Measles-Containing Vaccines and Febrile Seizures in Children Age 4 to 6 Years

Febrile seizure risk 7 to 10 days after measles-mumps-rubella-varicella (MMRV) is double that of separate measles-mumps-rubella (MMR) and varicella vaccines among 1-year-olds. Whether MMRV or MMR and varicella affect febrile seizure risk among 4- to 6-year-olds has not been reported. Using Vaccine Safety Datalink data, we examined risk for febrile seizures after measles-containing vaccines. This study provides reassurance that MMRV and separately administered MMR and varicella were not associated with increased risk of febrile seizures among 4- to 6-year-olds.

Effective Analgesia Using Physical Interventions for Infant Immunizations

Pain during routine infant immunization causes parental anxiety. Oral sucrose solutions are effective pain-reduction strategies. Few studies have measured a combined strategy of a physical intervention along with sucrose to decrease the infant’s pain response. We demonstrate that a physical, nonpharmacological intervention called the 5 S’s (swaddling, side/stomach position, shushing, swinging, and sucking) provides significant pain reduction with or without sucrose during routine 2- and 4-month vaccinations.

Decreasing Prevalence of Obesity Among Young Children in Massachusetts From 2004 to 2008

Following a rapid increase from 1980 to 2001, the prevalence of obesity among school-age children and adolescents in the United States has plateaued. Few studies have examined obesity trends among younger children in the past decade, and findings are inconsistent. Among children aged <6 years at this multisite pediatric practice, the prevalence of obesity was fairly stable during 1999–2003, but substantially decreased during 2004–2008. This decrease was smaller among children insured by Medicaid than children insured by non-Medicaid health plans.

Race and Unequal Burden of Perioperative Pain and Opioid Related Adverse Effects in Children

Disparities are known to exist in the prescription of opioid analgesics among racial and ethnic groups in the management of postoperative, cancer, and emergency department pain in patients across all ages, including children. Race is associated with an unequal burden of perioperative pain and opioid adverse effects in children. Relatively, African American children had higher postoperative pain, and Caucasian children had higher incidences of opioid related adverse effects.

Child and Adult Outcomes of Chronic Child Maltreatment

We lack prospective studies documenting “dosage effects” of chronic child maltreatment for both subsequent adolescent and adult outcomes. It is unknown whether effects are linear, shelving, or exponential, and we lack data across domains of outcomes. Chronic child maltreatment reports are a robust indicator of future negative health and behavioral outcomes. There is a dose-response relationship between chronicity and outcomes.
in adolescence, but this is attenuated in adulthood once adverse child outcomes are controlled.

Health Risks of Oregon Eighth-Grade Participants in the “Choking Game”: Results From a Population-Based Survey

Estimates of youth participation in strangulation activity, commonly referred to as the “choking game,” range from 5% to 11%. Previous studies have documented correlations between youth choking game participation and health risks such as substance use and mental health issues.

Among Oregon eighth-graders surveyed, >6% had ever participated in the choking game. Participation was linked to poor nutrition and gambling among females, exposure to violence among males, and sexual activity and substance use among both genders.

Magnesium Use in Asthma Pharmacotherapy: A Pediatric Emergency Research Canada Study

We know that many evidence-based treatments for acute asthma are underused, and adherence with treatment guidelines is poor; however, studies have focused on β2 agonists and corticosteroids, but little is known about intravenous magnesium, which has substantial evidence of benefit.

Magnesium is used infrequently in Canadian pediatric emergency departments in hospitalized children with acute asthma, with variation across sites. More than half of this population does not receive frequent bronchodilators and timely corticosteroids.

Maternal Caffeine Consumption and Infant Nighttime Waking: Prospective Cohort Study

Fetus and infants until 3 months of age are unable to metabolize caffeine, which crosses the placenta and in adults has a somnolycic effect. Little is known about the effect of caffeine consumption by pregnant or nursing mothers over infant sleeping.

In this setting where caffeine is largely consumed in pregnancy and by nursing mothers, heavy consumption (≥300 mg/day) did not increase the number of nighttime awakenings by their 3-month-old infants.

