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Diagnostic Accuracy of the Urinalysis for Urinary Tract Infection in Infants <3 Months of Age

The sensitivity of the urinalysis (UA) traditionally has been considered suboptimal in young infants. Whether the finding of a negative UA and a positive urine culture represents a false-negative UA versus a false-positive urine culture remains unclear.

In infants <3 months with bacteremic urinary tract infection, a condition that represents true infection, the UA sensitivity is higher than previously reported for urinary tract infection in general, suggesting that the UA is reliable even in young infants.

Long-Chain Polyunsaturated Fatty Acids and Cognition in VLBW Infants at 8 years: an RCT

Suboptimal brain development and increased risk of cognitive deficits are well documented in very low birth weight children. Supplementation with docosahexaenoic acid and arachidonic acid has been associated with positive cognitive effects.

This follow-up study of a randomized controlled trial of supplementation with docosahexaenoic acid and arachidonic acid to very low birth weight infants is the first report on both cognition and brain macrostructure measured with MRI. No cognitive or neuroanatomical effects were detected at 8 years.

Tdap Vaccine Effectiveness in Adolescents During the 2012 Washington State Pertussis Epidemic

Although waning immunity with the childhood pertussis vaccination series has been reported, there are limited data on

duration of protection of the adolescent pertussis vaccine (Tdap), especially among those who have received only acellular vaccines.

This study reports that protection from Tdap wanes substantially 2 to 4 years after vaccination among adolescents who received all acellular vaccines during childhood. This waning protection is likely contributing to the increase in adolescent pertussis.

First Pertussis Vaccine Dose and Prevention of Infant Mortality

Few studies have established the protective efficacy of 1 to 3 primary doses of diphtheria-tetanus-whole-cell pertussis (DTwP)/diphtheria-tetanus-acellular pertussis (DTaP) vaccines against pertussis, hospitalization, or pertussis complications in infants. However, vaccine effectiveness against infant pertussis death has not been previously reported.

This is the first study to report the protective role of ≥ 1 DTwP/DTaP doses among vaccine-eligible infants aged ≥ 6 weeks against death, hospitalization, and complications from pertussis. It describes risk markers for death among vaccine-ineligible infants aged <6 weeks.

Estimated Number of Infants Detected and Missed by Critical Congenital Heart Defect Screening

Newborn screening for critical congenital heart defects (CCHDs) has been implemented in many hospitals, yet there is uncertainty about the number of infants with CCHDs that might be detected through universal implementation of newborn CCHD screening in the United States.

We estimated that ~875 infants with CCHDs might be detected, and ~880 missed, annually through universal CCHD screening in the United States. Increases in prenatal diagnosis are unlikely to substantially impact the number of infants detected through CCHD screening.

The Pharmacy-Level Asthma Medication Ratio and Population Health

Disparities in asthma morbidity are exacerbated by underutilization of preventive controller medications. Community pharmacies are well positioned for an increased role in population health. The Asthma Medication Ratio, currently used at the patient-level, could be adapted for use at the pharmacy-level.

A newly developed Pharmacy-level Asthma Medication Ratio was associated with population-level childhood asthma morbidity. Collaborative relationships between physicians, community pharmacists, and patients (and families) have the potential to promote testable interventions aimed at reducing asthma morbidity and cross-community disparities.

Care Coordination Over Time in Medical Homes for Children With Special Health Care Needs

Care coordination is a central part of the medical home model. Little is known about how care coordination is implemented in pediatrics and how it changes over time in primary care practices successfully adopting medical home principles.

In high-performing medical homes, care coordination evolved toward designing and carrying out routine activities and policies that aimed to forestall disruptions in care delivery. Investing in medical home teams, engaging electronic medical record systems, and improving workflow supported these changes.

Safety Incidents in the Primary Care Office Setting

More than a quarter of child deaths in the United Kingdom are estimated to have identifiable failures in care. Although children account for 40% of the family practice workload, little is known about iatrogenic harm to children in this setting.

