



Receive summaries of articles in each month's issue of *Pediatrics* when you sign up at [www.pediatrics.org](http://www.pediatrics.org).

### **Etiologies for Seizures Around the Time of Vaccination**

Childhood vaccinations mildly increase the risk of febrile seizures in the general pediatric population, during specific risk periods. However, vaccinations are common precipitants for (first) seizures in the genetically determined, fever-sensitive Dravet syndrome (formerly severe myoclonic epilepsy of infancy).

This study shows that in most children with epilepsy onset after vaccination, genetic or structural causes of epilepsy can be identified. This claim includes children with Dravet syndrome (~35%) but also children with benign epilepsy or preexistent encephalopathy.

### **Variation in Care of the Febrile Young Infant <90 Days in US Pediatric Emergency Departments**

Various low-risk criteria have been developed to guide management of the febrile young infant (<90 days), but they differ in age criteria, recommendations, and implementation. Therefore, variation in care is likely but has not been previously studied.

There is wide variation in testing, treatment, and overall resource utilization in management of the febrile young infant across all 3 age groups: ≤28, 29 to 56, and 57 to 89 days. There may be opportunities to improve care variation without compromising outcomes.

### **Dating Violence, Childhood Maltreatment, and BMI From Adolescence to Young Adulthood**

Partner violence victimization is associated with mental and behavioral health effects linked to weight gain. Childhood

maltreatment is directly linked to obesity and associated with neuroanatomic and psychosocial changes, which heighten vulnerability to subsequent stressors.

This study finds that dating violence victimization is associated with greater increases in BMI from adolescence to young adulthood among women. Women with previous exposure to childhood sexual abuse are especially vulnerable to dating violence–related increases in BMI.

### **Immunologic Effects of Hydroxyurea in Sickle Cell Anemia**

Hydroxyurea is a treatment option for young patients with sickle cell disease (SCD). Establishing the safety of hydroxyurea is of paramount importance. The effect of hydroxyurea on immune function and immunizations in SCD has not been studied previously.

Children with SCD receiving hydroxyurea have lower lymphocyte, CD4, and memory T-cell counts compared with those receiving placebo, but still in the range for healthy children. Despite slower response to measles vaccine, measles, mumps, and rubella and pneumococcal vaccines are effective.

### **Young Adult Psychological Outcome After Puberty Suppression and Gender Reassignment**

Puberty suppression has rapidly become part of the standard clinical management protocols for transgender adolescents. To date, there is only limited evidence for the long-term effectiveness of this approach after gender reassignment (cross-sex hormones and surgery).

In young adulthood, gender dysphoria had resolved, psychological functioning had steadily improved, and well-being was comparable to same-age peers. The clinical protocol including puberty suppression had provided these formerly gender-dysphoric youth the opportunity to develop into well-functioning young adults.

### **Health Care-Associated Infections Among Critically Ill Children in the US, 2007–2012**

Health care–associated infections are harmful, costly, and preventable, yet there remain limited data as to their population incidence among hospitalized neonates and children in the United States.

Incidence rates of central line–associated bloodstream infections and ventilator-associated pneumonia decreased among critically ill neonates and children during a 5-year period in the United States. National efforts to improve patient safety through decreasing HAIs have been effective.

### **Parental Tdap Boosters and Infant Pertussis: A Case-Control Study**

Parental reduced antigen diphtheria-tetanus-acellular pertussis (Tdap) vaccination is difficult to implement, and empirical data on its impact is limited to a single hospital-based study in Texas, which found no reduction in infant pertussis hospitalization.

In New South Wales, Australia, a case-control study found both parents receiving Tdap  $\geq 4$  weeks before disease onset was associated with a significant reduction in risk of early infant pertussis and suggestive of persistent protection in subsequent pregnancies.

### **Pertussis Immunization in Infancy and Adolescent Asthma Medication**

Childhood immunization might contribute to an increase in asthma prevalence. Previous studies have been contradictory, and many lack sufficiently large control groups of nonimmunized children.

Pertussis immunization in infancy does not increase the risk of asthma medication in adolescents. Our study presents convincing evidence that pertussis immunization in early childhood can be considered safe with respect to long-term development of asthma.

