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Outpatient Course and Complications Associated With Home Oxygen Therapy for Mild Bronchiolitis

Home oxygen has been safely incorporated into emergency department management of bronchiolitis in certain populations. After discharge, a small proportion of patients (2.7%–6%) require subsequent admission. For patients managed successfully as outpatients, pediatricians report variable practice styles and comfort levels.

Our results define the clinical course and outpatient burden associated with discharge on home oxygen. By using an integrated health care system, we captured slightly higher rates (9.4%) of subsequent admission and found fever to be associated with this outcome.

Motor Vehicle-Pedestrian Collisions and Walking to School: The Role of the Built Environment

Many studies have demonstrated that the built environment is related to both collision risk and walking to school. However, little research examines the influence of the built environment on the relationship between walking to school and pedestrian collision risk. Increased walking was not associated with increased pedestrian collision once the effects of the built environment and socioeconomic status were modeled. Safety was related primarily to the built environment and specifically features related to road crossing.

Academic Achievement of Children and Adolescents With Oral Clefts

Previous studies that reported learning deficits among children with oral clefts mostly used small, clinic-based samples prone

to ascertainment bias. No previous studies in the United States have used a population-based sample and direct testing of academic achievement.

Using a large population-based sample from the United States and standardized school tests for achievement, we found that children with oral clefts scored significantly lower than their classmates on all evaluated domains of achievement and had higher rates of learning disability.

Language Problems in Children With ADHD: A Community-Based Study

Children with attention-deficit/hyperactivity disorder (ADHD) have poorer academic and social functioning and more language problems than typically developing peers. However, it is unknown how language problems impact the academic and social functioning of these children.

Language problems are common in children with ADHD and are associated with markedly poorer academic functioning independent of ADHD symptom severity and comorbidities. There was little evidence that language problems were associated with poorer social functioning for children with ADHD.

Anxiety in Children With Attention-Deficit/Hyperactivity Disorder

Up to 50% of children with attention-deficit/hyperactivity disorder (ADHD) meet criteria for a comorbid anxiety disorder. Despite the high prevalence of anxiety in these children, the impact of anxiety on the lives of children with ADHD has been largely overlooked.

Presence of ≥ 2 anxiety comorbidities in children with ADHD was associated with poorer child quality of life, daily functioning, and behavior. Multiple anxiety comorbidities were associated with poorer functioning for children with both ADHD-Inattentive and ADHD-Combined presentation.

Xenon Ventilation During Therapeutic Hypothermia in Neonatal Encephalopathy: A Feasibility Study

Hypothermia treatment of neonatal encephalopathy reduces death and disability from 66% to 50%; additional neuro-protective therapies are needed. We previously found in animal models that adding 50% xenon to the breathing gas during cooling doubled neuroprotection.

This clinical feasibility study used 50% xenon for 3 to 18 hours in 14 cooled infants with cardiovascular, respiratory, and amplitude-integrated EEG monitoring. This depressed seizures, with no blood pressure reduction. Xenon is ready for randomized clinical trials in newborns.

Validity of Brief Screening Instrument for Adolescent Tobacco, Alcohol, and Drug Use

The widely disseminated National Institute on Alcohol Abuse and Alcoholism screening tool for adolescent alcohol use was developed based on epidemiologic data. It has not been validated in a clinical sample and does not screen for tobacco or drug use.

This study found that a measure that expanded the National Institute on Alcohol Abuse and Alcoholism adolescent alcohol use tool to include tobacco and drugs was sensitive and specific for identifying substance use disorders in a pediatric clinic patient population.

Injury Among Children and Young Adults With Epilepsy

Injuries in children and young adults commonly cause morbidity and mortality. Epilepsy is common among children. Injury risk may be greater among those with epilepsy, but there are few large, population-based studies, making it difficult to estimate risk.

Children and young adults with epilepsy are at a greater risk of medicinal poisonings, thermal injuries, and fractures than those without epilepsy. Young adults with epilepsy are at particularly high risk of medicinal poisonings.