Inpatient Hospital Care of Children With Trisomy 13 and Trisomy 18 in the United States

Trisomy 13 and trisomy 18, common chromosomal abnormalities, are generally considered fatal within the first year after birth, although some children live longer. Little is known, however, about the inpatient medical courses of these infants and children.

Evaluation of nationally representative hospitalization data demonstrates that a significant number of children with trisomy 13 and trisomy 18 live beyond 1 year of age and that the care they receive includes both medical and surgical treatments.

Diagnostic Imaging and Negative Appendectomy Rates in Children: Effects of Age and Gender

Cross-sectional imaging can reduce the negative appendectomy rate (NAR) in children being evaluated for suspected appendicitis; however, the ability of diagnostic imaging to decrease NAR may vary by age and gender.

Cross-sectional imaging leads to a significant reduction in NAR for children younger than 5 years and girls older than 10 years. For boys older than 5 years being evaluated for uncomplicated appendicitis, advanced imaging appears to have limited value.

Association of Malodorous Urine With Urinary Tract Infection in Children Aged 1 to 36 Months

The presence of malodorous urine is often mentioned as one of the clinical manifestations of urinary tract infection (UTI) in young children, yet the few studies looking at this symptom are contradictory.

Our study demonstrates that malodorous urine as reported by parents increases the likelihood of UTI among young children evaluated for suspected UTI. However, this association is not strong enough to definitely rule in or out a diagnosis of UTI.

Effects of Description of Options on Parental Perinatal Decision-Making

Studies have found that the degree of detail with which palliative care is described and the order in which options are presented can affect end-of-life decisions. None of these studies, though, involved decisions regarding very premature infants.

Unlike other end-of-life decisions, those regarding extremely premature infants are influenced neither by the degree of detail nor order of presentation of management options. Deep-seated values embodied in the reasons given for these choices suggest why they are so robust.

Factors Related to Voluntary Parental Decision-Making in Pediatric Oncology

Valid parental permission requires that the decision be both informed and voluntary. Previous research has focused on the informational components of decision-making (eg, disclosure...
and understanding), with little empirical attention to the voluntariness of decisions.

We address this gap by examining the voluntariness of parents making research or treatment decisions in pediatric oncology. We identify demographic and contextual correlates of voluntariness and highlight the clinical implications of the findings for physicians and investigators.

The Dance Between Attending Physicians and Senior Residents as Teachers and Supervisors

Although all residents progressively assume responsibility for clinical skills under the teaching and supervision of attending physicians, senior residents also assume responsibility for teaching and supervising. This leads to a dynamic negotiation of responsibilities, particularly on clinical work rounds.

A better understanding of how attending physicians and senior residents negotiate shared responsibilities for teaching and supervising, and the context in which this negotiation occurs, may clarify assumptions and set expectations for resident training.

Tenfold Medication Errors: 5 Years’ Experience at a University-Affiliated Pediatric Hospital

Tenfold medication error is a well-recognized risk of pharmacotherapy in pediatric practice but little evidence describes the circumstances of such errors.

This study identified 252 tenfold medication errors, 22 of which resulted in patient harm. We identified opioids and other high-risk medications to be associated with tenfold medication error and frequent, recurrent causes, mechanisms, and error enablers that suggest areas for future improvements.

Six Developmental Trajectories Characterize Children With Autism

Autism is widely considered a heterogeneous disorder in terms of etiology and phenotype. Although autism is usually a lifelong disorder, little is known about the rate or timing of how children develop regarding their communication and social functioning.

Utilizing annual evaluations for a large population of children with autism, we describe the 6 most common trajectories from diagnosis through age 14 years. Trajectories revealed considerable variation, and high socioeconomic status children were more likely to experience rapid improvement.

Maternal Metabolic Conditions and Risk for Autism and Other Neurodevelopmental Disorders

Diabetes during pregnancy has been associated with general development impairments in offspring; however, associations between autism and maternal diabetes have been inconsistent. Few studies have examined related conditions accompanied by underlying increased insulin resistance and their association with developmental outcomes.

