30;xxx
Faustinella F.

Urgent message: Abdominal pain is an extremely common complaint in the urgent care setting. The differential diagnosis of abdominal pain is often a challenge, however, because many symptoms and signs are nonspecific. Ovarian torsion usually presents with sudden onset of severe, unilateral lower abdominal pain, associated with nausea and vomiting; however, in a small percentage of cases, the clinical course is prolonged, as the torsion can be intermittent. While failure to consider ovarian torsion in the differential diagnosis is not uncommon, given its relatively low occurrence, timely diagnosis is of paramount importance to prevent necrosis and preserve ovarian viability.

Introduction: Gynecological causes account for about 4% of all abdominal pain complaints seen in emergency departments. Of those, 3% of cases are attributed to ovarian torsion. Also referred to as adnexal torsion or tubo-ovarian torsion, ovarian torsion is the partial or complete rotation of the ovary and portion of the fallopian tube on the vascular and ligamentous structures, which results in limitation or complete cutoff of the blood supply to the ovary. The incidence of ovarian torsion is higher in younger women (15-30 years) and postmenopausal women. Approximately 20% of the cases occur during pregnancy. Risk factors for ovarian torsion include hypermobility of the ovary due to increased length of ovarian ligaments (<50%); enlarged corpus luteum in pregnancy, and the presence of ovarian masses/cysts (50%-60%), with masses between 5 and 10 cm causing the highest risk for torsion.

Key Points:
- Intermittent ovarian torsion is uncommon and represents a diagnostic challenge.
- Ovarian tumors, both benign and malignant, are implicated in 30%-50% of cases of torsion.
- Pelvic ultrasound is the imaging modality of choice, but Doppler flow is not always absent in torsion.
Hospital length of stay and cost burden of HIV, tuberculosis, and HIV- tuberculosis coinfection among pregnant women in the United States.

2018 May;46(5):564-570


Abstract
Background: We sought to determine hospital length of stay (LOS) and cost burden associated with hospital admissions among pregnant women with HIV monoinfection, tuberculosis (TB) monoinfection, or HIV-TB coinfection in the United States.

Methods: Analysis covered the period from 2002-2014 using data from the Nationwide Inpatient Sample. Relevant ICD-9-CM codes were used to determine HIV and TB status. Costs associated with hospitalization were calculated and adjusted to 2010 dollars using the medical care component of the Consumer Price Index.

Results: We found modest annual average reduction in HIV, TB, and HIV-TB coinfection rates over the study period. The mean LOS was lowest among mothers free of HIV or TB disease and highest among those with HIV-TB coinfection. The average LOS among mothers diagnosed with TB monoinfection was 60% higher than for those with HIV monoinfection. The cost associated with pregnancy-related hospital admissions among mothers with HIV was approximately 30% higher than disease-free mothers, and the cost more than doubled among patients with TB monoinfection or HIV-TB coinfection.

Conclusions: TB significantly increased hospital care cost among HIV-positive and HIV-negative pregnant women.

Keywords: HIV-TB coinfection; cost burden; length of stay (LOS); pregnancy recommended EMR tasks, including typing their own note and entering orders and prescriptions


2018 Apr;44(4):730-738

Mikhail E, Salemi JL, Schickler R, Salihu HM, Plosker S, Imudia AN.

Abstract
Am: To describe the frequency and temporal trends of inpatient hospitalization for tubal ectopic pregnancy as well as patients’ characteristics, determinants and the current national trends in surgical management of ectopic pregnancy.

Methods: We conducted a retrospective, cross-sectional analysis of patients who were treated for tubal ectopic pregnancy in an inpatient hospital setting in the United States from 1998 to 2011 using data from the Nationwide Inpatient Sample databases. National frequency and significant changes in the rate of surgical management of tubal ectopic pregnancy in the inpatient setting are described.

Results: The study included 334,639 tubal ectopic pregnancies for women aged 18-50 in the United States from 1998 to 2011. The rate of tubal ectopic pregnancy (per 10,000 maternal admissions) decreased from 77.2 in 1998 to 40.5 in 2011. The proportion of tubal ectopic pregnancies for which salpingostomy was performed decreased from 17.0% in 1998 to 7.0% in 2011, while the rate of salpingectomy increased from 69.3% in 1998 to 80.9% in 2011. The temporal change in surgical choice was not different in states with comprehensive in vitro fertilization insurance mandates.

Conclusion: The rate of tubal ectopic pregnancy managed in the inpatient setting in the United States decreased 5% annually between 1998 and 2011. The rate of salpingectomies performed annually increased whereas that of salpingostomy decreased over time. The surgical approach selected for the management of tubal ectopic pregnancies was not influenced by a state’s in vitro fertilization mandate status.

Keywords: in vitro fertilization mandate; ectopic pregnancy; surgical trends

2018 Mar 26;13(3):e0194836


Abstract

Background: Despite decades of efforts to eliminate tuberculosis (TB) in the United States (US), TB still contributes to adverse ill health, especially among racial/ethnic minorities. According to the Centers for Disease Control and Prevention, in 2016, about 87% of the TB cases reported in the US were among racial and ethnic minorities. The objective of this study is to explore the risks for pregnancy complications and in-hospital death among mothers diagnosed with TB across racial/ethnic groups in the US.

Methods: This retrospective cohort study utilized National Inpatient Sample data for all inpatient hospital discharges in the US. We analyzed pregnancy-related hospitalizations and births in the US from January 1, 2002 through December 31, 2014 (n = 57,393,459). Multivariable logistic regression was applied to generate odds ratios for the association between TB status and the primary study outcomes (i.e., pregnancy complications and in-hospital death) across racial/ethnic categories.

Results: The prevalence of TB was 7.1 per 100,000 pregnancy-related hospitalizations. The overall prevalence of pregnancy complications was 80% greater among TB-infected mothers than their uninfected counterparts. Severe pre-eclampsia, eclampsia, placenta previa, post-partum hemorrhage, sepsis and anemia occurred with greater frequency among mothers with a TB diagnosis than those without TB, irrespective of race/ethnicity. The rate of in-hospital death among TB patients was 37 times greater among TB-infected than in non-TB infected mothers (468.8 per 100,000 versus 12.6 per 100,000). A 3-fold increased risk of in-hospital death was observed among black TB-negative mothers compared to their white counterparts. No racial/ethnic disparities in maternal morbidity or in-hospital death were found among mothers with TB disease.

Conclusion: TB continues to be an important cause of morbidity and mortality among pregnant women in the US. Resources to address TB disease should also target pregnant women, especially racial/ethnic minorities who bear the greatest burden of the disease.

2018 March

Faustinella F, Hurwitz R.

Health Education for Young Adults addresses preventive medical and behavioral issues of great importance in adolescence. The book is not intended to be an exhaustive review of medical diseases or an encyclopedia but rather an overview of problems that are critical to teenagers and adolescents in this time of their life, a discussion of important behaviors that can affect their health now and in the future, and a framework on which to add new information. Besides taking care of the more traditional medical problems as they occur, part of the challenge in keeping adolescents healthy now involves addressing different issues, such as alcohol and drug use, sexual activity, violence, and the impact of cultural stereotypes on self-image. We believe that educating teens about the risks of certain behaviors can give them confidence in making wise decisions and bolster their self-esteem. Being fully aware of how their behavior and choices earlier in life can have a detrimental effect on their health, now and later, will give them the tools to develop mature and independent thinking to prevent a vast array of medical problems and disease processes and allow them to choose a healthy lifestyle.

Part I: Primary Care & Prevention
An Extreme Gamble: Drug Use
Supplements: How Much Is Too Much?

Part II: Common Symptoms and Important Medical Conditions in Adolescents
Eating Disorders
Allergies
Sudden Cardiac Death
Reproductive Cycle in Women
Body Hair
Genetic Diseases

The book was showcased at the Los Angeles Times Festival of Books (LATFOB) in April 2018.
Predicting medication adherence in older Hispanic patients with type 2 diabetes.

2018 May;75(10):e194-e201

Caballero J, Ownby RL, Jacobs RJ, Pandya N, Ricabel L.

Abstract

**Purpose:** Potential cognitive and demographic correlates of medication nonadherence in older Hispanic adults with type 2 diabetes were investigated.

**Methods:** Forty community-dwelling participants 65 years of age or older were recruited. Executive control function (ECF) was assessed using the executive clock drawing task (CLOX 1) test and the 25-item Executive Interview. Self-reported medication adherence was measured on a visual analog scale (VAS); measures of glycemic control included glycosylated hemoglobin (HbA1c) concentration. The primary objective was to determine if ECF performance correlated with medication adherence or glycemic control.

**Results:** Participants’ mean ± S.D. age was 74.95 ± 7.07 years, and 73% (n = 29) were female. Lower VAS scores correlated with worse CLOX 1 performance (r = 0.38, p = 0.02) and worse HbA1c status (r = −0.42, p = 0.007). Linear regression modeling indicated significant associations between VAS scores and both CLOX 1 results (beta coefficient [β] = 0.41, p = 0.01) and educational level (β = 0.345, p = 0.03). Receiver operating characteristic analysis of CLOX 1 scores (scoring range, 0–15; lower scores indicate greater impairment) showed that a highly sensitive cutoff score for predicting adherence of <90% would be 7, but a cutoff of 10 would provide more specificity.

**Conclusion:** Results of an evaluation of a small sample of Hispanic older adults with type 2 diabetes demonstrated a relationship between ECF, as measured by the CLOX 1 instrument, and self-reported medication adherence.

**Keywords:** executive control function, Hispanics, medication adherence, type 2 diabetes

Predictors of student use of an electronic record.

2018 Mar 25 [Epub ahead of print]

Huang W, Grigoryan L, Aggarwal A.

Abstract

**Background:** Little is known on ambulatory clerkship students’ use of an electronic medical record (EMR). We investigated students’ use of recommended EMR tasks across different types of sites and studied the predictors of these recommended tasks.

**Methods:** Students documented how often they performed recommended EMR tasks and suggested improvements to enhance EMR use. We compared student performance of recommended tasks across different types of sites using β2 tests and the Fisher’s exact test. We performed regression analyses to investigate factors predicting students’ performance of EMR tasks. Two faculty members read all of the suggested improvements and agreed on themes.

**Results:** From January 2014 to June 2015, 263 of 295 Family and Community Medicine Clerkship (FCMC) students (89.2%) were at sites that used an EMR. Of the 263 students, 68.4% typed their own note into the EMR, but only 31.2% entered orders and 27.8% entered prescriptions for their teacher to sign. Students’ rating of the orientation to the EMR predicted their use of all EMR tasks. The number of years that the teaching site used an EMR predicted the students’ use of some tasks. Suggested improvements included a better orientation to the EMR, more use of the EMR, and access to a computer and the EMR.

**Discussion:** Many students did not perform recommended EMR tasks. To help more students learn EMR tasks, clinical teachers can offer students a detailed orientation to their EMR, provide them with access to a computer and the EMR, and give them the opportunity to perform recommended EMR tasks, including typing their own note and entering orders and prescriptions.
The ranting of Mr. Schafer: Finding meaning in life.

2018 Mar 12 [Epub ahead of print]

Faustinella F.

Abstract

“Dr. F, would you be willing to see one last patient? He’s at the neuropsychiatry facility across the street. All he needs is something for gastroesophageal reflux.”

“OK, sounds easy enough. What is his name, so I can start looking at his medical record while I wait for him to get here?”

The nurse gave me the patient’s name, date of birth, and medical record number. I pulled up his chart and read some of the available notes:

“Mr. Schafer is a 65-year-old, English-speaking, white Jewish male, currently living at a shelter. Patient was born in New York City and arrived in Houston, Texas, when he was 6 years old. His parents moved to Texas because both he and his brother had rheumatism and Texas appeared to be a better place for them to grow up.”

“Mr. Schafer denies homicidal ideations but answers in a seemingly careful way, as though he is concerned about being misunderstood or concerned that his answers will be misconstrued. He states, ‘No one who comes into my life alive will leave dead.’

“Patient asked several times to ‘justify psychiatry’ and explain why he needed medications. The visit was terminated after about 10 minutes when Mr. Schafer became agitated and threatening. After checking out of the clinic, he walked back in and stated that he was upset because he realized that he couldn’t ‘help save me from the forces that are destroying me.’

The role of gender in career choice and intent to work with immigrant and underserved communities: Implications for evidence-based medical school curriculum enhancement.

2018 Mar

Jacobs RJ, Kane MN.

Abstract

Background: Fewer students are moving into primary care and the retention of primary care physicians in medically underserved communities is declining. Many medical students desire to be in esteemed specialties and do not perceive primary care to be a field that is well respected. Moreover, medical students may be influenced by the opinions of their colleagues, teachers, and role models. Also, the attitudes toward caring for immigrants and refugees may be influenced by gender role norms and expectations. However, few studies have addressed gender influences on intent to work with immigrants and patients in underserved and/or rural areas.

Methods: We explored the association between gender and choice for future medical practice specialty, particularly with intent to care for uninsured, immigrant, refugee, and underserved populations. We hypothesized that the gender and choice of future medical practice specialty will be associated with medical students’ intent to work with the underserved as a career choice. A cross-sectional, correlational design was used to collect data from medical students (N=239) in a large medical school in south Florida, United States. Students completed the “Medical Student Attitudes toward the Underserved” questionnaire. The questionnaire contained items on participants’ personal characteristics, intentions to work with underserved, and future practice interests. Chi-square tests were performed using SPSS software.

Results: The sample had 123 (51%) men and 116 (49%) women aged 20-47 years (M=24 years). About half were White (n=132, 55.2%); the rest were Asian/Pacific Islander (n =54, 22.5%), Black (n=17, 7.1%), and Hispanic (n=48; 24%). A relationship was found between gender and intentions to work with the underserved, x2(1, N=237) = 12.07, p<.01, with higher intentions to work with the underserved associated with being female (59.2% vs. 40.8%). Additional chi-square tests indicated a relationship between gender and future medical specialty practice choices. Choice of pediatrics as a future medical specialty practice choice was associated with more intent to work with underserved (78.6% vs. 21.4%), x2 (1, N=237) = 21.1, p<.01. Surgical medicine as a future career choice was associated with less intent to work with underserved (74.2 vs. 25.8%), x2 (1, N=237) = 5.42, p<.01.

Conclusion: Male students who have negative attitudes toward underserved populations may lack an understanding of these populations and the personal, cultural, and societal factors that affect health and health outcomes. Male students may have negative attitudes toward underserved populations due to social norms related to gender, insufficient role models, and the desire for more prestigious, high paying jobs. The gender of medical students might influence not only future career choice but in their future intentions to work in medically underserved, refugee and immigrant communities, where the need is great. Findings from this study could help guide academic programming efforts that encourage all students to pursue health careers in underserved areas where the need is great.

Keywords: gender disparity, immigrant, underserved, medical education, curriculum development.
Hypertensive disorders of pregnancy and postpartum readmission in the United States: National surveillance of the revolving door.

2018 Mar;36(3):608-618
Mogos MF, Salemi JL, Spooner KK, McFarlin BL, Salihu, HM.

Abstract
Objectives: Hypertensive disorders of pregnancy (HDP) represent the most common cause of maternal-fetal morbidity and mortality. Yet, the prevalence and cost of postpartum (42-day) readmission (PPR) among HDP-complicated pregnancies in the United States remains unknown. This study provides national prevalence and cost estimates of HDP, and examine factors associated with potentially preventable PPR following HDP-complicated pregnancies.

Method: The 2013 and 2014 Nationwide Readmissions Databases were used to investigate HDP and PPR among delivery hospitalizations to women aged 15-49 years. PPR rates, length of stay, and costs were stratified by four HDP subtypes based on timing and severity of their condition. Survey logistic regression was employed to generate adjusted odds ratios for the association between HDP and PPR.

Result: In 2013 and 2014, there were 6.3 million delivery hospitalizations; 666,506 (10.6%) were complicated by HDP. Annually, HDP was responsible for higher rates of potentially preventable PPR. Among HDP-complicated pregnancies, the 42-day all-cause PPR rate ranged from 2.5% (gestational hypertension) to 4.6% (superimposed preeclampsia/eclampsia). Compared with normotensive pregnancies, HDP resulted in an excess 404,800 hospital days and inpatient care costs of $731 million. Even after controlling for patient-level and hospital-level confounders, all hypertensive subgroups continued to have at least two-fold, statistically significant, increased odds of potentially preventable PPR.

Conclusion: HDP is associated with increased risk of PPR and substantial medical costs. Preventive efforts should be made to identify women at increased risk of PPR during hospitalization so that transition care intervention can be initiated.

Buprenorphine Therapy for Opioid Use Disorder.

2018 Mar 1;97(5):313-320
Zoorob R, Kowalchuk A, Mejia de Grubb, MC.

Opioid misuse, including the use of heroin and the overprescribing, misuse, and diversion of opioid pain medications, has reached epidemic proportions in the United States. As a result, there has been a dramatic increase in opioid use disorder and associated overdoses and deaths. Addiction is a chronic brain disease with a genetic component that affects motivation, inhibition, and cognition. Patient characteristics associated with successful buprenorphine maintenance treatment include stable or controlled medical or psychiatric comorbidities and a safe, substance-free environment. As a partial opioid agonist, buprenorphine has a ceiling effect that limits respiratory depression and adds to its safety in accidental or intentional overdose. Buprenorphine and combinations of buprenorphine and naloxone are generally well tolerated; adverse effects include anxiety, constipation, dizziness, drowsiness, headache, nausea, and sedation. Family physicians who meet specific requirements can obtain a Drug Addiction Treatment Act of 2000 waiver by notifying the Substance Abuse and Mental Health Services Administration of their intent to begin dispensing and/or prescribing buprenorphine. Medication-assisted treatment with buprenorphine is as effective as methadone in terms of treatment retention and decreased opioid use when prescribed at fixed dosages of at least 7 mg per day; dosages of 16 mg per day are clearly superior to placebo. Sporadic opioid use is not uncommon in the first few months of medication-assisted treatment and should be addressed by increased visit frequency and more intensive engagement with behavioral therapies. Follow-up visits should include documentation of any relapses, reemergence of cravings or withdrawal, random urine drug testing, pill or wrapper counts, and checks of state prescription drug database records.
Forgiveness and gender between friends and coworkers.

2018 Feb 20 [Epub ahead of print]

Kane MN, Jacobs RJ, Sherman D.

Abstract
Using original instrumentation four vignettes investigated differences in forgiveness of friends based on gender. A general linear model found significant differences in five items that investigated gender differences about doing anything do get ahead, the importance of forgiveness over revenge, being punished for doing wrong, offering forgiveness in relationships, and that men are more likely than women to be forgiving. Women respondents were more likely to believe that people will do anything to get ahead and that forgiving is better than getting revenge. Men believed they were more forgiving. Practitioners should be alert for these themes in their clinical work.

Keywords: Gender; forgiveness; gender relation; mental health

Italian Adagio: Every law has its loophole.

2018 Feb 15 [Epub ahead of print]

Dore MP, Pes GM, Faustinella F.

Abstract
The Italian law of December 2010 establishes new criteria and parameters for the evaluation of faculty members. The parameters are represented by the number of articles published in journals listed in the main international data banks, the total number of citations and the h index. Candidates with qualifications at least in two out of three parameters may access the national competitions for associate or full professor and apply for an academic appointment. This system developed with the aim to fight nepotism and promote meritocracy, progressively led to the deterioration of the Italian university system. Since promotion in academia is strictly dependent on publications the faculty members found the solution to get over this system by organizing themselves into large consortia or small groups with the purpose of sharing authorship in scientific publications. In this way parameter thresholds may be easily reached and even surpassed. An Italian adagio says: “Fatta la Legge, Trovato l’Inganno”; “Every law has its loophole.” However, there is no science without ethics and researchers must stay away from any kind of compromise.

Keywords: Academic ethics; faculty member appointment; recruitment metrics
Parenting style and perceptions of children’s weight among Hispanics: A qualitative analysis.

2018 Feb 1;33(1):132-139
Mejia de Grubb MC, Salemi JL, Sanderson M, Gonzalez SJ, Mkanta W, Zoorob RJ, Levine R.

Abstract
Parental perceptions of their children’s weight status may limit their willingness to participate in or acknowledge the importance of early interventions to prevent childhood obesity. This study aimed to examine potential differences in Hispanic mothers’ and fathers’ perceptions of childhood obesity, lifestyle behaviors and communication preferences to inform the development of culturally appropriate childhood obesity interventions. A qualitative study using focus groups was conducted. Groups (one for mothers and one for fathers) were composed of Hispanic parents (n = 12) with at least one girl and one boy (≤ 10 years old) who were patients at a pediatric clinic in Tennessee, USA. Thirteen major themes clustered into four categories were observed: (i) perceptions of childhood obesity/children’s weight; (ii) parenting strategies related to children’s dietary behaviors/physical activity; (iii) perceptions of what parents can do to prevent childhood obesity and (iv) parental suggestions for partnering with child care providers to address childhood obesity. Mothers appeared to be more concerned than fathers about their children’s weight. Fathers expressed more concern about the girls’ weight than boys’. Mothers were more likely than fathers to congratulate their children more often for healthy eating and physical activity. Parents collectively expressed a desire for child care providers (e.g. caregivers, teachers, medical professionals and food assistance programs coordinators) to have a caring attitude about their children, which might in turn serve as a motivating factor in talking about their children’s weight. Parental perceptions of their children’s weight and healthy lifestyle choices are of potential public health importance since they could affect parental participation in preventive interventions.

Keywords: Childhood; misperception; obesity prevention; parental views; qualitative methods
Oral anti-coagulation therapy upon discharge in hospitalized patients with nonvalvular atrial fibrillation: A retrospective cohort study.

Singh-Franco D, Hale G, Jacobs RJ.

Abstract
Objectives: Availability of direct oral anticoagulants and CHA2DS2VASc/HAS-BLED scoring tools underscore the importance of appropriate and safe use of oral anticoagulation therapy (OACT). The purpose of this study was to evaluate stroke prevention pharmacotherapy in adult patients with nonvalvular atrial fibrillation (NVAF) discharged from a large, community-based hospital.

Methods: A retrospective cohort study was conducted using a de-identified data collection sheet for data extraction (demographics, admitting diagnosis, OACT prior to admission and at discharge, concomitant medications that could increase bleed risk and/or acid-suppressive therapies). CHA2DS2VASc and HAS-BLED scores were calculated. Descriptive statistics were generated to describe all parameters. Frequency counts and percentages summarized categorical variables while mean ± standard deviation were determined for continuous variables.

Results: Data from 180 patients were evaluated and of these 177 (98.3%) received OACT regardless of stroke risk upon discharge, as determined by CHA2DS2VASc scoring tool. The mean CHA2DS2VASc and HAS-BLED scores were 3.61 ± 1.7 and 2.13 ± 1.26, respectively. At discharge, eight patients at low-stroke risk received OACT for unclear reasons, one intermediate-stroke risk patient received aspirin only, and two patients at high-stroke risk did not receive OACT due to concerns about bleeds. In 66 patients at high-bleed risk, only half received concomitant acid-suppressive therapy.

Conclusions: Decision to add OACT is often guideline-driven, however, individualized circumstances in which clinicians and patients find themselves are also important considerations. Determination of ischemic stroke risk should be performed with CHA2DS2VASc scoring tool to exclude patients who may not benefit from OACT. HAS-BLED scoring tool should be used to identify any modifiable bleeding risk factors present with subsequent initiation of management strategies. Availability of complete medical histories and scrupulous documentation are necessary for multiple clinicians to continuously determine optimal pharmacotherapy during follow-up visits.

Keywords: Anticoagulation; CHA2DS2VASc score; guideline; HAS-BLED score; nonvalvular atrial fibrillation; pharmacotherapy; stroke
Health insurance coverage and access to skilled birth attendance in Togo.

2018 May;141(2):181-188

Mati K, Adegoke KK, Michael-Asalu A, Salihu HM.

Abstract

Objective: To examine the effect of the newly introduced national health insurance plan on access to skilled birth attendance (SBA).

Methods: The present secondary analysis used data from the 2014 Togo Demographic and Health Survey. The study sample comprised women aged 15–49 years who had at least one delivery in the 5 years preceding the survey. Multivariate logistic regression analyses were conducted.

Results: The adjusted sample included 4826 women. Overall, 195 (4.0%) of 4826 pregnant women had health insurance. The coverage rate varied by wealth, with poor women having the lowest coverage rate (22/931 [1.1%]). Approximately one-third of the women had no SBA at delivery. Women with health insurance were almost three times as likely to be assisted by skilled healthcare personnel at delivery as were those without health insurance (adjusted odds ratio 2.74, 95% confidence interval 1.63-4.59). Other factors associated with SBA included education, household wealth, and age.

Conclusion: The study highlights the positive impact health insurance coverage could have on access to SBA and provides evidence that SBA use could be improved through improved access to health insurance. An accessible health insurance scheme will offer a pathway to achieving health equity and Sustainable Development Goal 3 in Togo.

Perceptions about fleeing religious persecution and entrance to the United States.

2018 Jan 15 [Epub ahead of print]

Kane MN, Jacobs RJ.

Abstract:

Using four vignettes to study attitudes toward religious persecution, a woman or man aged 22 or 68 came to the US with no supporting documentation. A General Linear Model analyzed the 12 items for each vignette. Three items were significant among the vignettes: “All immigration policies and laws should be observed even if it means that M may not be granted permission to stay”; “M’s gender might be an indicator that M wishes to do harm to the US and its citizens” and “M should be deported because s/he entered the country illegally.” Gender and age impact these perceptions.

Keywords: Immigration; religious persecution; mental health; religious belief; compassion
Examining the sustainability potential of a multisite pilot to integrate alcohol screening and brief intervention within three primary care systems.

2018 Jan 23 [Epub ahead of print]

King DK, Gonzalez SJ, Harre JA, Hanson BL, Edney C, Snell H, Zoorob RJ, Roget NA.

Abstract
The U.S. Preventive Services Task Force recommends that clinicians adopt universal alcohol screening and brief intervention as a routine preventive service for adults, and efforts are underway to support its widespread dissemination. The likelihood that healthcare systems will sustain this change, once implemented, is under-reported in the literature. This article identifies factors that were important to post-implementation sustainability of an evidence-based practice change to address alcohol misuse that was piloted within three diverse primary care organizations. The Centers for Disease Control and Prevention funded three academic teams to pilot and evaluate implementation of alcohol screening and brief intervention within multiclinic healthcare systems in their respective regions. Following the completion of the pilots, teams used the Program Sustainability Assessment Tool to retrospectively describe and compare differences across eight sustainability domains, identify strengths and potential threats to sustainability, and make recommendations for improvement. Health systems varied across all domains, with greatest differences noted for Program Evaluation, Strategic Planning, and Funding Stability. Lack of funding to sustain practice change, or data monitoring to promote fit and fidelity, was an indication of diminished Organizational Capacity in systems that discontinued the service after the pilot. Early assessment of sustainability factors may identify potential threats that could be addressed prior to, or during implementation to enhance Organizational Capacity. Although this study provides a retrospective assessment conducted by external academic teams, it identifies factors that may be relevant for translating evidence-based behavioral interventions in a way that assures that they are sustained within healthcare systems.

Keywords: Adaptation; alcohol prevention, evidence-based practice; maintenance, public health; sustainability

Carvalho-Salemi J, Salemi JL, Wong-Vega MR, Spooner KK, Juarez MD, Beer SS, Canada ML.

Abstract
Background: Pediatric malnutrition has been associated with adverse clinical outcomes, longer lengths of stay, and higher health care costs.

Objective: To characterize prevalence, temporal trends, and short-term clinical outcomes of coded diagnoses of pediatric malnutrition (CDM) across sociodemographic, clinical, and hospital characteristics from 2002 to 2011.

Design: This study is a retrospective cross-sectional analysis of nationally representative data from the Nationwide Inpatient Sample and the Kids’ Inpatient Database.

Participants/setting: The study sample included pediatric inpatient hospitalizations in the United States.

Main outcome measures: International Classification of Diseases-9th Revision-Clinical Modification diagnosis codes were used to identify CDM and coded malnutrition subtypes based on an etiology-related definition of pediatric malnutrition.

Statistical analyses: The national frequency and prevalence of CDM overall and across patient- and hospital-level characteristics were estimated for children aged 1 month to 17 years. Logistic regression was used to assess the association between CDM and each characteristic. Analyses evaluated conditions associated with the highest burden and risk of CDM, and compared clinical outcomes across malnutrition subtypes. Joinpoint regression was used to describe temporal trends in CDM.

Results: Of the 2.1 million pediatric patients hospitalized annually, more than 54,600 had CDM, a national prevalence of 2.6%. Considerable variation was observed based on primary diagnosis, with fluid and electrolyte disorders contributing the most malnutrition cases. Highest CDM rates were among patients with stomach cancer, cystic fibrosis, and human immunodeficiency virus. Patients with CDM experienced worse clinical outcomes, longer lengths of stay, and increased costs of inpatient care. The overall prevalence of CDM increased from 1.9% in 2002 to 3.7% in 2011, an 8% annual increase, and temporal increases were observed in nearly all population subgroups.

Conclusions: Despite improvements, pediatric malnutrition remains underdiagnosed in inpatient settings when relying exclusively on International Classification of Diseases-based codes, which underscores the need for a national benchmarking program to estimate the true prevalence, clinical significance, and cost of pediatric malnutrition.
Implementation Science

Protocol to disseminate a hospital-site controlled intervention using audit and feedback to implement guidelines concerning inappropriate treatment of asymptomatic bacteriuria.

2018 Jan 19;13(1):16


Abstract

Background: Antimicrobial stewardship to combat the spread of antibiotic-resistant bacteria has become a national priority. This project focuses on reducing inappropriate use of antibiotics for asymptomatic bacteriuria (ASB), a very common condition that leads to antimicrobial overuse in acute and long-term care. We previously conducted a successful intervention, entitled “Kicking Catheter Associated Urinary Tract Infection (CAUTI): the No Knee-Jerk Antibiotics Campaign,” to decrease guideline-discordant ordering of urine cultures and antibiotics for ASB. The current objective is to facilitate implementation of a scalable version of the Kicking CAUTI campaign across four geographically diverse Veterans Health Administration facilities while assessing what aspects of an antimicrobial stewardship intervention are essential to success and sustainability.

Methods: This project uses an interrupted time series design with four control sites. The two main intervention tools are (1) an evidence-based algorithm that distills the guidelines into a streamlined clinical pathway and (2) case-based audit and feedback to train clinicians to use the algorithm. Our conceptual framework for the development and implementation of this intervention draws on May’s General Theory of Implementation. The intervention is directed at providers in acute and long-term care, and the goal is to reduce inappropriate screening for and treatment of ASB in all patients and residents, not just those with urinary catheters. The start-up for each facility consists of centrally-led phone calls with local site champions and baseline surveys. Case-based audit and feedback will begin at a given site after the start-up period and continue for 12 months, followed by a sustainability assessment. In addition to the clinical outcomes, we will explore the relationship between the dose of the intervention and clinical outcomes.

Discussion: This project moves from a proof-of-concept effectiveness study to implementation involving significantly more sites, and uses the General Theory of Implementation to embed the intervention into normal processes of care with usual care providers. Aspects of implementation that will be explored include dissemination, internal and external facilitation, and organizational partnerships. “Less is More” is the natural next step from our prior successful Kicking CAUTI intervention, and has the potential to improve patient care while advancing the science of implementation.

Keywords: Antibiotic stewardship; asymptomatic bacteriuria; audit and feedback; guidelines implementation; dissemination; urinary tract infection

Heart failure in pregnant women: A concern across the pregnancy continuum.

2018 Jan;11:e004005

Mogos MF, Piano MR, McFarlin BL, Salemi JL, Liese KL, Briller JE.

Abstract

Background: Heart failure (HF) is a leading cause of maternal morbidity and mortality in the United States, but prevalence, correlates, and outcomes of HF-related hospitalization during antepartum, delivery, and postpartum periods remain unknown. The objective was to examine HF prevalence, correlates, and outcomes among pregnancy-related hospitalizations among women 13 to 49 years of age.

Methods and Results: We used the 2001 to 2011 Nationwide Inpatient Sample. Rates of HF were calculated by patient and hospital characteristics. Survey logistic regression was used to estimate adjusted odds ratios representing the association between HF and each outcome, stratified by antepartum, delivery, and postpartum periods. Joinpoint regression was used to describe temporal trends in HF and in-hospital mortality. Over 50 million pregnancy-related hospitalizations were analyzed. The overall rate of HF was 112 cases per 100,000 pregnancy-related hospitalizations. Although postpartum encounters represented only 1.5% of pregnancy-related hospitalizations, ≈60% of HF cases occurred postpartum, followed by delivery (27.3%) and antepartum (13.2%). Among postpartum hospitalizations, there was a significant 7.1% (95% confidence interval, 4.4–9.8) annual increase in HF from 2001 to 2006, followed by a steady rate through 2011. HF rates among antepartum hospitalizations increased on average 4.9% (95% confidence interval, 3.0–6.8) annually from 2001 to 2011. Women with a diagnosis of HF were more likely to experience adverse maternal outcomes, as reflected by outcome-specific adjusted odds ratios during antepartum (2.7–25), delivery (6–195), and postpartum (1.5–6.6) periods.

Conclusions: HF is associated with increased risk of maternal mortality and morbidities. During hospitalization, high-risk mothers need to be identified and surveillance programs developed before discharge.