This is the first analysis of nationally collected pediatric safety incident reports from family practice. To mitigate harm to children, priority areas requiring improvement include medication provision, referral of unwell children, provision of evidence-based treatment, and adequate diagnosis and assessment.

A Trigger Tool to Detect Harm in Pediatric Inpatient Settings

Harm occurs at a high rate in adult inpatient populations. One single-center study, applying an adult-based surveillance tool,

suggests that a pediatric inpatient population also has a high rate of harm.

Harm occurred frequently in 6 freestanding children's hospitals. Identification and understanding of the harm is the first step to making necessary improvements and to preventing future harm.

Academic Effects of Concussion in Children and Adolescents

Concussion produces a range of symptoms that may impede academic functioning. The need for empirical validation exists, despite growing consensus on the importance of a guided return-to-school process for students recovering from concussion.

This study provides initial evidence of a concussion's adverse effects on academic learning and performance across all grades, including heightened levels of school-related concern and amplified postinjury academic difficulties experienced by symptomatic students relative to their recovered peers.

Trends of US Hospitals Distributing Infant Formula Packs to Breastfeeding Mothers, 2007 to 2013

Distribution of infant formula discharge packs to breastfeeding mothers is common practice in maternity care facilities in the United States. Receiving discharge packs is associated with shortened exclusive breastfeeding duration. Many efforts have been made to discourage this practice.

From 2007 to 2013, there has been a marked reduction in distribution of discharge packs containing infant formula to breastfeeding mothers in hospitals and birth centers in the United States.

Ophthalmic Abnormalities and Reading Impairment

Dyslexia has a lifelong impact on learning. The consensus in the literature from clinical studies is that dyslexia is not caused by vision abnormalities. However, interventions and therapies directed at eye-related functions are still available.

In this cohort the majority of dyslexic children had normal results for all ophthalmic tests. These population-based data support the consensus that dyslexia is not primarily a vision problem and that vision-based therapies are not justified or likely to help.

Physical Activity in Youth Dance Classes

The majority of youth are not meeting the recommended physical activity guidelines. Dance classes are popular for girls and have potential to provide physical activity for many youth.

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digest Summary

Little is known about how active youth are in different dance types.

Objectively measured physical activity in dance classes are low and generally provide less physical activity than youth sports. There is a public health imperative to engage the dance profession in efforts to improve the health impact of youth dance classes.

Biomarkers of Alzheimer Disease, Insulin Resistance, and Obesity in Childhood

Insulin resistance plays a role in obesity. Recently it has been associated with increased risk of AD. $A\beta 42$ and PSEN1 are molecules associated with increased risk of later AD. Patients affected by AD show elevated levels of plasma $A\beta 42$.

Levels of $A\beta 42$ and PSEN1 are significantly elevated in obese adolescents and correlated with the degree of both adiposity and systemic insulin resistance.

Developmental Outcomes of Extremely Preterm Infants Born to Adolescent Mothers

Infants born extremely premature and infants born to adolescent mothers are at risk for adverse developmental and behavior outcomes. There is limited research on the dual risk imparted to infants born extremely premature to adolescent mothers.

Extremely premature infants of adolescent mothers have significantly increased rates of behavior problems. Nonwhite race and living in ≥ 3 places by 18 to 22 months of age are risk factors for adverse behavior outcomes among infants of adolescent mothers.

Inconclusive Diagnosis of Cystic Fibrosis After Newborn Screening

Infants with an inconclusive diagnosis of cystic fibrosis after newborn screening may turn out to have cystic fibrosis. However, little is known about the incidence, characteristics (phenotype and genotype), and outcomes of these infants to guide investigations and follow-up.

In this prospective longitudinal study, a proportion (11%) of infants with an initial inconclusive diagnosis were subsequently diagnosed with cystic fibrosis. This finding underscores the need for follow-up of this population.

Outcomes of Infants With Indeterminate Diagnosis Detected by Cystic Fibrosis Newborn Screening

Little is known about the prevalence or outcomes of infants with indeterminate diagnostic results after a positive

cystic fibrosis (CF) newborn screen (CF transmembrane conductance regulator–related metabolic syndrome [CRMS]).