This population-based study in young children provides evidence that maternal metabolic conditions are a risk factor for autism, developmental delay without autistic symptoms, and impairments in several domains of development, particularly expressive language, after adjusting for sociodemographic and other characteristics.

Level of NICU Quality of Developmental Care and Neurobehavioral Performance in Very Preterm Infants

Although developmental care in NICUs reduces the stress experienced by preterm infants, the actual level of developmental care may vary and little is known about how the level of developmental care relates to preterm infants’ neurobehavioral performance.

The study demonstrates the relationship between variations in developmental care in NICUs and the neurobehavior of preterm infants. Infants from NICUs with high-quality developmental care compared with infants from units with low quality of care evidenced a better neurobehavioral profile.

Qualitative Brain MRI at Term and Cognitive Outcomes at 9 Years After Very Preterm Birth

Cross-sectional studies have demonstrated associations between the white matter injury and cognitive impairment in very preterm born children. Longitudinal studies confirmed the relationships between cerebral MRI at term and neurodevelopmental outcomes at up to 2 years old.

White matter injury (but not gray matter injury) on term MRI predicted cognitive impairments of very preterm born infants at 9 years old. Qualitative assessment of white matter signal intensities showed limited predictive values of cognitive impairments.

Complementary and Alternative Medicine Use and Adherence With Pediatric Asthma Treatment

Complementary and alternative medicine (CAM) use for pediatric asthma is increasing. It is well known that effective asthma management depends on patient adherence to treatment. The authors of previous cross-sectional studies have linked CAM use with decreased adherence to conventional asthma treatment regimens.

This longitudinal data set was unique, allowing us to focus on patients who initiated CAM and to follow subsequent asthma medication adherence. We found that CAM use was not
associated with adherence, suggesting that patients may practice CAM alongside conventional therapies.

**Randomized Trial of Probiotics and Calcium on Diarrhea and Respiratory Tract Infections in Indonesian Children**

Some but not all randomized trials have shown effects of probiotics on incidence and duration of diarrhea and respiratory tract infections among children in developing countries. Calcium improves resistance to intestinal infections in adults, but efficacy in children is unknown.

Lactobacillus reuteri DSM17938 may prevent diarrhea, especially in children with lower nutritional status. Regular calcium milk, alone or with Lactobacillus casei CRL431, did not reduce diarrhea. None of the interventions affected respiratory tract infections in these Indonesian children.

**Reference Ranges for Lymphocyte Counts of Neonates: Associations Between Abnormal Counts and Outcomes**

High or low lymphocyte counts at birth have been reported as a marker for subsequent intraventricular hemorrhage, retinopathy of prematurity, and periventricular leukomalacia. However, this conclusion is questionable because reference ranges for lymphocyte counts have not been constructed by using large numbers of neonates.

This study provides reference ranges for lymphocytes of neonates. A high count at birth is associated with early onset sepsis and IVH and a low count with early onset sepsis, IVH, and retinopathy of prematurity. Among neonates with birth asphyxia, a low count identifies a high risk for death.

**Cumulative Social Risk and Obesity in Early Childhood**

Cumulative social factors in childhood have been associated with obesity in adulthood. Little is known regarding the role of accumulation of social stressors and obesity in early life.

Cumulative social adversities were associated with increased odds of early-onset obesity among girls. In addition, those with a higher number of stressors at a single time period had elevated odds for obesity by 5 years of age.

**Obese Mexican American Children Have Elevated MCP-1, TNF-α, Monocyte Concentration, and Dyslipidemia**

Nearly one-third of all US children are overweight or obese, with even higher prevalence among Mexican American children.

Overweight and obesity increase systemic inflammation, contributing to increased risk for chronic diseases, such as type 2 diabetes mellitus and cardiovascular disease.

Obese Mexican American children had concurrent alterations in both inflammatory markers and traditional disease risk markers, relative to healthy weight children. Our results provide evidence partially explaining the health disparity for disease in Mexican American children who are overweight/obese.