Keywords: Heart failure; maternal mortality; mothers; postpartum period; pregnancy
HIV-TB coinfection among 57 million pregnant women, obstetric complications, alcohol use, drug abuse, and depression.

Volume 2018 (2018), Article ID 5896901, 8 pages


Abstract

Objective: HIV and tuberculosis represent diseases of major public health importance worldwide. Very little is known about HIV-TB coinfection among pregnant women, especially from industrialized settings. In this study, we examined the association between TB, HIV, and HIV-TB coinfection among pregnant mothers and obstetric complications, alcohol use, drug abuse, and depression. Method. We examined inpatient hospital discharges in the United States from January 1, 2002, through December 31, 2014. We employed multivariable survey logistic regression to generate adjusted estimates for the association between infection status and study outcomes. Results. We analyzed approximately 57 million records of pregnant women and their delivery information. HIV-TB coinfection was associated with the highest risks for several obstetric complications, alcohol use, drug abuse, and depression. The risk for alcohol abuse was more than twice as high among HIV-monoinfected as compared to TB-monoinfected mothers. That risk gap more than doubled with HIV-TB coinfection. Both HIV-monoinfected and HIV-TB coinfected mothers experienced similarly increased risks for depression. Conclusions. Mothers with HIV-TB coinfection experienced relatively heightened risks for obstetric complications, alcohol use, and drug abuse. The findings of this study underscore the importance of augmenting and enhancing social and structural support systems for HIV-TB coinfected pregnant women.
Attributes about mindfulness and religion among university students.
2018 Jan;20(1):51-69
Kane MN, Jacobs RJ, Platt K, Sherman D, DeRigne LA

Abstract
Attributes about religious traditions and their perceived openness to mindfulness are considered in this exploratory research. A Christian, Muslim, Jewish, or atheist vignette character becomes interested in mindfulness. Using a general linear model, 11 items explored how the character’s family would be expected to react. Two items showed significant differences among the vignettes: K’s family will probably make an attempt to understand K’s interest in mindfulness and people from belief traditions like K’s family would tell their children that deviating from their belief traditions may have serious consequences for their (eternal) well-being.

Keywords: Mindfulness; religious/spiritual identification; religious belief

Opioid drug use and acute cardiac events among pregnant women in the United States.
2018 Jan;131(1):64-71.e1
Salihu HM, Salemi JL, Aggarwal A, Steele BF, Pepper RC, Mogos MF, Aliyu MH.

Abstract
Background: Cardiovascular disease remains a leading cause of pregnancy-associated deaths in the United States. The extent to which increasing opioid use among pregnant women contributes to fatal cardiovascular events is unknown. We examined trends in opioid use among pregnant women over the previous decade and the association between changes in temporal trends in opioid drug use and the incidence of acute cardiac events among mothers.

Methods: In this retrospective analysis of the Healthcare and Cost Utilization Project, we used a 2-stage stratified cluster sampling of all inpatient hospital discharges from nonfederal hospitals from January 1, 2002 through December 31, 2014. The study population comprised pregnant women aged 13-49 years and related hospitalizations, including delivery. The primary exposure of interest was opioid use during pregnancy. The primary outcome was the occurrence of acute myocardial infarction or cardiac arrest during pregnancy or childbirth.

Results: Among the estimated 57.4 million pregnancy-related inpatient hospitalizations, 511,469 (approximately 1%) had documented use of opioids, cocaine, and/or amphetamines. There was a 300% increase in the use of opioids during pregnancy over the study period, whereas cocaine consumption significantly decreased and that of amphetamine remained stable. Over the 13-year period, the rise in opioid use paralleled a 50% increase in the incidence of acute cardiac events among mothers.

Conclusion: Over the previous decade opioid use during pregnancy increased significantly, in parallel with the rise in the incidence of acute cardiac events in pregnancy and childbirth. An effective national policy is needed to address this emerging public health challenge.

Keywords: Cardiac arrest; childbirth; myocardial infarction; opioid use; pregnancy; trend
Predictors of osteopathic medical students’ readiness to use health information technology.

2017 Dec;117:773-781

Jacobs RJ, Iqbal H, Rana AM, Rana Z, Kane MN.

Abstract
Context: The advent of health information technology (HIT) tools can affect the practice of modern medicine in many ways, ideally by improving quality of care and efficiency and reducing medical errors. Future physicians will play a key role in the successful implementation of HIT. However, osteopathic medical students’ willingness to learn, adopt, and use technology in a health care setting is not well understood.

Objective: To understand osteopathic medical students’ knowledge, attitudes, and behaviors regarding HIT and to identify factors that may be related to their readiness to use HIT.

Methods: Using a cross-sectional approach, quantitative surveys were collected from students attending a large osteopathic medical school. Multivariate regression modeling was used to determine whether knowledge, attitudes, behaviors, and personal characteristics were associated with students’ readiness to use HIT in future clinical practice.

Results: Six hundred four students responded to at least 70% of the survey and were included in the analysis. Multivariate modeling successfully explained the 26% of variance in predicting students’ readiness to use HIT (F8,506=22.6, P<.001, R2=0.263). Greater self-efficacy, openness to change (in academic/work settings), favorable attitudes toward HIT use, mobile technology use, younger age, being male, and prior exposure to technology were associated with readiness to use HIT.

Conclusion: Understanding students’ level of HIT readiness may help guide medical education intervention efforts to better prepare future osteopathic physicians for HIT engagement and use. Innovative approaches to HIT education in medical school curricula that include biomedical informatics may be necessary.
Comparing utilization and costs of care in freestanding emergency departments, hospital emergency departments, and urgent care centers.
2017 Dec;70(6):846-857.e3
Ho V, Metcalfe L, Dark C, Vu L, Weber E, Shelton G, Underwood HR.

Abstract
Study objective: We compare utilization, price per visit, and the types of care delivered across freestanding emergency departments (EDs), hospital-based EDs, and urgent care centers in Texas.

Methods: We analyzed insurance claims processed by Blue Cross Blue Shield of Texas from 2012 to 2015 for patient visits to freestanding EDs, hospital-based EDs, or urgent care centers in 16 Texas metropolitan statistical areas containing 84.1% of the state’s population. We calculated the aggregate number of visits, average price per visit, proportion of price attributable to facility and physician services, and proportion of price billed to Blue Cross Blue Shield of Texas versus out of pocket, by facility type. Prices for the top 20 diagnoses and procedures by facility type are compared.

Results: Texans use hospital-based EDs and urgent care centers much more than freestanding EDs, but freestanding ED utilization increased 236% between 2012 and 2015. The average price per visit was lower for freestanding EDs versus hospital-based EDs in 2012 ($1,431 versus $1,842), but prices in 2015 were comparable ($2,199 versus $2,259). Prices for urgent care centers were only $164 and $168 in 2012 and 2015. Out-of-pocket liability for consumers for all these facilities increased slightly from 2012 to 2015. There was 75% overlap in the 20 most common diagnoses at freestanding EDs versus urgent care centers and 60% overlap for hospital-based EDs and urgent care centers. However, prices for patients with the same diagnosis were on average almost 10 times higher at freestanding and hospital-based EDs relative to urgent care centers.

Conclusion: Utilization of freestanding EDs is rapidly expanding in Texas. Higher prices at freestanding and hospital-based EDs relative to urgent care centers, despite substantial overlap in services delivered, imply potential inefficient use of emergency facilities.

Evidence of altered brain regulatory gene expression in tobacco-exposed fetuses.
2017 Dec 20;45(9):1045-1053

Abstract
Aim: We sought to determine the association between prenatal smoking status and expression of fetal brain regulatory genes.

Methods: At delivery, we collected information from parturient women on prenatal smoking habits and analyzed salivary cotinine levels. We obtained neonatal umbilical cord blood and extracted total RNA. We then employed the quantitative polymerase chain reaction (QPCR) analyses and the comparative CT method to calculate the relative gene expression of selected fetal brain regulatory genes responsible for (1) brain growth (brain-derived neurotrophic factor, BDNF), (2) myelination (proteolipidic protein 1, PLP1 and myelin basic protein, MBP), and (3) neuronal migration and cell-cell interactions during fetal brain development or RLN. The β2-test, analysis of variance (ANOVA), and the Grubb test were used to evaluate the relationship between prenatal smoking status and relative gene expression levels. Further analysis using bootstrapping was performed to assess the precision of our estimates.

Results: Of the 39 maternal-infant dyads included in this study, 25.6% were non-smokers, 43.6% were passive smokers and 30.8% were active smokers. The results showed down-regulation of the selected fetal brain regulatory genes among active smokers.

Conclusions: These findings represent preliminary evidence in humans that intrauterine tobacco exposure impacts fetal brain programming. Future studies are warranted to examine whether our findings represent potential mechanisms through which adverse childhood/adult-onset cognitive and behavioral outcomes that have been previously linked to intrauterine exposure occur.

Keywords: Fetal brain regulatory genes; intrauterine tobacco exposure; neonatal umbilical cord blood
Mental illness can take away your hope
It can destroy your life and make you homeless
Mental illness is like a heavy black curtain that keeps out
What you need the most: blue skies, sunlight and the will to fight it

"Nobody loves me
I'm alone in this world
Nobody loves me
I don't want to be here anymore"
She believed what she said
Tears streaming down her face
That's not true! Tell her, doc!
We all love her and we're here for support
But her eyes were full of pain
No words or tender touch could console her and lighten her anguish
"I know there is something wrong with me
The brain tells me to do things I know aren't right
Cut yourself, kill your brother and give up on life
I fight these thoughts as hard as I can
But someone else in my head is calling the shots
I feel that impulse and I got to do what I'm told by the boss"
You need help, young man:
The brain is hard to defeat when it's in the driving seat
Connections can be faulty and chemical transmitters can be deceitful"
"I hear voices, kill yourself they whisper
I see shadows around me and spiders on the walls
I close the doors and pull the curtains,
But I still hear those voices and still see those shadows
Thinking is dwarfed, up and down the rollercoaster
Strange doors are wide open and I slide into the haunted house ride
I can't get out of here, walls too tall, tunnels too dark
No lights to guide me out of this horrible Luna Park"
The labyrinth is treacherous; the labyrinth can swallow you up
Inside of it, all you know is distorted
You might not be able to find your way back
I'm here to help you, listen to me
Here are some medications for you, please take them
Give it a try and you might get better

"I don't need any, nothing is wrong with me,
I'll overcome these difficulties, leave me alone
I just live in a different world
How do you know that your world is right and mine is wrong?"
But how can you fight it, without any help?
The labyrinth won't let you escape
Got to trust the cure, got to trust the treatment
Have faith in God, have faith in the system
"Trust the cure? Trust the treatment?
Have faith in God? Have faith in the system?
No home, no family, in and out of jail,
Back to the psych ward and into the streets again
No resources, no support, it's a terrible mayhem"
I look into his eyes, I see his pain, I run out of words to say,
I feel overwhelmed by the enormity of that struggle
How can I tell him to cope, to keep on fighting and not to give up hope?
All I can think now is that a humane society
Shouldn't abandon her children and let them crumble
"Nobody loves me
I'm alone in this world
Nobody loves me
I don't want to be here anymore"
Mental illness can take away your hope
It can destroy your life and make you homeless
Mental illness can tear your family apart and break both
Your mind and your heart
Mental Illness is like a heavy black curtain that keeps out
What you need the most: blue skies, sunlight and the strength to fight it

Theory of scientific investigation by Hempel and a case of Semmelweis.
2017;6(2):198-200
Raza, SA.

Abstract
Carl Gustav Hempel brought our attention to 19th century Hungarian physician Ignaz Semmelweis and his investigations in “systematic discovery” of solution to a “scientific problem.” The historical account of Semmelweis provided an impetus for Hempel to ponder upon the role of “induction” in “scientific inquiry.” By considering various conjectures, Hempel examined through this case, how a hypothesis once proposed is tested and rejected on the basis of test implication. Somewhere around this account lies the lesson for family practitioners of modern age in how to fight age-old-dogmatic beliefs with simple answers, but the ones that require appreciation from larger academia.

Keywords: Causal inference; hypotheses; theory
Infant deaths and mortality from gun violence: Causal or casual?

Levine RS, Salemi JL, Mejia de Grubb MC, Gittner LS, Langston MA, Husaini BA, Rust G, Hennekens CH.

Abstract

Objective: Describe trends in non-Hispanic black infant mortality (IM) in the New York City (NYC) counties of Bronx, Kings, Queens, and Manhattan and correlations with gun-related assault mortality.

Methods: Linked Birth/Infant Death data (1999-2013) and Compressed Mortality data at ages 1 to ≥85 years (1999-2013). NYC and United States (US) Census data for income inequality and poverty. Pearson coefficients were used to describe correlations of IM with gun-related assault mortality and other causes of death.

Results: In NYC, the risk of non-Hispanic black IM in 2013 was 49% lower than in 1995 (rate ratio: 0.51; 95% CI: 0.43, 0.61). Yearly declines between 1999 and 2013 were significantly correlated with declines in gun-related assault mortality (correlation coefficient (r) = 0.70, p = 0.004), drug-related mortality (r = 0.59, p = 0.020), major heart disease and stroke (r = 0.85, p < 0.001), malignant neoplasms (r = 0.57, p = 0.026), diabetes mellitus (r = 0.63, p = 0.011), and pneumonia and influenza (r = 0.78, p < 0.001). There were no significant correlations of IM with chronic lower respiratory or liver disease, non-drug-related accidental deaths, and non-gun-related assault. Yearly IM (1995-2012) was inversely correlated with income share of the top 1% of the population (r = −0.66, p = 0.007).

Conclusions: In NYC, non-Hispanic black IM declined significantly despite increasing income inequality and was strongly correlated with gun-related assault mortality and other major causes of death. These data are compatible with the hypothesis that activities related to overall population health, including those pertaining to gun-related homicide, may provide clues to reducing IM. Analytic epidemiological studies are needed to test these and other hypotheses formulated from these descriptive data.

Keywords: Infant mortality; African American; assault

Multimorbidity is associated with increased rates of depression in patients hospitalized with diabetes mellitus in the United States.


Abstract

Aims: Information on the burden and risk factors for diabetes-depression comorbidity in the US is sparse. We used data from the largest all-payer, nationally-representative inpatient database in the US to estimate the prevalence, temporal trends, and risk factors for comorbid depression among adult diabetic inpatients.

Methods: We conducted a retrospective analysis using the 2002–2014 Nationwide Inpatient Sample databases. Depression and other comorbidities were identified using ICD-9-CM codes. Logistic regression was used to investigate the association between patient characteristics and depression.

Results: The rate of depression among patients with type 2 diabetes increased from 7.6% in 2002 to 15.4% in 2014, while for type 1 diabetes the rate increased from 8.7% in 2002 to 19.6% in 2014. The highest rates of depression were observed among females, non-Hispanic whites, younger patients, and patients with five or more chronic comorbidities.

Conclusions: The prevalence of comorbid depression among diabetic inpatients in the US is increasing rapidly. Although some portion of this increase could be explained by the rising prevalence of multimorbidity, increased awareness and likelihood of diagnosis of comorbid depression by physicians and better documentation as a result of the increased adoption of electronic health records likely contributed to this trend.

Keywords: Diabetes mellitus; depression; multimorbidity; trends; nationwide; inpatient sample; United States
Multilevel predictors of allied health and medical students' readiness to use technology in future settings: Implication for evidence-based curriculum enhancement.

2017 Nov; 486-92
Jacobs RJ, Aggarwal A, Juneja M, Zoorob R.

Abstract
Background: Health information technology (HIT) has revolutionized the world in its influence on health care. Technology readiness (TR) is the ability to understand and be prepared to use these technology tools in the future. Students' attitudes towards HIT tools, such as electronic medical records (EMR) and computer physician order entry system (CPOE) may influence their willingness learn, adopt and utilize these tools. With growing class sizes and creation of new medical and allied programs throughout the U.S., new providers will not only need to master medical knowledge, but will need to be ready to effectively utilize HIT tools in their practice. The purpose of this study was to investigate medical and allied health students' attitudes and behaviors regarding HIT and to identify factors related to readiness to utilize it in future practice.

Methods: Data were collected from 962 students attending two large medical schools with allied health programs in the SE and SW regions of the United States via an online questionnaire. Relevant published studies were used to guide the development of the 72-item quantitative questionnaire for this study. The Technology Readiness Index 2.0 was used to measure students' readiness to utilize health technology tools (e.g., electronic medical records [EMR], clinical decision support systems [CDSS]) technology readiness. Under two major domains (attitudes and utilization), the following content areas were assessed: 1) computer self-efficacy, 2) perceived ease of use and usefulness of HIT, 3) attitudes toward mobile technology, and 4) information technology (IT) utilization. Data on personal characteristics were also collected. Data were analyzed using SPSS computer software.

Results: Participant ages ranged from 20-47 years (M=25.2 years); 43% were female. Forty percent (n=386) of participants reported no approach had been established by their school for learning HIT. Many (n=625, 68.6 %) reported having little or no training in HIT systems; 63.8% (n=580) stated they never were instructed in the use of EMR in school. Multivariate regression modeling successfully explained nearly 30% of the variance in predicting F(6, 779) = 34.632, p<.000, R2= .295 (adj. R2= .273). More favorable attitudes toward HIT utilization and using mobile technology in clinical care, greater IT self-efficacy, having majored in computer science, previous use of HIT, younger age and being male was associated with students’ readiness to use HIT tools in future practice,

Conclusions: Medical informatics should be integrated using specially designed classrooms where students are motivated and strategically guided to learn how to use HIT technologies. Increasing student self-efficacy regarding HIT use and engaging students in hands-on HIT utilization practice in school may help escalate their readiness to use HIT technology in future clinical practice. Systematically instructing instruction in the use of technologies such as EMR training can minimize reticence to embrace the technology after graduation. While more research in this area is warranted, findings from this study may help guide curricula for medical and allied health sciences programs (e.g., nursing, physician assistant, orthotics and prosthetics) to enhance curricula to better prepare tomorrow’s health providers in medical technologies engagement and utilization.

Keywords: Medical informatics; health information technology (HIT); and medical and allied health students; technology readiness; curriculum development

HIV risk perception and sexual behaviors in a sample of lesbians and bisexual women across the United States: directions for future research and innovative education efforts.

2017 Nov;6633-6637
Jacobs RJ, Sklar EM, Kane MN.

Abstract
Background: The notion that women who have sex with women (WSW) may not be at risk for HIV may influence not only their risk perception and behavior, but public health education as well. Some WSW had their first sexual encounter (and possibly multiple encounters) with a man. Cases of HIV infection transmitted solely by sexual contact between women who have sex with women are difficult to ascertain. Other, more common, modes of transmission, such as injection drug use and heterosexual sex, usually are difficult to rule out. U.S. national health officials have asserted that while it is rare they advise that precautions should be taken nonetheless. Female-to-female transmission is possible because HIV can be found in vaginal fluid and menstrual blood. Albeit not as risky as exchanging bodily fluids with men, HIV transmission continues to pose a risk between women through other forms of sexual activity, including digital sex, oral sex and sharing sex toys.

Methods: A multiethnic community-based sample of 239 WSW aged 18-68 years attending LGBTIQ pride events in three cities completed a 53-item anonymous questionnaire (offered in English/Spanish) regarding sexual behaviors and perceptions of HIV-risk. Sexual orientation was identified by using the 7-point Kinsey’s Heterosexual-Homosexual Rating Scale. Data were analyzed using SPSS.

Results: Twenty-three percent of participants reported being in a committed, monogamous relationship with a woman. In the past 6 months, 18% of participants reported 1 or more male partners. Participants reported engaging in HIV-risk behaviors with men and women. Perception of HIV-risk was associated with having more male partners (r=.244, p<.01), no primary relationship (r =.185, p<.01), shorter time with primary partners (r=.191, p<.05), multiple female partners (r=.169, p<.05), and a primary relationship with a man (r =.208, p<.01).

Conclusions: Understanding perceptions of risk while taking into account the unique contexts of the lives of WSW may help guide targeted public health interventions that address HIV-risk in this group. Healthcare providers should collaborate with HIV educators and public health officials to help them understand the HIV risk posed to WSW. HIV education programs for WSW need to include facts and statistics on WSW and HIV, condom and barrier use instructions, HIV testing information to increase the knowledge about HIV and perceived susceptibility to HIV. Providing HIV education and creating increased awareness of risk factors can help decrease the stigma surrounding the disease. Designing successful HIV prevention efforts that focus on reducing HIV risk behaviors and enhancing protective factors in WSW may require an understanding of the interplay of a variety of factors. Efforts designed on reducing HIV-risk behaviors and enhancing protective factors may require an understanding of the interplay of a variety of factors.

Keywords: Lesbians; WSW; bisexual women; HIV risk; sex education; sexual behavior
Examining the association between maternal atopy and birth outcomes using a retrospective cohort in the southeastern region of the USA.

2017 Nov;12,7(11):e017161

Johnson A, Mason T, Kirby RS, Ledford D, Salihu HM.

Abstract

Objective: To assess birth outcomes in primiparous women with diagnosis of non-asthmatic atopy (NAA). Researchers hypothesized that women with NAA would have reduced the risk of adverse birth outcomes compared with women without NAA. NAA is defined as having allergic rhinitis and/or atopic dermatitis.

Setting: Women were mostly treated in primary care settings in South Carolina, USA.

Participants: This is a retrospective cohort study in which participants were identified using a Medicaid database. Participants were primiparous women aged 19 to 25. Births occurring between 2004 and 2014 were identified using the South Carolina’s Vital Statistics (VS) records of live births. Incomplete records (ie, information on plural birth, gestational age at birth or birth weight missing), plural births or infants born before completing 24 weeks of gestation were excluded. This provided 65,650 complete maternal-infant dyads, representing 97.6% of the maternal records and 96.9% of the VS records. Women previously diagnosed with NAA were frequency matched 1:4 to non-atopic controls for a total of 9,965 maternal-infant dyads used in the statistical analysis.

Primary outcome measures: Low birth weight, small for gestational age and preterm birth.

Results: Linear tests for trend were statistically significant (p<0.001), indicating that NAA was associated with improved birth weight and gestational age at birth. After controlling for potential confounders, mothers with NAA had equal risk for each outcome when compared with mothers with no diagnosis of NAA.

Conclusions: A diagnosis of NAA among women living in the southeastern region of the USA does not reduce the risk of adverse birth outcomes nor does it elevate the risk of same. Additional studies with more rigorous designs are warranted to confirm the findings in this study.

Keywords: Eczema; immunology; neonatology; reproductive medicine
Hospital length of stay and cost burden of HIV, tuberculosis, and HIV-tuberculosis coinfection among pregnant omen in the United States.

2017 Nov 3 [Epub ahead of print]


Abstract
Background: We sought to determine hospital length of stay (LOS) and cost burden associated with hospital admissions among pregnant women with HIV monoinfection, tuberculosis (TB) monoinfection, or HIV-TB coinfection in the United States.

Methods: Analysis covered the period from 2002-2014 using data from the Nationwide Inpatient Sample. Relevant ICD-9-CM codes were used to determine HIV and TB status. Costs associated with hospitalization were calculated and adjusted to 2010 dollars using the medical care component of the Consumer Price Index.

Results: We found modest annual average reduction in HIV, TB, and HIV-TB coinfection rates over the study period. The mean LOS was lowest among mothers free of HIV or TB disease and highest among those with HIV-TB coinfection. The average LOS among mothers diagnosed with TB monoinfection was 60% higher than for those with HIV monoinfection. The cost associated with pregnancy-related hospital admissions among mothers with HIV was approximately 30% higher than disease-free mothers, and the cost more than doubled among patients with TB monoinfection or HIV-TB coinfection.

Conclusions: TB significantly increased hospital care cost among HIV-positive and HIV-negative pregnant women.

Keywords: HIV-TB coinfection; cost burden; length of stay (LOS); pregnancy

Post-earthquake Zika virus surge: Disaster and public health threat amid climatic conduciveness.

2017 Nov 13;7(1):15408

Ortiz MR, Le NK, Sharma V, Hoare I, Quizhpe E, Teran E, Naik E, Salihu HM, Izurieta R.

Abstract
A recent major earthquake (M7.8), coupled with appropriate climatic conditions, led to significant destruction in Ecuador. Temperature variations, which may be induced by anthropogenic climate change, are often associated with changes in rainfall, humidity and pressure. Temperature and humidity are associated with ecological modifications that may favor mosquito breeding. We hypothesized that the disruptive ecological changes triggered by the earthquake, in the context of appropriate climatic conditions, led to an upsurge in Zika virus (ZIKV) infections. Here we show that, after controlling for climatic and socioeconomic conditions, earthquake severity was associated with incident ZIKV cases. Pre-earthquake mean maximum monthly temperature and post-earthquake mean monthly pressure were negatively associated with ZIKV incidence rates. These results demonstrate the dynamics of post-disaster vector-borne disease transmission, in the context of conducive/favorable climatic conditions, which are relevant in a climate change-affected world where disasters may occur in largely populated areas.
Sexual communication and seroadaptation practices in HIV-negative midlife and older men who have sex with men.

2017 Nov 18;43(2):193-204

Jacobs RJ, Kane MN, Sklar EM.

Abstract

Advances in treatments have increased the longevity of people with HIV. The high prevalence of HIV among men who have sex with men (MSM) creates a greater risk for exposure that increases with age. Seroadaptation, which includes serosorting (sexual behavior and condom use based on knowing the serostatus of self and partners) and strategic sexual positioning (choosing receptive versus insertive anal sex), is sometimes used as an HIV risk-reduction strategy. This study examined seroadaptation, sexual communication, and HIV-risk behaviors in 420 sexually active HIV-negative MSM aged 40–81 years in South Florida via anonymous pen-and-paper questionnaire. Recreational drug use and serosorting (i.e., not using condoms if the partner said he was HIV-negative) were associated with higher risk for unprotected receptive anal intercourse. Younger age, greater number of partners, and serosorting were associated with higher risk for unprotected insertive anal intercourse. Understanding these behaviors in this group might help guide HIV-prevention efforts. Future research may examine the role of HIV-prevention medication (PrEP) in influencing sexual behavior in midlife and older MSM.

Keywords: Seroadaptation; gay men; older MSM; MSM; sexual communication; HIV/AIDS; sexual risk; serosorting

Effectiveness of a federal healthy start program in reducing infant mortality.

2017 Fall;10(3)


Abstract

Objective: Infant mortality is an important indicator of the health status of a community. In this analysis, we aimed to evaluate temporal changes in infant mortality rates (IMR) in the Central Hillsborough Healthy Start (CHHS) program service area in Tampa, Florida compared to rates in the rest of Hillsborough County and the state.

Method: We conducted a five-year (2010-2014) trends analysis using birth and infant death data extracted from the Florida Community Health Assessment Resource Tool Set (CHARTS). The number of infant deaths and live births were used to calculate and compare IMRs in the CHHS catchment area to those in the rest of Hillsborough County, and the state of Florida. Three-year centered moving averages were directly adjusted to account for differences in the racial/ethnic distribution of mothers across geographic areas.

Results: Between 2010 and 2014, the IMR decreased 42.8% in the CHHS service area (from 14.5 to 8.3 per 1,000 live births) compared to decreases of 10.1% and 7.7% in the rest of Hillsborough County and the state of Florida, respectively. Additionally, the infant mortality gap in the CHHS catchment area narrowed from 72% in 2010 to 14% in 2014 compared to the rest of the state, and was eliminated when compared to the rest of Hillsborough County.

Discussion: The absolute and relative decreases in IMR in the CHHS catchment area reflect the program’s effectiveness in decreasing disparity in infant mortality. The quality services provided by the CHHS program have had a significant positive impact on the families served.

Keywords: Healthy Start; infant mortality; community-focused intervention; program effectiveness
Urinary tract infection.

2017 Oct 3;167(7)

Gupta K, Grigoryan L, Trautner B.

Abstract
Urinary tract infections (UTIs) are common in both inpatient and outpatient settings. This article provides an evidence-based, clinically relevant overview of management of UTIs, including screening, diagnosis, treatment, and prevention. Conditions covered include acute cystitis (both uncomplicated and complicated), catheter-associated UTI, and asymptomatic bacteriuria in both women and men.

The prevalence of active tuberculosis infection among pregnant women is not increasing in the United States.

2017 Oct;217(4):490-491

Salemi JL, Salihu HM.

Abstract
A recent study published in the American Journal of Obstetrics and Gynecology by El-Messidi, et al reported the prevalence of tuberculosis (TB) among pregnant women in the United States to be 26.6 per 100,000. The authors also observed that the TB rate (per 100,000) among pregnant women increased, on average, from 19.2 in 2003 to 40.6 in 2011. If valid, the authors’ findings would be alarming: (1) a TB rate during pregnancy that is >5 times higher than that in the general US population; and (2) an average 9.8% increase in the TB rate each year, in contradiction to consistent reports of decreasing TB rates in the United States attributable to improvements in TB control.
Antibiotic prescribing for uncomplicated acute bronchitis is highest in younger adults.

2017 Oct 27;6(4)


Abstract

Reducing inappropriate antibiotic prescribing is currently a global health priority. Current guidelines recommend against antibiotic treatment for acute uncomplicated bronchitis. We studied antibiotic prescribing patterns for uncomplicated acute bronchitis and identified predictors of inappropriate antibiotic prescribing. We used the Epic Clarity database (electronic medical record system) to identify all adult patients with acute bronchitis in family medicine clinics from 2011 to 2016. We excluded factors that could justify antibiotic use, such as suspected pneumonia, COPD or immunocompromising conditions. Of the 3616 visits for uncomplicated acute bronchitis, 2244 (62.1%) resulted in antibiotic treatment. The rates of antibiotic prescribing were similar across the years, p value for trend = 0.07. Antibiotics were most frequently prescribed in the age group of 18–39 years (66.9%), followed by the age group of 65 years and above (59.0%), and the age group of 40–64 years (58.7%), p value < 0.001. Macrolides were significantly more likely to be prescribed for younger adults, while fluoroquinolones were more likely to be prescribed for patients 65 years or older. Duration of antibiotic use was significantly longer in older adults. Sex and race were not associated with antibiotic prescribing. Our findings highlight the urgent need to reduce inappropriate antibiotic use for uncomplicated acute bronchitis, particularly in younger adults.

Keywords: Antimicrobial stewardship; antimicrobial resistance; bronchitis; primary care

Are children born with birth defects at increased risk of serious injuries in early childhood?

2017 Sep;188:148-55.e2


Abstract

Objective: To investigate the extent to which children with birth defects experience differential likelihood of various injuries and injury-related hospitalizations in early childhood.

Study Design: The Florida Birth Defects Registry was used to identify infants born 2006-2010 with select birth defects. Injury matrices were used to detect injuries in inpatient, ambulatory, and emergency department admissions for each infant up to their third birthday. Results were used to compare sociodemographic and perinatal characteristics of children, by presence of an injury-related hospital admission. Adjusted multivariable logistic and zero-inflated negative binomial regression models were used to investigate birth defect and injury associations and related hospital use.

Results: We observed a 21% (99% CI: 1.16-1.27) increased odds of injury in children with birth defects. All birth defect subgroups had a statistically significantly increased odds of injury (excluding chromosomal defects), with adjusted ORs ranging from 1.19 to 1.40. The combination of birth defects and injuries resulted in 40% (99% CI: 1.36-1.44) more frequent injury-related hospital visits and a 3-fold (99% CI: 2.76-2.96) increase in time spent receiving inpatient medical care. Over 30% of children with critical congenital heart defects had an injury-related hospital admission.

Conclusions: Children born with specific birth defects are at increased likelihood of various injuries during early life. Although the magnitude of this increased likelihood varied by the mechanism by which the injury occurred, the location of the injury, and the type of birth defect, our study findings support a direct association between birth defects and injuries in early life.

Keywords: Birth defects; congenital malformations; injuries; surveillance; external cause of injury; nature of injury; hospital
Errors in diagnosis of spinal epidural abscesses in the era of electronic health records.

2017 Aug;130(8):975-981

Blaise V, Meyer AND, Singh H, Wei L, Russo E, Al-Mutairi A, Murphy DR.

Abstract
Purpose: With this study, we set out to identify missed opportunities in diagnosis of spinal epidural abscesses to outline areas for process improvement.

Methods: Using a large national clinical data repository, we identified all patients with a new diagnosis of spinal epidural abscess in the Department of Veterans Affairs (VA) during 2013. Two physicians independently conducted retrospective chart reviews on 250 randomly selected patients and evaluated their records for red flags (e.g., unexplained weight loss, neurological deficits, and fever) 90 days prior to diagnosis. Diagnostic errors were defined as missed opportunities to evaluate red flags in a timely or appropriate manner. Reviewers gathered information about process breakdowns related to patient factors, the patient–provider encounter, test performance and interpretation, test follow-up and tracking, and the referral process. Reviewers also determined harm and time lag between red flags and definitive diagnoses.

Results: Of 250 patients, 119 had a new diagnosis of spinal epidural abscess, 66 (55.5%) of which experienced diagnostic error. Median time to diagnosis in error cases was 12 days, compared with 4 days in cases without error (P <.01). Red flags that were frequently not evaluated in error cases included unexplained fever (n = 57; 86.4%), focal neurological deficits with progressive or disabling symptoms (n = 54; 81.8%), and active infection (n = 54; 81.8%). Most errors involved breakdowns during the patient–provider encounter (n = 60; 90.1%), including failures in information gathering/integration, and were associated with temporary harm (n = 43; 65.2%).