A Longitudinal Study of Paternal Mental Health During Transition to Fatherhood as Young Adults

There is growing understanding of the detrimental effect of paternal depression on children. The transition to fatherhood is

a unique time for men. Identifying which fathers are at-risk and when will inform effective methods to help men and their families.

Nonresident fathers have the highest depression symptom scores, peaking before entering fatherhood. Although resident fathers' scores decrease preceding entry into fatherhood, there is a significant increase from 0 to 5 years of their child's life when key parent–infant attachment occurs.

United States Birth Weight Reference Corrected For Implausible Gestational Age Estimates

Population-based references of birth weight for gestational age are useful indices of birth size in clinical and research settings.

This article uses 2009–2010 US natality data and corrects for likely errors in gestational age dating to yield an up-to-date birth weight for gestational age reference.

Dipstick Screening for Urinary Tract Infection in Febrile Infants

Urinary tract infection (UTI) is the most common bacterial infection in febrile infants aged 1 to 90 days. It is unclear if urine microscopy offers significant benefit beyond urine dipstick as a screening test for UTI in this population.

Dipstick may be an adequate screening test for UTI in infants aged 1 to 90 days with a negative predictive value (NPV) of 98.7%. Adding microscopy increases the NPV to 99.2% but results in 8 false-positives for every UTI missed by dipstick.

Parental Obesity and Risk of Autism Spectrum Disorder

Maternal prepregnancy obesity is associated with an increased risk of neurodevelopmental disorders in children, but previous studies have not taken paternal obesity into account. This has precluded differentiation between the effects of intrauterine exposures and potential genetic associations.

Robust associations were demonstrated between paternal obesity and the risk of autistic disorder and Asperger disorder in children. This study is the first to implicate paternal obesity as a risk factor for autism, and replication is warranted.

National Patterns of Codeine Prescriptions for Children in the Emergency Department

Owing to genetic variability in its metabolism, codeine can lead to fatal toxicity or inadequate treatment in pediatric sub-populations and several guidelines have recommended against its use in children. Little is known about codeine prescribing for children in the United States.

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There has been a small decline in pediatric codeine prescriptions overall in emergency departments, but no change in prescription for children who have cough or upper respiratory infection, despite professional recommendations against this practice. Substantial numbers of children are being prescribed codeine annually.

Empiric Combination Therapy for Gram-Negative Bacteremia

Existing data do not demonstrate a need for combination therapy after antimicrobial susceptibility data indicate adequate in vitro activity with β -lactam monotherapy. However, the role of empirical combination therapy for the treatment of Gram-negative bacteremia in children remains unsettled.

We conducted a retrospective, propensity-score matched study demonstrating no improvement in 10-day mortality of children who have Gram-negative bacteremia receiving empirical β -lactam and aminoglycoside combination therapy compared with β -lactam monotherapy, unless the bacteremic episode was attributable to a multidrug-resistant organism.

Unmet Needs of Siblings of Pediatric Stem Cell Transplant Recipients

The American Academy of Pediatrics has recommended that sibling donors should have an independent advocate. Defining the need for and role of this advocate is hampered by a lack of empirical data.

This study provides prospective family data regarding siblings' experiences during HLA typing and donation pre- and posttransplantation. Most family members, including the siblings, perceive no choice in typing or donation, yet have few concerns and report positive aspects to participating.

Television Viewing, Bedroom Television, and Sleep Duration From Infancy to Mid-Childhood

Inadequate sleep in childhood is associated with poor mental and physical health. Numerous cross-sectional studies reveal associations between television viewing and the presence of a bedroom TV and inadequate sleep in older children and adolescents, but longitudinal research is limited.

More TV viewing, and, among racial/ethnic minority children, bedroom TV, were associated with shorter sleep from infancy to midchildhood. These results raise the possibility that interventions to reduce TV could improve children's sleep.

Infant Self-Regulation and Early Childhood Media Exposure

Several studies suggest that excessive media use in early childhood predicts poorer developmental outcomes. It has not been studied whether infants with self-regulation problems, who may be at higher developmental risk, develop excessive media use habits.

