Firearm Possession Among Adolescents Presenting to an Urban Emergency Department for Assault

Violence involving firearms is a leading cause of death among US youth ages 14 to 24. The emergency department is the primary medical setting for care of assault-injured youth and an underused but important setting for violence-prevention programs.

Among assault-injured youth seeking emergency department care, firearm possession rates are high, most obtained outside of legal channels. Higher rates of negative retaliatory attitudes and substance use among those youth with firearms increases risk of future lethal violence.

Obstetric and Neonatal Care Practices for Infants 501 to 1500 g From 2000 to 2009

Among infants with birth weights of 501 to 1500 g born between 2000 and 2009, mortality and major morbidities among survivors declined.

Obstetrical and neonatal care practices for infants 501 to 1500 g changed significantly from 2000 and 2009, particularly decreased conventional ventilation and use of steroids for chronic lung disease and increased nasal continuous positive airway pressure and surfactant treatment after delivery.

Variation in Resource Use and Readmission for Diabetic Ketoacidosis in Children’s Hospitals

Diabetic ketoacidosis (DKA) is a short-term complication of type 1 diabetes and is a major cause of preventable hospitalization in children. Hospital resource utilization and readmission rates for DKA across the US are not known.

Readmission for DKA within a year of hospitalization is common, accounting for one-fifth of all DKA admissions. Resource use, hospital length of stay, and readmission rates vary widely across major US children’s hospitals, even after adjusting for hospital differences in patients.

Variation in Emergency Department Diagnostic Testing and Disposition Outcomes in Pneumonia

There is wide variation in testing and treatment of children hospitalized with pneumonia. Limited data are available on diagnostic testing patterns and the association of test utilization with disposition outcomes for children with pneumonia evaluated in the emergency department (ED).

Significant variation exists in testing for pediatric pneumonia. EDs that use more testing have higher hospitalization rates. However, ED revisit rates were not significantly different between high- and low-utilizing EDs, suggesting an opportunity to reduce testing without negatively affecting outcomes.

Variation and Trends in ED Use of Radiographs for Asthma, Bronchiolitis, and Croup in Children

Variation in the emergency department (ED) use of radiographs for asthma, bronchiolitis, and croup exists. Unnecessary radiographs contribute to higher costs of care, decreased ED efficiency, and increased radiation in children.

Despite no changes in guidelines to support routine use, there is a significant upward trend in the use of radiographs for children with emergency department visits for asthma. Pediatric-focused EDs use significantly fewer radiographs for asthma, bronchiolitis, and croup.
Diaper Need and Its Impact on Child Health

Although studies have examined family socioeconomic status as income and educational and employment status, emerging research suggests indicators of material hardship, such as diaper need, are increasingly important to child health. Diaper need has not been examined in the scientific literature. This study quantifies diaper need, proposes a method to measure diaper need, and explores psychosocial and demographic variables associated with diaper need in a large sample of low-income families.

Video Game Use in Boys With Autism Spectrum Disorder, ADHD, or Typical Development

Children with autism spectrum disorder (ASD) and those with ADHD are at risk for problematic video game use. However, group differences in media use or in the factors associated with problematic video game use have not been studied. Boys with ASD and ADHD demonstrated greater problematic video game use than did boys with typical development. Inattention was uniquely associated with problematic use for both groups, and role-playing game genre was associated with problematic use among the ASD group only.

Television-Related Injuries to Children in the United States, 1990–2011

Previous research has demonstrated that pediatric injuries associated with television (TV) tip-overs are increasing. Children aged ≤4 years are at highest risk for injury, and the head and neck are most commonly injured. We analyzed a nationally representative sample comprising 22 years of data. On average, 17,313 children receive emergency treatment of a TV-related injury annually in the United States. The rate of injury attributable to falling TVs increased by 95% over 22 years.

Nonfatal Choking on Food Among Children 14 Years or Younger in the United States, 2001–2009

In 2001, an estimated 10,438 children were treated in US emergency departments for nonfatal choking on food. The foods most frequently associated with pediatric fatal choking are hot dogs, seeds, nuts, candy, and certain types of fruits and vegetables. From 2001 through 2009, an estimated annual average of 12,435 children ages 0 to 14 years were treated in US emergency departments for nonfatal choking on food; 0- to 4-year-olds accounted for 61.7% of episodes. Foods most frequently involved were candy, meat, bone, and fruits/vegetables.

All-Terrain Vehicle–Related Nonfatal Injuries Among Young Riders in the United States, 2001–2010

Because children often lack the physical strength, cognitive abilities, and fine motor skills to operate all-terrain vehicles (ATVs) properly, their risk of injury is greater. During 2001–2010 in the United States, ~361,000 children aged ≤15 years were injured while riding ATVs. The decline in the injury rate during 2005–2010 might be related to the economic recession and decreased sales of new ATVs.