**Parental Separation and Pediatric Cancer: A Danish Cohort Study**

Cancer in a child may affect the quality of the parents’ relationship, but few studies have examined a potential effect on parental divorce, and no studies have accounted for the proportion of couples that live outside formal marriages.

In this nationwide registry-based study with up to 20 years of follow-up, we included both married and cohabiting couples, reflecting modern family structures. We found that experiencing cancer in a child is not a risk factor for the parents separating.

**Intakes of Alcohol and Folate During Adolescence and Risk of Proliferative Benign Breast Disease**

Alcohol consumption during adolescence and early adulthood has been associated with an increased risk of biopsy-confirmed benign breast disease (BBD), an established risk factor of breast cancer. This is the first study to analyze the association between adolescent alcohol consumption and risk of biopsy-confirmed proliferative BBD by adolescent folate intake. The result provides no evidence for protective effects of adolescent folate intake on risk of alcohol-associated BBD.

**High Blood Pressure in 2.5-Year-Old Children Born Extremely Preterm**

Subjects born preterm have higher blood pressure (BP) in childhood and adolescence. Little is known about at what age the deviation from normal BP starts, and data are especially scarce for the new generation of survivors after extremely preterm birth.

In a population-based study, we found that BP was higher in 2.5-year-old children born extremely preterm compared with controls. This finding might have implications for follow-up programs after preterm birth, with the goal of improving later cardiovascular health.

**Comparison of Mercury and Aneroid Blood Pressure Measurements in Youth**

As a result of safety and environmental concerns about mercury, aneroid sphygmomanometers have replaced
mercury-filled devices for blood pressure measurements. Despite this change, few studies have compared the 2 devices. Little clinical variation exists between blood pressure measurements obtained from an aneroid or mercury device, suggesting that either device could be used in a research or clinical setting.

**Evaluation of a Clinical Dehydration Scale in Children Requiring Intravenous Rehydration**

Evaluating dehydration severity is a challenging task. Clinical dehydration scores that combine multiple clinical findings are promising. One clinical dehydration scale score has been developed and subsequently evaluated; however, few participants in the derivation and validation studies were significantly dehydrated.

In children requiring intravenous rehydration, the dehydration scale displayed moderate reliability and weak associations with objective measures. Thus, although the scale can assist in assessing dehydration, it should not be used in isolation to dictate interventions (eg, intravenous rehydration, hospitalization).

**Risk Factors for Hospitalization With Lower Respiratory Tract Infections in Children in Rural Alaska**

Rural Alaska children have high rates of hospitalization with lower respiratory tract infections from a variety of pathogens. Past studies of risk factors for respiratory syncytial virus infection associated medically high-risk status, household crowding, and infant feeding practices with hospitalization. This study reveals the importance of medically high-risk status and infant feeding practices as important factors in respiratory hospitalization. In addition, we identified woodstove use and the absence of 2 or more sinks in household as risk factors for hospitalization.

**Comparison of Adolescent, Young Adult, and Adult Women’s Maternity Experiences and Practices**

Some studies demonstrate that adolescents have different perinatal risks and outcomes than nonadolescents. Few studies have explored the maternity experiences or practices of adolescents that may underlie these differences, or compared these with nonadolescents by using a nationally representative sample. Adolescents and young adults were more likely to experience physical abuse, late prenatal care initiation, poor prenatal health behaviors, lower breastfeeding initiation and duration rates, postpartum depression, and lower folic acid supplementation than adult women.

**Birth Asphyxia: A Major Cause of Early Neonatal Mortality in a Tanzanian Rural Hospital**

The presumed causes of neonatal deaths globally have remained unchanged over the past decade and include infections (∼30%), prematurity (∼30%), and asphyxia (∼25%). Great uncertainty surrounds these estimates and, in addition, cases are likely misclassified as stillbirths.

These observational findings indicate that asphyxia accounts for a much higher percentage (60% of early deaths). Prematurity (18%), low birth weight (8%), and overt infection are much less common. The 5-minute Apgar score is an unreliable indicator of birth asphyxia.