This study shows that infants and toddlers with self-regulation difficulties (ie, problems with self-soothing, sleep, emotional regulation, and attention) view more media at 2 years of age, independent of other important confounders.

Cervical Spine Injury Patterns in Children

Practice standards for managing adult cervical spine injuries (CSIs) are well established. However, pediatric CSIs are rare and different from those of adults, preventing extrapolation from adult practice and illustrating the need for larger multicenter investigations of CSIs in children.

This study comprehensively describes CSIs in a large multicenter pediatric cohort. The large number of young children included allowed us to comprehensively explore the relationship between CSI pattern and age, mechanism of injury, comorbid injuries, surgical interventions, and neurologic outcome.

Sleep in Healthy Black and White Adolescents

A national probability study based on time diaries for 2 days indicated that black and white adolescents get close to the recommended amount of sleep. Sleep should be measured by using multiple methods to get an accurate picture of adolescent sleep.

Based on actigraphy and daily diary assessments, healthy adolescents from a lower socioeconomic community got less than the recommended amount of sleep; black male students were likely to have short, fragmented sleep, which may play a role in their health risks.

Postmarketing Trials and Pediatric Device Approvals

Medical devices approved for adults can be used to treat children despite the lack of rigorous evidence. In 2007, Congress passed the Pediatric Medical Device Safety and Improvement Act to stimulate pediatric device development.

Most pediatric devices approved since the legislative change have had limited premarket study in children, with pediatric patients representing <10% of trial participants. Postmarketing studies required by the US Food and Drug Administration also yielded limited additional pediatric data.

Genome-Wide Expression Profiles in Very Low Birth Weight Infants With Neonatal Sepsis

Rapid and reliable tools for the diagnosis of neonatal sepsis are still unavailable. No single biomarker studied has yielded conclusive results. Genome-wide expression profiles (GWEPs) have been successfully determined for the diagnosis of sepsis in pediatric and adult populations.

GWEPs are described for the first time in very low birth weight infants with proven bacterial sepsis. Our results suggest that GWEPs could be used for early discrimination of septic newborn versus nonseptic infants.

Echocardiography Screening of Siblings of Children With Bicuspid Aortic Valve

Left heart defects, such as bicuspid aortic valve, are heritable. Echocardiography screening has been recommended for first-degree relatives of patients with left heart defects. Such screening may allow timely recognition of complications such as progressive aortic dilation.

This study examines the utility and cost of echocardiography screening of siblings of patients with bicuspid aortic valve in clinical practice. Screening has high yield, and the cost compares favorably with those of other screening methods used in pediatrics.

Effectiveness of Trivalent Flu Vaccine in Healthy Young Children

In the United States, given the high burden of disease, influenza vaccine is recommended for all children from age 6 months. The paucity of vaccine effectiveness data in children <2 years has led some to argue against routine vaccination in this age group.

This study reveals the effectiveness of trivalent influenza vaccine in young children and supports the current Advisory Committee on Immunization Practices recommendation. This study provides the strongest evidence to date confirming the effectiveness of trivalent influenza vaccine in children <2 years of age.

Rape Prevention Through Empowerment of Adolescent Girls

In parts of sub-Saharan Africa, sexual assault incidence among adolescents is as high as 24%, resulting in serious physical and mental health problems. In the United States, empowerment and self-defense training have been shown to decrease incidence of sexual assault.

This study evaluated an empowerment and self-defense training intervention for adolescent girls in the African context.

This intervention proved highly effective at preventing sexual assault and should be replicable in other countries in sub-Saharan Africa and around the world.

Effect of a URI-Related Educational Intervention in Early Head Start on ED Visits

Young children have multiple upper respiratory infections (URI) annually. Limited health literacy regarding URI can place families at risk for emergency department (ED) visits, inappropriate use of over-the-counter medications, and medication measurement errors.

Few educational interventions for URI have targeted groups with limited health literacy. Integrating an educational intervention into Early Head Start is a novel approach to increasing parental health literacy regarding URI and decreasing ED visits, with potential for wide dissemination.

