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First Use of a Serogroup B Meningococcal Vaccine in the US in Response to a University Outbreak

Outbreaks of serogroup B meningococcal disease occur at universities and other organizations. Until October 2014, options for control of serogroup B outbreaks were limited by the absence of a licensed vaccine for serogroup B meningococcal disease in the United States.

We describe a serogroup B outbreak at a university in 2013 and the campaign with investigational serogroup B vaccine held in response. This was the first use of a serogroup B vaccine as an outbreak response in the United States.

Firearm Violence Among High-Risk Emergency Department Youth After an Assault Injury

Firearm violence is a leading cause of death among US youth aged 14 to 24. The emergency department is a key setting for interacting with high-risk assault-injured youth and remains an underused but important setting for violence prevention programs.

High-risk youth seeking emergency department care for assault have high rates of firearm violence over the subsequent 2 years. Higher severity substance use, combined with negative retaliatory attitudes and access to firearms, increases this risk for involvement with firearm violence.

Neurodevelopmental Outcomes After Cardiac Surgery in Infancy

Neurodevelopmental disabilities are the most common, and potentially the most damaging, sequelae of congenital heart

defects. Children with congenital heart defects undergoing surgery in infancy have problems with reasoning, learning, executive function, inattention and impulsive behavior, language skills, and social skills.

Early neurodevelopmental outcomes for survivors of cardiac surgery in infancy have improved modestly over time, but only after adjustment for innate patient risk factors. As more high-risk infants with congenital heart defects survive cardiac surgery, a growing population will require significant societal resources.

Neonatal Intensive Care Unit Antibiotic Use

Although treatment of infection is a mainstay of neonatal intensive care, little attention has focused on the proportion of patient antibiotic exposures validated by clinical indications that are unambiguous.

Septic workups in 127 California NICUs reveal similar burdens of proven infection, yet patient antibiotic exposures in those NICUs vary 40-fold. Because antibiotic stewardship principles dictate that antibiotic use should correlate with burden of infection, some NICUs overuse antibiotics.

Point-of-Care Child Psychiatry Expertise: The Massachusetts Child Psychiatry Access Project

A program to support pediatric primary care providers in mental health care using point-of-care, telephone-based advice from specialists has been available since 2005 in Massachusetts. Other US states are implementing similar models. Little is known about how providers use this service.

There is wide variability in adoption and use of this program. Patterns are associated with panel size, enrollment timing, and assignment to the program team at the pilot site. Findings will help new programs establish expectations and design implementation interventions.

Prescription Opioid Epidemic and Infant Outcomes

Although opioid pain relievers are commonly prescribed in pregnancy, their association with neonatal outcomes is not well described. Further, factors associated with development of neonatal abstinence syndrome, a neonatal opioid withdrawal syndrome is inadequately understood.

Prescription opioid use in pregnancy is common and strongly associated with neonatal complications. Antenatal cumulative prescription opioid exposure, opioid type, tobacco use, and selective serotonin reuptake inhibitor use increase the risk of neonatal abstinence syndrome.

Alcohol Use in Films and Adolescent Alcohol Use

Exposure to risky behavior in the media is associated with increased risky behavior during adolescence. To date, published studies have not adjusted results for early childhood confounders in this literature.

Our findings confirm associations between adolescent alcohol use in the United Kingdom and exposure to alcohol use in films consistent with other global studies, even after controlling for early childhood confounding influences.

Nicotine Replacement Therapy in Pregnancy and Major Congenital Anomalies in Offspring

Smoking has been found to increase the risk of some specific congenital anomalies; however, results remain inconsistent. Nicotine replacement therapy (NRT) is increasingly being used as for smoking cessation in pregnancy although little is known about its association with congenital anomalies.

Being prescribed NRT while pregnant was not associated with major congenital anomalies (MCA), except a small increase in respiratory anomalies (3/1000 births). This must be considered in context of the rarity of MCAs and higher morbidities in the NRT group.

Parental Hope for Children With Advanced Cancer

Although physicians worry that communicating about prognosis or life-threatening illness can take away hope, previous work suggests that prognosis communication may even enhance hope. The nature of hopes held by parents of children with advanced cancer was not previously understood.