**Barriers to Medication Adherence in HIV-Infected Children and Youth Based on Self- and Caregiver Report**

Nonadherence to antiretroviral therapy among children and youth with HIV is a frequent problem that can result in treatment failure and disease progression for this population. Children and adolescents face different barriers to adherence than adults infected with HIV.

Few studies have examined specific barriers to adherence as reported by children with perinatally acquired HIV and their caregivers. This report examines the agreement between child and caregiver perceptions of adherence barriers and the factors associated with these barriers.

**Relationship Between Maternal and Neonatal Staphylococcus aureus Colonization**

*Staphylococcus aureus* is a leading cause of infections in infants. Staphylococcal colonization is a known risk factor for infection, but whether maternal colonization plays a role in subsequent colonization in the infant is unclear.

This prospective study found that infants born to women colonized with *S aureus* either during their third trimester of pregnancy or at the time of delivery are more likely to harbor *S aureus* than are those born to noncolonized women.

**Early or Delayed Enteral Feeding for Preterm Growth-Restricted Infants: A Randomized Trial**

Preterm, growth-restricted infants are at high risk of necrotizing enterocolitis (NEC). NEC occurs most frequently in infants who have received enteral feeds. It is common practice to delay introduction of enteral feeds in these infants.

Early introduction of enteral feeds results in earlier achievement of full enteral feeding. Early feeding is not associated with
a higher risk of NEC. Delayed feeding is associated with a higher risk of cholestasis.

Supplemental Written Information Improves Prenatal Counseling: A Randomized Trial

During prenatal counseling for prematurity, information is provided to expectant parents to empower them to participate in the medical-care decision-making regarding their child. However, numerous studies have shown that providing information effectively during preterm labor is challenging. The current study provides evidence that effectiveness of counseling can be improved by providing written information to parents before the face-to-face verbal counseling. Appropriately presented, detailed information improves knowledge and decreases maternal anxiety.

Automated Primary Care Screening in Pediatric Waiting Rooms

Clinical decision support systems offer a way to help physicians use evidence-based guidelines for screening. Screening patients for common developmental, psychosocial, and behavioral issues informs the clinical decision-making process and may improve patient outcomes. The Child Health Improvement through Computer Automation system, a clinical decision support system and an electronic medical record, is able to effectively screen patient families in the waiting room by using a tailored questionnaire. The study reveals positive screening rates for identifiable risks in a very large representative urban population by using Child Health Improvement through Computer Automation’s questionnaire.

Antenatal Glucocorticoid Exposure and Long-Term Alterations in Aortic Function and Glucose Metabolism

In utero exposure to glucocorticoids in animal models influences vascular development. Studies in young adults have shown that exposure to antenatal glucocorticoids alters glucose metabolism, but it is not known whether there are any cardiovascular effects. Glucocorticoid exposure is associated with a localized increase in aortic arch stiffness, similar in magnitude to term-born individuals a decade older. The change in stiffness does not relate to changes in glucose metabolism that were also evident in this cohort.

Clinical Research Involving Children: Registration, Completeness, and Publication

Existing clinical research policy does not guarantee availability of results. Registration on the Web site ClinicalTrials.gov and the Food and Drug Administration Amendments Act improved transparency in pediatric clinical research. Registration and publication remain voluntary for many trials involving children. Only 29% of completed registered studies and 53% of National Institutes of Health–funded trials involving children were published. Numbers of studies are increasing. Registration and posting of results on ClinicalTrials.gov should be mandatory for all studies involving children.

Pharmacologic Treatment of Repetitive Behaviors in Autism Spectrum Disorders: Evidence of Publication Bias

Although several randomized trials have examined the efficacy of serotonin receptor inhibitors in the treatment of repetitive behaviors, there still remains clinical uncertainty as to whether these agents are effective in treating such behaviors in children and adults with autism spectrum disorders. The goal of this meta-analysis was to examine randomized trials of serotonin receptor inhibitors for treating repetitive behaviors in autism spectrum disorders. Although a small but significant effect of these agents was observed, this effect is likely due to the selective publication of trial results.