Conclusion: Despite wide availability of clinical data, errors in diagnosis of spinal epidural abscesses are common and involve inadequate history, physical examination, and test ordering. Solutions should include renewed attention to basic clinical skills.

Keywords: Back pain; diagnostic delays; diagnostic errors; red flags; spinal epidural abscess

Worldwide sex ratio variations in cancer incidence.

2017 Aug;27(8):507-508

Raza SA, Tahir MR, Schnitzer M, Siemiatycki J.

Abstract
Cancer is a major public health problem and a common indicator of the cancer burden is the incidence rate. This measure, which is useful in investigating etiology, is often obtained from population-based cancer registries in different regions. However, the incidence rate of cancer in any registry is only valid if the ascertainment of cancer cases approaches 100%. Incomplete ascertainment can lead to biased comparisons of incidence rates across worldwide regions. Sex ratio (SR) analysis of cancer incidence (age-standardized incidence rates in males relative to females) mitigates some of the methodological challenges created by imperfect case ascertainment in international cancer registries such as inter-regional variability in diagnostic techniques, prevention strategies, tumor definitions, coding practices and socio-cultural factors (provided that the ascertainment is similar among males and females in those registries).

Objectives: The primary purpose of this study was to estimate the geographic (inter-regional and intra-regional) and temporal variability in the SR for different cancer types across a large number of cancer registries worldwide. Secondary purposes was to consider the inferences that can thereby be drawn concerning possible etiologic influences, and investigate potential gender-bias in the study.

Conclusions: For cancer types in which both the SRm and SRv was high, behavioral and environmental causes are more likely than endogenous (non-avoidable) causes. In regions or countries where the causes of cancers are hypothesized to be similar in males and females, SRs is low. For cancers where both SRm and SRv are low, exogenous (avoidable) factors are likely causes. However, endogenous factors are also compatible with the observation. Cancer registries reporting incidence rates from developed countries that are low in GII, will have low SRm and SRv and vice versa. These observations emphasize the importance of studying SR in cancer incidence in depth and suggest avenues for further investigation.
Serious, nonlethal firearm-related injuries in the United States: Compiling the evidence.

2017 Aug;1407(8):e24-e25

Salemi JL.

Disparities in accuracy of maternal perceptions of obesity among Hispanic children.

2017 Aug;28(3):1208-1221


Abstract
Maternal perceptions of their children’s weight status may limit their readiness to foster healthy habits to prevent childhood obesity. We compared maternal perceptions as measured by verbal and visual scales of their children’s weight status (CWS) with measured BMI/weight-for-age percentile among 75 Hispanic mothers with at least one child aged ≤10 years. Mothers were significantly more likely to underestimate their CWS compared to measured BMI, particularly during verbal appraisals. Although maternal perceptions (verbal and visual scales) were significantly associated with measured CWS, the strength of the association was moderate (Verbal r=0.45 (95%CI:0.30, 0.57); Visual r=0.34 (95%CI:0.18, 0.48)). In no case, did parents in this study identify their children as “obese.” These results underscore the need for more precise understandings about parental perceptions in order to develop better modes of communication regarding health risks of obesity and ways to modify and control unhealthy behaviors related to body weight.
Preventing alcohol and tobacco exposed pregnancies: CHOICES plus in primary care.

2017 Jul;53(1):85-95


Abstract

Introduction: Alcohol and tobacco use are common among U.S. women, yet if used during pregnancy these substances present significant preventable risks to prenatal and perinatal health. Because use of alcohol and tobacco often continue into the first trimester and beyond, especially among women with unintended pregnancies, effective evidence-based approaches are needed to decrease these risk behaviors. This study was designed to test the efficacy of CHOICES Plus, a preconception intervention for reducing the risk of alcohol- and tobacco-exposed pregnancies (AEPs and TEPs).

Study design: RCT with two intervention groups: CHOICES Plus (n=131) versus Brief Advice (n=130). Data collected April 2011 to October 2013. Data analysis finalized February 2016.

Setting/participants: Settings were 12 primary care clinics in a large Texas public healthcare system. Participants were women who were non-sterile, non-pregnant, aged 18–44 years, drinking more than three drinks per day or more than seven drinks per week, sexually active, and not using effective contraception (N=261). Forty-five percent were smokers.

Intervention: Interventions were two CHOICES Plus sessions and a contraceptive visit or Brief Advice and referral to community resources.

Main outcome measures: Primary outcomes were reduced risk of AEP and TEP through 9-month follow-up.

Results: In intention-to-treat analyses across 9 months, the CHOICES Plus group was more likely than the Brief Advice group to reduce risk of AEP with an incidence rate ratio of 0.620 (95% CI=0.511, 0.757) and absolute risk reduction of –0.233 (95% CI=–0.239, –0.226). CHOICES Plus group members at risk for both exposures were more likely to reduce TEP risk (incidence rate ratio, 0.597; 95% CI=0.424, 0.840 and absolute risk reduction, –0.233; 95% CI=–0.019, –0.521).

Conclusions: CHOICES Plus significantly reduced AEP and TEP risk. Addressing these commonly co-occurring risk factors in a single preconception program proved both feasible and efficacious in a low-income primary care population. Intervening with women before they become pregnant could shift the focus in clinical practice from treatment of substance-exposed pregnancies to prevention of a costly public health concern.

Syphilis and HIV/Syphilis co-infection among men who have sex with men (MSM) in Ecuador.

2017 Jul;11(4):823-833


Abstract

There is a reemergence of syphilis in the Latin American and Caribbean region. There is also very little information about HIV/Syphilis co-infection and its determinants. The aim of this study is to investigate knowledge, attitudes, and practices regarding sexually transmitted infections (STIs), in particular syphilis infection and HIV/Syphilis co-infection, as well as to estimate the prevalence of syphilis among men who have sex with men (MSM) in a city with one of the highest HIV prevalence rates in Ecuador. In this study, questionnaires were administered to 291 adult MSM. Questions included knowledge about STIs and their sexual practices. Blood samples were taken from participants to estimate the prevalence of syphilis and HIV/syphilis co-infection. In this population, the prevalence of HIV/syphilis co-infection was 4.8%, while the prevalence of syphilis as mono-infection was 6.5%. Participants who had syphilis mono-infection and HIV/syphilis co-infection were older. Men who had multiple partners and those who were forced to have sex had increased odds of syphilis and HIV/syphilis co-infection. A high prevalence of syphilis and self-reported STI was observed, which warrants targeted behavioral interventions. Co-infections are a cause for concern when treating a secondary infection in a person who is immunocompromised. These data suggest that specific knowledge, attitudes, and behaviors among MSM are associated with increased odds of STIs (including HIV/syphilis co-infections) in this region of Ecuador.
Electronic detection of delayed test result follow-up in patients with hypothyroidism.

2017 Jul;32(7):753-59

Meyer AND, Murphy DR, Al-Mutairi A, Sittig DF, Wei L, Rasso E, Singh H.

Abstract

Background: Delays in following up abnormal test results are a common problem in outpatient settings. Surveillance systems that use trigger tools to identify delayed follow-up can help reduce missed opportunities in care.

Objective: To develop and test an electronic health record (EHR)-based trigger algorithm to identify instances of delayed follow-up of abnormal thyroid-stimulating hormone (TSH) results in patients being treated for hypothyroidism.

Design: We developed an algorithm using structured EHR data to identify patients with hypothyroidism who had delayed follow-up (>60 days) after an abnormal TSH. We then retrospectively applied the algorithm to a large EHR data warehouse within the Department of Veterans Affairs (VA), on patient records from two large VA networks for the period from January 1, 2011, to December 31, 2011. Identified records were reviewed to confirm the presence of delays in follow-up.

Key Results: During the study period, 645,555 patients were seen in the outpatient setting within the two networks. Of 293,554 patients with at least one TSH test result, the trigger identified 1250 patients on treatment for hypothyroidism with elevated TSH. Of these patients, 271 were flagged as potentially having delayed follow-up of their test result. Chart reviews confirmed delays in 163 of the 271 flagged patients (PPV = 60.1%).

Conclusions: An automated trigger algorithm applied to records in a large EHR data warehouse identified patients with hypothyroidism with potential delays in thyroid function test results follow-up. Future prospective application of the TSH trigger algorithm can be used by clinical teams as a surveillance and quality improvement technique to monitor and improve follow-up.

Keywords: Electronic algorithms; hypothyroidism; patient safety; test result follow-up; thyroid-stimulating hormone (TSH); triggers
Less workup, longer treatment, but no clinical benefit observed in women with diabetes and acute cystitis.

2017 Jul;129:197-202

Grigoryan L, Zoorob R, Horsfield M, Gupta K, Trautner BW.

Abstract

**Aims:** There is a lack of evidence on the optimal approach for treating acute cystitis in women with diabetes. We performed an outpatient database study to compare management of women with and without diabetes and to assess the effect of treatment duration on early and late recurrence.

**Methods:** We used the EPIC Clarity database (electronic medical record system) to identify all female patients aged ≥18 years with acute cystitis in two family medicine clinics and a urology department. An index case was defined as the first cystitis episode during the study period (2011–2014) with follow-up data of at least 12 months. Recurrence was defined as a Urinary Tract Infection (UTI) episode, plus a new prescription for an antibiotic, between 6 and 29 days (early), or between 30 days and 12 months (late).

**Results:** We included 2327 visits for cystitis representing 1845 unique patients. Women with diabetes and acute cystitis were less likely to receive urinary tests to work up cystitis, and received significantly longer treatment courses of antibiotics. There was a higher risk of early recurrence in women with treatment duration >5 days (odds ratio 2.17, 95% confidence interval 1.07–4.41) in multivariate analyses. Longer treatment was not associated with late UTI recurrence. Presence of diabetes, and Charlson comorbidity score were independent determinants of late recurrence.

**Conclusions:** Longer treatment of cystitis was not associated with lower recurrence rates. This calls into question whether many episodes of diabetic cystitis may be managed with a short course of antibiotics, as for uncomplicated disease.

Salemi JL, Spooner KK, Mejia de Grubb MC, Aggarwal A, Matas JL, Salihu HM.

Abstract
Currently, data examining nationally representative prevalence and trends of HBV or HCV among specific subgroups of pregnant women in the US are unavailable. We conducted a cross-sectional analysis of hospitalizations for liveborn singleton deliveries from 1998 to 2011 using data from the Nationwide Inpatient Sample. After identifying deliveries with HBV, HCV, and HIV infection during pregnancy, survey logistic regression was used to identify risk factors. Temporal trends were analyzed using joinpoint regression. The rates of HBV and HCV were 85.8 and 118.6 per 100,000 deliveries, respectively; however, there was substantial variation across maternal and hospital factors. The HBV rate increased from 57.8 in 1998 to 105.0 in 2011, resulting in an annual increase of 5.5% (95% CI: 3.8-7.3). The HCV rate increased fivefold, from 42.0 in 1998 to over 210 in 2011. These trends were observed for nearly every population subgroup. However, we did observe differences in the degree to which hepatitis during pregnancy was becoming more prevalent. The increasing national trend in the prevalence of hepatitis among pregnant women was particularly concerning among already high-risk groups. This underscores the need for coordinated approaches—encompassing culturally-appropriate health education/risk-reduction programs, and increased vaccination and screening efforts—championed by health providers.

Keywords: Disparities; hepatitis B; hepatitis C; pregnancy; temporal trends

Factors influencing osteopathic medical students’ intent to work with underserved populations: Implications for curriculum enhancement.

Jacobs RJ, Kane MN, Wallace EM, Rana AM, Iqbal H, Rana Z.

Abstract
Background: Fewer medical students are selecting primary care, and medical students’ attitudes toward underserved populations may impact their decision to pursue primary care.

Objective: This study investigated first year medical students’ beliefs and attitudes toward underserved patient populations and how those attitudes might influence their intent to care for the this population as a career choice.

Methods: A cross-sectional, correlational research design was used to determine the influence of attitudes and beliefs on osteopathic medical students’ intention to provide care to underserved patient populations in future practice. Between 2011 and 2015 data were collected using the Medical Students Attitudes Scale via written questionnaire from 829 first-year attending a large osteopathic medical school in the United States.

Results: More positive attitudes toward equitable healthcare, greater belief that access to medical care is influenced by socio-cultural-environmental factors (e.g., income, gender), sense of professional responsibility, choice of family medicine as a career, and being female were related to higher levels of intent to work with underserved populations; desire for higher income and choice of surgery as a career choice were associated with less intent. Multivariate modeling successfully explained the 29% of the variance in predicting intention to provide care to the underserved in future practice.

Conclusions: With an increasingly diverse population and increasing health disparities, osteopathic medical schools might consider incorporating changes in their curricula to inculcate cultural competency and social responsibility and foster more compassion among students to care for underserved populations.

Keywords: Medical education; student attitudes, underserved; indigent; health disparities; primary care; cultural competence
An examination of the likelihood of home discharge after general hospitalizations among Medicaid recipients.

2017 Jun;54:1-6

Mkanta WN, Chumbler NR, Yang K, Abdollahi M, Mejia de Grubb MC, Ezekwu EU.

Abstract

Ability to predict discharge destination would be a useful way of optimizing post-hospital care. We conducted a cross-sectional, multiple state study of inpatient services to assess the likelihood of home discharges in 2009 among Medicaid enrollees who were discharged following general hospitalizations. Analyses were conducted using hospitalization data from the states of California, Georgia, Michigan, and Mississippi. A total of 33,160 patients were included in the study among which 13,948 (42%) were discharged to their own homes and 19,212 (58%) were discharged to continue with institutional-based treatment. A multiple logistic regression model showed that gender, age, race, and having ambulatory care-sensitive conditions upon admission were significant predictors of home-based discharges. Females were at higher odds of home discharges in the sample (odds ratio [OR] = 1.631; 95% confidence interval [CI], 1.520-1.751), while patients with ambulatory care-sensitive conditions were less likely to get home discharges (OR = 0.739; 95% CI, 0.684-0.798). As the nation engages in the continued effort to improve the effectiveness of the health care system, cost savings are possible if providers and systems of care are able to identify admission factors with greater prospects for in-home services after discharge.

Keywords: Home discharges; home-based discharges; discharge destination; cost savings; Medicaid hospitalizations
Using alcohol screening and brief intervention to address patients’ risky drinking.

2017 May-June;24(3):12-16

Zoorob RJ, Grubb II J, Gonzalez SJ, Kowalchuk AA.

Abstract
Excessive alcohol use is far from an isolated problem. Only four percent of the U.S. population meets the diagnostic criteria of having an alcohol use disorder, but almost one in three U.S. adults falls into the “risky” drinking category, and 38 million U.S. adults “binge drink” each year (defined as drinking more than four drinks for women and five drinks for men within a two-hour period).

Most of these drinkers are unaware of the dangers, and many probably consider themselves merely “social” drinkers. However, risky alcohol use can lead to motor vehicle crashes, arrest, intimate partner violence, and medical problems including hypertension, gastritis, liver disease, and cancer. Moreover, if a woman drinks while pregnant, the child may be born with a fetal alcohol spectrum disorder, causing lifelong developmental and intellectual disabilities.

As a family physician, you can efficiently and productively address risky drinking with the many patients in your practice who are affected by it. Alcohol screening and brief intervention (aSBI) has been shown to reduce risky drinking and is similar to the blood pressure or tobacco screening you likely already perform in your available for payment. This article describes three steps to seamlessly implement aSBI into your practice:

1) Establish a practice workflow,
2) Incorporate aSBI prompts into your electronic health record (EHR) system,
3) Ensure appropriate coding to receive payment.

State-level progress in reducing the black-white infant mortality gap, United States, 1999-2013.

2017 May;107(5):775-78

Brown Speights JS, Goldfarb SS, Wells BA, Beitsch L, Levine RS, Rust G.

Abstract
Objectives: To assess state-level progress on eliminating racial disparities in infant mortality.
Methods: Using linked infant birth-death files from 1999 to 2013, we calculated state-level 3-year rolling average infant mortality rates (IMRs) and Black-White IMR ratios. We also calculated percentage improvement and a projected year for achieving equality if current trend lines are sustained.
Results: We found substantial state-level variation in Black IMRs (range = 6.6-13.8) and Black-White rate ratios (1.5-2.7), and also in percentage relative improvement in IMR (range = 2.7% to 36.5% improvement) and in Black-White rate ratios (from 11.7% relative worsening to 24.0% improvement). Thirteen states achieved statistically significant reductions in Black-White IMR disparities. Eliminating the Black-White IMR gap would have saved 64,876 babies during these 15 years. Eighteen states would achieve IMR racial equality by the year 2050 if current trends are sustained.
Conclusions: States are achieving varying levels of progress in reducing Black infant mortality and Black-White IMR disparities. Public Health Implications. Racial equality in infant survival is achievable, but will require shifting our focus to determinants of progress and strategies for success.
The global burden of preventable cancer mortality.

2017 May;5(1):1-2

Zoorob R.

I am pleased to present this special issue of Family Medicine and Community Health, entitled “The Global Burden of Preventable Cancer Mortality.” This issue was completed in collaboration with the Baylor College of Medicine (BCM) Department of Family and Community Medicine in Houston, Texas, USA. The mission of the department is to enhance population health and advance the primary care discipline through rigorous and evidence-based prevention and research. We focus our research efforts on a broad range of research areas including, but not limited to, cancer control, nutrition and health, medical education, and health disparities.

Herein we explore key issues in global cancer mortality and prevention. According to estimates from the World Health Organization’s International Agency for Research on Cancer (IARC), of 14 million new cancer cases in 2012, 8 million occurred in low-middle income countries (which contain 82% of the world’s population). Cancer deaths totaled 8.2 million (with 70% in low- and middle-income countries), and estimates show there were 32.6 million people living with cancer (within five years of diagnosis) worldwide. By 2030, the global burden is expected to grow to 21.7 million new cancer cases and 13 million cancer deaths. This is due in part to the growth and aging of populations, but there are many factors and questions to investigate.


2017 May;5(1):3-12

Wang H, Warwick E, Mejia de Grubb MC, Deng N, Corboy J.

Abstract

Background: The American Cancer Society estimates that about 25% of all US cancer deaths will be due to lung cancer & more than from cancers of the colon, breast, and prostate combined.

Methods: We ascertained county-level age-adjusted and age-specific death rates and 95% confidence intervals from the Centers for Disease Control and Prevention Compressed Mortality File. Multiple regression analyses were used to estimate the strength and direction of relationships between county poverty, smoking, fine particulate matter (PM2.5) air pollution, and US Census divisions and race- and sex-specific lung cancer deaths.

Results: Poverty, smoking, and particulate matter air pollution were positively and significantly related to lung cancer deaths among white men, but of these, only poverty and smoking were significantly associated with lung cancer deaths among white women. Residence in the South Atlantic, East South Central, and West South Central US Census divisions at the time of death was significantly associated with lung cancer deaths for both white men and white women. As with white men, poverty and smoking were associated with lung cancer deaths among black men, but of these, only adult smoking had a statistically significant association among black women.

Conclusions: The results support the need for further research, particularly in high-risk areas, to better differentiate factors specific to race and sex and to understand the impact of local risk factors.

Keywords: Lung cancer; environmental; geographic; hot spot; mortality; risk factors
Unplanned hospitalizations for metastatic cancers: The changing patterns of inpatient palliative care, discharge to hospice care, and in-hospital mortality in the United States.

2017 May;5(1):13-28

Salemi JL, Chima CC, Spooner KK, Zoorob RJ.

Abstract

Objective: To describe the rates and temporal trends of inpatient end-of-life care among patients hospitalized with metastatic cancer in the United States.

Methods: We used data from the Nationwide Inpatient Sample to conduct a cross-sectional analysis of unplanned inpatient hospitalizations of patients aged 18 years or older with metastatic cancer from 2002 to 2011. Multivariable logistic regression was used to assess patient- and hospital-level predictors of discharge to hospice care, palliative care, and in-hospital mortality. Temporal trends in outcomes were characterized with use of joinpoint regression.

Results: There were an estimated 350,241 unplanned hospitalizations per year of patients with a diagnosis of metastatic cancer. During their inpatient stay, 5.8% of patients received palliative care, and among those discharged alive, 12.2% were referred to hospice care. The rate of inpatient palliative care increased from 2.3% to 13.6%, the rate of discharge to hospice care increased from 4.1% to 15.6%, and the in-hospital mortality rate decreased from more than 14.0% to 9.8%. These patterns were consistent across cancer subtypes, and were most pronounced among patients with extreme risk of mortality.

Conclusion: Despite increases in the provision of comfort-oriented care to patients with metastatic cancer, few receive such services. We recommend screening protocols in hospitals to identify patients who are good candidates for palliative care consultation and hospice referral.

Keywords: End-of-life; hospice care; inpatient mortality; metastatic cancer; palliative care; unplanned hospitalization

Smoking, depression, and hospital costs of respiratory cancers: Examining race and sex variation.

2017 May;5(1):29-42

Husaini BA, Levine RS, Lammers P, Hall P, Novotny M, Moonis M.

Abstract

Objective: To investigate the effect of smoking and depression on hospital costs for lung cancer (LC).

Methods: We extracted data on depression, smoking history, demographics, and hospital charges for patients with respiratory cancers (ICD-9 codes 161-163, 165) from the 2008 Tennessee Hospital Discharge Data System. The sample (n=6665) was mostly white (86%) and male (57%). Age-adjusted rates were developed in accordance with Centers for Disease Control and Prevention methods, and hospital costs were compared for patients with LC with versus without depression and a smoking history.

Results: Three findings (P<0.001) emerged: (1) the LC rate was higher among blacks than among whites, and higher among men than among women; (2) while 66% of LC patients smoked (more men than women without racial variation), 24% had depression (more females and whites were depressed); (3) the LC hospital cost was 54% higher than the non-LC hospital cost, and this cost doubled for patients with LC with depression and smoking versus those without such characteristics.

Conclusion: While LC is more prevalent among blacks and men, depression is higher among female and white patients. Since depression with higher costs existed among LC patients, our findings point to (1) the possibility of cost savings by diagnosing and treating depression among LC patients, and (2) implementation of proven smoking cessation programs to reduce LC morbidity and hospital costs.

Keywords: Smoking; depression; lung cancer; race; sex
Self-reported preferences for patient and provider roles in cancer treatment decision-making in the United States.

2017 May;5(1):43-55

Spooner K, Chima C, Salemi JL, Zoorob RJ.

Abstract

Objective: To describe differences in preferred roles in cancer treatment decision-making and identify associated sociodemographic and health-related factors among adults in the United States.

Methods: We conducted a cross-sectional analysis of nationally representative data from the 2014 Health Information National Trends Survey. Descriptive statistics were calculated and multivariable logistic regression was conducted to examine associations.

Results: Half (48.3%) of respondents preferred a collaborative role in decision-making under the supposition of a moderate chance of survival; while 53.4% preferred a more active role when the chance of survival was low. Approximately 7%-8% indicated a preference for a passive role in decision-making, for both low and moderate chances of survival. Several predictors of role preference for cancer treatment decision-making emerged, including age, sex, education, race/ethnicity, and having a regular health care provider. At both low and moderate chances of survival, the college educated were less likely to prefer a passive role, whereas Hispanics were two to three times more likely than whites to indicate a preference for a passive role.

Conclusion: Adults’ role preference for cancer treatment decision-making may be influenced by sociodemographic and health-related factors. Increased awareness of these factors, paired with enhanced patient-provider communication, may assist health care professionals in providing individualized and high-quality, patient-centered cancer care.

Keywords: Cancer; decision-making role preference; treatment decision-making


2017 May;5(1):56-64

Wang H, Mejia de Grubb MC, Gonzalez SJ, Sidani M, Ma J, Zoorob RJ.

Abstract

Objective: To investigate the incidence and trends in colorectal cancer (CRC) among Asian American populations in the United States.

Methods: CRC incidence data from 1994 through 2013 were obtained from 13 Surveillance, Epidemiology, and End Results registries. SEER*Stat and IBM SPSS Statistics were used.

Results: The age-adjusted incidence of CRC among Asian Americans decreased from 45.6 per 100,000 in 1994 to 33.0 per 100,000 in 2013, with the annual percent change being −1.8% (P<0.05). The incidences were higher for men, the elderly (aged 60 years or older), and several geographic areas. For those younger than 70 years, the rectal site was more affected compared with those aged 70 years or older, in whom the proximal site were more affected. Most patients presented with localized and regional stages. Men, 80 years or older, in situ stage, and some geographic areas such as Connecticut and California experienced significant incidence decreases in the 20-year observation period.

Conclusion: Although CRC incidence has declined among Asian American populations in the United States in the past 2 decades, there are persistent differences by age and geographic areas. Further research is needed to guide the design and implementation of tailored strategies to reduce CRC outcome differences across Asian American populations.

Keywords: Colorectal cancer; distal colon; incidence; proximal colon; rectal cancer; trend
Student self-assessment versus preceptor assessment at the midpoint of a family medicine clerkship.

2017 May;5(1):65-70

Huang W, Grigoryan L.

Abstract

Objective: To study how student self-assessment compared with the faculty’s assessment on our family medicine clerkship and to explore the effect of demographic factors on the ratings.

Methods: Students and their faculty preceptors assessed the students’ achievement of clerkship objectives at mid clerkship. We performed Mann-Whitney U tests to compare student ratings and faculty ratings for each clerkship objective. We performed linear regression analyses to investigate the effect of medical school year and student sex on student ratings and the effect of sex concordance or sex difference of the faculty-student pair on faculty ratings.

Results: Two hundred one students completed the family medicine clerkship between July 2015 and June 2016. Faculty ratings were higher than student ratings for all 12 clerkship objectives (P<0.05 for all comparisons). Third-year students rated themselves higher than second-year students for nine of the clerkship objectives. There was no difference in student ratings between female students and male students and no difference in faculty ratings whether there was a sex-concordant or a sex-different preceptor-student pair.

Discussion: Our findings add to the knowledge of the mid-clerkship feedback process offered by different clerkships. Further study is needed to investigate how students use this feedback to improve for the remainder of the clerkship.

Keywords: Education; clinical clerkship; medical; student self-assessment; undergraduate


2017 May;5(1):71-77

Aggarwal A, Salemi JL, Yap B, Matas JL, Naik S, Zoorob RJ, Salihu HM.

Abstract

Objective: The main objective of this initiative was to present evaluation results from an innovative adaptation of the Advanced Life Support in Obstetrics (ALSO) training course. We modified the traditional ALSO curriculum in our institution by adding hands-on training in laceration repairs and simulation scenarios on acute maternity care.

Methods: The modified ALSO provider course was designed to enhance cognitive and procedural skills of health care professionals in managing obstetric emergencies. Forty-nine participants attended this course and completed a post-training survey. Descriptive statistics were used to describe the participant-reported assessment scores for the ALSO course on three domains (subject knowledge, organization and clarity, and teaching effectiveness) for each of 12 course topics.

Results: Evaluation of the results showed a high rate of trainee satisfaction as evidenced by the mean assessment scores across all topics ranging from 4.80 to 4.98 (out of 5.00). All trainees said they would refer others to the course. Our modified ALSO course effectively addressed the important needs of primary care physicians involved in maternity care, especially in underserved communities where specialized obstetric care is not readily available. Both simulation scenarios and workshops using simulated human tissue provide a better foundation before formal training.

Conclusion: Given the changing legal and regulatory climate, we expect that learning to treat complex obstetric situations on the job will become increasingly risky. With this in mind, both simulation scenarios and workshops using simulated human tissue will provide a better foundation before formal training.

Keywords: Advanced Life Support in Obstetrics (ALSO); hands-on laceration repair; simulated human tissue; training
Primary and secondary prevention of colorectal cancer: An evidence-based review.

2017 May;5(1):78-84

Gonzalez SJ, Mejia de Grubb MC, Levine R.

Abstract
Colorectal cancer (CRC) is a common cancer that affects one in three men and one in four women worldwide. Late-stage detection is associated with significantly lower 5-year survival rates. Although it is well established that CRC mortality rates have decreased in the past several decades, adoption of routine screening continues to lag behind screening for other common cancers such as cervical and breast cancer. The decrease in overall rates has been attributed, in part, to improved primary and secondary prevention efforts, including smoking prevention and cessation programs, nutritional counseling, and the use of evidence-based screening protocols, as well as access to better treatment. Despite the increased screening rates, it is estimated that at least one-third of eligible people do not receive appropriate screening. The objective of this review is to describe the current epidemiology of CRC and to demonstrate effective primary and secondary prevention strategies for the primary care provider.

Telomere length and fetal programming: A review of recent scientific advances.

2017 May;77(5)

Whiteman VE, Goswami A, Salihu HM.

Abstract
We sought to synthesize a comprehensive literature review comprising recent research linking fetal programming to fetal telomere length. We also explored the potential effects fetal telomere length shortening has on fetal phenotypes. Utilizing the PubMed database as our primary search engine, we retrieved and reviewed 165 articles of published research. The inclusion criteria limited the articles to those that appeared within the last ten years, were pertinent to humans, and without restriction to language of publication. Our results showed that socio-demographic factors like age, sex, genetic inheritance, and acquired disease impact telomere length. Further, we found several maternal characteristics to be associated with fetal telomere length shortening, and these include maternal chemical exposure (e.g., tobacco smoke), maternal stress during pregnancy, maternal nutritional and sleeping disorders during pregnancy as well as maternal disease status. Due to paucity of data, our review could not synthesize evidence directly linking fetal phenotypes to telomere length shortening. Although the research summarized in this review shows some association between determinants of intrauterine programming and fetal telomere length, there is still significant work that needs to be done to delineate the direct relationship of telomere attrition with specific fetal phenotypes.
Exploring the life course perspective in maternal and child health through community-based participatory focus groups: Social risks assessment.

2017 Apr;10(1):143-66


Abstract

Little is known about the patterns of risk factors experienced by communities of color and how diverse community contexts shape the health trajectory of women from the early childhood period to the time of their pregnancies. Thus, we conducted a focus group study to identify social risks over the life course that contribute to maternal and child health from the perspective of community members residing in low income urban areas.

Ten community-based participatory focus groups were conducted with residents from selected communities in Tampa, Florida, from September to November 2013. We used the life course perspective to illuminate and explain the experiences reported by the interviewees.

A total of 78 residents participated in the focus groups. Children and adolescents' health risks were childhood obesity, lack of physical activity, and low self-esteem. Women's health risks were low self-esteem, low educational level, low health literacy, inadequate parenting skills, and financial problems. Risks during pregnancy included stress, low self-esteem, inadequate eating patterns, lack of physical activity, healthcare issues, lack of social support, and lack of father involvement during pregnancy.

Multiple risk factors contribute to maternal and child health in low income communities in Tampa Bay. The intersection of risk factors in different life periods suggest possible pathways, cumulative, and latent effects, which must be considered in future longitudinal studies and when developing effective maternal and child health programs and policies.

Keywords: Community-based participatory research; life course perspective; maternal and child health; focus groups; risk factors

Bowling alone, dying together: The role of social capital in mitigating the drug overdose epidemic in the United States.

2017 Apr 1;173:1-9

Zoorob MJ, Salemni JL.

Abstract

Background: Drug overdose deaths have risen precipitously over the last fifteen years. Substantial geographic variation, beyond a simple rural-urban dichotomy, exists in the concentration of overdose deaths, suggesting the existence of as-yet unidentified environmental variables that predict resilience (or vulnerability) to drug overdoses. Motivated by reports highlighting the role of community fragility in the opioid epidemic, we explore whether social capital attenuates overdose death rates.

Methods: We conducted an ecologic temporal trends study from 1999 to 2014 to investigate the association between mortality due to drug overdose and social capital. Data from multiple sources were compiled at the county-level to produce an analytic dataset comprising overdose mortality, social capital, and a host of potentially confounding variables indicated by the literature (N=49,664 county-years). Multinomial logistic regression was used to estimate the likelihood that a county falls in low (<4 deaths per 100,000), moderate, or high (>16 deaths per 100,000) categories of annual overdose mortality.

Results: We observed a strong and statistically significant inverse association between county-level social capital and age-adjusted mortality due to drug overdose (p<0.01). Compared to the lowest quintile of social capital, counties at the highest quintile were 83% less likely to fall in the “high-overdose” category and 75% less likely to fall in the “moderate-overdose” category.

Conclusion: This study finds large-sample evidence that social capital protects communities against drug overdose. This finding could help guide policymakers in identifying where overdose epidemics are likely to occur and how to ameliorate them.
eHealth patient-provider communication in the United States: Interest, inequalities, and predictors.
2017 Apr 1;24(e1):e18-e27

Spooner KK, Salemi JL, Salihu HM, Zoorob RJ.

Abstract
Objective: Health-related Internet use and eHealth technologies, including online patient-provider communication (PPC), are continually being integrated into health care environments. This study aimed to describe sociodemographic and health- and Internet-related correlates that influence adult patients' interest in and electronic exchange of medical information with health care providers in the United States.

Methods: Nationally representative cross-sectional data from the 2014 Health Information National Trends Survey (N = 3677) were analyzed. Descriptive statistics and multivariable regression analyses were performed to examine associations between patient-level characteristics and online PPC behavior and interests.