Parents in our study frequently recognized their child's poor prognosis, yet held many different hopes, including for cure,

quality of life, and meaningful relationships. Parents who hoped for cure often recognized that this was not possible for their child.

Parents' Daily Time With Their Children: A Workplace Intervention

Children's time with parents is critical for healthy development. Lack of control over parents' schedules and limited supervisor support for personal and family life can interfere with parents' family time.

This is the first group randomized controlled field trial demonstrating effects of a workplace intervention, designed to increase schedule control and supervisor support, on working parents' time with their children, as assessed by using longitudinal daily telephone interviews.

The Early Benefits of Human Papillomavirus Vaccination on Cervical Dysplasia and Anogenital Warts

Clinical trials of the quadrivalent human papillomavirus vaccine show it to be highly efficacious in preventing vaccine-type-specific cervical dysplasia and anogenital warts, but few studies have assessed its effects in the real world and none have done so at the program/population level.

This study provides strong evidence of the early benefits of quadrivalent human papillomavirus vaccination on reductions in cervical dysplasia and possible reductions in anogenital warts among girls aged 14 to 17 years, offering additional justification for not delaying vaccination until girls are older.

Outcomes of Infants Born to Women Infected With Hepatitis B

Timely immunoprophylaxis and completion of the 3-dose hepatitis B vaccine series represents the cornerstone of perinatal hepatitis B prevention. Immunoprophylaxis for infants born to hepatitis B surface antigen-positive mothers reduces up to 95% of perinatal hepatitis B virus infections.

Despite recommended immunoprophylaxis, perinatal hepatitis B virus infection occurs among ~1% of infants. Infants born to mothers who are younger, hepatitis B e-antigen positive, or who have a high viral load or infants who receive <3 hepatitis B vaccine doses are at greatest risk of infection.

Childhood Vaccination Coverage Rates Among Military Dependents in the United States

Current childhood vaccination coverage rates among military dependents in the United States are not known. Past studies on

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childhood vaccination coverage in military dependents have shown mixed results, with the majority showing lower than ideal coverage rates.

This study analyzes a national database with 6 years of data and provider-confirmed vaccination status to describe the current documented vaccination coverage rates among military dependents in the United States.

Cow's Milk Contamination of Human Milk Purchased via the Internet

Sharing human milk between those with an abundant supply and those seeking milk for their child is growing in popularity, including that facilitated by Web sites established to link buyers and sellers.

This study documents that human milk purchased via the Internet can be contaminated with cow's milk, which poses a potential risk to infants with allergy or intolerance to cow's milk.

Intensity of Perinatal Care for Extremely Preterm Infants: Outcomes at 2.5 Years

Considerable differences in outcome after extremely preterm birth have been reported between centers and regions providing a comparative level of care, but the reasons for these variations have been poorly examined.

In extremely preterm fetuses alive at the mother's admission for delivery, and in infants born alive, mortality up to 2.5 years is reduced in regions with a more active use of perinatal interventions without increased neurodevelopmental morbidity.

Heart Rates in Hospitalized Children by Age and Body Temperature

Heart rate (HR) increases with increasing body temperature. Previous studies have characterized the relationship among HR, age, and temperature for patients in primary care and emergency department settings but not in hospitalized children.

Our data demonstrate an overall increase in HR by ~10 beats/minute for each 1°C increase in body temperature. Expected heart rates for hospitalized children differ from those for primary care and emergency department patients at the same age and temperature.

Cost-Effectiveness of Treatment of Acute Otorrhea in Children With Tympanostomy Tubes

Otorrhea is common in children with tympanostomy tubes: annually, 2 of 3 children develop 1 or more episodes.

Antibiotic-glucocorticoid eardrops are the most effective treatment in both the short- and long-term.

Treatment with antibiotic-glucocorticoid eardrops costs less than oral antibiotics and initial observation in children with tympanostomy tubes who develop otorrhea. Non-health care costs constitute a substantial proportion of the total costs of this condition.