### **Asthma and Food Allergy Management in Chicago Public Schools**

Asthma and food allergy are common chronic conditions impacting 14% and 8% of US school-aged children, respectively.

School districts must be prepared to track students who have these conditions to ensure proper daily management and emergency response.

This study examines the demographic distribution of asthma and food allergy and the existence of school health management plans in a large, urban school district. The findings show that school health management plans are underused for both conditions.

### **Behavioral Health Services Following Implementation of Screening in Massachusetts Medicaid Children**

Behavioral health (BH) screening is known to increase identification of children with BH issues, but in small-scale studies, rates of follow-up after screening have been reported to be low.

This study examines the relationship between BH screening and the receipt of BH services in Massachusetts Medicaid children. Nearly 60% of children identified with BH problems received BH services, but only 30% of newly identified children received BH services.

### **Maintenance of Certification Part 4 Credit and Recruitment for Practice-Based Research**

Pediatric primary care has undergone a cultural shift. Changes in electronic health records, certification requirements, and practice structure have left many physicians feeling too busy to participate in research. Practice-based research networks must adapt to fit the current climate.

Adding quality improvement activities that meet Maintenance of Certification Part 4 criteria to research study design adds value to a practice-based research protocol. This incentive meets the needs of busy physicians, and may help researchers meet study recruitment goals.

### **Single-Family Room Care and Neurobehavioral and Medical Outcomes in Preterm Infants**

The single-family room (SFR) NICU is a major response to improve care and reduce developmental morbidity in preterm infants. However, no studies have examined how and why this model is associated with changes in medical and neurobehavioral outcome.

This study shows improved medical and neurodevelopmental outcome in infants hospitalized in the SFR model of care. More important, improvements occurred specifically in relation to increases in maternal involvement and developmental support afforded by the SFR environment.

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#### **Birth Size and Brain Function 75 Years Later**

The fetal origins of adult disease hypothesis proposes that suboptimal fetal development may condition the later risk of disease, particularly cardiovascular disease. However, this hypothesis has never been tested for diseases of the aging brain. This first study of its kind provides clinical measures suggesting that small birth size, as an indicator of an adverse intrauterine environment, has lifelong consequences for brain tissue volume and cognitive function. In addition, it shows that the effects of a suboptimal intrauterine environment on late-life cognitive function were particularly present in those with lower educational levels.

#### **ADHD, Stimulant Treatment, and Growth: A Longitudinal Study**

Stimulant medications are indicated for treatment of childhood attention-deficit/hyperactivity disorder (ADHD), but there is concern that stimulants may negatively affect growth. However, no longitudinal, population-based studies have examined height into adulthood for childhood ADHD cases.

This longitudinal, population-based study shows that neither childhood ADHD itself nor treatment with stimulants is associated with significant deficits in height into adulthood.

#### **Cancer Incidence Rates and Trends Among Children and Adolescents in the United States, 2001–2009**

Cancer continues to be the leading disease-related cause of death among children and adolescents in the United States. More information is needed about recent trends.

This study provides recent, robust data supporting the increasing incidence of pediatric thyroid cancer and rising overall cancer rates among African American children and adolescents and is the first study to describe increasing rates of pediatric renal carcinoma.

#### **Bacterial Prevalence and Antimicrobial Prescribing Trends for Acute Respiratory Tract Infections**

Many pediatric acute respiratory tract infections (ARTI) are viral and do not require antimicrobial treatment. Recent estimates of antimicrobial overprescribing for these infections, defined based on the published bacterial disease prevalence among all ARTI, are not available.

Based on the published bacterial prevalence rates for pediatric ARTI, antimicrobial agents are prescribed almost twice as often as expected to outpatients nationally, amounting to an estimated 11.4 million potentially preventable antimicrobial prescriptions annually.

#### **Parental Awareness and Use of Online Physician Rating Sites**

Public awareness and usage of physician-rating Web sites have been increasing over the last few years. Such ratings can influence adults' decisions about choosing a physician, but their influence on decisions for children's physicians has not been characterized.

In this nationally representative survey of parents, we found that the majority (74%) are aware of rating Web sites and slightly more than one-quarter (28%) had sought information on rating Web sites when choosing a primary care physician for their children.