Results: Most respondents were Internet users (82.8%), and 61.5% of information seekers designated the Internet as their first source for health information. Younger respondents (<50 years), Hispanics, those from higher-income households, and those perceiving access to personal health information as important were more likely to be interested in online PPC. Despite varying levels of patient interest, 68.5% had no online PPC in the last year. However, Internet users (odds ratio, OR = 2.87, 95% CI, 1.35-6.08), college graduates (OR = 2.92, 95% CI, 1.42-5.99), and those with frequent provider visits (OR = 1.94, 95% CI, 1.02-3.71) had a higher likelihood of online PPC via email or fax, while Hispanics and those from higher-income households were 2-3 times more likely to communicate via text messaging or phone/mobile apps.

Conclusion: Patients' interest in and display of online PPC-related behaviors vary by age, race/ethnicity, education, income, Internet access/behaviors, and information type. These findings can inform efforts aimed at improving the use and adoption of eHealth technologies, which may contribute to a reduction in communication inequalities and health care disparities.

Keywords: eHealth; electronic patient-provider communication; national health survey

Discharge against medical advice in the United States, 2002-2011: A cross-sectional analysis.
2017 Apr;92(4):525-535

Spooner KK, Salemi JL, Salihu HM, Zoorob RJ.

Abstract
Objective: To describe the national frequency, prevalence, and trends of discharge against medical advice (DAMA) among inpatient hospitalizations in the United States and identify differences across patient- and hospital-level characteristics, overall and in clinically distinct diagnostic subgroups.

Patients and Methods: We conducted a retrospective, cross-sectional analysis of inpatient hospitalizations (≥18 years), discharged between January 1, 2002, and December 31, 2011, using the Nationwide Inpatient Sample. Descriptive statistics, multivariable logistic, and joinpoint regression were used for statistical analyses.

Results: Between January 1, 2002, and December 31, 2011, more than 338,000 inpatient hospitalizations were discharged against medical advice each year, with a 1.9% average annual increase in prevalence over the decade (95% CI, 0.8%-3.0%). Temporal trends in DAMA varied by principal diagnosis. Among patients hospitalized for mental health- or substance abuse-related disorders, there was a −2.3% (95% CI, −3.8% to −0.8%) average annual decrease in the rate of DAMA. A statistically significant temporal rate change was not observed among hospitalizations for pregnancy-related disorders. Multivariable regression revealed several patient and hospital characteristics as predictors of DAMA, including lack of health insurance (odds ratio [OR], 3.78; 95% CI, 3.62-3.94), male sex (OR, 2.40; 95% CI, 2.36-2.45), and northeast region (OR, 1.91; 95% CI, 1.72-2.11). Other predictors included age, race/ethnicity, income, primary diagnosis, severity of illness, and hospital location/type and size.

Conclusion: Rates for DAMA have increased in the United States, and key differences exist across patient and hospital characteristics. Early identification of vulnerable patients and preventive measures such as improved patient-provider communication may reduce DAMA.
A qualitative study examining health literacy and chronic illness self-management in Hispanic and non-Hispanic older adults.

2017 Apr 20;10:167-177

Jacobs RJ, Ownby RL, Acevedo A, Waldrop-Valverde D.

Abstract

Purpose: Chronic illness and low levels of health literacy affect health outcomes for many individuals, particularly older adults and racial/ethnic minorities. This study sought to understand the knowledge, strengths, and areas of need regarding self-management of chronic illness in order to lay the groundwork for content development of an intervention to increase health literacy and maximize patient engagement in chronic disease self-care.

Patients and Methods: In-depth, qualitative interviews were conducted in Spanish and English with 25 older adults with various chronic illnesses. Topics included knowledge and understanding of chronic conditions, medications, and disease self-management skills. Qualitative data were coded by searching text and conducting cross-case analysis. An inductive analysis was then employed to allow for the patterns and themes to emerge.

Results: Emerged themes included 1) social support, 2) coping strategies, 3) spirituality, 4) chronic disease health literacy, 5) anger, and 6) depression. While participants had a general overall knowledge of chronic illness, they had deficits in knowledge regarding their own illnesses and medications.

Conclusion: Chronic illness self-management is a complex and dynamic behavioral process. This study identified themes that leverage patient motivation to engage in self-care in a personalized manner. This information will guide the development of an intervention to promote health literacy and optimal disease self-management.

Keywords: Health disparities; older adults; resilience; computer interventions; comorbidity; multimorbidity

Reproductive rights movement.

Alzate MM.

pp. 1414-1415
Social support and health-related quality of life among low-income women: Findings from community-based participatory research.

2017 Apr;110(4):270-277

Salihu HM, Adegoke K, Turner D, Al Agili D, Berry EL.

Abstract

Objectives: This study examined the association between social support and health-related quality of life (HRQoL) among low-income women in the southeastern region of the United States.

Methods: Analysis was performed on data from a community needs assessment survey that was designed to explore social determinants of health and QoL indicators using a community-based participatory research approach. The study sample comprised 132 women aged 18 years old and older. Bivariate analysis and logistic regressions with bootstrapping were performed.

Results: Social support was predictive of physical and mental HRQoL in a contrasting fashion, suggesting a complex relation. Other social determinants of global HRQoL, independent of social support status include marital and employment status, maternal age, and income. Our results also demonstrate complex interaction patterns across race, social support, and HRQoL.

Conclusions: The linkage between social support and HRQoL may not be a simple relation, as previously assumed. Rather, it is characterized by multifaceted interactions through which social determinants of health modulate the impact of social support on HRQoL. These are new findings.
Patient satisfaction and its potential impact on refugee integration into the healthcare system.

2017 Apr 19 [Epub ahead of print]

Mkanta WN, Ibeke O, Mejia de Grubb MC, Korupolu C.

Abstract

Background: Health care constitutes an important aspect of services in the resettlement processes for newly arriving and resettling refugees.

Objectives: We conducted a study to investigate levels of satisfaction related to health services delivered to refugee populations in a resettlement community and its surrounding areas.

Methods: We used the experience of 92 adult refugee patients to examine social-cultural, clinical and economic characteristics affecting satisfaction with health care. A cross-sectional study using the Patient Satisfaction Questionnaire (PSQ) was conducted. Item analysis was conducted by considering each question on the PSQ as an item and by developing dimensions of satisfaction. Chi-square analyses were used to assess the relationships between satisfaction and patient factors.

Results: Patients were satisfied with the initial health assessment (90%) and overall quality (86%). Only 59% of the patients were satisfied with phone interpreters. The general satisfaction dimension had a score of 4.05 on a scale of 5, while time spent with the doctor had the lowest score of 2.98. Having pre-arrival medical conditions was associated with poor satisfaction with both the initial health assessment ($\chi^2=10.260; p=.036$) and regular health services ($\chi^2=4.550; p=.033$).

Conclusion: Although patients were generally satisfied with health services, improvements are recommended in different aspects of care to create a favorable environment of care and increase levels of satisfaction and trust with the healthcare system among refugee populations.

Keywords: Patient satisfaction; refugee; refugee health care; Patient Satisfaction Questionnaire-PSQ; initial health assessment
Reply: Pregnancy as a window to future health: maternal placental syndromes and short-term cardiovascular outcomes.

2017 Apr;216(4):429

Cain MA, Salemi JL.

The authors thank Quinn for comments regarding our article titled "Pregnancy as a window to future health: Maternal placental syndromes and short-term cardiovascular outcomes." The article presented the short-term risk of cardiovascular disease among nulliparous women experiencing placental syndromes. We then further evaluated this risk when the women experienced placental syndromes in conjunction with a preterm delivery or delivery of a small-for-gestational age (SGA) infant. A statewide, multiyear maternal-infant database in the state of Florida provided data for our study. Due to the nature of the study database and the reliance primarily on administrative diagnostic coding, we were unable to identify the root cause of subsequent cardiovascular disease among these women. Although the placental syndromes may be the unmasking of underlying disease, the syndrome itself may also cause damage that increases a woman's lifetime, and even shorter term, risk of cardiovascular disease. Dr Quinn’s letter to the editor adds to the possible etiologies for subsequent cardiovascular disease; specifically discussing the potential stretching of intrauterine nerves leading to uterorenal nerve activation and preeclampsia. These vascular changes may then cause resistant renal hypertension and ultimately cardiovascular disease. Prior studies note vascular dysfunction may be caused by preeclampsia. Certainly, further investigation into the pathophysiology of placental syndromes and their impact on vascular disease is warranted.

Dr Quinn also notes a trade of sensitivity for specificity in our decision to not include intrauterine growth restriction and preterm labor in our definition of placental syndromes. In an effort to evaluate the additional impact of poor fetal growth and preterm deliveries, we included SGA and preterm birth in addition to placental syndromes. Women who experienced a placental syndrome as well as either SGA or preterm birth were at greater risk of cardiovascular disease than those with a placental syndrome without SGA or preterm birth. We agree that, if we were to have omitted consideration of SGA and preterm birth from the study entirely, our definition of placental syndromes would have had suboptimal sensitivity. We instead chose to highlight this increase in risk conferred by SGA and/or preterm birth by evaluating these outcomes both with and without a more specific definition of placental syndromes.

Association between obesity and perioperative morbidity in open versus laparoscopic sacrocolpopexy.

2017 Mar/Apr;23(2):146-150

Halder GE, Salemi JL, Hart S, Mikhail E.

Abstract

Objectives: The aim of this study was to compare differences in 30-day perioperative morbidity and mortality for women undergoing open sacrocolpopexy (OSCP) versus laparoscopic sacrocolpopexy (LSCP) across all body mass index (BMI) groups and between patients of ideal versus elevated BMI (includes overweight, obese, and morbidly obese).

Materials and Methods: Data for this retrospective review were obtained from the American College of Surgeons-National Surgical Quality Improvement Project database using current procedural terminology. All women older than 18 years who underwent an OSCP or LSCP from 2005 to 2013 were included. Patients were divided into 4 BMI (weight [kg] / [height (m)]2) subgroups: (1) less than 25, (2) 25 to 29.9, (3) 30 to 39.9, and (4) 40 or greater. The data were analyzed using Student t or χ2 test and Fisher exact test.

Results: A total of 4894 women underwent an OSCP or LSCP. Shorter operative times were observed with OSCP (P < 0.05) in all BMI groups except morbidly obese patients. Compared with patients of ideal body weight, overweight and obese patients had significantly longer operation times during LSCP (P < 0.05), a difference that was not observed during OSCP. For all BMI subgroups, the length of hospital stay was significantly shorter for LSCP (1 [1-1]) versus OSCP (2 [2-3]) (P < 0.05). Statistically significant increases in the rate of superficial surgical site infections were observed in OSCP in patients of both ideal and overweight BMIs (P < 0.05).

Conclusions: Obesity increases the operative time during LSCP. For patients in all BMI groups, LSCP offers the benefit of shorter hospital stays when compared with OSCP.
Family medicine maternity care call to action: Moving toward national standards for training and competency assessment.

2017 Mar;49(3):211-217

Magee SR, Eidson-Ton WS, Leeman L, Tuggy M, Kim TO, Nothnagle M, Breuner J, Loafman M.

Abstract
Maternity care is an integral part of family medicine, and the quality and cost-effectiveness of maternity care provided by family physicians is well documented. Considering the population health perspective, increasing the number of family physicians competent to provide maternity care is imperative, as is working to overcome the barriers discouraging maternity care practice. A standard that clearly defines maternity care competency and a systematic set of tools to assess competency levels could help overcome these barriers. National discussions between 2012 and 2014 revealed that tools for competency assessment varied widely. These discussions resulted in the formation of a workgroup, culminating in a Family Medicine Maternity Care Summit in October 2014. This summit allowed for expert consensus to describe three scopes of maternity practice, draft procedural and competency assessment tools for each scope, and then revise the tools, guided by the Family Medicine and OB/GYN Milestones documents from the respective residency review committees. The summit group proposed that achievement of a specified number of procedures completed should not determine competency; instead, a standardized competency assessment should take place after a minimum number is performed. The traditionally held required numbers for core procedures were reassessed at the summit, and the resulting consensus opinion is proposed here. Several ways in which these evaluation tools can be disseminated and refined through the creation of a learning collaborative across residency programs is described. The summit group believed that standardization in training will more clearly define the competencies of family medicine maternity care providers and begin to reduce one of the barriers that may discourage family physicians from providing maternity care.
Social interventions can lower costs and improve outcomes.

2017 Mar 07

Holton-Burke RC, Buck DS.

Hepatitis C virus seroprevalence in the general female population of 9 countries in Europe, Asia and Africa.

2017 Feb 2;12:9


Abstract

Background: New oral treatments with very high cure rates have the potential to revolutionize global management of hepatitis C virus (HCV), but population-based data on HCV infection are missing in many low and middle-income countries (LMIC).

Methods: Between 2004 and 2009, dried blood spots were collected from age-stratified female population samples of 9 countries: China, Mongolia, Poland, Guinea, Nepal, Pakistan, Algeria, Georgia and Iran. HCV antibodies were detected by a multiplex serology assay using bead-based technology.

Results: Crude HCV prevalence ranged from 17.4% in Mongolia to 0.0% in Iran. In a pooled model adjusted by age and country, in which associations with risk factors were not statistically heterogeneous across countries, the only significant determinants of HCV positivity were age (prevalence ratio for ≥45 versus <35 years = 2.84, 95%CI 2.18-3.71) and parity (parous versus nulliparous = 1.73, 95%CI 1.02-2.93). Statistically significant increases in HCV positivity by age, but not parity, were seen in each of the three countries with the highest number of HCV infections: Mongolia, Pakistan, China. There were no associations with sexual partners nor HPV infection. HCV prevalence in women aged ≥45 years correlated well with recent estimates of female HCV-related liver cancer incidence, with the slight exception of Pakistan, which showed a higher HCV prevalence (5.2%) than expected.

Conclusions: HCV prevalence varies enormously in women worldwide. Medical interventions/hospitalizations linked to childbirth may have represented a route of HCV transmission, but not sexual intercourse. Combining dried blood spot collection with high-throughput HCV assays can facilitate seroepidemiological studies in LMIC where data is otherwise scarce.

Keywords: Hepatitis C virus; epidemiology; serology; liver cancer
A comprehensive electronic health record based patient navigation module including technology driven colorectal cancer outreach and education.


Ajeesh S, Luis R.

Abstract
The purpose of this concept paper is to propose an innovative multifaceted patient navigation module embedded in the Electronic Health Record (EHR) to address barriers to efficient and effective colorectal cancer (CRC) care. The EHR-based CRC patient navigation module will include several patient navigation features: (1) CRC screening registry; (2) patient navigation data, including CRC screening data, outcomes of patient navigation including navigation status (CRC screening referrals, fecal occult blood test (FOBT) completed, colonoscopy scheduled and completed, cancelations, reschedules, and no-shows); (3) CRC counseling aid; and 4) Web-based CRC education application including interactive features such as a standardized colonoscopy preparation guide, modifiable CRC risk factors, and links to existing resources. An essential component of health informatics is the use of EHR systems to not only provide a system for storing and retrieval of patient health data but can also be used to enhance patient decision-making both from a provider and patient perspective.

Keywords: Boston bowel preparation scale; colonoscopy; colorectal cancer; electronic health record; fecal occult blood test; patient navigation

Diet and obesity issues in the underserved.
2017 Feb;44(1):127-140
Mejia de Grubb MC, Levine RS, Zoorob RJ.

The goal of this article is to inform new directions for addressing inequalities associated with obesity by reviewing current issues about diet and obesity among socioeconomically vulnerable and underserved populations. It highlights recent interventions in selected high-risk populations, as well as gaps in the knowledge base. It identifies future directions in policy and programmatic interventions to expand the role of primary care providers, with an emphasis on those aimed at preventing obesity and promoting healthy weight.

Substance use issues among the underserved: United States and international perspectives.
2017 Mar;44(1):113-125
Kowalchuk A, Gonzalez SJ, Zoorob R.

Substance use affects people of all ages, cultures, and socioeconomic levels. Most underserved populations have lower rates of substance use than the general population in a given society, excluding tobacco use. The impact of substance use is more severe, however, in the underserved, with higher rates of incarceration, job loss, morbidity, and mortality. Innovative solutions are being developed to address these differences. Working together, underserved patients with substance use problems can be helped on their journeys toward health and wholeness.

Geriatric care issues: An American and an international perspective.
2017 Feb;44(1):e15-e36
Sidani MS, Reed BC, Steinbauer J.

As the global population ages, there is an opportunity to benefit from the increased longevity of a healthy older adult population. Healthy older individuals often contribute financially to younger generations by offering financial assistance, paying more in taxes than benefits received, and providing unpaid childcare and voluntary work. Governments must address the challenges of income insecurity, access to health care, social isolation, and neglect that currently face elderly adults in many countries. A reduction in disparities in these areas can lead to better health outcomes and allow societies to benefit from longer, healthier lives of their citizens.
Ambient PM2.5 aluminum and elemental carbon and placental abruption morbidity.

2017 Feb;59(2):148-153

Ibrahimou B, Albatineh AN, Salihu HM, Gasana J.

Abstract

Purpose: The aim of this study was to assess relationship between exposure to particulate matter (PM) chemicals during pregnancy and the odd of having placental abruption.

Methods: The 2004 to 2007 Florida linked birth certificate records and the Environmental Protection Agency PM speciation data were used. We were interested in placental abruption. We computed adjusted odds ratios (ORs) and 95% confidence intervals (95% CIs).

Results: The odds for placental abruption were increased per interquartile range (IQR) increase in aluminum during the first trimester (OR=1.10; CI= 1.02 to 1.18) and marginally during the entire pregnancy (OR= 1.06; CI= 0.94 to 1.19). The most substantial association was observed for elemental carbon exposure during the first trimester, resulting in 38% increased odd (OR=1.09; CI =1.09 to 1.75) per IQR increase in elemental carbon.

Conclusion: Women exposure to PM2.5 aluminum and elemental carbon during pregnancy has an increased odd of having placental abruption.
Development and evaluation of two instruments for assessing screening, brief intervention, and referral to treatment (SBIRT) competency.


ABSTRACT

Background: Screening, brief intervention, and referral to treatment (SBIRT) is shown to be effective in identifying, intervening with, and making appropriate referrals for patients with unhealthy alcohol use. SBIRT training consists of knowledge-based and skill-based components and has increased the use of screening and intervention skills in clinical settings. This article reports on the development and evaluation of 2 SBIRT proficiency checklists for use across institutions to assess SBIRT skills in both simulated and clinical encounters.

Methods: A national panel of 16 experts identified 137 discrete SBIRT skills items for the checklists. From this final list, 2 proficiency checklists were derived: the SBIRT Proficiency Checklist (SPC), composed of 22 questions for videotaped interviews, and the Clinical SBIRT Proficiency Checklist (CSPC), composed of 13 questions for direct clinical observation. An evaluation was conducted to test the reliability of the SPC and to assess the utility of the CSPC.

Results: Two checklists for assessing SBIRT proficiency were developed by a collaborative workgroup. Fleiss' kappa analyses indicated moderate agreement. In addition, faculty recorded satisfaction with the CSPC for assessing residents on their SBIRT performance during clinical encounters.

Conclusions: The SPC and the CSPC are practical tools for assessing competence with SBIRT and are easily integrated as standard instruments in a wide range of training settings. Future advancements to the checklists and their evaluation include modification of the SPC rating scale to be consistent with the CSPC, developing a training program for using the checklists, and further testing to improve interrater reliability.

Keywords: Assessment, proficiency checklist; SBIRT; substance abuse

Evaluation of the sensitivity and accuracy of birth defects indicators on the 2003 revision of the U.S. birth certificate: Has data quality improved?


Abstract

Background: The 2003 revision of the U.S. Birth Certificate was restricted to birth defects readily identifiable at birth. Despite being the lone source of birth defects cases in some studies, we lack population-based information on the quality of birth defects data from the most recent revision of the birth certificate.

Methods: We linked birth certificate data to confirmed cases from the Florida Birth Defects Registry (FBDR) to assess the sensitivity and positive predictive value (PPV) of birth defects indicators on the birth certificate. Descriptive statistics and log-binomial regression were used to examine variation in data quality measures by defect type and other characteristics. We also evaluated the contribution of birth certificates as a case ascertainment source for the FBDR.

Results: Sensitivity of the birth certificate was poor (19.1%) with variation across defects ranging from 55% for anencephaly and 54% for gastroschisis, to >10% for other defects. PPV was better (87.1%) and ranged from >93% for orofacial clefts and gastroschisis to <55% for anencephaly and limb reduction defects. We also observed variation in data quality across maternal, infant, and hospital characteristics. Of cases identified by the birth certificate and not any other FBDR data source, 54.9% were false-positive diagnoses.

Conclusions: Efforts to restrict the 2003 revision of the birth certificate to defects identifiable at birth have not improved the likelihood that birth certificates will identify infants born with those defects. We do not recommend the use of birth certificates as a source of birth defects data without case verification strategies.
College students’ sense of coherence and connectedness as predictors of suicidal thoughts and behaviors.

2017 Jan 2;21(1):169-184

Drum DJ, Brownson C, Hess EA, Burton Denmark A, Talley AE.

Abstract

This study aimed to explore the relationship between college students’ sense of coherence and connectedness and their development of suicidal thoughts and behaviors. Using archival data from a larger survey with responses from 26,742 undergraduate and graduate students at 74 colleges and universities, we applied Exploratory Factor Analysis to derive these protective factors (coherence and connectedness) as well as hypothesized distal and proximal risk factors (pre-existing vulnerabilities and distress). Structural Equation Modeling was used to explore latent variable interactions among these factors with regards to outcomes on a continuum of suicidal thinking and behavior. Sense of coherence mitigated the impact of pre-existing vulnerabilities on movement along the continuum, while connectedness mitigated the impact of distress. Findings suggest that including both connectedness and coherence in suicide prevention frameworks will increase the impact of suicide prevention programming.

Keywords: College mental health; connectedness; protective factors; sense of coherence; suicidal continuum

Catholic priests’ beliefs of the use of power by their bishop.

2017 Jan;19(4):268-86

Kane MN, Jacobs RJ.

Abstract

Responses from randomly sampled U.S. Catholic priests were analyzed to determine how they perceived their bishop’s use of his power and status as he related to subordinates. Respondents had a moderate concern for the misuse of power by their bishop. In a backward multiple regression analysis (adjusted $R^2 = .511, F = 48.08, p < .001$) these perceptions were affected by three variables in the final model: (a) my bishop knows my personal worth, (b) most bishops are concerned about their power and status, and (c) the approachability of most bishops. Implications of these perceived beliefs are considered against research relating to destructive leadership and respectful leadership.

Keywords: Catholic Bishops, Catholic priests, leadership, respect
Survey finds improvement in cognitive biases that drive overtreatment of asymptomatic bacteriuria after a successful antimicrobial stewardship intervention.

2016 Dec 1;44(12):1544-1548

Grigoryan L, Naik AD, Horwitz D, Cadena J, Patterson JE, Zoorob R, Trautner BW.

Abstract

Background: Lack of guideline knowledge and cognitive biases are barriers that drive overtreatment of catheter-associated asymptomatic bacteriuria (ASB). We explored whether providers’ knowledge and attitudes toward management of ASB differed before and after a multifaceted guidelines implementation intervention, reported elsewhere.

Methods: We surveyed providers’ knowledge of guidelines, cognitive-behavioral constructs, and self-reported familiarity with the relevant Infectious Diseases Society of America guidelines. The survey was administered to providers in the preintervention (n = 169) and postintervention (n = 157) periods at the intervention site and postintervention (n = 65) at the comparison site.

Results: At the intervention site, the mean knowledge score increased significantly during the postintervention period (from 57.5% to 69.9%; P < .0001) and fewer providers reported following incorrect cognitive cues (pyuria and organism type) for treatment of ASB. The knowledge of guidelines was higher in the postintervention sample after adjusting for provider type in the multiple linear regression analysis. Cognitive behavioral constructs (i.e., self-efficacy, behavior, social norms, and risk perceptions) and self-reported familiarity with the guidelines also significantly improved during the postintervention period.

Conclusions: We identified and targeted specific barriers that drive overtreatment of ASB. Guideline implementation interventions targeting cognitive biases are essential for encouraging the application of ASB guidelines into practice.

Keywords: Clinical practice guidelines; medical education; urinary catheterization; urinary tract infection

Permanent supportive housing for homeless people — Reframing the debate.

2016;375:2115-2117

Kertesz SG, Baggett TP, O’Connell JJ, Buck DS, Kushel MB.
Pediatric Obesity

Childhood obesity prevention cluster randomized trial for Hispanic families: outcomes of the healthy families study.

2016 Nov 24 [Epub ahead of print]

Hull PC, Buchowski M, Canedo JR, Beech BM, Du L, Koyama T, Zoorob R.

Abstract

Background: Obesity prevalence is disproportionately high among Hispanic children.

Objectives: The Healthy Families Study assessed the efficacy of a culturally targeted, family-based weight gain prevention intervention for Hispanic immigrant families with children ages 5-7 years.

Methods: The study used a two-group, cluster randomized trial design, assigning 136 families (clusters) to the active intervention (weight gain prevention) and 136 families to attention control (oral health). The active intervention included a 4-month intensive phase (eight classes) and an 8-month reinforcement phase (monthly mail/telephone contact). Children’s body mass index z-score (BMI-Z) was the primary outcome.

Results: The BMI-Z growth rate of the active intervention group did not differ from the attention control group at short-term follow-up (median 6 months; 168 families, 206 children) or long-term follow-up (median 16 months; 142 families, 169 children). Dose response analyses indicated a slower increase in BMI-Z at short term among overweight/obese children who attended more intervention classes. Moderate physical activity on weekends increased at short term. Weekend screen time decreased at short term among those attending at least one class session.

Conclusion: Low class attendance likely impacted intention-to-treat results. Future interventions targeting this population should test innovative strategies to maximize intervention engagement to produce and sustain effects on weight gain prevention.

Keywords: Children, Hispanics, cluster randomized controlled trial, obesity prevention

Southern Medical Journal

Association between maternal-perceived psychological stress and fetal telomere length.

2016 Dec;109(12):767-772


Abstract

Objective: Our study aimed to investigate the association between maternal-perceived psychological stress and fetal telomere length.

Methods: We recruited women in labor upon hospital delivery admission. Based on responses to the Perceived Stress Scale, we categorized participants as having “high,” “normal,” or “low” perceived stress. We collected umbilical cord blood samples (N = 71) and isolated genomic DNA from cord blood leukocytes using quantitative polymerase chain reaction. We used a ratio of relative telomere length derived by telomere-to-single-copy gene ratio (T/S ratio). We applied analysis of variance and bootstrapping statistical procedures.

Results: Sixteen (22.5%) women were classified as having low perceived stress, 42 (59.2%) were classified as having normal perceived stress, and 13 (18.3%) were classified as having high perceived stress. Fetal telomere length differed significantly across the three stress groups in a dose-response pattern (T/S ratio of those with low perceived stress was greater than those with normal perceived stress, which was greater than those with high perceived stress [P < 0.05]).

Conclusions: Our findings support our hypothesis that maternal-perceived psychological stress during pregnancy is associated with shorter fetal telomere length and suggest maternal stress as a possible marker for early intrauterine programming for accelerated chromosomal aging.
Theoretical and methodological issues in research related to value-based approaches to health service.

2016 Nov-Dec;61(6):402-418

Mkanta WN, Katta M, Basireddy K, English G, Mejia de Grubb MC.

EXECUTIVE SUMMARY
The U.S. healthcare system is undergoing a transformation from traditional fee-for-service models to value-based purchasing in an attempt to build a culture of accountability and address escalating costs and other major concerns. Research related to the new environment of care is imperative in light of the growing body of data that informs the healthcare system about the impact of value-based purchasing. This study reviews theoretical and methodological issues related to research in value-based care. The concept of value is reviewed on the basis of its definition, measurement, and application in healthcare settings. Stakeholder roles in relation to creation, management, and improvement of value are also explored. The authors also conduct a review of theoretical frameworks that can be applied to the assessment of value and offer suggestions about what might constitute an ideal framework. Recommendations for future research are presented, with a focus on areas in which health systems and providers have the potential to generate value and achieve professional benefits and fiscal integrity in this new environment of care.

A comparison of opioid and nonopioid substance users in residential treatment for co-occurring substance use and mental disorders.

2016 Nov-Dec;31(7):678-687

Bride BE, Macmaster SA, Morse SA, Watson CA, Choi S, Seitzers J.

Abstract
The past decade has seen a marked increase in the illicit use of opioids, as well as a doubling of the percentage of individuals seeking treatment for opioid use disorders. However, little is known about the differences between opioid users and nonopioid users in residential treatment. Further, no studies have been published that compare opioid users and nonopioid users in treatment for co-occurring substance use and mental disorders. To address this gap, this study examined differences between opioid and nonopioid substance users in residential treatment for co-occurring disorders. Data was drawn from 1,972 individuals treated between 2009 and 2011 at one of three private residential treatment centers that provide integrated treatment for co-occurring substance use and mental disorders. To examine within-group changes in substance use, addiction severity, and mental health across time, linear mixed-model analyses were conducted with facility, year, age, gender, and race included as covariates. The authors found more similarities than differences between the two groups on baseline characteristics, treatment motivation, length of stay, and outcomes on measures of substance use, addiction severity, and mental health. The results demonstrate that though opioid users entered treatment with higher levels of substance use-related impairment, they were just as successful in treatment outcomes as their non-opioid-using peers.

Keywords: Substance use; co-occurring disorders; opioid use; outcomes; treatment motivation
Trends of bilateral salpingectomy during vaginal hysterectomy with and without laparoscopic assistance performed for benign indications in the United States.

2016 Nov-Dec;23(7):1063-69

Mikhail E, Salemi JL, Wyman A, Salihu MH, Imudia AN, Hart S.

Abstract

Study Objective: To estimate the recent temporal trends of concurrent bilateral salpingectomy (BS) during vaginal hysterectomy (total vaginal hysterectomy [TVH] and laparoscopic-assisted vaginal hysterectomy [LAVH]) in the United States.

Design: A cross-sectional analysis was conducted using data from the Healthcare Cost and Utilization Project Nationwide Inpatient Sample, including all female patients 18 years and older whose inpatient discharge record indicated a TVH or LAVH performed for benign indications between January 1, 1998, and December 31, 2011. Joinpoint regression was used to identify statistically significant changes in overall and subgroup temporal trends of TVH and LAVH as well as concomitant BS during the 14-year study period (Canadian Task Force Classification II).

Patients: All patients who underwent TVH and LAVH from 1998 to 2011 registered in the Healthcare Cost and Utilization Project Nationwide Inpatient Sample database.

Measurements and Main Results: Regarding TVH, between 1998 and 2001, there was a steep negative trend with an annual percentage change of −5.2 (95% confidence interval [CI], −8.8 to −2.2). From 2001 to 2011, the negative trend was still observed but with a more gradual 2% annual decrease (95% CI, −2.4 to −1.3). Conversely, the rate of LAVH increased at a rate of 4.4% each year (95% CI, 3.7–5.0). From 1998 to 2004, the national rate of BS during TVH increased sharply with an annual increase of 42.8% (95% CI, 22.7–66.3). Beginning in 2004, the BS rate during TVH decreased and remained stable. During LAVH, the rate of concomitant BS increased an estimated 15% each year during the entire study period (95% CI, 11.9–17.8).

Conclusion: The proportion of annual LAVH with concomitant BS procedures performed across the nation is on the rise while TVH is declining with a stable rate of concomitant BS.

Keywords: Laparoscopic-assisted vaginal hysterectomy; salpingectomy; temporal trends; vaginal hysterectomy

Time from screening mammography to biopsy and from biopsy to breast cancer treatment among Black and White, non-HMO Medicare women beneficiaries.

2016 Nov-Dec;26(6):642-47


Abstract

Purpose: There is a breast cancer mortality gap adversely affecting Black women in the United States. This study assessed the relationship between number of days between abnormal mammogram, biopsy, and treatment among Medicare (Part B) beneficiaries ages 65 to 75 and 75 to 84 years, accounting for race and comorbidity.

Methods: A cohort of non-Hispanic Black and non-Hispanic White women residing in the continental United States and receiving no services from a health maintenance organization was randomly selected from the Center for Medicare and Medicaid Services denominator file. The cohort was followed from 2005 to 2008 using Center for Medicare and Medicaid Services claims data. The sample included 4,476 women (weighted n = 70,731) with a diagnosis of breast cancer. Cox proportional hazard modeling was used to identify predictors of waiting times.

Findings: Black women had a mean of 16.7 more days between biopsy and treatment (p < .001) and 15.7 more days from mammogram to treatment (p < .001) that White women. Median duration from abnormal mammogram to treatment exceeded National Quality Measures for Breast Centers medians regardless of race, age, or number of comorbidities (overall 43 days vs. the National Quality Measures for Breast Centers value of 28 days).

Conclusions: Medical care delays may contribute, in part, to the widening breast cancer mortality gap between Black women and White women. Further study, with additional clinical and social information, is needed to broaden scientific understanding of racial determinants and assess the clinical significance of mammogram to treatment times among Medicare beneficiaries.
Cognitive behavior therapy for late-life generalized anxiety disorder delivered by lay and expert providers has lasting benefits.