CRMS accounted for 15.7% of newborn screened diagnoses in the CF Patient Registry from 2010 to 2012 (CRMS:CF ratio = 5.0:1.0). Although most infants were healthy, some infants demonstrated clinical features concerning for CF.

Head Growth and Neurocognitive Outcomes

Microcephaly is known to be associated with neurocognitive disorders and increasing head size with hydrocephalus. Head circumference is widely measured in childhood, but its practical value as a screening test is unclear.

Measured head size is not a stable characteristic and centile shifts occur very commonly, mostly reflecting measurement error or regression to the mean. Even where head size was consistently extreme, it was not a good predictor of later developmental problems.

Validity of Bronchiolitis Outcome Measures

The Respiratory Distress Assessment Instrument (RDAI) and the Respiratory Assessment Change Score (RACS) are the most frequently used measurement instruments in bronchiolitis clinical trials. Evidence is scarce regarding their measurement properties and their suitability for use as evaluative instruments in clinical trials.

The RDAI is an incomplete measure of respiratory distress in bronchiolitis, with poor to moderate construct validity. It has adequate discriminative properties but considerable test-retest measurement error. The RDAI and RACS were moderately responsive, but methodologic issues limit the interpretation of this finding.

Factors Associated With Meaningful Use Incentives in Children's Hospitals

Meaningful use (MU) incentive payments have been developed to encourage adoption and use of electronic health records (EHRs). Several studies have revealed children's hospitals have unique barriers to the use of EHRs but were relatively early adopters of information technology.

Although a minority of children's hospitals have succeeded with MU incentives, freestanding children's hospitals are significantly more likely to succeed. Improvement of EHRs for pediatric use should focus on information exchange, quality reporting, and MU relevance to pediatrics.

BMI and Magnitude of Scoliosis at Presentation to a Specialty Clinic

Early detection of scoliosis facilitates treatment. For detection, topographic features, such as truncal asymmetry or rib hump, are used.

We show a correlation between curve magnitude at presentation and BMI. Obesity may obscure physical examination findings.

Active Play Opportunities at Child Care

Physical activity (PA) of preschoolers has been found to be highly correlated with their child care environment. Preschool-aged children are sedentary for most of their time at child care and most are not meeting PA recommendations.

Preschoolers were presented with significantly fewer than recommended PA opportunities at child care. More active play opportunities are needed to increase PA, including more outdoor time, more teacher-led and child-initiated active play, and flexibility in naptime for preschoolers.

Sedentary Time in Late Childhood and Cardiometabolic Risk in Adolescence

Evidence on the cardiometabolic consequences of sedentary behavior in youth is inconsistent and mostly relies on cross-sectional studies. Studies with objective measures of sedentary time have found limited evidence of cross-sectional associations with adiposity markers but no other outcomes.

Objectively assessed daily sedentary time was not prospectively associated with cardiometabolic outcomes. Moderate to

vigorous physical activity was beneficially associated with body fat mass, insulin, high-density lipoprotein cholesterol, and clustered cardiometabolic score.

Sudden Infant Death Syndrome and Residential Altitude

Various clinical and demographic factors are associated with sudden infant death syndrome (SIDS), and an association between altitude of residence and SIDS has been questioned but not yet demonstrated in any large observational studies.

This study demonstrates an association between altitude and SIDS, with higher SIDS rates observed at high elevation (>8000 feet) than at the more moderate elevations (<6000 feet).

Early Psychosocial Exposures, Hair Cortisol Levels, and Disease Risk

Early psychosocial exposures are increasingly recognized as crucial to health throughout life. A possible mechanism is physiologic dysregulation due to stress. Cortisol in hair is a new biomarker assessing long-term hypothalamic-pituitary-adrenal axis activity.

Added early psychosocial exposures seem to increase infant long-term hypothalamic-pituitary-adrenal axis activity and risk of common childhood diseases in a cumulative manner, supporting the model of physiologic dysregulation as a plausible mechanism through which early detrimental exposures determine health outcomes.

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