#### **Safety and Effectiveness of Continuous Aerosolized Albuterol in the Non-Intensive Care Setting**

Continuously aerosolized albuterol been shown to be safe and effective for the treatment of severe status asthmaticus in the emergency department and ICU. Little evidence supports its use in the non-intensive care setting.

With the appropriate resources and support, continuous albuterol may be administered in the non-ICU setting with a low incidence of clinical deterioration and adverse effects. Certain clinical factors may help identify which patients may benefit from higher acuity care.

#### **Safety of Live-Attenuated Influenza Vaccination in Cystic Fibrosis**

Influenza leads to respiratory deteriorations in cystic fibrosis (CF) patients. In children, live attenuated influenza virus vaccine (LAIV) is more efficacious than inactivated influenza vaccines, which could be beneficial for CF. Data on the safety of LAIV in this population are scarce.

This study assesses LAIV's safety in patients with CF and is necessary to determine whether the anticipated benefits associated with LAIV will outweigh potential risks. This can potentially lead to a recommendation for preferential LAIV use in this population.

#### **Functional Status in Children With ADHD at Age 6–8: A Controlled Community Study**

Children who have attention-deficit/hyperactivity disorder (ADHD) attending clinical services have poorer outcomes in adolescence on a range of measures. However, it is unknown how early in development these impairments appear, particularly for community-ascertained samples.

At age 6 to 8 years, children in the community with ADHD have significantly poorer mental health, academic performance and

social function compared with control children. Children who have impairing ADHD symptoms should be referred early for assessment and intervention.

### **Cognitive Deficit and Poverty in the First 5 Years of Childhood in Bangladesh**

More than 200 million children <5 years old in low- and middle-income countries are not reaching their potential in cognitive development because of factors associated with poverty.

Poverty affects children's cognition as early as 7 months and continues to increase until 5 years of age. It is mainly mediated by parental education, birth weight, home stimulation throughout the 5 years, and growth in the first 24 months.

### **Emergency Hospitalizations for Unsupervised Prescription Medication Ingestions by Young Children**

Despite child-resistant packaging requirements for most medications and safe storage education for all medicines, tens of thousands of young children are brought to emergency departments and thousands are hospitalized annually after ingesting prescription medications. Targeted prevention efforts may be needed.

Twelve medications were implicated in nearly half of hospitalizations for prescription medication ingestions. Buprenorphine and clonidine were most commonly implicated and had the highest hospitalization rates when accounting for outpatient use. Prevention efforts should focus on most commonly implicated medications.

### **Universal Bilirubin Screening and Health Care Utilization**

Evidence from cohort studies has consistently found that universal bilirubin screening is associated with reductions in rates of severe hyperbilirubinemia but has shown variation in other outcomes such as phototherapy use, length of stay, emergency department visits, and readmission rates.

Universal bilirubin screening may not increase neonatal length of stay or postdischarge hospital use. Preexisting trends in health care utilization have an impact on observed effects of universal bilirubin screening.

### **Characteristics of Recurrent Utilization in Pediatric Emergency Departments**

Although frequent utilizers of emergency departments (EDs) are targeted for quality improvement initiatives across the

United States, little is known about the health services these patients receive in the ED.

Eight percent of children account for 24% of ED visits and 31% of all costs. Frequent utilizers of pediatric EDs, especially infants without a chronic condition, are least likely to need medications, testing, and hospital admission during their ED visits.

### **Sibling Bullying and Risk of Depression, Anxiety, and Self-Harm: A Prospective Cohort Study**

Recent reviews suggest that children bullied by siblings are at increased risk of internalizing symptoms. It is not known whether being bullied by a sibling increases risk of psychiatric disorders such as depression, anxiety, and self-harm.

Using a large, community-based birth cohort, we found that being bullied by a sibling is prospectively associated with a doubling in the odds of both depression and self-harm at 18 years in young adults.

### **Bullying and Parasomnias: A Longitudinal Cohort Study**

Being bullied can lead to adverse physical and mental health outcomes. Individuals who experience a sudden traumatic event often have short-term disturbances in their sleep patterns. Ongoing trauma may result in extended periods of sleep disruption.

Being bullied in elementary school predicts parasomnias, such as nightmares and night terrors, years later. General practitioners, pediatricians, parents, and teachers may consider parasomnias as potential signs of being bullied.