2016 Nov;31(11):1225-1232


Abstract

Objective: Peaceful Living, a cognitive-behavioral treatment (CBT) for late-life generalized anxiety disorder (GAD), produced positive outcomes in GAD severity, anxiety, depression, insomnia, and mental health quality of life relative to usual care with treatment delivered by either bachelor-level lay providers (BLPs) or PhD-level expert providers (PLPs). We examined long-term maintenance of gains during 12 months following CBT for patients in this trial who received the intervention delivered by BLPs and PLPs and completed post-treatment assessments.

Methods: Participants were 112 older adults (mean age, 66.83 years) with GAD recruited from primary care who received CBT from BLPs (n = 52) or PLPs (n = 60) and completed post-treatment assessments. Assessments were given at post-treatment and at 6- and 12-month follow-up. Primary outcomes assessed long-term maintenance of gains in worry (Generalized Anxiety Disorder Severity Scale) and anxiety (State-Trait Anxiety Inventory, Structured Interview Guide for the Hamilton Anxiety Scale). Secondary outcomes assessed depression (Patient Health Questionnaire), mental health quality of life (Medical Outcomes Study Short Form – mental wellness scale), and sleep (Insomnia Severity Index).

Results: At 6- and 12-month follow-ups, post-treatment reductions in GAD severity, anxiety, depression, and improvements in mental health quality of life and sleep were maintained for patients in both groups. No differences were found, based on provider group.

Conclusion: Treatment of late-life anxiety delivered by nonexpert lay providers working under supervision of licensed providers has lasting benefits. These findings support the potential of new models of care for older adults that may expand reach of mental health services.

The role of patient navigation on colorectal cancer screening completion and education: A review of the literature.

2018 Apr;33(2):251-259 / 2016 Nov 23 [Epub ahead of print]

Sunny A, Rustveld L.

Abstract

Although the general assumption is that patient navigation helps patients adhere to CRC screening recommendations, concrete evidence for its effectiveness is still currently under investigation. The present literature review was conducted to explore effectiveness of patient navigation and education on colorectal cancer (CRC) screening completion in medically underserved populations. Data collection included PubMed, Google Scholar, and Cochrane reviews searches. Study inclusion criteria included randomized controlled trials and prospective investigations that included an intervention and control group. Case series, brief communications, commentaries, case reports, and uncontrolled studies were excluded. Twenty-seven of the 36 studies screened for relevance were selected for inclusion. Most studies explored the utility of lay and clinic-based patient navigation. Others implemented interventions that included tailored messaging, and culturally and linguistically appropriate outreach and education efforts to meet CRC screening needs of medically underserved individuals. More recent studies have begun to conduct cost-effectiveness analyses of patient navigation programs that impacted CRC screening and completion. Peer-reviewed publications consistently indicate a positive impact of patient navigation programs on CRC screening completion, as well have provided preliminary evidence for their cost-effectiveness.

Keywords: Colorectal cancer; patient navigation; fecal occult blood test; fecal immunochemical test
Preventing large birth size in women with preexisting diabetes mellitus: The benefit of appropriate gestational weight gain.

2016 Oct;91:164-168

Kim SY, Sharma AJ, Sappenfield W, Salihu HM.

Abstract

Objective: To estimate the percentage of infants with large birth size attributable to excess gestational weight gain (GWG), independent of prepregnancy body mass index, among mothers with preexisting diabetes mellitus (PDM).

Study design: We analyzed 2004–2008 Florida linked birth certificate and maternal hospital discharge data of live, term (37–41 weeks) singleton deliveries (N = 641,857). We calculated prevalence of large-for-gestational age (LGA) (birth weight-for-gestational age ≥ 90th percentile) and macrosomia (birth weight > 4500 g) by GWG categories (inadequate, appropriate, or excess). We used multivariable logistic regression to estimate the relative risk (RR) of large birth size associated with excess compared to appropriate GWG among mothers with PDM. We then estimated the population attributable fraction (PAF) of large birth size due to excess GWG among mothers with PDM (n = 4427).

Results: Regardless of diabetes status, half of mothers (51.2%) gained weight in excess of recommendations. Large birth size was higher in infants of mothers with PDM than in infants of mothers without diabetes (28.8% versus 9.4% for LGA; 5.8% versus 0.9% for macrosomia). Among women with PDM, the adjusted RR of having an LGA infant was 1.7 (95% CI 1.5, 1.9) for women with excess GWG compared to those with appropriate gain; the PAF was 27.7% (95% CI 22.0, 33.3). For macrosomia, the adjusted RR associated with excess GWG was 2.1 (95% CI 1.5, 2.9) and the PAF was 38.6% (95% CI 24.9, 52.4).

Conclusion: Preventing excess GWG may avert over one-third of macrosomic term infants of mothers with PDM. Effective strategies to prevent excess GWG are needed.

Keywords: Gestational weight gain; LGA; macrosomia; preexisting diabetes

Differences in mortality after cardiopulmonary resuscitation between pregnant and nonpregnant women.

2016 Oct;128(4):880-888

Mogos MF, Salemi JL, Spooner KK, McFarlin BL, Salihu HM.

Abstract

Objective: To examine the association between pregnancy status and in-hospital mortality after cardiopulmonary resuscitation (CPR) in an inpatient setting.

Methods: We conducted a population-based cross-sectional study using the Nationwide Inpatient Sample databases (2002–2011). International Classification of Diseases, 9th Revision, Clinical Modification codes were used to define cases, comorbidities, and clinical outcomes. Rates of CPR among study groups were calculated by patient and hospital characteristics. Survey logistic regression was used to estimate adjusted odds ratios (ORs) that represent the association between pregnancy status and mortality after CPR. Joinpoint regression was used to describe temporal trends in CPR and mortality rates.

Results: During the study period, 5,923 women (13-49 years) received inpatient CPR annually. Cardiopulmonary resuscitation rates increased significantly from 2002 to 2011, by 6.4% and 3.8% annually for pregnant and nonpregnant women, respectively. In-hospital mortality rates after CPR were lower among pregnant women 49.4% (45.4-53.4) than nonpregnant women 71.1% (70.1-72.2), even after adjusting for confounders (adjusted OR 0.46, 95% confidence interval 0.39-0.56).

Conclusion: Cardiopulmonary resuscitation in an inpatient pregnant woman is associated with improved survival compared with this procedure in nonpregnant women. Elucidating reasons behind this association could help to improve CPR outcomes in both pregnant and nonpregnant women.

2016 Oct;40(10):2169-2179

Mejia de Grubb MC, Salemi JL, Gonzalez SJ, Zoorob RJ, Levine R.

Abstract

Background: Among Hispanics, chronic liver disease and cirrhosis are among the leading causes of death despite generally lower alcohol consumption rates. Moreover, recent national studies have suggested temporal changes in Hispanic consumption and alcohol mortality, which raises the question of whether Hispanic white disparities in alcohol-related mortality are also changing over time. This study aimed to describe temporal trends of alcohol-related mortality between Hispanics and non-Hispanic (NH) whites in the United States from 1999 to 2014 and to assess county-level sociodemographic characteristics that are associated with racial/ethnic disparities in age-adjusted alcohol-related mortality.

Methods: We conducted a population-based, cross-sectional, ecologic study using multiple cause-of-death mortality data linked, at the county level, to census data from the American Community Survey.

Results: Overall, 77% of alcohol-related deaths were among men, and Hispanic men had the highest age-adjusted alcohol-related mortality rate (41.6 per 100,000), followed by NH white men (34.8), NH white women (10.8), and Hispanic women (6.7). Whereas the relative gap in alcohol-related mortality between NH white and Hispanic women increased from 1999 to 2014, the disparity between NH white and Hispanic men that was pronounced in earlier years was eliminated by 2012. From 2007 to 2014, when the race/ethnic disparity among men was decreasing, county-specific Hispanic:NH white age-adjusted mortality ratios (AAMRs) ranged from 0.29 to 2.64. Lower Hispanic rates were associated with large metropolitan counties, and those counties that tended to have Hispanic populations were less acculturated, as evidenced by their higher rates of being foreign-born, non-U.S. citizens or citizens through naturalization, and a higher proportion that do not speak English “very well.”

Conclusions: Since 1999, whereas the increasing mortality rate among whites is leading to a widening gap among women, mortality differences between Hispanic and white men have been eliminated. The understanding of contextual factors that are associated with disparities in alcohol-related mortality may assist in tailoring prevention efforts that meet the needs of minority populations.

Pregnancy as a window to future health: Maternal placental syndromes and short-term cardiovascular outcomes.

2016 Oct;215(4):484.e1-14 “Editor’s Choice” article

Cain MA, Salemi JL, Tanner JP, Kirby RS, Salihu HM, Louis JM.

Abstract

Background: Cardiovascular disease is the leading cause of death among women. Identifying risk factors for future cardiovascular disease may lead to earlier lifestyle modifications and disease prevention. Additionally, interpregnancy development of cardiovascular disease can lead to increased perinatal morbidity in subsequent pregnancies. Identification and implementation of interventions in the short term (within 5 years of first pregnancy) may decrease morbidity in subsequent pregnancies.

Objective: We identified the short-term risk (within 5 years of first pregnancy) of cardiovascular disease among women who experienced a maternal placental syndrome, as well as preterm birth and/or delivered a small-for-gestational-age infant.

Study Design: We conducted a retrospective cohort study using a population-based, clinically enhanced database of women in the state of Florida. Nulliparous women and girls aged 15-49 years experiencing their first delivery during the study time period with no prepregnancy history of diabetes mellitus, hypertension, or heart or renal disease were included in the study. The risk of subsequent cardiovascular disease was compared among women who did and did not experience a placental syndrome during their first pregnancy. Risk was then reassessed among women with placental syndrome and preterm birth or delivering a small for gestational age infant vs those without these adverse pregnancy outcomes.

Results: The final study population was 302,686 women and girls. Median follow-up time for each patient was 4.9 years. The unadjusted rate of subsequent cardiovascular disease among women and girls with any placental syndrome (11.8 per 1000 women) was 39% higher than the rate among women and girls without a placental syndrome (8.5 per 1000 women). Even after adjusting for sociodemographic factors, preexisting conditions, and clinical and behavioral conditions associated with the current pregnancy, women and girls with any placental syndrome experienced a 19% increased risk of cardiovascular disease (hazard ratio, 1.19; 95% confidence interval, 1.07-1.32). Women and girls with ≥1 placental syndrome had the highest cardiovascular disease risk (hazard ratio, 1.43; 95% confidence interval, 1.20-1.70), followed by those with eclampsia/preeclampsia alone (hazard ratio, 1.42; 95% confidence interval, 1.14-1.76). When placental syndrome was combined with preterm birth and/or small for gestational age, the adjusted risk of cardiovascular disease increased 45% (95% confidence interval, 1.24-1.71). Women and girls with placental syndrome who then developed cardiovascular disease experienced a 5-fold increase in health care-related costs during follow-up, compared to those who did not develop cardiovascular disease.

Conclusions: Women and girls experiencing placental syndromes and preterm birth or small-for-gestational-age infant are at increased risk of subsequent cardiovascular disease in short-term follow-up. Strategies to identify and improve cardiovascular disease risk in the postpartum period may improve future heart disease outcomes.

Keywords: Cardiovascular disease; preeclampsia; preterm birth; small for gestational age.
Post-traumatic stress disorder following emergency peripartum hysterectomy.

2016 Oct;294(4):681-88

de la Cruz CZ, Coulter M, O’Rourke K, Salihu HM, et al.

Abstract

Purpose: Our objective was to explore if women who experience emergency peripartum hysterectomy (EPH), a type of severe maternal morbidity, are more likely to screen positive for post-traumatic stress disorder (PTSD) compared to women who did not experience EPH.

Methods: Using a retrospective cohort design, women were sampled through online communities. Participants completed online screens for PTSD. Additionally, women provided sociodemographic, obstetric, psychiatric, and psychosocial information. We conducted bivariate and logistic regression analyses, then Monte Carlo simulation and propensity score matching to calculate the risk of screening positive for PTSD after EPH.

Results: 74 exposed women (experienced EPH) and 335 non-exposed women (did not experience EPH) completed the survey. EPH survivors were nearly two times more likely to screen positive for PTSD compared to women who did not experience EPH (aOR: 1.90; 95 % CI: 1.57, 2.30), and nearly 2.5 times more likely to screen positive for PTSD at 6 months postpartum compared to women who were not EPH survivors (aOR: 2.46; 95 % CI: 1.92, 3.16).

Conclusion: The association of EPH and PTSD was statistically significant, indicating a need for further research, and the potential need for support services for these women following childbirth.

Keywords: Emergency hysterectomy; maternal mental health; maternal morbidity; PTSD; post-traumatic stress disorder
Poster 210 Urine study results of persons with spinal cord injury presenting for annual evaluation.

Skelton FM, Grigoryan L, Ying J, Homes SA, Trautner B.

Abstract

Objective: This study aimed to examine the urinalysis (UA) and urine culture (UC) results of patients with spinal cord injury (SCI) presenting for a routine annual evaluation.

Design: Retrospective Cohort.

Setting: Veterans Health Administration (VA) outpatient clinic.

Participants: 327 persons with SCI presenting for their annual evaluation in 2012 and 2013.

Interventions: Using a validated algorithm, each case was classified as asymptomatic bacteriuria (ASB), urinary tract infection (UTI) or neither.

Main Outcome Measures: Urinalysis results (levels of pyuria, presence of nitrates, presence of leukocyte esterase) and urine culture results (colony forming unit count and organisms).

Results: The patients were predominantly male (95%), white (60%), and used intermittent catheterization (43%). Of the 327 clinic visits, 271 (83%) had a UA obtained, and 249 (76%) of cultures were positive. 76 (44%) of the cultures grew urease producing organisms. The vast majority (149, 87%) of the positive cultures represented ASB, and 22 cases (13%) represented UTI. Nitrates were present in 11 (50%) of the UTI cases and 92 (61%) of the ASB cases. Leukocyte esterase was present in 21 (95%) of the UTI cases and 133 (89%) of the ASB cases. There was no difference in the mean level of pyuria in the ASB and UTI cases (115, SD 311 and 115, SD 148, respectively).

Conclusions: Distinguishing between ASB and UTI poses a diagnostic challenge, as the presenting signs and symptoms of UTI in persons with SCI can be non-specific. Urinalysis and urine culture results can be difficult to interpret in the setting of chronic catheter use.
Racial differences in DNA-methylation of CpG sites within preterm-promoting genes and gene variants.


Abstract
Objective: To evaluate the role DNA methylation may play in genes associated with preterm birth for higher rates of preterm births in African-American women. Methods: Fetal cord blood samples from births collected at delivery and maternal demographic and medical information were used in a cross-sectional study to examine fetal DNA methylation of genes implicated in preterm birth among black and non-black infants. Allele-specific DNA methylation analysis was performed using a methylation bead array. Targeted maximum likelihood estimation was applied to examine the relationship between race and fetal DNA methylation of candidate preterm birth genes. Receiver-operating characteristic analyses were then conducted to validate the CpG site methylation marker within the two racial groups. Bootstrapping, a method of validation and replication, was employed. Results: 42 CpG sites were screened within 20 candidate gene variants reported consistently in the literature as being associated with preterm birth. Of these, three CpG sites on TNFAIP8 and PON1 genes (corresponding to cg23917399; cg07086380; and cg07404485, respectively) were significantly differentially methylated between black and non-black individuals. The three CpG sites showed lower methylation status among infants of black women. Bootstrapping validated and replicated results. Conclusion for Practice: Our study identified significant differences in levels of methylation between black and non-black gene variants. Understanding the genetic/epigenetic mechanisms that lead to preterm birth may lead to enhanced prevention strategies to reduce morbidity and mortality by eventually providing a means to identify individuals with a genetic predisposition to preterm labor.

Keywords: Preterm birth; Race; DNA methylation; TNFAIP8; PON1
Factors associated with married women’s support of male circumcision for HIV prevention in Uganda: A population based cross-sectional study.

2016 Aug 2;16:696

Mati K, Adegoke KK, Salihu HM.

Abstract

Background: Despite the protective effect of male circumcision (MC) against HIV in men, the acceptance of voluntary MC in priority countries for MC scale-up such as Uganda remains limited. This study examined the role of women’s sociodemographic characteristics, knowledge of HIV and sexual bargaining power as determinants of women’s support of male circumcision (MC).

Methods: Data from the Uganda AIDS Indicator Survey, 2011 were analyzed (n = 4,874). Bivariate and multivariate logistic regression analyses with random intercept were conducted to identify factors that influence women’s support of MC.

Results: Overall, 67.0 % (n = 3,276) of the women in our sample were in support of MC but only 28.0 % had circumcised partners. Women who had the knowledge that circumcision reduces HIV risk were about 6 times as likely to support MC than women who lacked that knowledge [AOR (adjusted odds ratio) = 5.85, 95 % CI (confidence interval) = 4.83-7.10]. The two indicators of women’s sexual bargaining power (i.e., ability to negotiate condom use and ability to refuse sex) were also positively associated with support of MC. Several sociodemographic factors particularly wealth index were also positively associated with women’s support of MC.

Conclusions: The findings in this study will potentially inform intervention strategies to enhance uptake of male circumcision as a strategy to reduce HIV transmission in Uganda.

Keywords: HIV; medical male circumcision; sexual bargaining power; women
Usability of low-cost android data collection system for community-based participatory research.

2016 Summer;10(2):265-73

Salihu HM, Salinas-Miranda A, Turner D, King L, Paonthong A, Austin D, Berry EL.

Abstract

Background: Android tablet computers can be valuable tools for data collection, but their usability has not been evaluated in community-based participatory research (CBPR).

Objectives: This article examines the usability of a low-cost bilingual touchscreen computerized survey system using Android tablets, piloted with a sample of 201 community residents in Tampa, Florida, from November 2013 to March 2014.

Methods: Needs assessment questions were designed with the droidSURVEY software, and deployed using Android tablet computers. In addition, participants were asked questions about system usability.

Results: The mean system usability was 77.57 ± 17.66 (range, 0-100). The mean completion time for taking the 63 survey questions in the needs assessment was 23.11 ± 9.62 minutes. The survey completion rate was optimal (100%), with only 6.34% missingness per variable. We found no sociodemographic differences in usability scores.

Conclusions: Our findings indicate that Android tablets could serve as useful tools in CBPR studies.

Heart failure hospitalization by race/ethnicity, gender and age in California: Implications for prevention.

2016 Jul 21;26(3):345-54

Husaini BA, Levine RS, Norris KC, Cain V, Bazargan M, Moonis M.

Abstract

Objective: We examined variation in rates of hospitalization, risk factors, and costs by race/ethnicity, gender and age among heart failure (HF) patients.

Methods: We analyzed California hospital discharge data for patients in 2007 (n=58,544) and 2010 (n=57,219) with a primary diagnosis of HF (ICD-9 codes: 402, 404, 428). HF cases included African Americans (Blacks; 14%), Hispanic/Latinos (21%), and non-Hispanic Whites (65%). Age-adjusted prevalence rates per 100,000 US population were computed per CDC methodology.

Results: Four major trends emerged: 1) Overall HF rates declined by 7.7% from 284.7 in 2007 to 262.8 in 2010; despite the decline, the rates for males and Blacks remained higher compared with others in both years; 2) while rates for Blacks (aged ≤54) were 6 times higher compared with same age Whites, rates for Hispanics were higher than Whites in the middle age category; 3) risk factors for HF included hypertension, chronic heart disease, chronic kidney disease, atrial fibrillation, and chronic obstructive pulmonary disease; and 4) submitted hospitalization costs were higher for males, Blacks, and younger patients compared with other groups.

Conclusions: Health inequality in HF persists as hospitalization rates for Blacks remain higher compared with Whites and Hispanics. These findings reinforce the need to determine whether increased access to providers, or implementing proven hypertension and diabetes preventive programs among minorities might reduce subsequent hospitalization for HF in these populations.

Keywords: Age; ethnicity; gender; heart failure; hospital costs
A positive association between umbilical cord RBC folate and fetal telomere length at birth supports a potential for fetal reprogramming.

2016 Jul;36(7):703-9


Abstract
Telomere length (TL) has been studied extensively in adults; however, limited information exists regarding maternal influences on TL in utero. The objective of this study was to investigate the relationship between fetal red blood cell (RBC) folate levels, a surrogate measure for maternal folate levels, and TL. We hypothesized that umbilical cord RBC folate concentrations would positively correlate with fetal TL. Data for this analysis were collected as part of a prospective cohort study that recruited pregnant women upon admission into labor and delivery. Cord blood was collected for 96 maternal-fetal dyads, and DNA analysis was performed using quantitative polymerase chain reaction. The telomere to single copy gene ratio method was used to determine TL, and RBC folate levels were measured. Statistical analysis was conducted by incorporating a bootstrapping approach into generalized linear modeling-based analyses. Consistent significant positive correlations were observed between RBC folate and TL (telomere to single copy gene ratio) with 9880 of the 10000 (98.8%) iterations performed having a P value less than .05. Our study shows a positive association between umbilical cord RBC folate and fetal TL at birth. These findings may provide a pathway of understanding and preventing adult-onset disease and mortality through intrauterine reprogramming.

Keywords: DNA; fetus; folate; folic acid; newborn; telomere

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Clostridium difficile infection in patients hospitalized with type 2 diabetes mellitus and its impact on morbidity, mortality, and the costs of inpatient care.

2016 Jun;116:68-79

Olanipekun TO, Salemi JL, Mejia de Grubb MC, Gonzalez SJ, Zoorob RJ.

Abstract
Aims: Type 2 diabetes mellitus (T2DM) is often complicated by infections leading to hospitalization, increased morbidity, and mortality. Not much is known about the impact of Clostridium difficile infection (CDI) on health outcomes in hospitalized patients with T2DM. We estimated the prevalence and temporal trends of CDI; evaluated the associations between CDI and in-hospital mortality, length of stay (LOS), and the costs of inpatient care; and compared the impact of CDI with that of other infections commonly seen in patients with T2DM.

Methods: We conducted a cross-sectional analysis using data from the Nationwide Inpatient Sample among patients >18yrs with T2DM and generalized linear regression was used to analyze associations and jointpoint regression for trends.

Results: The prevalence of CDI was 6.8 per 1000 hospital discharges. Patients with T2DM and CDI had increased odds of in-hospital mortality (OR, 3.63; 95% CI 3.16, 4.17). The adjusted mean LOS was higher in patients with CDI than without CDI (11.9 vs. 4.7 days). That translated to average hospital costs of $23,000 and $9100 for patients with and without CDI, respectively. The adjusted risk of mortality in patients who had CDI alone (OR 3.75; 95% CI 3.18, 4.41) was similar to patients who had CDI in addition to other common infections (OR 3.25; 95% CI 2.58, 4.10).

Conclusion: CDI is independently associated with poorer health outcomes in patients with T2DM. We recommend close surveillance for CDI in hospitalized patients and further studies to determine the cost effectiveness of screening for CDI among patients with T2DM.

Keywords: Clostridium difficile; infection; nationwide inpatient sample; screening; type 2 diabetes mellitus
Cancer

Counties eliminating racial disparities in colorectal cancer mortality.

2016 Jun 1;122(11):1735-48


Abstract

Background: Although colorectal cancer (CRC) mortality rates are declining, racial-ethnic disparities in CRC mortality nationally are widening. Herein, the authors attempted to identify county-level variations in this pattern, and to characterize counties with improving disparity trends.

Methods: The authors examined 20-year trends in US county-level black-white disparities in CRC age-adjusted mortality rates during the study period between 1989 and 2010. Using a mixed linear model, counties were grouped into mutually exclusive patterns of black-white racial disparity trends in age-adjusted CRC mortality across 20 three-year rolling average data points. County-level characteristics from census data and from the Area Health Resources File were normalized and entered into a principal component analysis. Multinomial logistic regression models were used to test the relation between these factors (clusters of related contextual variables) and the disparity trend pattern group for each county.

Results: Counties were grouped into 4 disparity trend pattern groups: 1) persistent disparity (parallel black and white trend lines); 2) diverging (widening disparity); 3) sustained equality; and 4) converging (moving from disparate outcomes toward equality). The initial principal component analysis clustered the 82 independent variables into a smaller number of components, 6 of which explained 47% of the county-level variation in disparity trend patterns.

Conclusions: County-level variation in social determinants, health care workforce, and health systems all were found to contribute to variations in cancer mortality disparity trend patterns from 1990 through 2010. Counties sustaining equality over time or moving from disparities to equality in cancer mortality suggest that disparities are not inevitable, and provide hope that more communities can achieve optimal and equitable cancer outcomes for all.

Hispanic acculturation and gender differences in support and self-efficacy for managing diabetes.

2016 Jun;42(3):315-24

Mansyur CL, Rustveld LO, Nash SG, Jibaja-Weiss ML.

Abstract

Purpose: The purpose of this study was to determine whether perceived support, social norms, and their association with self-efficacy varied by gender and language-based acculturation in Hispanic men and women with uncontrolled type 2 diabetes mellitus (T2DM).

Methods: A cross-sectional, secondary analysis of baseline survey data from a randomized control trial. Participants were 248 Hispanic patients from 4 community health centers who participated in a culturally targeted intervention for diabetes management. Quantitative statistical methods were used, including chi-square analyses, one-way ANOVA, and multiple regression.

Results: Gender and language both moderated the relationship between social factors and self-efficacy. Regardless of language, better perceived support was associated with improved self-efficacy in women but not men. Dietary norms were associated with self-efficacy in English-speaking men and women, while physical activity norms were associated with self-efficacy for Spanish-speaking women only.

Conclusions: This study builds on previous research by exploring the extent to which the social context of diabetes self-management may vary in its effects depending on gender and acculturation. The findings revealed potentially important differences based on both gender and language, suggesting that interventions must be designed with these differences in mind. Diabetes-specific support from family members, especially spouses, may be especially important for Hispanic women. For both men and women, it may be effective to find creative ways of involving the family in creating healthier social norms and expectations.
Incorporating cultural sensitivity into interactive entertainment-education for diabetes self-management designed for Hispanic audiences.

2016 Jun;21(6):658-68

Kline KN, Montealegre JR, Rustveld LO, Glover TL, Chauca G, Reed BC, Jibaja-Weiss ML.

Abstract
Diabetes self-management education can improve outcomes in adults with Type 2 diabetes mellitus (T2DM). However, Hispanics, a group that carries a large burden of disease, may not participate in diabetes education programs. Audience engagement with entertainment-education has been associated with improved health education outcomes and may engage and empower Hispanic users to active self-care. Successful use of entertainment-education relies on the use of characters and situations with whom the viewers can feel some sense of involvement and for Hispanic audiences is encouraged when storylines and characters are culturally sensitive. In this study, we used a mixed methods approach that included descriptive statistics of closed-ended and content analysis of open-ended questions to measure the cultural sensitivity of the telenovela portion of a novel technology-based application called Sugar, Heart, and Life (SHL). Specifically, we analyzed the responses of 123 male and female patients diagnosed with uncontrolled T2DM to determine viewer involvement with characters and situations in the telenovela, viewer perceived self-efficacy in following recommendations, as well as viewer satisfaction with the program. Our findings indicate that the SHL application achieved its goal of creating a user-friendly program that depicted realistic, culturally sensitive characters and storylines that resonated with Hispanic audiences and ultimately fostered perceived self-efficacy related to following recommendations given about healthy lifestyle changes for diabetes self-management. These findings suggest that the SHL application is a culturally sensitive health education intervention for use by Hispanic male and female individuals that may empower them in self-management of T2DM.

A systematic review of eHealth interventions to improve health literacy.

2016;22(2):81-98

Jacobs RJ, Lou J, Ownby RL, Caballero J.

Abstract
Implementation of eHealth is now considered an effective way to address concerns about the health status of health care consumers. The purpose of this study was to review empirically based eHealth intervention strategies designed to improve health literacy among consumers in a variety of settings. A computerized search of 16 databases of abstracts (e.g., Biomedical Reference Collection, Cochrane Central Register of Controlled Trials, Computers & Applied Sciences Complete, Health Technology Assessments, MEDLINE) were explored in a systematic fashion to assess the presence of eHealth applications targeting health literacy. Compared to control interventions, the interventions using technology reported significant outcomes or showed promise for future positive outcomes regarding health literacy in a variety of settings, for different diseases, and with diverse samples. This review has indicated that it is feasible to deliver eHealth interventions specifically designed to improve health literacy skills for people with different health conditions, risk factors, and socioeconomic backgrounds.

Keywords: computer, eHealth, health literacy, Internet, systematic review
Florida child care center directors’ intention to implement oral health promotion practices in licensed child care centers.

2016;16(1):100

Joshi A, Bhoopathi V, Jacobs RJ, Ocanto R.

Abstract

Background: To determine the factors associated with child care center directors’ (CCCDs) intention to implement oral health promotion practices (OHPPs) in licensed childcare centers (CCCs) within the next year, and their self-perceived barriers in successfully implementing those practices.

Methods: For this cross-sectional study, a pretested 45-item online survey was sent to 5142 CCCDs assessing pediatric oral health knowledge, attitudes towards oral health, intention to implement OHPPs, and self-perceived barriers to implementing OHPPs. An adjusted logistic regression model determined the factors associated with CCCDs intention to implement OHPPs within the next year.

Results: Participants were 877 CCCDs, with mean age of 48.5 ± 10.5 years, of whom 96 % were women, and 74 % were whites (Response rate = 19.4 %). The majority (67 %) of respondents reported that they intended to implement OHPPs in their center within a year. Insufficient funding, lack of enough training in oral health, and limited time to promote oral health were the most frequently cited barriers to implementing OHPPs. CCCDs of non-White race (p = 0.02), with a college degree or above (p = 0.05), and with positive attitudes (p < 0.0001), were more likely to report that they will implement OHPPs within the next year compared to their counterparts.

Conclusions: CCCDs reported fewer barriers to implementing OHPPs within the next year, indicating that CCCs can be a suitable setting to promote oral health. CCCDs race, educational status and attitudes towards oral health strongly predicted their intention to implement OHPPs. Though this study assessed the intention of CCCDs to implement OHPPs in CCCs, it did not access the actual implementation of OHPPs by them. Therefore future research could longitudinally assess predictors for true implementation of OHPPs. In addition, researchers should adopt a more comprehensive, multi-level approach to assess the actual dental health needs of children attending these centers, along with parental, staff and center level characteristics, and other relevant factors related to implementing OHPPs.

Keywords: Child care centers; day care centers; oral health; oral health promotion; pediatric oral health knowledge; pediatric health

Uncertainty in maternal exposures to ambient PM2.5 and benzene during pregnancy: Sensitivity to exposure estimation decisions.

2016 May;17:117-29


Abstract

We investigate uncertainty in estimates of pregnant women’s exposure to ambient PM2.5 and benzene derived from central-site monitoring data. Through a study of live births in Florida during 2000-2009, we discuss the selection of spatial and temporal scales of analysis, limiting distances, and aggregation method. We estimate exposure concentrations and classify exposure for a range of alternatives, and compare impacts. Estimated exposure concentrations were most sensitive to the temporal scale of analysis for PM2.5, with similar sensitivity to spatial scale for benzene. Using 1-12 versus 3-8 weeks of gestational age as the exposure window resulted in reclassification of exposure by at least one quartile for up to 37% of mothers for PM2.5 and 27% for benzene. The largest mean absolute differences in concentration resulting from any decision were 0.78 µg/m3 and 0.44 ppbC, respectively. No bias toward systematically higher or lower estimates was found between choices for any decision.

Keywords: Air pollution; benzene; birth defects; particles
Institutional review boards: A flawed system of risk management.

2016 May 13 [Epub ahead of print]

Whitney SN.

Abstract
Institutional Review Boards (IRBs) and their federal overseers protect human subjects, but this vital work is often dysfunctional despite their conscientious efforts. A cardinal, but unrecognized, explanation is that IRBs are performing a specific function – the management of risk – using a flawed theoretical and practical approach. At the time of the IRB system’s creation, risk management theory emphasized the suppression of risk. Since then, scholars of governance, studying the experience of business and government, have learned that we must distinguish pure from opportunity risks. Pure risks should be suppressed. Some opportunity risks, in contrast, must be accepted if the institution is to meet its goals. Contemporary theory shows how institutions may make these decisions wisely. It also shows how a sound organizational understanding of risk, a proper locus of responsibility, and appropriate institutional oversight all contribute to effective risk management. We can apply this general theory, developed in other contexts, to the problems of the IRB system. Doing so provides a unifying explanation for IRBs’ disparate dysfunctions by spotlighting five related deficiencies in IRB theory and structure. These deficiencies are (i) inability to focus on greater risks, (ii) loss of balanced theory, (iii) inaccessibility to guidance from senior leadership, (iv) unbalanced federal oversight, and (v) inflexibility. These flaws are deeply rooted in the system, and superficial reform cannot resolve them. Congress should overhaul the system to meet contemporary standards of risk management; this would benefit subjects, scientists, and the public that needs the fruits of research. 

Keywords: Ethical review; ethics committees; government regulation; human experimentation; legislation and jurisprudence; research

Disparities in perceived patient-provider communication quality in the United States: Trends and correlates.

2016 May;99(5)844-54

Spooner KK, Salemi JL, Salihu HM, Zoorob RJ.

Abstract
Objective: This study aimed to describe disparities and temporal trends in the level of perceived patient-provider communication quality (PPPCQ) in the United States, and to identify sociodemographic and health-related factors associated with elements of PPCQ. 