Outcomes and Costs of Surgical Treatments of Necrotizing Enterocolitis

Mortality rates and health care expenditures are high among infants requiring surgery for necrotizing enterocolitis. The impact of different surgical managements on mortality remains equivocal. Adjusted economic differences for various surgical treatments may exist but have not been elucidated.

After performing a relatively large-scale, adjusted analysis of cost and mortality for surgical managements currently used for treating necrotizing enterocolitis, a cost-benefit for a particular surgical approach was demonstrated while accounting for comorbidities and group assignment bias.

Maternal Prepregnancy Body Mass Index and Child Psychosocial Development at 6 Years of Age

Both obesity and developmental disabilities have increased in recent decades; however, the full long-term effects of prepregnancy obesity on a child's psychosocial development remain unknown. Limited studies suggest associations between maternal prepregnancy obesity and child psychosocial development.

This study in 6-year-old children provides evidence that severe prepregnancy obesity is associated with adverse child psychosocial outcomes, including attention-deficit/hyperactivity disorder. These findings were not explained by many pregnancy and postpartum factors related to maternal obesity or child development.

Validity of the Strengths and Difficulties Questionnaire in Preschool-Aged Children

Although the psychometric properties of the school-age Strengths and Difficulties Questionnaire (SDQ) have been extensively examined by using longitudinal data, the preschool version of the SDQ has only been explored in a limited number of cross-sectional studies.

This is the first psychometric study of the preschool SDQ using longitudinal data. We report measurement invariance over time, satisfactory reliability, construct and criterion validity, and predictive utility for subsequent behavioral problems (4 years) and clinical disorders (2 years).

Incidence and Outcomes of Symptomatic Neonatal Arterial Ischemic Stroke

Neonatal arterial ischemic stroke is associated with later cerebral palsy and cognitive impairment. Many studies on neonatal ischemic stroke are limited by modest sample sizes, and prospective studies that include outcomes assessments are scarce.

Results from this prospective, nationwide, population-based study provide information on the epidemiology, associated clinical variables, clinical manifestation, vascular distribution, and treatment of neonatal arterial ischemic stroke. The study also provides outcomes regarding motor function and cognition.

Predicting Neonatal Intubation Competency in Trainees

Pediatric residents may not be achieving competency in neonatal intubation. Opportunities for intubation during residency are decreasing. A precise definition of competency during training is lacking.

Bayesian statistics may be used to describe neonatal intubation competency in residents. At least 4 successful intubations are needed to achieve competency. The first 2 intubation opportunities appear to predict how many intubation opportunities are ultimately needed to achieve competency.

Impact of Just-in-Time and Just-in-Place Simulation on Intern Success With Infant Lumbar Puncture

Trainee success rates with infant lumbar puncture are poor. The model of just-in-time learning via simulation has produced clinical improvement for other medical skills such as cardiac compressions and central line dressing changes.

This is the first study to evaluate the impact of just-in-time-and-place simulation-based learning on success with infant lumbar puncture. The intervention improved clinical behaviors associated with success without making a significant impact on success with the procedure.

Parenting Skills and Emotional Availability: An RCT

Early parenting programs benefit children's development in low- and middle-income countries. However, the extent to which these interventions have a positive impact on parenting skills and their emotional availability is less studied.

An early child development intervention using play and communication activities to promote caregivers' responsiveness can improve mother-child interactions, caregiving environment, caregiving practices pertaining to development and feeding, and, in combination with a nutrition intervention, support maternal emotional well-being.

Bayley-III Cognitive and Language Scales in Preterm Children

There is concern that the Bayley-III overestimates developmental functioning in preterm populations. The ability of the Bayley-III Cognitive and Language scales to predict later functioning in very preterm children has not been examined.

The norms on the Bayley-III Cognitive and Language scales at 24 months had low sensitivity for impairment across general cognitive, verbal and nonverbal reasoning domains at 4 years, which was better detected using cut-points based on local term-born reference data.

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Pediatrics Digest
Pediatrics 2015;135;D1
DOI: 10.1542/peds.digest1355

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Pediatrics Digest
Pediatrics 2015;135;D1
DOI: 10.1542/peds.digest1355

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