A Genome-Wide Association Study (GWAS) for Bronchopulmonary Dysplasia

Twin studies suggest that bronchopulmonary dysplasia (BPD) is heritable; however, only a small number of genetic loci have been associated with BPD and these explain only a limited amount of this heritability. A genome-wide association study of singleton infants (899 BPD cases and 827 controls) of 25 to 30 weeks’ gestational age did not identify single-nucleotide polymorphisms associated with BPD at the genome-wide significance level but did identify polymorphisms warranting further study.

The Incidence of Positional Plagiocephaly: A Cohort Study

The incidence of plagiocephaly varies widely and is based on anecdotal evidence of increase in the number of referrals to specialty clinics. Five studies have produced varying results, indicating that the incidence of plagiocephaly ranges from 3.1% to 61.0%. This is the first study to estimate the incidence of positional plagiocephaly using 4 community-based data collection sites in infants ranging from 7 to 12 weeks of age. The estimated incidence of positional plagiocephaly was found to be 46.6%.

Parental Knowledge of Potential Cancer Risks From Exposure to Computed Tomography

Studies have highlighted a lack of patient awareness of potential increased cancer risks associated with computed tomography (CT) scans in adult patients and in nonurgent settings. However, little is known about parental awareness of these risks in an emergency setting. Approximately half of parents were aware of the potential cancer risks from CT scans in an emergency setting. Although risk disclosure moderately reduced willingness to proceed with recommended testing, almost all parents preferred an informed discussion before CT imaging.
Health Care Costs Associated With Child Maltreatment: Impact on Medicaid

Child maltreatment is a serious and prevalent public health problem in the United States. Responsible for substantial morbidity and mortality, maltreatment affects children’s physical and mental health.

Although many health impacts of child maltreatment have been documented, no claims-based study has quantified the impact of maltreatment on health service utilization and costs. This study presents systematic claims-based estimates of maltreatment impacts on utilization and costs for the Medicaid population.

Community-Centered Education Improves Vaccination Rates in Children From Low-Income Households

Obstacles to vaccine delivery, including poverty, reduced access to medical care, and incomplete understanding of vaccine safety and importance, result in suboptimal coverage rates in some populations, allowing for disease outbreaks. Multicomponent interventions are successful in increasing immunization coverage rates.

We show that collaboration with local resources, including the county health department and a large community-based organization, effectively increases immunization coverage rates in low-income, resource-poor children.

Randomized Controlled Trial of a Car Safety Seat Insert to Reduce Hypoxia in Term Infants

Brief periods of low oxygen saturation are common in infants while restrained in car safety seats. There is some evidence that an insert that allows the infant head to rest in a neutral position in sleep may reduce hypoxic episodes.

This randomized controlled study shows that the insert reduced numbers of obstructive apneas and the severity of desaturation events but did not significantly reduce the overall rate of moderate desaturations.

Results From the New Jersey Statewide Critical Congenital Heart Defects Screening Program

Prenatal diagnosis and clinical examination do not identify all infants with critical congenital heart defects before hospital discharge. To improve early critical congenital heart defect detection, New Jersey was the first state to implement legislatively mandated newborn pulse oximetry screening.

This report is the first to evaluate statewide pulse oximetry screening implementation. New Jersey had a high statewide screening rate and identified 3 infants with previously unsuspected critical congenital heart defects that otherwise might have resulted in significant morbidity and mortality.

Cost-Effectiveness of Using 2 vs 3 Primary Doses of 13-Valent Pneumococcal Conjugate Vaccine

Pneumococcal conjugate vaccines are effective in preventing pneumococcal disease but are also costly. Although the current US immunization schedule recommends 4 doses, many countries have adopted 3-dose schedules that have worked well, but may provide less protection against pneumococcal disease.

Changing the US 13-valent pneumococcal conjugate vaccine schedule from 3 to 2 primary doses while keeping a booster dose would save $412 million annually but might lead to moderate increases in pneumococcal disease, especially otitis media and pneumonia.

Harsh Physical Punishment in Childhood and Adult Physical Health

Physical punishment is associated with a range of Axis I and II mental disorders in adulthood. More research is needed on the possible long-term relationship between physical punishment and physical health.

To our knowledge, this is the first nationally representative examination of harsh physical punishment and physical health. Harsh physical punishment in the absence of child maltreatment is associated with higher odds of cardiovascular disease (borderline significance), arthritis, and obesity.