Methods: A cross-sectional analysis was conducted using nationally-representative data from the 2011-2013 iterations of the Health Information National Trends Survey (HINTS). Descriptive statistics, multivariable linear and logistic regression analyses were conducted to examine associations.

Results: PPCQ scores, the composite measure of patients’ ratings of communication quality, were positive overall (82.8; 95% CI: 82.1-83.5). However, less than half (42-46%) of respondents perceived that providers always addressed their feelings, spent enough time with them, or helped with feelings of uncertainty about their health. Older adults and those with a regular provider consistently had higher PPCQ scores, while those with poorer perceived general health were consistently less likely to have positive perceptions of their providers’ communication behaviors. 

Conclusions: Disparities in PPCQ can be attributed to patients’ age, race/ethnicity, educational attainment, employment status, income, healthcare access and general health. 

Practice Implications: These findings may inform educational and policy efforts which aim to improve patient-provider communication, enhance the quality of care, and reduce health disparities.

Keywords: National survey; patient perceptions; patient-centered care; patient–provider communication
Homocysteine levels are not related to telomere length in cord blood leukocytes of newborns.

2016 May;33(6):552-59


Abstract
Objective: Elevated homocysteine (HC) levels and/or shortened telomere length (TL) are associated with adverse medical conditions. Our objective is to investigate the relationship between HC and TL in cord blood leukocytes of newborns.

Study Design: This is a nested study from a prospective cohort from 2011 to 2012 in pregnant women admitted for delivery at a university-affiliated hospital. Cord blood was collected at delivery and genomic DNA was analyzed using quantitative PCR. The telomere-to-single copy gene ratio method was employed to quantify TL. Newborn HC levels were measured. Generalized linear regression modeling (GLM) and bootstrap statistical analyses were performed.

Results: Seventy-seven maternal-fetal dyads with a mean gestational age of 39 weeks were included. The distribution of the coefficient of homocysteine showed most values greater than zero demonstrating that homocysteine had a positive relationship with TL. In 915 of 10,000 (9.15%) iterations, the p-value was < 0.05 demonstrating a positive effect.

Conclusion: Increasing newborn concentrations of HC are not associated with decreasing TL. Larger, prospective studies are needed to confirm these findings and long-term implications.

Infant outcomes after elective early-term delivery compared with expectant management.

2016 Apr;127(4):657-66

Salemi JL, Pathak EB, Salihu HM.

Abstract
Objective: To compare the risk of neonatal morbidity and infant mortality between elective early-term deliveries and those expectantly managed and delivered at 39 weeks of gestation or greater.

Methods: We conducted a population-based retrospective cohort study of 675,202 singleton infants born alive at 37-44 weeks of gestation from 2005 to 2009 in more than 125 birthing facilities in Florida. Data were collected from a validated, longitudinally linked maternal and infant database. The study population was categorized into exposure groups based on the timing and reason for delivery initiation: four subtypes of deliveries at 37-38 weeks of gestation and a comparison group of expectantly managed infants delivered at 39-40 weeks of gestation. Primary outcomes included neonatal respiratory morbidity, sepsis, feeding difficulties, admission to the neonatal intensive care unit (NICU), and infant mortality.

Results: Neonatal outcome rates ranged from 6.0% for respiratory morbidities to 1.3% for both sepsis and feeding difficulties, and the infant mortality rate was 1.5 per 1,000 live births. When compared with infants expectantly managed and delivered at 39-40 weeks of gestation, those delivered after elective induction at 37-38 weeks of gestation did not have increased odds of neonatal respiratory morbidity, sepsis, or NICU admission but did experience slightly higher odds of feeding difficulty (odds ratio 1.18, 99% confidence interval 1.02-1.36). In contrast, infants delivered by elective cesarean at 37-38 weeks of gestation had 13-66% increased odds of adverse outcomes. Survival experiences were similar when comparing early inductions and early cesarean deliveries with the expectant management group.

Conclusion: The issues that surround the timing and reasons for delivery initiation are complicated and each pregnancy unique. This study cautions against a general avoidance of all elective early-term deliveries.

2016 Apr;29(7):1077-82

Mogos MF, Salemi JL, Cain MA, Whiteman VE, Salihu HM.

Abstract

Objective: To describe the prevalence, trends, adverse maternal-fetal morbidities and healthcare costs associated with placenta accreta (PA) in the United States (US) between 1998 and 2011.

Methods: A retrospective, cross-sectional analysis of inpatient hospital discharges was conducted using the National Inpatient Sample (NIS). We used International Classification of Diseases, Ninth Edition, Clinical Modification (ICD-9-CM) codes to identify both cases of PA and of selected comorbidities. Survey logistic regression was used to assess the association between PA and various maternal-fetal outcomes. Joinpoint regression modeling was used to estimate annual percent changes (APCs) in PA prevalence during the study period.

Results: The prevalence of PA from 1998 to 2011 was 3.7 per 1000 delivery-related discharges. After adjusting for known or suspected confounders, PA conferred between a 20% to over a 19-fold increased odds of experiencing an adverse outcome. This resulted in a higher mean, per-hospitalization, cost of inpatient care after adjustment for inflation ($5561 versus $4989), translating into over $115 million dollars in additional inpatient expenditures relative to non-PA affected deliveries from 2001 to 2011.

Conclusions: This study updates recent trends in the prevalence of PA, which is valuable to clinicians and policymakers as they formulate targeted strategies to address factors related to PA.

Keywords: Birth outcomes; cost; placenta accreta; pregnancy; trend

Meaningful learning moments on a family medicine clerkship: When students are patient centered.

2016 Apr;48(4)

Huang WY, Rogers JC, Nelson EA, Wright CC, Teal CR.

Abstract

Background and Objectives: Reflection after patient encounters is an important aspect of clinical learning. After our medical school instituted a reflection paper assignment for all clerkships, we wanted to learn about the types of encounters that students found meaningful on a family medicine clerkship and how they impacted students’ learning.

Methods: Family and Community Medicine Clerkship students completed a reflection paper after the clerkship, based on guidelines that were used for all clerkship reflection papers at our medical school. Two reviewers independently organized student responses into themes and then jointly prioritized common themes and negotiated any initial differences into other themes.

Results: A total of 272 reflection papers describing an actual learning moment in patient care were submitted during the study period of January 2011–December 2012. In describing actions performed, students most frequently wrote about aspects of patient-centered care such as listening to the patient, carefully assessing the patient’s condition, or giving a detailed explanation to the patient. In describing effects of those actions, students wrote about what they learned about the patient-physician interaction, the trust that patients demonstrated in them, the approval they gained from their preceptors, and the benefits they saw from their actions.

Conclusions: An important contribution of a family medicine clerkship is the opportunity for students to further their skills in patient-centered care and realize the outcomes of providing that type of care.
Phenotypes of intimate partner violence among women experiencing infertility in Kano, Northwest Nigeria.

2016 Apr;133(1):32-36

Iliyasu Z, Galadanci HS, Abubakar S, Auwal MS, Odoh C, Salihu HM, Aliyu MH.

Abstract

Objective: To determine the prevalence of and risk factors for intimate partner violence (IPV) among women attending a large urban fertility clinic in Kano, Nigeria.

Methods: Interviewers administered questionnaires to a cross-section of women attending an infertility clinic in Northwest Nigeria, regarding their experience of IPV and associated factors.

Results: In total, 373 individuals were interviewed. Of the individuals interviewed, 134 (35.9%; 95% confidence Interval [CI] 31.1%-41.0%) had experienced at least one form of IPV in the preceding year. Of the 134 patients who had encountered violence, 126 (94.0%), 111 (82.8%), 47 (35.1%), and 25 (18.7%) had experienced psychological, sexual, verbal, and physical forms of violence, respectively. Of the affected individuals, 34 (25.4%) experienced multiple forms of violence, with spouses being the main perpetrators. A lack of formal education (adjusted odds ratio [OR] 2.21; 95%CI 1.21-7.43), employment in the informal sector (OR 2.01; 95% CI: 1.02-4.52), and having an unemployed spouse (OR 1.56; 95%CI 1.02-3.15) or one with low level of education (OR 2.32; 95%CI 1.87-4.21) were independently associated with IPV.

Conclusion: In this setting, women who were infertile experienced a high incidence of IPV. Women presenting at fertility clinics should be screened for IPV and provided with links to appropriate support services.

Keywords: Infertility; intimate partner violence; Nigeria; prevalence; risk factors

Malignant bowel obstruction in patients with recurrent ovarian cancer.

2016 Apr;33(3):272-75

Tran E, Spiceland C, Sandhu NP, Jatoi A.

Abstract

We sought to report incidence, risk factors, and survival related to bowel obstruction in 311 ovarian cancer patients with recurrent disease. A total of 68 (22%) had a documented bowel obstruction during their cancer course, and 49 (16%) developed it after cancer recurrence. Surprisingly, 142 (45%) fit into an "unknown" category (3+ months of data lacking from last contact/death). No risk factors were identified; management included surgery (n = 21), conservative measures (n = 21), and other (n = 7). Documented bowel obstruction was not associated with a statistically significant reduction in survival after cancer recurrence. In conclusion, although bowel obstruction occurs in only a subgroup of patients with ovarian cancer and does not appear to detract from survival after cancer recurrence, limited end-of-life information may be resulting in an underestimation of incidence.

Keywords: Bowel obstruction; end of life; morbidity; ovarian cancer

2016 Feb;31(3):444-64

Mogos MF, Araya WN, Masho SW, Salemi JL, Shieh C, Salihu HM.

Abstract

Our purpose was to estimate the national prevalence of intimate partner violence (IPV) among delivery-related discharges and to investigate its association with adverse feto-maternal birth outcomes and delivery-related cost. A retrospective cross-sectional analysis of delivery-related hospital discharges from 2002 to 2009 was conducted using the Nationwide Inpatient Sample (NIS). We used ICD-9-CM codes to identify IPV, covariates, and outcomes. Multivariable logistic regression modeling was used to calculate adjusted odds ratios (OR) and 95% confidence intervals (CI) for the associations between IPV and each outcome. Joinpoint regression was used for trend analysis. During the study period, 3,649 delivery-related discharges were diagnosed with IPV (11.2 per 100,000; 95% CI = [10.0, 12.4]). IPV diagnosis during delivery is associated with stillbirth (AOR = 4.12, 95% CI = [2.75, 6.17]), preterm birth (AOR = 1.97, 95% CI = [1.59, 2.44]), fetal death (AOR = 3.34, 95% CI = [1.99, 5.61]), infant with poor intrauterine growth (AOR = 1.55, 95% CI = [1.01, 2.40]), and increased inpatient hospital care cost (US$5,438.2 vs. US$4,080.1) per each discharge, incurring an additional cost of US$4,955,707 during the study period. IPV occurring during pregnancy has a significant health burden to both the mother and infant. Education about IPV; screening at periodic intervals, including during obstetric visits; and ongoing clinical care could help to reduce or eliminate adverse effects of pregnancy-related IPV. Preventing the lifelong consequences associated with IPV can have a positive effect on the overall health of all women and delivery-related health care cost.

Keywords: Alcohol and drugs; child abuse; domestic violence; sexual abuse; violence

Comparing single and dual console systems in the robotic surgical training of graduating OB/GYN residents in the United States.

2016 Feb 4;2016(5190152):1-6

Mikhail E, Salemi JL, Bassalay R, Hart S, Imudia AN.

Abstract

Objective: To assess the impact of a single versus dual console robotic system on the perceptions of program directors (PD) and residents (RES) towards robotic surgical training among graduating obstetrics and gynecology residents.

Design: An anonymous survey was developed using Qualtrics, a web-based survey development and administration system, and sent to obstetrics and gynecology program directors and graduating residents.

Participants: 39 program directors and 32 graduating residents (PGY4).

Results: According to residents’ perception, dual console is utilized in about 70% of the respondents’ programs. Dual console system programs were more likely to provide a robotics training certificate compared to single console programs (43.5% versus 0%, p = 0.03). A greater proportion of residents graduating from a dual console program perform more than 20 robotic-assisted total laparoscopic hysterectomies, 30% versus 0% (p = 0.15).

Conclusions: Utilization of dual console system increased the likelihood of obtaining robotic training certification without significantly increasing the case volume of robotic-assisted total laparoscopic hysterectomy.

2016 Jan 22;65(2):23-26


Abstract

Gastroschisis is a serious congenital defect in which the intestines protrude through an opening in the abdominal wall. Gastroschisis requires surgical repair soon after birth and is associated with an increased risk for medical complications and mortality during infancy. Reports from multiple surveillance systems worldwide have documented increasing prevalence of gastroschisis since the 1980s, particularly among younger mothers; however, since publication of a multistate U.S. report that included data through 2005, it is not known whether prevalence has continued to increase. Data on gastroschisis from 14 population-based state surveillance programs were pooled and analyzed to assess the average annual percent change (AAPC) in prevalence and to compare the prevalence during 2006-2012 with that during 1995-2005, stratified by maternal age and race/ethnicity. The pooled data included approximately 29% of U.S. births for the period 1995-2012. During 1995-2012, gastroschisis prevalence increased in every category of maternal age and race/ethnicity, and the AAPC ranged from 3.1% in non-Hispanic white (white) mothers aged <20 years to 7.9% in non-Hispanic black (black) mothers aged <20 years. These corresponded to overall percentage increases during 1995-2012 that ranged from 68% in white mothers aged <20 years to 263% in black mothers aged <20 years. Gastroschisis prevalence increased 30% between the two periods, from 3.6 per 10,000 births during 1995-2005 to 4.9 per 10,000 births during 2006-2012 (prevalence ratio = 1.3, 95% confidence interval [CI]: 1.3-1.4), with the largest increase among black mothers aged <20 years (prevalence ratio = 2.0, 95% CI: 1.6-2.5). Public health research is urgently needed to identify factors contributing to this increase.
Mammography screening among the elderly: A research challenge.

2015 Dec;128(12):1362.e7-1362.e14


Abstract
Background: Randomized trials demonstrate clear benefits of mammography screening in women through age 74 years. We explored age- and race-specific rates of mammography screening and breast cancer mortality among women aged 69 to 84 years.

Methods: We analyzed Medicare claims data for women residing within Surveillance, Epidemiology and End Results geographic areas from 1995 to 2009 from 64,384 non-Hispanic women (4886 black and 59,498 white) and ascertained all primary breast cancer cases diagnosed between ages 69 and 84 years. The exposure was annual or biennial screening mammography during the 4 years immediately preceding diagnosis. The outcome was breast cancer mortality during the 10 years immediately after diagnosis.

Results: After adjustment for stage at diagnosis, radiation therapy, chemotherapy, comorbid conditions, and contextual socioeconomic status, hazard ratios (and 95% confidence intervals) for breast cancer mortality relative to no/irregular mammography at 10 years for women aged 69 to 84 years at diagnosis were 0.31 (0.29-0.33) for annual mammography and 0.47 (0.44-0.51) for biennial mammography among whites and 0.36 (0.29-0.44) for annual mammography and 0.47 (0.37-0.58) for biennial mammography among blacks. Trends were similar at 5 years overall and stratified by ages 69 to 74 years, 75 to 78 years, and 79 to 84 years.

Conclusions: In these Medicare claims and Surveillance, Epidemiology and End Results data, elderly non-Hispanic women who self-selected for annual mammography had lower 10-year breast cancer mortality than corresponding women who self-selected for biennial or no/irregular mammography. These findings were similar among black and white women. The data highlight the evidentiary limitations of data used for current screening mammography recommendations.

Keywords: Breast cancer screening; geographic disparities; mortality; racial disparity

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A fern in amber: Risk management in research with humans.

2015 Dec 24 [Epub ahead of print]

Whitney SN.

Abstract
Scientific and scholarly research with human subjects presents an array of hazards and benefits that are ideally suited to holistic management. Yet the regulation of this research, particularly in the United States, follows a risk management model that was academically discredited decades ago. This system, although staffed by able federal officials and conscientious Institutional Review Board members, has produced disappointing results; it does protect subjects but through a process that is deeply flawed. The failure of this ethics review system is based on an underlying defect: it is implicitly modeled on the risk management practices of the time it was created, 50 years ago. Its major flaws are best understood as risk management failures. (i) Review committees are not permitted to focus on the most significant risks. (ii) The theory under which review is conducted is unbalanced, emphasizing subject protection to the near exclusion of research’s value to society. (iii) Senior institutional officials are prohibited from overturning a negative decision by their own review committee. (iv) Government oversight emphasizes rote compliance and exacerbates the system’s lack of balance. (v) The system cannot adapt to changing circumstances. The system is, like a fern in amber, frozen in time.

Keywords: institutional review board; ethics committees; research ethics; research; government regulation; human experimentation; legislation & jurisprudence; risk management

2015 Nov 16;9:42-50

Mogos MF, Salmon JL, Sultan DH, Shelton MM, Salihu HM.

Abstract

Objective: To estimate the national prevalence of cervical cancer (CCA) in women discharged from hospital after delivery, and to examine its associations with birth outcomes.

Methods: We did a retrospective cross-sectional analysis of maternal hospital discharges in the United States (1998-2009). We used the Nationwide Inpatient Sample (NIS) database to identify hospital stays for women who gave birth. We determined length of hospital stay, in-hospital mortality, and used ICD-9-CM codes to identify CCA and all outcomes of interest. Multivariable logistic regression modeling was used to calculate adjusted odds ratios (AOR) and 95% confidence intervals (CI) for the associations between CCA and feto-maternal outcome.

Results: In the 12-year period from 1998 to 2009, there were 8,387 delivery hospitalizations with a CCA diagnosis, a prevalence rate of 1.8 per 100,000 (95% CI=1.6, 1.9). After adjusting for potential confounders, CCA was associated with increased odds of maternal morbidities including: anemia (AOR, 1.78, 95% CI, 1.54-2.06), anxiety (AOR, 1.95, 95% CI, 1.11-3.42), cesarean delivery (AOR, 1.67, 95% CI, 1.46-1.90), and prolonged hospital stay (AOR, 1.51, 95% CI, 1.30-1.76), and preterm birth (AOR, 1.69, 95% CI, 1.46-1.97).

Conclusion: There is a recent increase in the prevalence of CCA during pregnancy. CCA is associated with severe feto-maternal morbidities. Interventions that promote safer sexual practice and regular screening for CCA should be promoted widely among women of reproductive age to effectively reduce the prevalence of CCA during pregnancy and its impact on the health of mother and baby.

Keywords: Birth outcomes; cervical cancer; delivery; fetus; maternal; trend

Characteristics and outcomes of young adult opiate users receiving residential substance abuse treatment.

2015 12(6):556-66

Morse SA, MacMaster SA.

Abstract

Opiate use patterns, user characteristics, and treatment response among young adults are of interest due to current high use prevalence and historical low levels of treatment engagement relative to older populations. Prior research in this population suggests that overall, young adults present at treatment with different issues. In this study the authors investigated potential differences between young adult (18-25 years of age) and older adult (26 and older) opiate users and the impact of differences relative to treatment motivation, length and outcomes. Data for this study was drawn from 760 individuals who entered voluntary, private, residential treatment. Study measures included the Addiction Severity Index (ASI), the Treatment Service Review (TSR), and University of Rhode Island Change Assessment (URICA). Interviews were conducted at program intake and 6-month post-discharge. Results indicate that older adults with a history of opiate use present at treatment with higher levels of severity for alcohol, medical, and psychological problems and young adults present at treatment with greater drug use and more legal issues. Significant improvement for both groups was noted at 6 months post treatment; there were also fewer differences between the two age groups of opiate users. Results suggest different strategies within treatment programs may provide benefit in targeting the disparate needs of younger opiate users. Overall, however, results suggest that individualized treatment within a standard, abstinence-based, residential treatment model can be effective across opiate users at different ages and with different issues, levels of severity, and impairment at intake.

Keywords: Substance use; co-occurring disorders; opiate use; young adults
2015 Nov;213(5):713.e1-13
Mikhail E, Salemi JL, Mogos MF, Hart S, Salihu HM, Imudia A.

Abstract
Objective: We sought to investigate the most recent national trends of bilateral salpingectomy (BS) and bilateral salpingo-oophorectomy (BSO) at the time of hysterectomy performed for benign indications.

Study Design: We conducted a national cross-sectional analysis of all inpatient discharges for women aged ≥18 years who underwent a hysterectomy for benign indications from 1998 through 2011 using the largest publicly available all-payer inpatient database in the United States. We scanned International Classification of Diseases, Ninth Revision codes for an indication of specific bilateral adnexal surgeries, including BSO and BS. Joinpoint regression was used to characterize and estimate 14-year national trends in performing BSO and BS at the time of hysterectomy for benign indications, overall and in population subgroups.

Results: During the study period, there were approximately 428,523 inpatient hysterectomy procedures performed annually for benign indications. Of these, >53% had no adnexal surgery performed during the same hospitalization, whereas 43.7% and 1.3% of those discharges had BSO and BS procedures, respectively. The rate of BSO was directly correlated with increasing age for patients <65 years. Conversely, we observed an inverse relationship between BS and patient age, with the BS rate among women aged <25 years twice that of women aged ≥45 years. From 1998 through 2001, there was a 2.2% increase in the rate of BSO per year (95% confidence interval, 0.4-4.0); however, this was followed by a consistent 3.6% (95% confidence interval, -4.0 to -3.3) annual decline in the BSO rate, from 49.7% in 2001 to 33.4% in 2011. National rates of BS among women undergoing hysterectomy for benign indications increased significantly throughout the study period, with an estimated 8% annual increase from 1998 through 2008, followed by a sharp 24% increase annually during the last 4 years of the study period. The BS rate nearly quadrupled in 14 years.

Conclusion: The type of adnexal surgery performed concomitantly with hysterectomy for benign indications has undergone a significant shift since 2001. Significantly more BS and less BSO procedures are being performed among gynecologic surgeons in the United States.

Keywords: United States; adnexal surgery; benign indication; hysterectomy; trends

Differences between older and younger adults in residential treatment for co-occurring disorders.
2015;11(1):75-82
Morse SA, Watson C, MacMaster SA, Bride BE.

Abstract
Objective: The purpose of this study was to examine differences between older and younger adults who received integrated treatment for co-occurring substance use and mental disorders, including differences on demographic and baseline characteristics (e.g., substance use, readiness for change, mental health symptoms, and severity of problems associated with substance use), as well as predictors of retention in treatment.

Methods: This study included 1400 adults who received integrated substance abuse and mental health treatment services at one of two private residential facilities offering residential and outpatient services. Initial analyses consisted of basic descriptive and bivariate analyses to examine differences between older (≥50 years old) and younger (<50 years old) adults on baseline variables. Next, three ordinary least squares regression models were employed to examine the influence of baseline characteristics on length of stay.

Results: Three main findings emerged. First, older adults differed from younger adults on pre-treatment characteristics. Older adults used more alcohol and experienced greater problem severity in the medical and alcohol domains, while younger adults used more illicit drugs (e.g., heroin, marijuana, and cocaine) and experienced problems in the drug, legal, and family/social domains. Second, while readiness to change did not differ between groups at baseline, older adults remained enrolled in treatment for a shorter period of time (nearly four days on average) than younger adults. Third, the pattern of variables that influenced length of stay in treatment for older adults differed from that of younger adults. Treatment retention for older adults was most influenced by internal factors, like psychological symptoms and problems, while younger adults seemed influenced primarily by external factors, like drug use, employment difficulties, and readiness for change.

Conclusions: The results of this study add to the limited knowledge base regarding older adults receiving integrated treatment for co-occurring substance use and mental health disorders by documenting that age-based differences exist in general and in the factors that are associated with the length of stay in residential treatment.

Keywords: Addiction severity; co-occurring disorders; mental health; older adults; residential treatment; retention; substance use
The additive effects of pre-pregnancy body mass index and gestational diabetes on pregnancy outcomes and healthcare costs.

2015 Nov;23(11):2299-308


Abstract
Objective: Pre-pregnancy obesity and gestational diabetes mellitus (GDM) are increasingly prevalent independent risk factors for maternal and infant morbidities. However, there is a paucity of information on their joint effects on health outcomes and healthcare costs.

Methods: A population-based retrospective cohort study was conducted in Florida using a validated statewide database covering 1,057,647 infants born between 2004 and 2009. Using generalized linear modeling, joint associations between levels of pre-pregnancy body mass index (BMI) and GDM and maternal complications of pregnancy, adverse birth outcomes, and healthcare costs were examined. The relative excess risk due to interaction was used to describe the direction and magnitude of the BMI-GDM interaction on the additive scale.

Results: Increasing pre-pregnancy BMI conferred increasing odds of adverse consequences, as did GDM, and the BMI-GDM interaction was greater than additive for 9 of 14 outcomes. The cost for infants born to women with GDM/obesity-III was 34% higher during the first year compared with those born to women with normal BMI and without GDM. The costs of maternal and infant inpatient care associated with overweight/obesity and GDM totaled over $351 million.

Conclusions: These findings provide further evidence of the importance of lifestyle modifications to decrease rates of obesity and risk factors from GDM.

Risk factors and hospitalization costs of dementia patients: Examining race and gender variations.

2015 Oct-Dec;40(4):258-63

Husaini B, Gudlavalletil L, Cain V, Levine R, Moonis M.

Abstract
Aims: To examine the variation in risk factors and hospitalization costs among four elderly dementia cohorts by race and gender.

Materials and Methods: The 2008 Tennessee Hospital Discharged database was examined. The prevalence, risk factors and cost of inpatient care of dementia were examined for individuals aged 65 years and above, across the four race gender cohorts - white males (WM), black males (BM), white females (WF), and black females (BF).

Results: 3.6% of patients hospitalized in 2008 had dementia. Dementia was higher among females than males, and higher among blacks than whites. Further, BF had higher prevalence of dementia than WM; similarly, BM had a higher prevalence of dementia than WM. Overall, six risk factors were associated with dementia for the entire sample including HTN, DM, CKD, CHF, COPD, and stroke. These risk factors varied slightly in predicting dementia by race and gender. Hospital costs were 14% higher among dementia patients compared to non-dementia patients.

Conclusions: There exist significant race and gender disparities in prevalence of dementia. A greater degree of co-morbidity, increased duration of hospital stay, and more frequent hospitalizations, may result in a higher cost of inpatient dementia care. Aggressive management of risk factors may subsequently reduce stroke and cost of dementia care, especially in the black population. Race and gender dependent milestones for management of these risk factors should be considered.

Keywords: Cost; dementia; race-gender cohort
Improving the completeness of ascertainment in Florida’s birth defects surveillance program: The impact of adding infant death and emergency department data.

Fall 2015;42(3):91-102


Abstract

Introduction: The Florida Birth Defects Registry (FBDR) relies predominantly on a statewide, population-based, passive surveillance system constructed by linking together multiple administrative and clinical databases. With funding limitations and data restrictions a reality in public health, it is imperative for disease registries to have ongoing evaluation of existing and new data sources. This study quantifies the impact of expanding the FBDR case ascertainment net to include infant death certificates (IDCs) and emergency department (ED) discharge data on the reported prevalence of birth defects.

Methods: Between 2008 and 2011, the FBDR identified cases using various data sources: inpatient and outpatient discharge data (2008-2011), Regional Perinatal Intensive Care Center data (2008), Early Steps program data (2008), IDCs (2009-2011), and ED data (2010-2011). Using hypothetical reconstructions of the FBDR, we examined the overall and unique contribution of each data source in identifying infants with birth defects. This permitted evaluation of a changing FBDR data source mix during the 4-year study period. The effect of adding both IDCs and ED data was investigated by constructing the 2010-2011 FBDR with and without these data sources, and then comparing frequencies and prevalence rates across each scenario. Analyses were conducted for all FBDR cases and for specific birth defect categories; improvements in ascertainment were assessed across sociodemographic and perinatal characteristics.

Results: Overall, IDCs captured 3.4% of all infants with at least 1 birth defect studied, ED data captured 3.9% of the cases, and together the 2 data sources captured 7.2%. However, IDCs uniquely identified 0.8% of all cases, ED data uniquely identified 0.7% of all cases, and collectively they identified only 1.4% of cases that would otherwise have been missed. The unique contribution of IDC and ED data to case identification varied by defect and across sociodemographic and perinatal subgroups, with the largest impact among infants with anencephalus (64.7%), trisomy 13 (52.0%), trisomy 18 (22.2%), and encephalocele (13.3%), or those who were born weighing less than 1,500 grams or less than 32 weeks’ gestation, or whose mothers’ education was eighth grade or less.

Discussion: Although their unique contribution is small when all defects are considered together, IDCs and ED data contribute cases that would otherwise have been disproportionately lost and are thus an important addition to surveillance activities. The FBDR continues to strive to create a comprehensive, accurate, and efficient statewide birth defects surveillance system.

Low concordance with guidelines for treatment of acute cystitis in primary care.

2015 Oct 26;2(4):olv159

Grigoryan L, Zoorob R, Wang H, Trautner BW.

Abstract

Background: The updated 2010 Infectious Diseases Society of America guidelines recommended 3 first-line therapies for uncomplicated cystitis: nitrofurantoin, trimethoprim-sulfamethoxazole (TMP-SMX), and fosfomycin, while fluoroquinolones (FQs) remained as second-line agents. We assessed guideline concordance for antibiotic choice and treatment duration after introduction of the updated guidelines and studied patient characteristics associated with prescribing of specific antibiotics and with treatment duration.

Methods: We used the Epic Clarity database (electronic medical record system) to identify all female patients aged ≥18 years with uncomplicated cystitis in 2 private family medicine clinics in the period of 2011-2014. For each eligible visit, we extracted type of antibiotic prescribed, duration of treatment, and patient and visit characteristics.

Results: We included 1546 visits. Fluoroquinolones were the most common antibiotic class prescribed (51.6%), followed by nitrofurantoin (33.5%), TMP-SMX (12.0%), and other antibiotics (3.2%). A significant trend occurred toward increasing TMP-SMX and toward decreasing nitrofurantoin use. The duration of most prescriptions for TMP-SMX, nitrofurantoin, and FQs was longer than guidelines recommendations (longer durations were prescribed for these agents in 82%, 73%, and 71% of the prescriptions, respectively). No patient or visit characteristic was associated with use of specific antibiotics. Older age and presence of diabetes were independently associated with longer treatment duration.

Conclusions: We found low concordance with the updated guidelines for both the choice of drug and duration of therapy for uncomplicated cystitis in primary care. Identifying barriers to guideline adherence and designing interventions to decrease overuse of FQs may help preserve the antimicrobial efficacy of these important antiinfectious.

Keywords: Antibacterial agents; guideline adherence; urinary tract infections
All data are (most likely) not created equal: A SAS® macro to compare structure and data across multiple datasets.

2015 Oct
Salemi JL

Abstract
In nearly every discipline, from Accounting to Zoology, whether you are a student-in-training or an established professional, a central tenet of interacting with information is to “Know Thy Data”. Hasty compilation and analysis of inadequately vetted data can lead to misleading if not erroneous interpretation, which can have disastrous consequences ranging from business downsfalls to adopting health interventions that worsen rather than improve the longevity and quality of people’s lives. In some situations, knowing thy data involves only a single analytic dataset, in which case review of a data dictionary to explore attributes of the dataset supplemented with univariate and bivariate statistics will do the trick. This has been discussed extensively in the literature and certainly in the SAS Global Forum and User’s Groups. In other scenarios, there is a need for comparing the structure, variables, and even values of variables across two datasets. Again, in this case, SAS offers a powerful COMPARE procedure to compare pairs of datasets, and many papers have offered macros to add additional functionality, refine the comparison, or simplify the analytic output. However, imagine the following scenario: you are provided with or download a myriad of datasets, perhaps which are produced quarterly or annually. Each dataset has a corresponding data dictionary and you might even be fortunate enough to have been provided with some code to facilitate importation into SAS. Your initial goal, perhaps a “first date” with your new datasets, is to understand whether variables exist in every dataset, whether there are differences in the type or length of each variable, the absolute and relative missingness of each variable, and whether the actual values being input for each variable are consistent. This paper describes the creation and use of a macro, “compareMultipleDS”, to make the first date with your data a pleasant one. Macro parameters through which the user can control which comparisons are performed/reported as well as the appearance of the generated “comparison report” are discussed, and use of the macro is demonstrated using two case studies that leverage publicly-available data.

Associations between exposure to ambient benzene and PM (2.5) during pregnancy and the risk of selected birth defects in offspring.

2015 Oct;142:345-353

Abstract
Objective: A growing number of studies have investigated the association between air pollution and the risk of birth defects, but results are inconsistent. The objective of this study was to examine whether maternal exposure to ambient PM2.5 or benzene increases the risk of selected birth defects in Florida.

Methods: We conducted a retrospective cohort study of singleton infants born in Florida from 2000 to 2009. Isolated and non-isolated birth defect cases of critical congenital heart defects, orofacial clefts, and spina bifida were identified from the Florida Birth Defects Registry. Estimates of maternal exposures to PM2.5 and benzene for all case and non-case pregnancies were derived by aggregation of ambient measurement data, obtained from the US Environmental Protection Agency Air Quality System, during etiologically relevant time windows. Multivariable Poisson regression was used to estimate adjusted prevalence ratios (aPRs) and 95% confidence intervals (CI) for each quartile of air pollutant exposure.