Prenatal SSRI Use and Offspring With Autism Spectrum Disorder or Developmental Delay

Serotonin is critical in early brain development, creating concerns regarding prenatal exposure to factors influencing serotonin levels, like selective serotonin reuptake inhibitors (SSRIs). Prenatal SSRI use was recently associated with autism; however, its association with other developmental delays is unclear.

This population-based case-control study in young children provides evidence that prenatal SSRI use may be a risk factor for autism and other developmental delays. However, underlying depression and its genetic underpinnings may be a confounder.

Interventions to Reduce Behavioral Problems in Children With Cerebral Palsy: An RCT

One in 4 children with cerebral palsy (CP) have a behavioral disorder. Parenting interventions are an efficacious approach to treating behavioral disorders. There is a paucity of research on parenting interventions with families of children with CP.

This is the first study to demonstrate the efficacy of a parenting intervention in targeting behavioral problems in children with CP. Further, results suggest that Acceptance and Commitment Therapy delivers additive benefits above and beyond established parenting interventions.

Public Perceptions of Pharmacogenetics

As technical improvements of pharmacogenetics (PGx) continue to be made, little is known about the perceptions of the public, in particular parents and children, on the topic of PGx.

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If PGx testing is for oneself, differences in opinion are due to baseline PGx knowledge, regardless of whether respondents are parents or not. If PGx testing is for children, parents would prioritize their own understanding above their child's assent.

Influence of Caregivers and Children's Entry Into the Dental Care System

Early establishment of a dental home is critical for addressing the "silent epidemic" of early childhood caries. Physicians and dentists have worked to improve children's access to dental care, but little is known about caregivers' role in this context.

Addressing factors that affect the establishment of a child's dental home, such as caregivers' dental neglect and problem-driven care-seeking behaviors, is essential. Caregiver engagement seems to be pivotal for increasing use of preventive services while decreasing episodic and problem-initiated care.

Prenatal Vitamin D and Dental Caries in Infants

Many young children are at risk for caries, which is the most common chronic disease of childhood. As primary teeth begin to develop in utero, prenatal influences are believed to affect the integrity of enamel and subsequent resistance to decay.

This study shows, for the first time, that maternal prenatal 25-hydroxyvitamin D levels may have an influence on the primary dentition and the development of early childhood caries. Specifically, lower levels are associated with increased risk of caries in infants.

Neonatal Outcomes of Prenatally Diagnosed Congenital Pulmonary Malformations

Congenital pulmonary malformations are mostly identified prenatally. At birth, some children develop respiratory distress, which may be sufficiently severe to require mechanical ventilation and immediate surgery. The factors predictive of neonatal respiratory distress are not well defined.

Malformation volume and prenatal signs of intrathoracic compression are significant risk factors for respiratory complications at birth in fetuses with pulmonary malformations. In

such situations, the delivery should take place in a tertiary care center.

Adolescent Carotenoid Intake and Benign Breast Disease

Breast tissue may be most sensitive to environmental exposures during adolescence. Carotenoids, a group of pigments found in fruits and vegetables, have antioxidative/anti-proliferative properties and may reduce breast cancer risk. Benign breast disease (BBD) is an independent breast cancer risk factor.

In this prospective cohort study, higher adolescent intakes of β -carotene were associated with a lower risk of BBD in young women. BBD prevention may be one of the many positive health effects of fruit and vegetable consumption.

Hemostatic Abnormalities in Noonan Syndrome

Noonan syndrome is associated with a bleeding diathesis and abnormal coagulation tests.

Bleeding diathesis in Noonan syndrome was evaluated by using a validated bleeding score. For the first time, platelet function was fully investigated, and a significant prevalence of platelet abnormalities likely to contribute to the bleeding diathesis was found.

Variations in Measurement of Sexual Activity Based on EHR Definitions

The use of electronic health record systems to measure adolescent health care quality requires an operational definition of sexual activity for measuring recommended health promotion activities such as *Chlamydia* screening and others related to reproductive health.

This study is the first to compare operational definitions of sexual activity by using information electronically abstracted from electronic health records of adolescent females. Our research supports the use of broader operational definitions of sexual activity for health quality measurement.

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