Respiratory Syncytial Virus–Associated Hospitalizations Among Children Less Than 24 Months of Age

Respiratory syncytial virus (RSV) infection is a leading cause of hospitalization among infants. Most estimates of RSV hospitalization rates are imprecise, having been calculated by using retrospective discharge diagnosis data and stratified age groups no narrower than 6 to 12 months.

Prospective, population-based surveillance data for infants hospitalized with laboratory-confirmed RSV infection were combined with birth certificate information to yield more precise age-specific hospitalization rates. These data should help determine priorities for the use of existing and future RSV prophylaxis strategies.

Patterns of Care and Persistence After Incident Elevated Blood Pressure

Screening for hypertension in asymptomatic children and adolescents occurs during routine care. For those with elevated
blood pressure, a repeat measurement within 1 to 2 weeks is recommended. However, little is known about patterns of care after an incident elevated blood pressure.

In a population of 72,625 children and adolescents, 6108 (8.4%) had an incident elevated blood pressure. Among these, 1275 (20.9%) had their blood pressure measurement repeated within 1 month. However, few individuals with an incident elevated blood pressure subsequently developed hypertension.

**Incidental Findings in Children With Blunt Head Trauma Evaluated With Cranial CT Scans**

The evaluation of blunt head trauma in children who undergo cranial computed tomography will occasionally reveal incidental findings. These findings may require further evaluation or intervention. The prevalence of incidental findings has previously been described using small cohorts, limiting generalizability.

This study is the largest pediatric multicenter description of the prevalence of incidental findings on cranial computed tomography. Incidental findings are categorized by urgency to describe the spectrum of abnormalities, providing a context for clinicians faced with these unexpected results.

**The Relationship Between Parents’ and Children’s Television Viewing**

Many children exceed the American Academy of Pediatrics’ recommendation to limit non-educational screen media to <2 hours per day. The household media environment shapes children’s television viewing (TVV), and heavy screen time is associated with poor health outcomes.

Parent TVV is a stronger predictor of child TVV than traditional media “access” and “rules” variables regardless of child age. This research highlights an important factor of child TVV that has been underemphasized in most studies and outreach efforts.

**Neonatal Infection and 5-year Neurodevelopmental Outcome of Very Preterm Infants**

Neonatal infections are frequent complications in very preterm infants, already at high risk of neurologic and cognitive disabilities. Few studies have linked neonatal infections and neurodevelopmental outcomes. Those that did evaluated children only to the age of 22 months.

This study assessed the respective effects of early- and late-onset sepsis and their association with 5-year neurodevelopmental outcomes. We identified a significant and cumulative risk of cerebral palsy when episodes of early- and late-onset sepsis were associated.

**Mask Versus Nasal Tube for Stabilization of Preterm Infants at Birth: A Randomized Controlled Trial**

Effective ventilation is fundamental to successful resuscitation of newborns, but face mask leak and airway obstruction are common during manual positive-pressure ventilation in the delivery room, which may compromise resuscitation.

Compared with a soft, round silicone face mask, using a nasal tube to provide respiratory support in the delivery room does not reduce the rate of intubation but may be a suitable alternative with equivocal efficacy.

**A Randomized Trial of Nasal Prong or Face Mask for Respiratory Support for Preterm Newborns**

Respiratory support is commonly given to newborn infants via a face mask in the delivery room. Respiratory support given to preterm infants via a single nasal prong may be more effective.

Compared with a face mask, using a single nasal prong to deliver respiratory support to preterm newborns did not result in less intubation and ventilation in the delivery room.

**Changes in Language Services Use by US Pediatricians**

Language barriers adversely affect health care access, utilization, outcomes, and patient safety. Trained formal interpreters can improve care quality and safety, but many patients and families with limited English proficiency do not receive appropriate language services during health care encounters.

Despite continued growth of the US population with limited English proficiency, federal language use standards, and enhanced education about appropriate use of language services, there has been only modest improvement over time in pediatricians’ use of language services.

**Characteristics of Pain in Children and Youth With Cerebral Palsy**

Pain in children with cerebral palsy is underrecognized and undertreated and negatively affects quality of life. Communication challenges and multiple pain etiologies complicate management. There is a wide range of pain prevalence reported in the literature (14% to 73%).

The impact of pain on activities in children with cerebral palsy across a wide age range and motor abilities is investigated. Physician-identified causes of pain are systematically assessed and reported. Concordance of physician and caregiver identification of pain is evaluated.
Estimating Overweight Risk in Childhood From Predictors During Infancy

Several risk factors for both overweight and obesity in childhood are identifiable during infancy. A simple risk algorithm can be used to quantify risk of overweight in children. It can be used to help identify at-risk infants in a clinical setting to facilitate targeted intervention.