### **Parent and Adolescent Knowledge of HPV and Subsequent Vaccination**

Vaccinating youth is among the nation's highest health care priorities. Despite proven health benefits, human papillomavirus vaccination rates remain low.

This is the first known study to test whether vaccination of high-risk adolescents is related to their or their parents' previous knowledge levels. In the results presented, neither parental nor adolescent knowledge is related to subsequent adolescent vaccination.

### **Post-Resuscitation Care for Neonates Receiving Positive Pressure Ventilation at Birth**

Infants who require positive pressure ventilation at birth are considered to be at risk for subsequent compromise and are recommended to receive postresuscitation care. The supportive evidence and details of this care have not been fully investigated.

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We investigate the need for postresuscitation care in infants who require positive pressure ventilation at birth, review the aspects of care needed, and explore the important risk factors most predictive of it.

#### Effects of the FITKids Randomized Controlled Trial on Executive Control and Brain Function

Physical activity programs have been shown to have positive implications for children's cognitive performance and brain structure and function. However, additional randomized controlled trials are needed to determine whether daily physical activity influences executive control and its neural underpinnings.

The randomized controlled trial, designed to meet daily physical activity recommendations, used behavioral and electrophysiological measures of brain function to demonstrate enhanced attentional inhibition and cognitive flexibility among prepubertal children.

#### Cardiovascular Risk Factors in Adolescents Born Preterm

Adolescents and adults born early preterm have higher blood pressure and altered glucose metabolism compared with their term born peers. Evidence of an atherogenic lipid profile is inconsistent. Whether these risks apply to those born less preterm is not known.

In adolescence, girls have higher blood pressure and boys a more atherogenic lipid profile than their term born peers. Overall, our results are consistent with a dose-response relationship between shorter length of gestation and increasing levels of cardiovascular risk factors.

#### Early Neonatal Bilirubin, Hematocrit, and Glucose-6-Phosphate Dehydrogenase Status

Glucose-6-phosphate dehydrogenase (G6PD) deficiency is an important risk factor for neonatal jaundice in Nigeria. It is associated with severe hyperbilirubinemia among infants exposed to icterogenic agents. Elevated bilirubin levels have occasionally been demonstrated in G6PD-deficient infants without exposure to icterogenic agents.

Even without exposure to known icterogens, G6PD-deficient infants have a more rapid hematocrit decline and higher

bilirubin levels than their G6PD-intermediate and G6PD-normal counterparts throughout the first week of life.

#### Use of Neonatal Chest Ultrasound to Predict Noninvasive Ventilation Failure

Lung ultrasound outperforms conventional radiology in the emergency diagnosis of pneumothorax and pleural effusions. In the pediatric age, lung ultrasound has been also successfully applied to the fluid-to-air transition after birth and to rapid pneumonia diagnosis.

Nasal ventilation has dramatically decreased the need for invasive mechanical respiratory support. This study demonstrates that, after a short trial on nasal continuous positive airway pressure, lung ultrasonography reliably predicts the failure of noninvasive ventilation unlike the conventional chest radiogram.

#### Eszopiclone for Insomnia Associated With Attention-Deficit/Hyperactivity Disorder

Sleep disorders are common in children and adolescents and have a substantial negative impact on daily life and school performance. Long-term evaluations of the efficacy and safety of pharmacologic treatment options for sleep disorders are lacking in pediatric patients.

These 2 studies provide the first evaluation of the effectiveness and safety of eszopiclone in children and adolescents with insomnia associated with ADHD. Data presented here encompass longer-term (up to 1 year) pediatric exposure to eszopiclone.

#### Using CD4 Percentage and Age to Optimize Pediatric Antiretroviral Therapy Initiation

In HIV-infected children, decisions to start antiretroviral therapy must weigh immunologic benefits against potential risks. Current guidelines recommend using CD4 percentage and age when deciding to start treatment. Population-level effects of these factors on immunologic recovery are unknown.

Starting antiretroviral therapy at higher CD4 percentages and younger ages maximizes potential for immunologic recovery. However, not all benefits are sustained, and viral failure may occur. Our results help clinicians better weigh immunologic benefits against viral failure risks.

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