Results: Compared to the first quartile of PM2.5 exposure, higher levels of exposure were associated with an increased risk of non-isolated truncus arteriosus (aPR4th Quartile, 8.80; 95% CI, 1.11-69.50), total anomalous pulmonary venous return (aPR2nd Quartile, 5.00; 95% CI, 1.10-22.84), coarctation of the aorta (aPR4th Quartile, 1.72; 95% CI, 1.15-2.57), interrupted aortic arch (aPR4th Quartile, 5.50; 95% CI, 1.22-24.92), and isolated and non-isolated any critical congenital heart defect (aPR3rd Quartile, 1.13; 95% CI, 1.02-1.25; aPR4th Quartile, 1.33; 95% CI, 1.07-1.65). Mothers with the highest level of exposure to benzene were more likely to deliver an infant with an isolated cleft palate (aPR4th Quartile, 1.52; 95% CI, 1.13-2.04) or any orofacial cleft (aPR4th Quartile, 1.29; 95% CI, 1.08-1.56). An inverse association was observed between exposure to benzene and non-isolated pulmonary atresia (aPR4th Quartile, 0.19; 95% CI, 0.04-0.84).

Conclusion: Our results suggest a few associations between exposure to ambient PM2.5 or benzene and specific birth defects in Florida. However, many related comparisons showed no association. Hence, it remains unclear whether associations are clinically significant or can be causally related to air pollution exposures.

Keywords: Air pollution; benzene; birth defects; exposure assessment; particulate matter

Drowos J, Hennekens CH, Levine RS.

Abstract

Background: In the United States (US) between 279 and 507 people were killed yearly by legal intervention/ law enforcement other than by legal execution (1999-2013).

Methods: We explored variations in US deaths by legal intervention using the Compressed Mortality File and CDC WONDER.

Results: Among 5551 deaths by legal intervention, rates increased from 0.11/100,000 (95% Confidence Interval (CI) 0.10, 0.12) in 1999 to 0.16/100,000 (0.14, 0.17) in 2012-2013. Further, for 1999-2013, 71% (3912) occurred at ages 20-44 with the highest rates at ages 20-24 (0.30 (0.28, 0.32)) and 25-34 (0.27 (0.26, 0.28)) per 100,000. In addition, 96% (5335) occurred among males, 78% at ages 15-44 years. Among men ages 15-44, rates were highest among American Indian or Alaska Natives (1.04 (95% CI 0.83, 1.29)), who comprise 2.06% of deaths and non-Hispanic Black or African American men (0.97 (0.92, 1.03)), who comprise 29.60%. Rates among men ages 15 to 44 were also higher among Hispanic whites (0.58 (0.54, 0.61)), than among non-Hispanic Whites (0.30 (0.28, 0.31)), or non-Hispanic or Latino Asian and Pacific Islanders (0.18 (0.15, 0.23)). Among places with reliable rates, the highest State rate for non-Hispanic Black males occurred in Nevada (1.27/100,000 (95% CI 0.77, 1.96) while the highest county was Riverside, CA (2.40 (1.52, 3.61)). Corresponding values for Hispanic whites were New Mexico (1.07 (0.83, 1.37) and Denver, CO (1.76 (1.11, 2.67)) and for non-Hispanic whites, New Mexico (0.54 (0.36, 0.78) and San Bernardino, CA (0.73 (0.52, 1.00)).

Conclusions and Relevance: Community-based programs, with collaboration from policy makers and community members, may reduce these potentially avoidable premature deaths from legal intervention by targeting high risk sub-populations.

Keywords: Law enforcement officers; minority health; United States


Abstract

Background: US breast cancer deaths have been declining since 1989, but African American women are still more likely than white women to die of breast cancer. Black/white disparities in breast cancer mortality rate ratios have actually been increasing.

Methods: Across 762 US counties with enough deaths to generate reliable rates, county-level, age-adjusted breast cancer mortality rates were examined for women who were 35 to 74 years old during the period of 1989-2010. Twenty-two years of mortality data generated twenty 3-year rolling average data points, each centered on a specific year from 1990 to 2009. Mixed linear models were used to group each county into 1 of 4 mutually exclusive trend patterns. The most recent 3-year average black breast cancer mortality rate for each county was also categorized as being worse or not worse than the breast cancer mortality rate for the total US population.

Results: More than half of the counties (54%) showed persistent, unchanging disparities. Roughly 1 in 4 (24%) had a divergent pattern of worsening black/white disparities. However, 10.5% of the counties sustained racial equality over the 20 year period, and 11.7% of the counties actually showed a converging pattern from high disparities to greater equality. Twenty-three counties had 2008-2010 black mortality rates better than the US average mortality rate.

Conclusions: Disparities are not inevitable. Four US counties have sustained both optimal and equitable black outcomes as measured by both absolute (better than the US average) and relative benchmarks (equality in the local black/white rate ratio) for decades, and 6 counties have shown a path from disparities to health equity.

Keywords: Breast cancer; disparities; equity; local-area variation; mortality trends; race
Adverse childhood experiences and health-related quality of life in adulthood: revelations from a community needs assessment.

2015 Aug;13(1):123


Abstract

Background: Adverse childhood experiences (ACE) have been previously linked to quality of life, health conditions, and life expectancy in adulthood. Less is known about the potential mechanisms which mediate these associations. This study examined how ACE influences adult health-related quality of life (HRQoL) in a low-income community in Florida.

Methods: A community-based participatory needs assessment was conducted from November 2013 to March 2014 with 201 residents of Tampa, Florida, USA. HRQoL was measured by an excessive number of unhealthy days experienced during the previous 30-day window. Mediation analyses for dichotomous outcomes were conducted with logistic regression. Bootstrapped confidence intervals were generated for both total and specific indirect effects.

Results: Most participants reported ‘good to excellent health’ (76%) and about a fourth reported ‘fair to poor health’ (24%). The mean of total unhealthy days was 9 days per month (SD ± 10.5). Controlling for demographic and neighborhood covariates, excessive unhealthy days was associated with ACE (AOR = 1.23; 95% CI: 1.06, 1.43), perceived stress (AOR = 1.07; 95% CI: 1.03, 1.10), and sleep disturbance (AOR = 8.86; 3.61, 21.77). Mediated effects were significant for stress ($\beta$ = 0.08) and sleep disturbances ($\beta$ = 0.11) as they related to the relationship between ACE and excessive unhealthy days.

Conclusion: ACE is linked to adult HRQoL. Stress and sleep disturbances may represent later consequences of childhood adversity that modulate adult quality of life.


2015 Aug;126(2):284-93


Abstract

Objective: To examine the trends in the prevalence, epidemiologic correlates, and 1-year survival of omphalocele using 1995-2005 data from the National Birth Defects Prevention Network in the United States.

Methods: We examined 2,308 cases of omphalocele over 11 years from 12 state population-based birth defects registries. We used Poisson regression to estimate prevalence and risk factors for omphalocele and Kaplan-Meier survival curves and Cox proportional hazards regression to estimate survival patterns and hazard ratios, respectively, to examine isolated compared with nonisolated cases.

Results: Birth prevalence of omphalocele was 1.92 per 10,000 live births with no consistent trend over time. Neonates with omphalocele were more likely to be male (prevalence ratio 1.22, 95% confidence interval [CI] 1.12-1.34), born to mothers 35 years of age or older (prevalence ratio 1.77, 95% CI 1.54-2.04) and younger than 20 years (prevalence ratio 1.34, 95% CI 1.14-1.56), and of multiple births (prevalence ratio 2.22, 95% CI 1.85-2.66). The highest proportion of neonates with omphalocele had congenital heart defects (32%).

The infant mortality rate was 28.7%, with 75% of those occurring in the first 28 days. The best survival was for isolated cases and the worst for neonates with chromosomal defects (hazard ratio 7.75, 95% CI 5.40-11.10) and low-birth-weight neonates (hazard ratio 7.51, 95% CI 5.86-9.63).

Conclusion: Prevalence of omphalocele has remained constant from 1995 to 2005. Maternal age (younger than 20 years and 35 years or older), multiple gestation, and male sex are important correlates of omphalocele, whereas co-occurrence with chromosomal defects and very low birth weight are consistent determinants of 1-year survival among these neonates.
Enhancing clinical content and race/ethnicity data in statewide hospital administrative databases: Obstacles encountered, strategies adopted, and lessons learned.

2015 Aug;50 Suppl 1:1300-21


Abstract
Objectives: Eight grant teams used Agency for Healthcare Research and Quality infrastructure development research grants to enhance the clinical content of and improve race/ethnicity identifiers in statewide all-payer hospital administrative databases.

Principal Findings: Grantees faced common challenges, including recruiting data partners and ensuring their continued effective participation, acquiring and validating the accuracy and utility of new data elements, and linking data from multiple sources to create internally consistent enhanced administrative databases. Successful strategies to overcome these challenges included aggressively engaging with providers of critical sources of data, emphasizing potential benefits to participants, revising requirements to lessen burdens associated with participation, maintaining continuous communication with participants, being flexible when responding to participants’ difficulties in meeting program requirements, and paying scrupulous attention to preparing data specifications and creating and implementing protocols for data auditing, validation, cleaning, editing, and linking. In addition to common challenges, grantees also had to contend with unique challenges from local environmental factors that shaped the strategies they adopted.

Conclusions: The creation of enhanced administrative databases to support comparative effectiveness research is difficult, particularly in the face of numerous challenges with recruiting data partners such as competing demands on information technology resources. Excellent communication, flexibility, and attention to detail are essential ingredients in accomplishing this task. Additional research is needed to develop strategies for maintaining these databases when initial funding is exhausted.

Transformative use of an improved all-payer hospital discharge data infrastructure for community-based participatory research: A sustainability pathway.

2015 Aug;50 Suppl 1:1322-38

Salemi JL, Salinas-Miranda AA, Wilson RE, Salihu HM.

Abstract
Objective: To describe the use of a clinically enhanced maternal and child health (MCH) database to strengthen community-engaged research activities, and to support the sustainability of data infrastructure initiatives.


Setting: A community-based participatory research (CBPR) project in a socioeconomically disadvantaged community in central Tampa, Florida.

Study Design: Case study of the use of an enhanced state database for supporting CBPR activities.

Principal Findings: A federal data infrastructure award resulted in the creation of an MCH database in which over 92 percent of all birth certificate records for infants born between 1998 and 2009 were linked to maternal and infant hospital encounter-level data. The population-based, longitudinal database was used to supplement data collected from focus groups and community surveys with epidemiological and health care cost data on important MCH disparity issues in the target community. Data were used to facilitate a community-driven, decision-making process in which the most important priorities for intervention were identified.

Conclusions: Integrating statewide all-payer, hospital-based databases into CBPR can empower underserved communities with a reliable source of health data, and it can promote the sustainability of newly developed data systems.
Effectiveness of an antimicrobial stewardship approach for urinary catheter-associated asymptomatic bacteriuria.

2015 Jul;175(7):1120-27

Trautner BW, Grigoryan L, Petersen NJ, Hysong S, Cadena J, Patterson JE, Naik AD.

Abstract
Importance: Overtreatment of asymptomatic bacteriuria (AB) in patients with urinary catheters remains high. Health care professionals have difficulty differentiating cases of AB from catheter-associated urinary tract infections.

Objectives: To evaluate the effectiveness and sustainability of an intervention to reduce urine culture ordering and antimicrobial prescribing for catheter-associated ASB compared with standard quality improvement methods.

Design, Setting, and Participants: A preintervention and postintervention comparison with a contemporaneous control group from July 2010 to June 2013 at 2 Veterans Affairs health care systems. Study populations were patients with urinary catheters on acute medicine wards and long-term care units and health care professionals who order urine cultures and prescribe antimicrobials.

Intervention: A multifaceted guidelines implementation intervention.

Main Outcomes and Measures: The primary outcomes were urine cultures ordered per 1000 bed-days and cases of AB receiving antibiotics (overtreatment) during intervention and maintenance periods compared with baseline at both sites. Patient-level analysis of inappropriate antimicrobial use adjusted for individual covariates.

Results: Study surveillance included 289,754 total bed-days. The overall rate of urine culture ordering decreased significantly during the intervention period (from 41.2 to 23.3 per 1000 bed-days; incidence rate ration [IRR], 0.57; 95% CI, 0.53-0.61) and further during the maintenance period (to 12.0 per 1000 bed-days; IRR, 0.29; 95% CI, 0.26-0.32) (P < .001 for both). At the comparison site, urine cultures ordered did not change significantly across all 3 periods. There was a significant difference in the number of urine cultures ordered per month over time when comparing the 2 sites using longitudinal linear regression (P < .001). Overtreatment of AB at the intervention site fell significantly during the intervention period (from 1.6 to 0.6 per 1000 bed-days; IRR, 0.35; 95% CI, 0.22-0.55), and these reductions persisted during the maintenance period (to 0.4 per 1000 bed-days; IRR, 0.24; 95% CI, 0.13-0.42) (P < .001 for both). Overtreatment of AB at the comparison site was similar across all periods (odds ratio, 1.32; 95% CI, 0.69-2.52). When analyzed by type of ward, the decrease in AB overtreatment was significant in long-term care.

Conclusions and Relevance: A multifaceted intervention targeting health care professionals who diagnose and treat patients with urinary catheters reduced overtreatment of AB compared with standard quality improvement methods. These improvements persisted during a low-intensity maintenance period. The impact was more pronounced in long-term care, an emerging domain for antimicrobial stewardship.

Use of six sigma for eliminating missed opportunities for prevention services.

2015 Jul-Sep;30(3):254-60


Abstract
Delivery of primary care preventative services can be significantly increased utilizing Six Sigma methods. Missed preventative service opportunities were compared in the study clinic with the community clinic in the same practice. The study clinic had 100% preventative services, compared with only 16.3% in the community clinic. Preventative services can be enhanced to Six Sigma quality when the nurse executive and medical staff agree on a single standard of nursing care executed via standing orders.
Evaluating difficult decisions in public health surveillance: Striking the right balance between timeliness and completeness.

2015 Summer;42(2):48-61


Abstract
Introduction: State-based surveillance programs play a key role in birth defects planning, prevention, education, support, and research activities. High-quality data are essential to all of these functions, and a key indicator of quality is timeliness. The Florida Birth Defects Registry (FBDR)-one of the largest population-based state registries in the United States-faces challenges with timeliness, as evidenced by its 18-month lag time. The goal of this study was to determine if the timeliness of the FBDR could be improved without significantly reducing the completeness of birth defect ascertainment.

Methods: Using 2006-2011 data from the FBDR, we first investigated the timing of diagnosis of birth defects by estimating the effect of different periods of follow-up on prevalence rates reported by the FBDR. We achieved this through retrospective reconstructions of the FBDR under 5 different scenarios with progressively narrower follow-up windows for each infant, and by comparing recalculated rates to the rate of the current FBDR with 1 year of follow-up. We then considered scenarios in which the time lag used to construct the FBDR was reduced (15, 12, 9, and 6 months) by using less data (from 7 to 4 quarters). Recalculated rates were again compared to the current FBDR constructed with 2 years of data and an 18-month lag. Analyses were performed overall and for 44 specific defects.

Results: During the 6-year study period, the FBDR identified more than 27,000 infants with a defect detected during the first year of life. Restricting follow-up from 1 year to 9 months would only result in a loss of 1.4% of cases. Cutting follow-up in half to 6 months would miss 3.2% of cases, although there was significant variation across defects. Improving timeliness had a small impact on completeness of ascertainment. Overall, compiling the FBDR with only 6 quarters of Florida Agency for Health Care Administration data (as opposed to 8 quarters) would improve timeliness by approximately 6 months, resulting in a registry that is 99.4% complete.

Discussion: Six-to-nine month improvements in timeliness were achievable with a minimal sacrifice in completeness (0.6%-1.7%). Efforts to enhance data quality through the assessment of timeliness and completeness indicators are not unique to birth defects surveillance programs. Other programs, particularly those with similar passive case ascertainment protocols, can use our findings to consider a more timely release of registry data, or to design similar investigations of their own.


2015 Jul;57(7):814-826


Abstract
Objective: To describe the trends, correlates, and healthcare costs associated with industry-related injuries across the United States between 1998 and 2011.

Methods: A retrospective, cross-sectional analysis of hospital discharges was conducted using the National Inpatient Sample. We used the International Classification of Diseases, Ninth Revision, Clinical Modification codes to identify accidents occurring in industrial settings. Joinpoint regression modeling was used to analyze trends.

Results: Most of the 357,716 inpatient hospitalizations were admissions from the emergency department (55%). Fractures were the most prevalent injuries (48.1%), whereas the lower and upper extremities were the most common injury sites (51.7%). The mean per admission cost of direct medical care was $12,849, with an overall downward trend in injuries during the study period.

Conclusions: A comprehensive trend analysis of industry-related injuries is valuable to policymakers in formulating targeted strategies and allocating resources to address disparities at various levels.
Community Priority Index (CPI): Utility, applicability and validation for priority setting in community-based participatory research.

2015 Jul 20;4(2):76-81


Abstract

Background: Providing practitioners with an intuitive measure for priority setting that can be combined with diverse data collection methods is a necessary step to foster accountability of the decision-making process in community settings. Yet, there is a lack of easy-to-use, but methodologically robust measures, that can be feasibly implemented for reliable decision-making in community settings. To address this important gap in community based participatory research (CBPR), the purpose of this study was to demonstrate the utility, applicability, and validation of a community priority index in a community-based participatory research setting.

Design and Methods: Mixed-method study that combined focus groups findings, nominal group technique with six key informants, and the generation of a Community Priority Index (CPI) that integrated community importance, changeability, and target populations. Bootstrapping and simulation

Results: For pregnant mothers, the top three highly important and highly changeable priorities were: stress (CPI=0.85; 95%CI: 0.70, 1.00), lack of affection (CPI=0.87; 95%CI: 0.69, 1.00), and nutritional issues (CPI=0.78; 95%CI: 0.48, 1.00). For non-pregnant women, top priorities were: low health literacy (CPI=0.87; 95%CI: 0.69, 1.00), low educational attainment (CPI=0.78; 95%CI: 0.48, 1.00), and lack of self-esteem (CPI=0.72; 95%CI: 0.44, 1.00). For children and adolescents, the top three priorities were: obesity (CPI=0.88; 95%CI: 0.69, 1.00), low self-esteem (CPI=0.81; 95%CI: 0.69, 0.94), and negative attitudes toward education (CPI=0.75; 95%CI: 0.50, 0.94).

Conclusions: This study demonstrates the applicability of the CPI as a simple and intuitive measure for priority setting in CBPR. Significance for public health Community-based participatory research (CBPR) has been credited to be a promising approach for the reduction of health disparities and as an effective way to create sustainable community outcomes. Priority setting is an essential decision-making step in community-based participatory research. Issue prioritization must be driven not just by the importance of the issue, but also what realistically can be changed with available funds. However, there is little guidance on how to approach priority setting with objective and subjective measures while implementing CBPR. This study depicts the invention of a Community Priority Index (CPI), which can be used to prioritize community health issues by combining subjective and objective markers into a single measure. The CPI shown in this study represents a viable systematic approach to improve the objectivity and reliability of community-based decision-making.

Keywords: Priority setting; community-based participatory research; nominal group

Adult immunization improvement in an underserved family medicine practice.

2015 Jul;3(2):2-7

Sidani M, Harris J, Zoorob R.

Abstract

Objective: Vaccines prevent many cases of infectious disease, yet immunization campaigns are hindered by various barriers. This work presents the results of a quality improvement project addressing barriers to vaccine compliance in an underserved teaching practice by reducing missed opportunities and increasing provider and patient compliance rates for pneumococcal, Tdap, influenza, and zoster vaccines in adults.

Methods: The study intervention aimed to address patient knowledge, provider knowledge and skills, proactive care coordination, and outreach and counselling of high-risk groups. Aggregate patient data from intervention at year-end were compared to the prior year. Outcome targets were as follows: improved vaccination rates by one-half of the difference between baseline and Healthy People 2020 goals; reduced patient refusals by 10%; and reduced missed opportunities by 50%.

Results: All of the vaccination rates improved, but with mixed results regarding the target outcomes. The rates of vaccine refusal were mixed in terms of the direction of the change, the significance, and achieving targets. Missed opportunities all improved, but the significance was mixed and none reached targets.

Conclusion: This project has helped to identify patient and provider knowledge of vaccination as a key to increasing compliance, and missed opportunities as the greatest challenge in achieving targets. The burden of documentation is significant on providers, and future work should focus on methods to improve the ease of documentation. Clinical outcomes and improvements were encouraging; however, it is clear that there remain challenges to reaching Healthy People 2020 goals within the study population and nationally.

Keywords: Immunization; Tdap; influenza; pneumococcal; practice improvement; vaccine; zoster

2015 Jul;3(2):8-19


Abstract
Objective: To describe the prevalence, trends, correlates, and short-term outcomes of inpatient hospitalizations for firearm-related injuries (FRIs) in the United States between 1998 and 2011.

Methods: We conducted a retrospective, cross-sectional analysis of inpatient hospitalizations using data from the Nationwide Inpatient Sample. In addition to generating national prevalence estimates, we used survey logistic regression to calculate odds ratios (ORs) and 95% confidence intervals (CIs) for the association between FRIs and patient/hospital-level characteristics. Temporal trends were estimated and characterized using joinpoint regression.

Results: There were 10.5 FRIs (95% CI: 9.2-11.8) per 10,000 non-maternal/neonatal inpatient hospitalizations, with assault accounting for 60.1% of FRIs, followed by unintentional/accidental (23.0%) and intentional/self-inflicted FRIs (8.2%). The highest odds of FRIs, particularly FRIs associated with an assault, was observed among patients 18-24 years of age, patients 14-17 years of age, patients with no insurance/self-pay, and non-Hispanic blacks. The mean inpatient length of stay for FRIs was 6.9 days; however, 4.7% of patients remained in the hospital over 24 days and 1 in 12 patients (8.2%) died before discharge. The mean cost of an inpatient hospitalization for a FRI was $22,149, which was estimated to be $679 million annually; approximately two-thirds of the annual cost (64.7%) was for assault ($439 million).

Conclusion: FRIs are a preventable public health issue which disproportionately impacts younger generations, while imposing significant economic and societal burdens, even in the absence of fatalities. Prevention of FRIs should be considered a priority in this era of healthcare cost containment.

Keywords: Assault; cost; firearms; gunshot; hospitalization; intentional injury


2015 Jul;3(2): 20-26


Abstract
Objective: This quality improvement project evaluated the impact of a point-of-care (POC) HbA1c stat lab intervention and a nurse-assisted expanded visit implemented among patients with uncontrolled type 2 diabetes (T2D) at a community health center in Houston, TX.

Methods: This was a before-and-after POC intervention among adult patients who received primary care services between 1 July 2014 and 31 December 2014 (baseline visit) and who had at least one 3-month follow-up visit.

Results: Three hundred eighty-seven patients were included in the study. The majority were <60 years of age (72.1%), female (60.5%), and Hispanic (63%), followed by black (16.5%) and Asian (11.1%). Almost 87% of the patients had uncontrolled T2D (HbA1c >9%) at baseline, with the highest average levels among Hispanic (10.9%) and black (10.7%) patients. There was a significant difference in the HbA1c level before (mean=10.65, SD=1.9291) and after (mean=9.25, SD=1.8187) intervention. The absolute reduction in the level of HbA1c was 1.4% (t=12.834, p<0.001), corresponding to a 13% overall percentage decrease from baseline.

Conclusion: There is a distinct advantage in using a stat HbA1c lab when combined with shared POC visits to assist patients with uncontrolled T2D in lowering the HbA1c, improving self-management, and reducing long-term costs.

Keywords: Diabetes; point of care; stat HbA1c

2015 Jul;3(2):29-38

Mejia de Grubb MC, Levine RS, Kilbourne B, Husaini BA, Skelton T, Gittner L, Langston MA, Rust GE.

Abstract
Objective: Describe modern trends in congestive heart failure (CHF) among elderly (>65 years of age) in the United States, to identify potentially successful rural areas. Compare CHF mortality using multiple (MCOD) versus underlying (UCOD) cause of death data.

Methods: U.S. Centers for Disease Control and Prevention mortality files (WONDER internet site).

Results: Using MCOD data, overall mortality rates/100,000 population (and 95% confidence intervals) for CHF among persons >65 years of age (1999-2013) were 482.0 (481.2-482.8) for large central and large fringe metropolitan (LCLF) counties, 549.6 (548.6-550.7) in small and medium metropolitan (SM) counties, and 652.6 (650.9-654.0) in micropolitan and non-core, non-metropolitan (MNCNM) counties. Twenty positive deviance NCNM counties (collectively including 198,581 residents >65 years of age) had an overall CHF rate of 300.9 (275.0-326.9) in 2013. This was significantly lower than the LCLF rate for 2013 (482.0 [481.2-482.8]), and represented a reduction of 47% since 1999. Overall CHF occurrence as estimated with MCOD was 3.4-fold higher than that obtained with UCOD.

Conclusion: These data illustrate underestimation of CHF by UCOD data and the importance of correct death certification. Rural CHF mortality rates are higher than urban rates, but some positive deviance counties demonstrate that this is not inevitable. Further research is needed to understand the relative contribution of research innovation, medical care, and public health to rural-urban disparities and the relative success of positive deviance counties.

Keywords: Congestive heart failure; elderly; mortality; rural

Depression and race affect hospitalization costs of heart failure patients.

2015 Jul;3(2):39-48

Husaini BA, Levine RS, Novotny ML, Cain VA, Sampson UKA, Moonis M.

Abstract
Objective: Depression and anxiety are frequently observed in heart failure (HF) patients; however, the effect of such factors on hospitalization costs of HF patients, and whether such costs vary by race and gender remain poorly understood. This analysis delineated the prevalence of depression/anxiety among HF patients and estimated the effect of race and gender on hospitalization costs.

Methods: We examined the 2008 files of the Tennessee Hospital Discharge Data System (HHDS) on patients (≥20 years of age) with a primary diagnosis of HF (ICD-9 codes 402, 404, and 428) along with demographic data, depression/anxiety diagnoses, hospital costs, and comorbidities. Among the HF sample (n=16,889) 53% were female and 23% were black. Race and gender differences in hospital costs were evaluated for the following three groups: (1) HF patients with depression/anxiety (HF+D); (2) HF-only patients without depression/anxiety (HFO); and (3) HF patients with other mental diagnoses (HF+M).

Results: HF was significantly (p<0.000) higher among blacks compared to whites, and higher among males than females. Nearly 25% of HF patients had depression/anxiety (more whites and females were depressed). HF patients averaged more than 3 comorbidities (blacks had a greater number of comorbidities and hospitalization cost for the year). Costs were higher among HF+D patients compared to HFO patients. Among HF+D patients, costs were higher for black males compared with white males. These cost patterns prevailed largely because of higher comorbidities that required more re-admissions and longer hospital stays.

Conclusion: Race and depression/anxiety are associated with increased hospitalization costs of HF patients. The higher costs among blacks reflect the higher burden of comorbidities, such as hypertension and diabetes, which calls for widespread dissemination, adoption, and implementation of proven interventions for the control of these comorbidities.

Keywords: Hospitalization costs; depression; gender; heart failure; race
Family Medicine and Community Health

Patient-centered medical home and integrated care in the United States: An opportunity to maximize delivery of primary care.

2015 Jul;3(2):49-53
Gonzalez JS, Mejia de Grubb MC, Zoorob RJ.

Abstract
The reciprocal relationship between mental and physical health is well established. Undiagnosed, untreated, and poorly managed mental health conditions are associated with numerous physical health complications, poor treatment adherence, and decreased quality of life. Despite growing evidence regarding the importance of effectively addressing these conditions in primary care, the rates of identification remain low and follow-up and management by primary care providers has been criticized. The objective of this review was to demonstrate the role of Patient-Centered Medical Home (PCMH) and mental health integration in addressing comprehensive health care needs in primary care patients, and to describe common barriers and facilitators to the implementation of these types of programs.

Keywords: Patient-centered medical home; behavioral health integration; chronic disease management; health care service delivery; integrated primary care; mental health

A review of adult asthma and the effectiveness of educational programs in reducing symptoms.

2015 Jul;3(2):54-61
Perkison WB, Sidani M.

Abstract
Asthma is a chronic inflammatory disease that occurs in children and adults. The National Heart, Lung, and Blood Institute (NHLBI) recommends asthma self-management education to be essential in providing patients with the skills necessary to control asthma and improve outcomes. A number of studies have been conducted to assess the effectiveness of these educational programs in children; however, such studies have not demonstrated efficacy in adult populations. This review explores the epidemiology of asthma, the different categories of asthma based on demographic differences, and environmental triggers of asthma. We also discuss common medical options that are available to treat asthma. We then describe the components of an asthma education program and the effectiveness in improving patient outcomes. The literature review was conducted using the National Library of Medicine Pub Med search engine. Comprehensive reviews were focused on the English literature involving human subjects in the last 5 years. Randomized controlled trials were selected for a citation on each subject when available. The Expert Panel Report 3 (EPR-3; Guidelines for the Diagnosis and Management of Asthma - Report 2007) was used as the primary reference source for standard of care treatment guidelines. Search terms included asthma, motivational interviewing, irritant-induced asthma, asthma education, home intervention, telemedicine, nitric oxide, asthma action plan, occupational asthma, IgE-mediated asthma, asthma guidelines, asthma prevalence, and asthma treatment.

Keywords: Asthma; asthma education; home intervention; irritant-induced asthma; occupational asthma
Student self-assessment of strengths and needed improvements during a family medicine clerkship.

2015 Jul;3(2):62-68

Huang W, Barning K, Grigoryan L.

Abstract

Objective: There are few reports on how students self-assess their performance on a family medicine clerkship. We studied what students perceived as their strengths and areas of needed improvement at the mid-point in our family medicine clerkship.

Methods: We introduced a form for family medicine clerkship students to self-assess their strengths and areas of needed improvements using the clerkship objectives as a standard. We calculated the frequency in which each clerkship objective was reported as a strength or an area of needed improvement. For students' open-ended comments, two reviewers independently organized students' comments into themes, then negotiated any initial differences into a set of themes that incorporated both the reviewers' findings. We performed χ² tests to determine any significant differences in the frequency of responses between male and female students.

Results: During the study period (July 2012 to June 2014), 372 students submitted completed self-assessment forms. The most frequently reported strengths were professional objectives (48.9%) and interpersonal communication objectives (43.0%). The most frequently reported areas of needed improvement were the ability to explain key characteristics of commonly used medications (29.3%) and the ability to develop a management plan (28.5%). There were no significant differences in the frequency of responses between male and female students.

Conclusion: We now have a better understanding of students' perceived strengths and areas of needed improvement in our family medicine clerkship. We have shared this information with our community faculty preceptors so that they will be better prepared to work with our students. Family medicine clerkship preceptors at other institutions may also find these results useful.

Keywords: Education; clinical clerkship; medical; student self-assessment; undergraduate

Evaluation of obstetrics procedure competency of family medicine residents.

2015 Jul;3(2):69-78

Wang H, Warwick E, Mejia de Grubb MC, Deng N, Corboy J.

Abstract

Objective: To establish a procedure evaluation system to monitor residents’ improvement in obstetrics (OB) procedures performance and skills during the training period.

Methods: A web-based procedure logging and evaluation system was developed using Microsoft .net technology with a SQL server as a backend database. Residents’ logged OB procedures were captured by the system. The OB procedures logged within 7 days were evaluated by supervising faculty using three observable outcomes (procedure competency, procedure-related medical knowledge level, and patient care).

Results: Between 1 July 2005 and 30 June 2008, a total of 8543 procedures were reported, of which 1263 OB procedures were evaluated by supervising faculty. There were significant variations in the number of logged procedures by gender, residency track, and US versus non-US medical graduates. Approximately 84% of the procedures were performed (independently or with assistance) by residents. Residents’ procedure skills, procedure-related medical knowledge, and patient care skills improved over time, with significant variations by gender among the three outcomes.

Conclusion: The benefits of specific evaluation of procedural competence in postgraduate medical education are well established. Innovative and reliable tools to assess and monitor residents’ procedural skills are warranted.

Keywords: Resident procedure; evaluation; family medicine

2015 Jul;57(7):814-826


Abstract

Objective: To describe the trends, correlates, and healthcare costs associated with industry-related injuries across the United States between 1998 and 2011.

Methods: A retrospective, cross-sectional analysis of hospital discharges was conducted using the National Inpatient Sample. We used the International Classification of Diseases, Ninth Revision, Clinical Modification codes to identify accidents occurring in industrial settings. Joinpoint regression modeling was used to analyze trends.

Results: Most of the 357,716 inpatient hospitalizations were admissions from the emergency department (55%). Fractures were the most prevalent injuries (48.1%), whereas the lower and upper extremities were the most common injury sites (51.7%). The mean per admission cost of direct medical care was $12,849, with an overall downward trend in injuries during the study period.

Conclusions: A comprehensive trend analysis of industry-related injuries is valuable to policymakers in formulating targeted strategies and allocating resources to address disparities at various levels.

A quasi-experimental design to assess the effectiveness of the federal Healthy Start in reducing preterm birth among obese, others.

2015 Jun;36(3):205-12

August EM, Salihu HM, de la Cruz CZ, Mbah AK, Alio AP, Berry EL.