Inpatient Characteristics of the Child Admitted With Chronic Pain

Children with chronic pain complaints seem to represent an increasing portion of general pediatric inpatient services. Few data exist, however, on the characteristics of this population, their length of stay, or the best approach to their evaluation and management. This study defines the demographic, diagnostic, procedural, and episode of care characteristics for children admitted to the acute care setting with chronic pain syndromes. Admission rates are rising, lengths of stay are substantial, and comorbid diagnoses are common.

Patterns of Retinal Hemorrhage Associated With Increased Intracranial Pressure in Children

Retinal hemorrhage (RH) is an important sign of pediatric abusive head trauma. Raised intracranial pressure (ICP) is sometimes proposed as an alternate cause of RH in children being evaluated for possible child abuse. Nontraumatic, markedly elevated ICP rarely causes RH in children. When it does, RH are superficial intraretinal and located adjacent to a swollen optic nerve head. This pattern does not match the widespread pattern seen in abusive head trauma.

Remission and Persistence of Asthma Followed From 7 to 19 Years of Age

The natural history of asthma during adolescence is dynamic because both remission and relapse are common. Remission has consistently been associated with mild asthma and the absence of sensitization. One in 5 children with asthma remitted from age 7 to 19. Remission was defined as no wheezing and no medication for ≥3 years and was inversely related to female gender, sensitization to furred animals, and asthma severity at baseline.


The incidence of necrotizing enterocolitis (NEC), a devastating condition in neonates, varies geographically and with time. Although the most consistent risk factors are prematurity and low birth weight, it has not been convincingly shown to increase in the postsurfactant era. The incidence of NEC, especially among the highly premature but also in more mature groups, has increased in recent decades, concurrent with dramatically improved early infant survival. Seasonal variation of NEC suggests environmental etiological factors.

General Movements in Very Preterm Children and Neurodevelopment at 2 and 4 Years

Assessment of general movements (GM) in early infancy is predictive of adverse neurologic outcome, particularly cerebral palsy. There is limited evidence of the predictive value of GM for other domains of neurodevelopment such as language and cognitive impairment. Abnormal GM in preterm infants in the first 3 months postterm are predictive of a range of neurodevelopmental outcomes in early childhood. GM at 3 months are more accurate at distinguishing later neurodevelopment impairment than those at 1 month.

Functional Somatic Symptoms and Consultation Patterns in 5- to 7-Year-Olds

Functional somatic symptoms (FSS) in children account for 10% to 15% of visits in medical services. Few studies have investigated the full range of pediatric FSS and factors linked to the medical help-seeking for young children with these symptoms. More parental worries, higher symptom severity and impact, and previous contact to medical services are found among the children with FSS who seek medical consultation. Putative risk mechanisms include the early pattern of health care use and parental worries.

Prenatal Alcohol Exposure and Educational Achievement in Children Aged 8–9 Years

Children exposed to alcohol prenatally have increased risk of a range of developmental problems such as language delay, behavior problems, learning, and memory and cognitive deficits, all of which can have a negative impact on educational achievement. The expression of learning problems varied with the dose, pattern, and timing of prenatal alcohol exposure. Test scores below national benchmarks for reading were associated with first trimester heavy alcohol exposure and for writing after late pregnancy occasional binge drinking.
Assessing Functional Impairment in Siblings Living With Children With Disability

Previous research on potential deleterious effects of typically developing children growing up in households with children with disability has produced mixed results. Research methods have been cited as a problem in many studies. This is the largest known empirical study comparing functional impairment in siblings living with a child with disability and siblings residing with children who are typically developing. This study also follows the trajectory of functional impairment across 2 measurement periods.

Immunologic Features of Cornelia de Lange Syndrome

Cornelia de Lange syndrome (CdLS) is a genetic syndrome with multisystem abnormalities. Infections are a significant cause of morbidity and mortality in affected patients and are typically attributed to anatomic abnormalities. This study identified a high frequency of antibody immunodeficiency in CdLS subjects, indicating a critical need for screening and management of immunodeficiency in CdLS patients with a history of severe or recurrent infections.

Use of Ecallantide in Pediatric Hereditary Angioedema

Patients with hereditary angioedema (HAE) have recurrent episodes of painful swelling. Several new therapies to prevent and treat HAE attacks are approved by the Food and Drug Administration, but their safety and efficacy in children are largely unknown. Ecallantide appears effective for treatment of HAE attacks in pediatric patients age 10 to 17 years with an acceptable safety profile. It represents a potential treatment option for adolescents with HAE.

See the table of contents of this issue to learn more about these articles.
# Pediatrics Digest

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