Abstract

We assessed the impact of Central Hillsborough Healthy Start (CHHS), a federally-funded program dedicated to improving maternal and infant outcomes in a population of high-risk obese mothers in the socio-economically challenged community of East Tampa in Florida on preterm birth and very preterm birth (VPTB). We utilized hospital discharge records linked to vital statistics data in Florida (2004–2007) to study obese women with a singleton birth, matching mothers in the CHHS catchment area with those from the rest of Florida. We conducted conditional logistic regression with the matched data. Obese mothers in the CHHS service area had a 61 % lower likelihood of having a VPTB infant than obese mothers in the rest of the state (AOR = 0.39, 95 % CI 0.21–0.70). Obese women of reproductive age may benefit from services from federal Healthy Start programs. Study findings underscore the need for further research to explore the impact of such programs.

Keywords: Preterm birth; obesity; community intervention; infant morbidity
Social factors and barriers to self-care adherence in Hispanic men and women with diabetes.

2015 Jun;98(6):805-810

Mansyur CL, Rustveld LO, Nash SG, Jibaja-Weiss ML.

Abstract

Objective: To explore quantitatively the extent to which social support, social norms and barriers are associated with self-efficacy and self-care adherence in Hispanic patients with diabetes and the extent to which these differ for men and women.

Methods: Baseline survey data were collected from 248 low-SES, Hispanic men and women who were participants in a randomized controlled trial of a culturally targeted intervention for diabetes management. Student’s t, Pearson correlations and multiple regression were used to analyze the data.

Results: Compared to men, women were less likely to receive support, faced more barriers, reported less self-efficacy and had lower levels of self-care adherence. Perceived support was consistently correlated with better self-efficacy in women but not men, even though men reported higher levels of support.

Conclusion: The lack of adequate support seems to be a fundamental barrier for Hispanic women with diabetes.

Practice Implications: Health care providers should be sensitive to sociocultural influences in Hispanic groups that may facilitate men’s self-care adherence, but could potentially hamper women’s efforts. Interventions designed for Hispanics should augment women’s support needs and address culture and social factors that may differentially impact the ability of men and women to manage their diabetes.

Keywords: Diabetes; gender disparities; Hispanic; self-care adherence; self-efficacy; social norms; social support

The accuracy of hospital discharge diagnosis codes for major birth defects: Evaluation of a statewide registry with passive case ascertainment.

2016 May-Jun;22(3):E9-E19


Abstract

Context: Birth defects prevention, research, education, and support activities can be improved through surveillance systems that collect high-quality data.

Objective: To estimate the overall and defect-specific accuracy of Florida Birth Defects Registry (FBDR) data, describe reasons for false-positive diagnoses, and evaluate the impact of statewide case confirmation on frequencies and prevalence estimates.

Participants: A total of 8479 infants born to Florida resident mothers between January 1, 2007, and December 31, 2011, and diagnosed with 1 of 13 major birth defects in the first year of life.

Main Outcome Measures: Positive predictive value: calculated overall (proportion of FBDR-identified cases confirmed by medical record review, regardless of which of the 13 defects were confirmed) and defect-specific (proportion of FBDR-identified cases confirmed by medical record review with the same defect) indices.

Results: The FBDR’s overall positive predictive value was 93.3% (95% confidence interval, 92.7-93.8); however, there was variation in accuracy across defects, with positive predictive values ranging from 96.0% for gastroschisis to 54.4% for reduction deformities of the lower limb. Analyses suggested that International Classification of Diseases, Ninth Edition, Clinical Modification, codes, upon which FBDR diagnoses are based, capture the general occurrence of a defect well but often fail to identify the specific defect with high accuracy. Most infants with false-positive diagnoses had some type of birth defect that was incorrectly documented or coded. If prevalence rates reported by the FBDR for these 13 defects were adjusted to incorporate statewide case confirmation, there would be an overall 6.2% rate reduction from 82.6 to 77.5 per 10,000 live births.

Conclusions: A statewide birth defects surveillance system, relying on linkage of administrative databases, is capable of achieving high accuracy (>93%) for identifying infants with any one of the 13 major defects included in this study. However, the level of accuracy and the ability to minimize false-positive diagnoses vary depending on the defect.
Randomized, controlled pilot trial of solifenacin succinate for overactive bladder in Parkinson’s disease.

2015 May;21(5):514-20


Abstract

Objective: To evaluate the efficacy of solifenacin succinate in Parkinson’s disease (PD) patients suffering from overactive bladder (OAB).

Background: Urinary dysfunction is a commonly encountered non-motor feature in PD that significantly impacts patient quality of life.

Design/Methods: This was a double-blind, randomized, placebo-controlled, 3-site study with an open label extension phase to determine the efficacy of solifenacin succinate in idiopathic PD patients with OAB. Patients were randomized to receive solifenacin succinate 5-10 mg daily or placebo for 12 weeks followed by an 8-week open label extension. The primary outcome measure was the change in the mean number of micturitions per 24 h period. Secondary outcome measures included the change in the mean number of urinary incontinence episodes and the mean number of nocturia episodes.

Results: Twenty-three patients were randomized in the study. There was no significant improvement in the primary outcome measure in the double-blind phase, but there was an improvement in the number of micturitions per 24 h period in the solifenacin succinate group compared to placebo at a mean dose of 6 mg/day (p = 0.01). In the open label phase, the mean number of urinary incontinence episodes per 24 h period decreased (p = 0.03), as did the number of nocturia episodes per 24 h period (p = 0.01). Adverse events included constipation and xerostomia, which resolved after treatment was discontinued.

Conclusions: In this pilot trial, solifenacin succinate treatment led to an improvement in urinary incontinence, despite persistence in other OAB symptoms.

Effectiveness of a federal Healthy Start Program on HIV/AIDS risk reduction among women in Hillsborough County, Florida.

2015 Apr;108(4):235-41

August E, Aliyu MH, Mbah A, Okwechime I, Adegoke KK, de la Cruz C, Berry EL, Salihu HM.

Abstract

Objectives: To examine the impact of the Central Hillsborough Healthy Start Project (CHHS) on human immunodeficiency virus (HIV)/acquired immunodeficiency syndrome (AIDS) diagnosis rates in women in Hillsborough County, Florida.

Methods: Project records were linked to hospital discharge data and vital statistics (Florida, 1998-2007; N = 1,696,221). The χ² test was used to compare rates for HIV/AIDS and pregnancy-related complications for mothers within the CHHS service area with mothers in Hillsborough County and the rest of Florida.

Results: During a 10-year period, HIV/AIDS diagnosis rates among women in the CHHS service area declined by 56.3% (P = 0.01). The observed decline was most evident among black women. HIV/AIDS diagnosis rates in the rest of Hillsborough County and Florida remained unchanged (P = 0.48).

Conclusions: Lessons learned from the CHHS Project can be used to develop effective and comprehensive models for addressing the HIV epidemic.
Medication adherence and resistant hypertension.

2015 Apr;29:213-28

Hyman DJ, Pavlik VN.

Abstract

Non-adherence has been a major concern in the treatment of hypertension and is particularly important in understanding and intervening in patients who appear to have resistant hypertension. Relatively few studies have examined the role of non-adherence in resistant hypertension. This review will address issues related to measurement of adherence, adherence interventions and rates of non-adherence in general hypertensive populations and in patients classified as having resistant hypertension.

Association between maternal symptoms of sleep disordered breathing and fetal telomere length.

2015 Apr;38(4):559-66


Abstract

Study Objectives: Our investigation aims to assess the impact of symptoms of maternal sleep-disordered breathing, specifically sleep apnea risk and daytime sleepiness, on fetal leukocyte telomere length.

Participants and Setting: Pregnant women were recruited upon hospital delivery admission.

Interventions: Sleep exposure outcomes were measured using the Berlin Questionnaire to quantify sleep apnea and the Epworth Sleepiness Scale to measure daytime sleepiness. Participants were classified as "High Risk" or "Low Risk" for sleep apnea based on responses to the Berlin, while "Normal" or "Abnormal" daytime sleepiness was determined based on responses to the Epworth.

Design: Neonatal umbilical cord blood samples (N = 67) were collected and genomic DNA was isolated from cord blood leukocytes using Quantitative PCR. A ratio of relative telomere length was derived by telomere repeat copy number and single copy gene copy number (T/S ratio) and used to compare telomere lengths. Bootstrap and ANOVA statistical procedures were employed.

Measurements and Results: On the Berlin, 68.7% of participants were classified as Low Risk while 31.3% were classified as High Risk for sleep apnea. According to the Epworth scale, 80.6% were determined to have Normal daytime sleepiness, and 19.4% were found to have abnormal daytime sleepiness. The T/S ratio among pregnant women at High Risk for sleep apnea was significantly shorter than for those at Low Risk (P value < 0.05), and the T/S ratio among habitual snorers was significantly shorter than among non-habitual snorers (P value < 0.05). Although those with Normal Sleepiness had a longer T/S ratio than those with Abnormal Sleepiness, the difference was not statistically significant.

Conclusion: Our results provide the first evidence demonstrating shortened telomere length among fetuses exposed to maternal symptoms of sleep disordered breathing during pregnancy, and suggest sleep disordered breathing as a possible mechanism of accelerated chromosomal aging.
Gender differences in treatment retention among individuals with co-occurring substance abuse and mental health disorders.

2015 Apr;50(5):653-63

Choi S, Adams SM, Morse SA, MacMaster S.

Abstract
Background: A significant number of individuals with co-occurring substance abuse and mental health disorders do not engage, stay, and/or complete residential treatment. Although prior research indicates that women and men differ in their substance abuse treatment experiences, our knowledge of individuals with co-occurring substance abuse and mental health disorders as well as those attending private residential treatment is limited.

Objectives: The purpose of this study is to examine gender differences on treatment retention for individuals with co-occurring substance abuse and mental health disorders who participate in private residential treatment.

Methods: The participants were 1,317 individuals (539 women and 778 men) with co-occurring substance abuse and mental health disorders receiving treatment at three private residential treatment centers. Bivariate analyses, life tables, and Cox regression (survival analyses) were utilized to examine gender effects on treatment retention, and identify factors that predict treatment retention for men and women.

Results: This study found that women with co-occurring disorders were more likely to stay longer in treatment when compared to men. The findings indicate the factors influencing length of stay differ for each gender, and include: type of substance used prior to admission; Addiction Severity Index Composite scores; and Readiness to Change/URICA scores. Age at admission was a factor for men only.

Conclusions/Importance: These findings can be incorporated to develop and initiate program interventions to minimize early attrition and increase overall retention in private residential treatment for individuals with co-occurring substance use and mental health disorders.

Keywords: Co-occurring disorders, dual diagnosis, gender differences, predictors, residential treatment, retention, substance abuse, and mental health disorder.


2015 Feb;32(3):289-98

Salihu HM, Mogos MF, Salinas-Miranda AA, Salemi JL, Whiteman VE.

Abstract
Objective: The aim of this study is to describe national trends for opioid use among pregnancy-related hospitalizations from 1998 to 2009.

Study Design: Using the Nationwide Inpatient Sample, we identified hospital discharge records associated with the diagnoses codes for the use of opioids for all eligible pregnancy-related inpatient admissions between 1998 and 2009. Joinpoint regression modeling was used to describe changes in trend of pregnancy-related opioid use. The main outcome measure was the annual percent change for opioids use among pregnancy-related hospitalizations.

Results: From 1998 to 2009, opioid use was documented in 138,224 of 55,781,966 pregnancy-related inpatient hospitalizations (25 cases per 10,000 discharges). A statistically significant downward trend occurred from 1998 to 2001, whereas from 2002 to 2009 there was a statistically significant upward trend. The increasing trend in opioid use from 2002 to 2009 is notably higher for whites compared with blacks and Hispanics.

Conclusions: Our findings highlight the continuous need to monitor opioids use and to revise prescription guidelines, practices, and regulatory mechanisms to curtail the progression of the increasing opioids use during pregnancy. It is critical that health care providers weight the benefits of these medications along with their potential risks when discussing analgesic treatment options with pregnant women.
Impact of intrauterine tobacco exposure on fetal telomere length.

2015 Feb;212:205.e1-8


Abstract

Objective: We sought to investigate whether maternal smoking during pregnancy affects telomere length of the fetus.

Study Design: Pregnant women were recruited on hospital admission at delivery. A self-report questionnaire and salivary cotinine test were used to confirm tobacco exposure. Neonatal umbilical cord blood samples were collected, and genomic DNA was isolated from cord blood leukocytes and was analyzed for fetal telomere length based on quantitative polymerase chain reaction. A ratio of relative telomere length was determined by telomere repeat copy number and single copy gene copy number (T/S ratio) and used to compare the telomere length of active, passive, and nonsmokers. Bootstrap and analysis of variance statistical methods were used to evaluate the relationship between prenatal smoking status and fetal telomere length.

Results: Of the 86 women who were included in this study, approximately 69.8% of the participants were covered by Medicaid, and 55.8% of the participants were black or Hispanic. The overall mean T/S ratio was 0.8608 ± 1.0442. We noted an inverse relationship between smoking and fetal telomere length in a dose-response pattern (T/S ratio of nonsmokers that was more than passive smokers that was more than active smokers). Telomere length was significantly different for each pairwise comparison, and the greatest difference was between active and nonsmokers.

Conclusion: Our results provide the first evidence to demonstrate a positive association between shortened fetal telomere length and smoking during pregnancy. Our findings suggest the possibility of early intrauterine programming for accelerated aging that is the result of tobacco exposure.

Preterm birth in the first pregnancy and risk of neonatal death in the second pregnancy: A propensity score-weighted matching approach.

2015 Jan;35:30-6

Whiteman VE, August EM, Mogos M, Naik E, Garba M, Sanchez E, Weldeselasse HE, Salihu HM.

Abstract

The study purpose was to assess the relationship between various grades of preterm birth (moderate preterm: 33-36 weeks; severe preterm: 27-32 weeks; extreme preterm: ≤ 26 weeks) in the first pregnancy and neonatal mortality (death within 28 days of birth; early: 0-7 days; late: 8-28 days) in the second pregnancy. Using the Missouri maternally-linked dataset (1989-2005), a population-based, retrospective cohort analysis with propensity score weighted matching was conducted on mothers with two consecutive singleton live births (n = 310,653 women). Women with a prior preterm birth were more likely to subsequently experience neonatal death. The odds increased in a dose-dependent pattern with ascending severity of the preterm event in the first pregnancy (moderate preterm: AOR = 1.32; 95% CI: 1.10-1.60; severe preterm: AOR = 2.62; 95% CI: 2.01-3.41; extreme preterm: AOR = 5.84; 95% CI: 4.28-7.97; p value for trend < 0.001). However, the pathway for the relationship between prior preterm birth and subsequent neonatal mortality may be the recurrence of preterm birth.

Keywords: Birth outcomes; neonatal mortality; pregnancy; preterm birth

2015 Jan;9(1):6-14


Abstract
Prior research indicates that infants with absent fathers are vulnerable to unfavorable fetal birth outcomes. HIV is a recognized risk factor for adverse birth outcomes. However, the influence of paternal involvement on fetal morbidity outcomes in women with HIV remains poorly understood. Using linked hospital discharge data and vital statistics records for the state of Florida (1998-2007), the authors assessed the association between paternal involvement and fetal growth outcomes (i.e., low birth weight [LBW], very low birth weight [VLBW], preterm birth [PTB], very preterm birth [VPTB], and small for gestational age [SGA]) among HIV-positive mothers (N=4,719). Propensity score matching was used to match cases (absent fathers) to controls (fathers involved). Conditional logistic regression was employed to generate adjusted odds ratios (OR). Mothers of infants with absent fathers were more likely to be Black, younger (<35 years old), and unmarried with at least a high school education (p<.01). They were also more likely to have a history of drug (p<.01) and alcohol (p=.02) abuse. These differences disappeared after propensity score matching. Infants of HIV-positive mothers with absent paternal involvement during pregnancy had elevated risks for adverse fetal outcomes (LBW: OR=1.30, 95% confidence interval [CI]=1.05-1.60; VLBW: OR=1.72, 95% CI=1.05-2.82; PTB: OR=1.38, 95% CI=1.13-1.69; VPTB: OR=1.81, 95% CI=1.13-2.90). Absence of fathers increases the likelihood of adverse fetal morbidity outcomes in women with HIV infection. These findings underscore the importance of paternal involvement during pregnancy, especially as an important component of programs for prevention of mother-to-child transmission of HIV.

Keywords: HIV/AIDS, parenting, population based, public health

Fetal homocysteine levels and shortened telomere length: In-utero programming with potential consequences for future health.

2015 Jan;212(1):S411


Abstract
Objective: Elevated homocysteine levels (HC) and/or shortened telomere length (TL) are associated with an increased risk of adverse medical conditions. The objective of this study is to investigate the relationship between HC and TL in cord blood leukocytes of newborns.

Study Design: This project is a nested study from a prospective cohort from 2011 - 2012 in pregnant women with a singleton gestation who were admitted for delivery at a university-affiliated hospital. Cord blood was collected at delivery and genomic DNA was analyzed using quantitative PCR. The telomere-to-single copy gene (T/S) ratio method was employed to quantify telomere length. HC was also measured. Statistical analysis was performed using bootstrap and Generalized Linear Regression Modeling (GLM).

Results: A total of 96 maternal-fetal dyads were enrolled with a mean gestational age of 39.44 weeks. Figure 1 represents the histogram of all p-values generated using GLM from 10,000 bootstrapping simulations. The distribution of the coefficient of HC shows that all values were less than zero confirming that HC had an inverse relationship with telomere length. The figure shows that in 6,689 of the 10,000 (66.89%) iterations performed, the p-value returned was <0.05 demonstrating statistical significance.

Conclusion: Our study is the first to show that increasing fetal concentrations of HC is associated with decreasing telomere length in a dose-response pattern. The results tend to suggest early intrauterine fetal programming of future disease risk as a result of fetal exposure to elevated HC levels. Further studies are needed to confirm our findings and the long term implications.
Community-based decision making and priority setting using the R software: The community priority index.

2015;347501

Salihu HM, Salinas-Miranda AA, Paothong A, Wang W, King LM.

Abstract

This paper outlines how to compute community priority indices in the context of multicriteria decision making in community settings. A simple R function was developed and validated with community needs assessment data. Particularly, the first part of this paper briefly overviews the existing methods for priority setting and reviews the utility of a multicriteria decision-making approach for community-based prioritization. The second part illustrates how community priority indices can be calculated using the freely available R program to handle community data by showing the computational and mathematical steps of CPI (Community Priority Index) with bootstrapped 95% confidence intervals.

Implementing targeted cervical cancer screening videos at the point of care.

2014 Dec;97(3):426-29

Montecalegre JR, Gossey JT, Anderson ML, Chenier RS, Chauca G, Rustveld LO, Jibaja-Weise ML.

Abstract

Objective: To develop and implement educational videos to improve cervical cancer health literacy for patients within a safety net healthcare system.

Methods: Testimonial-style videos were developed with the goal of describing the Pap test to low literacy patients and motivating them to participate in regular cervical cancer screening. Nurses were trained to use the electronic medical record to identify patients due or past due for a Pap test according to the current screening guidelines. They played the video for all eligible patients as they waited to be seen by their physician in clinical examination rooms.

Results: Four 2-minute videos were developed in English, Spanish, and Vietnamese. Videos were made available on desktop computers in 458 exam rooms at 13 community health centers.

Conclusion: Integration of educational videos into the workflow of high-volume community health centers is feasible. Future work will focus on optimizing uptake of the videos as well as assessing their efficacy for improving cervical cancer health literacy.

Practice Implications: Integrating targeted videos into patient flow may be a feasible way to address health literacy barriers to cervical cancer screening within a busy workflow environment.

Keywords: Cervical cancer screening; electronic medical records; health literacy; patient education
Risk of preeclampsia from exposure to particulate matter (PM2.5) speciation chemicals during pregnancy.

2014 Dec;56:1228-34

Ibrahimou B, Salihu HM, Aliyu MH, Anozie C.

Abstract

Objective: To determine whether maternal exposure to particulate matter (PM2.5) speciation chemicals during pregnancy is associated with the risk of preeclampsia.

Methods: We allocated average daily exposure values for 36 ambient particulate matter speciation chemicals to mothers during their first trimester and their entire pregnancy. The main outcome of interest was preeclampsia occurrence. Adjusted odd ratios and 95% confidence intervals were computed.

Results: The odds for preeclampsia were increased per interquartile range increase in pollutants for exposure to elemental carbon during the first trimester of pregnancy (odds ratio = 1.08; confidence interval = 1.01 to 1.16) and during the entire pregnancy period (odds ratio = 1.05; confidence interval = 1.01 to 1.11). The most substantial risk for preeclampsia was observed for PM2.5 aluminum exposure during the entire pregnancy, resulting in 10% increased risk (odds ratio = 1.10; confidence interval = 1.03 to 1.18) per interquartile range increase in aluminum.

Conclusions: Maternal exposure to PM2.5, aluminum, and elemental carbon during pregnancy increases the risk of preeclampsia.

Maternal hepatitis B and hepatitis C infection and neonatal neurological outcomes.

2014 Nov;21(11):e144-153

Salemi JL, Whiteman VE, August EM, Chandler K, Mbah K, Salihu HM.

Abstract

To examine the associations between maternal hepatitis B (HBV) and hepatitis C (HCV) infection status and selected infant neurological outcomes diagnosed at birth, we conducted a population-based, retrospective cohort study on singleton live births in Florida from 1998 to 2009. Primary exposures included maternal HBV and HCV monoinfection. The neurological outcomes included brachial plexus injury, cephalhematoma, fetal distress, feeding difficulties, intraventricular haemorrhage and neonatal seizures. Multivariable logistic regression models were used to generate odds ratios (OR) and 95% confidence intervals (CI) that were adjusted for socio-demographic characteristics, risky behaviours, pregnancy complications and pre-existing medical conditions, and timing of delivery. The risk of an adverse neurological outcome was higher in infants born to mothers with hepatitis viral infection (7.2% for HCV, 5.0% for HBV), compared with infants of hepatitis virus-free mothers (4.2%). After adjusting for potential confounders, women with HBV were twice as likely to have infants who suffered from brachial plexus injury (OR = 2.04, 95% CI = 1.15-3.60), while those with HCV had an elevated odds of having an infant with feeding difficulties (OR: 1.32, 95% CI = 1.06-1.64) and a borderline increased likelihood for neonatal seizures (OR: 1.74, 95% CI = 0.98-3.10). Additionally, HCV+ mothers had a 22% increased odds of having an infant with some type of adverse neurological outcome (OR: 1.22, 95% CI = 1.03-1.44). Our findings add to current understanding of the association between maternal HBV/HCV infections and infant neurological outcomes. Further research evaluating the role of maternal HBV and HCV infections (including viraemia, treatment) on pregnancy outcomes is warranted.
Risk Analysis

Estimating benchmark exposure for air particulate matter using latent class models.

2014 Nov;34:2053-62
Mbah AK, Hamisu I, Naik E, Salihu HM.

Abstract
We performed benchmark exposure (BME) calculations for particulate matter when multiple dichotomous outcome variables are involved using latent class modeling techniques and generated separate results for both the extra risk and additional risk. The use of latent class models in this study is advantageous because it combined several outcomes into just two classes (namely, a high-risk class and a low-risk class) and compared these two classes to obtain the BME levels. This novel approach addresses a key problem in risk estimation—namely, the multiple comparisons problem, where separate regression models are fitted for each outcome variable and the reference exposure will rely on the results of the best-fitting model. Because of the complex nature of the estimation process, the bootstrap approach was used to estimate the reference exposure level, thereby reducing uncertainty in the obtained values. The methodology developed in this article was applied to environmental data by identifying unmeasured class membership (e.g., morbidity vs. no morbidity class) among infants in utero using observed characteristics that included low birth weight, preterm birth, and small for gestational age.

Keywords: Benchmark exposure; bootstrap; infant morbidity; latent class; particulate matter

Obstetrics & Gynecology

Perinatal outcomes and hospital costs in gastroschisis is based on gestational age at delivery.

2014 Sep;124:543-50
Cain MA, Salemi JL, Paul Tanner J, Mogos MF, Kirby RS, Whiteman VE, Salihu HM.

Abstract
Objective: To investigate the association between gestational age at delivery and perinatal outcomes among gastroschisis-affected pregnancies that result in live birth.

Methods: We conducted a retrospective cohort study using a linked maternal-infant database for more than 2.3 million liveborn neonates in Florida from 1998 to 2009. Cases were identified using a combination of International Classification of Diseases, 9th Edition, Clinical Modification, diagnosis and procedure codes indicative of gastroschisis. We restricted our analyses to singleton cases without another major birth defect or medical conditions that would justify early elective delivery. We categorized cases based on gestational age in weeks and compared perinatal outcomes.

Results: Among 1,005 neonates with gastroschisis, 324 (32.3%) were isolated, singleton cases without an additional indication for early delivery. We observed decreased rates of adverse pregnancy outcomes among those neonates delivered in the early term period (37-38 weeks of gestation) compared with preterm (less than 34 weeks of gestation); specifically, jaundice (18.5% compared with 42.3%, P=.01) and respiratory distress syndrome (5.9% compared with 23.1%, P<.01). As the gestational age at birth increased, we observed fewer mean number of days spent in the hospital (less than 34 weeks of gestation: 55.9, P<.01; 34-36 weeks of gestation: 51.9, P=.04; 37-38 weeks of gestation: 36.9 [reference]) and lower direct inpatient medical costs (in thousands, U.S. dollars; less than 34 weeks of gestation: 79, P=.01; 34-36 weeks of gestation: 71, P=.04; 37-38 weeks of gestation: 51 [reference]) per infant in the first year of life.

Conclusion: In pregnancies complicated by gastroschisis, and with no other known major indications, birth at early term or later term gestation, when compared with delivery before 37 weeks of gestation, is associated with improved perinatal outcomes and lower medical costs.
Assessing the economic impact of paternal involvement: A comparison of the generalized linear model versus decision analysis trees.


Salihu HM, Salemi JL, Nash MC, Chandler K, Mbah AK, Alio AP.

Abstract
Lack of paternal involvement has been shown to be associated with adverse pregnancy outcomes, including infant morbidity and mortality, but the impact on health care costs is unknown. Various methodological approaches have been used in cost minimization and cost effectiveness analyses and it remains unclear how cost estimates vary according to the analytic strategy adopted. We illustrate a methodological comparison of decision analysis modeling and generalized linear modeling (GLM) techniques using a case study that assesses the cost-effectiveness of potential father involvement interventions. We conducted a 12-year retrospective cohort study using a statewide enhanced maternal-infant database that contains both clinical and nonclinical information. A missing name for the father on the infant’s birth certificate was used as a proxy for lack of paternal involvement, the main exposure of this study. Using decision analysis modeling and GLM, we compared all infant inpatient hospitalization costs over the first year of life. Costs were calculated from hospital charges using department-level cost-to-charge ratios and were adjusted for inflation. In our cohort of 2,243,891 infants, 9.2% had a father uninvolved during pregnancy. Lack of paternal involvement was associated with higher rates of preterm birth, small-for-gestational age, and infant morbidity and mortality. Both analytic approaches estimate significantly higher per-infant costs for father uninvolved pregnancies (decision analysis model: $1,827, GLM: $1,139). This paper provides sufficient evidence that healthcare costs could be significantly reduced through enhanced father involvement during pregnancy, and buttresses the call for a national program to involve fathers in antenatal care.
Acute or reactivated toxoplasmosis during pregnancy, its impact on birth outcomes and the associated costs of inpatient care in the United States, 2001-2009.

2014 Aug;1(1):1002

Mogos MF, Salemi JL, de la Cruz CZ, Groer ME, Sultan DH, Salihu HM.

Abstract

Objective: To describe prevalence of acute or reactivated toxoplasmosis during pregnancy (ARTP) in the United States (US) and its association with maternal-fetal outcomes.

Methods: The authors conducted a cross-sectional analysis of a national sample of pregnancy-related hospital discharges using 2001-2009 annual data from the largest publicly-available National Inpatient Sample database in the US (N=42,468,049). Maternal toxoplasmosis and clinical outcomes were identified using International Classification of Diseases, 9th Edition, Clinical Modification diagnosis codes. We described the annual prevalence of ARTP and used survey logistic regression to evaluate the associations between ARTP and adverse pregnancy outcomes. The cost of inpatient care for pregnant women with ARTP was compared with inpatient care cost for those without ARTP.

Results: The national prevalence of ARTP was 2 per 100,000 pregnancy related discharges. Odds of a prolonged hospital stay quadrupled among ARTP cases (AOR=4.59, 95% CI: [2.81- 7.48]). Women with ARTP also had three times higher odds of having an infant with poor fetal growth (AOR= 3.41, 95% CI: [1.71-6.77]) and stillbirth (AOR= 3.41, 95% CI: [1.23-9.49]). The mean medical care cost for women with ARTP was $6,686, compared to $4,347 for women without ARTP. The excess cost associated with ARTP over the study period was $1,939,031.

Conclusion: Toxoplasmosis during pregnancy is associated with adverse maternal-fetal outcomes and increased cost of maternal inpatient care.

Keywords: Toxoplasmosis; pregnancy; birth outcomes; cost

The shell game: How Institutional Review Boards shuffle words.

2014 Aug;12:201

Whitney SN.

Abstract

Concepts like coercion, vulnerability, and dignitary harm have acquired specialized meanings in the research ethics literature. Institutional Review Boards (IRBs), also called Research Ethics Committees (RECs), sometimes use these concepts in two different ways without acknowledging or even realizing what they are doing. IRBs misuse any language that encourages subject participation in trials as "coercive," then demand its removal as if it were actually coercive in the sense of a threat of force. An example of language that is treated as coercive is the use of the word "hope" in an educational brochure about clinical trials. The concepts of vulnerability and dignitary harm are similarly misused. The regulations instruct IRBs to protect vulnerable groups; but IRBs sometimes use a group's vulnerability to one threat to protect it against an unrelated and harmless threat, as when homeless people, who are vulnerable to street crime and disease, are protected from the risk of an interview. Finally, the term "dignitary harm" is so vague that IRBs can use it to restrict research that is entirely free of risk, while ignoring the possibility that research might provide the dignitary benefit of contributing to society's health and welfare. Dignitary harm—usually nonphysical "harm" of which the subject is entirely unaware—can be deemed more important than obtaining information that subjects want or actual risk of physical injury. These vague or shifting definitions permit the IRB to play a shell game without either the board or the investigator realizing what is happening.

2014 Aug;2014:906723

Whiteman VE, Salemi JL, Mogos MF, Cain MA, Aliyu MH, Salihu HM.

Abstract
Objective: To identify factors associated with opioid use during pregnancy and to compare perinatal morbidity, mortality, and healthcare costs between opioid users and nonusers.

Methods: We conducted a cross-sectional analysis of pregnancy-related discharges from 1998 to 2009 using the largest publicly available all-payer inpatient database in the United States. We scanned ICD-9-CM codes for opioid use and perinatal outcomes. Costs of care were estimated from hospital charges. Survey logistic regression was used to assess the association between maternal opioid use and each outcome; generalized linear modeling was used to compare hospitalization costs by opioid use status.

Results: Women who used opioids during pregnancy experienced higher rates of depression, anxiety, and chronic medical conditions. After adjusting for confounders, opioid use was associated with increased odds of threatened preterm labor, early onset delivery, poor fetal growth, and stillbirth. Users were four times as likely to have a prolonged hospital stay and were almost four times more likely to die before discharge. The mean per-hospitalization cost of a woman who used opioids during pregnancy was $5,616 (95% CI: $5,166-$6,067), compared to $4,084 (95% CI: $4,002-$4,166) for nonusers.

Conclusion: Opioid use during pregnancy is associated with adverse perinatal outcomes and increased healthcare costs.

Fetal Alcohol Spectrum Disorders: Survey of healthcare providers after continuing education.

2014 Jul;2(2):133-143

Evans SF, Tenkku LE, Kennedy T, Zoorob R, Rudeen PK.

Abstract
Fetal alcohol spectrum disorders (FASD) occur as a result of prenatal alcohol exposure and are commonly associated with intellectual disability. Maternal alcohol consumption affects fetal development resulting in numerous lifelong physical, mental, and neurobehavioral abnormalities. To promote prevention of prenatal alcohol exposure and intervention to mitigate alcohol's postnatal effects, the Centers for Disease Control and Prevention (CDC) provides continuing education to healthcare providers through their FASD Regional Training Centers (RTCs). An online survey evaluated healthcare providers' perceived competency after training. Cover letters with the survey link were electronically mailed to healthcare providers, who received training between 2002 and 2009 from the Midwest and Southeast RTCs. Eighty-two providers who treated women or children responded to the survey (7.5% response rate). Approximately 86% of providers who treated women have identified women 'at risk' for alcohol abuse with 90% indicating they would refer to Substance Abuse or Mental Health Services. However, over 25% perceived lack of training and limited time as barriers in treating women of childbearing age for at-risk drinking. Over 90% of providers who treated children reported feeling competent in recognizing FAS and other alcohol-related effects. Yet, only 23% of providers for children reported using FASD diagnostic schema and were more apt to use growth charts (70%) rather than lip philtrum guides (58%) or palpebral fissure length measurements (50%), tools typically used in FAS determination. These results suggest a need for training to focus on methodology that assists providers to easily incorporate screening, diagnostic, and treatment procedures into their daily practice.

Keywords: Fetal alcohol syndrome; prenatal alcohol exposure; intellectual disability; healthcare training; practice behaviors.