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This Month...

Birth Defects

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- Newborn hearing screening programme in Belgium: a consensus recommendation on risk factors

Newborn

- Do antenatal corticosteroids in term elective cesarean sections reduce neonatal respiratory morbidity?
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Publications

The Partnership for Maternal, Newborn & Child Health 2015 Accountability Report

We stand at a moment of transition, as the world's gaze shifts from 2015 to 2030. A new countdown begins today, and this immensely important accounting work will continue until the last preventable death has been counted. As the global community combines to implement the SDGs and the Global Strategy, the as -yet unheard voices of millions worldwide must guide our efforts to ensure greater accountability for resources, right and results to the health of women, children and adolescents.

This report highlights a number of encouraging trends in the implementation of Global Strategy commitments and financing for reproductive, maternal, newborn and child health (RMNCH). And it identifies 12 key areas in which to improve overall accountability for the health of women, children and adolescents.

Read full publication

Birth Defects

Parental risk factors for oral clefts among Central Africans, Southeast Asians, and Central Americans.

Figueiredo JC, Ly S, Magee KS, Ihenacho U, Baurley JW, Sanchez-Lara PA, Brindopke F, Nguyen TH, Nguyen V, Tangco MI, Giron M, Abrahams T, Jang G, Vu A, Zolfaghari E, Yao CA, Foong A, DeClerk YA, Samet JM, Magee W 3rd.

Abstract
BACKGROUND:
Several lifestyle and environmental exposures have been suspected as risk factors for oral clefts, although few have been convincingly demonstrated. Studies across global diverse populations

could offer additional insight given varying types and levels of exposures.

METHODS:
We performed an international case-control study in the Democratic Republic of the Congo (133 cases, 301 controls), Vietnam (75 cases, 158 controls), the Philippines (102 cases, 152 controls), and Honduras (120 cases, 143 controls). Mothers were recruited from hospitals and their exposures were collected from interviewer-administered questionnaires. We used logistic regression modeling to estimate odds ratios (OR) and 95% confidence intervals (CI).

RESULTS:
Family history of clefts was strongly associated with increased risk (maternal: OR = 4.7; 95% CI, 3.0-7.2; paternal: OR = 10.5; 95% CI, 5.9-18.8; siblings: OR = 5.3; 95% CI, 1.4-19.9). Advanced maternal age (5 year OR = 1.2; 95% CI, 1.0-1.3), pregestational hypertension (OR = 2.6; 95% CI, 1.3-5.1), and gestational seizures (OR = 2.9; 95% CI, 1.1-7.4) were statistically significant risk factors. Lower maternal (secondary school OR = 1.6; 95% CI, 1.2-2.2; primary school OR = 2.4, 95% CI, 1.6-2.8) and paternal education (OR = 1.9; 95% CI, 1.4-2.5; and OR = 1.8; 95% CI, 1.1-2.9, respectively) and paternal tobacco smoking (OR = 1.5, 95% CI, 1.1-1.9) were associated with an increased risk. No other significant associations between maternal and paternal factors were found; some environmental factors including rural residency, indoor cooking with wood, chemicals and water source appeared to be associated with an increased risk in adjusted models.

CONCLUSION:
Our study represents one of the first international studies investigating risk factors for clefts among multiethnic underserved populations. Our findings suggest a multifactorial etiology including both maternal and paternal factors.

Newborn hearing screening programme in Belgium: a consensus recommendation on risk factors

Vos B, Senterre C, Lagasse R; SurdiScreen Group, Levêque A.

Abstract
BACKGROUND:
Understanding the risk factors for hearing loss is essential for designing the Belgian newborn hearing screening programme. Accordingly, they needed to be updated in accordance with current scientific knowledge. This study aimed to update the recommendations for the clinical management and follow-up of newborns with neonatal risk factors of hearing loss for the newborn screening programme in Belgium.

METHODS:
A literature review was performed, and the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) system assessment method was used to determine the level of evidence quality and strength of the recommendation for each risk factor. The state of scientific knowledge, levels of evidence quality, and graded recommendations were subsequently assessed using a three-round Delphi consensus process (two online questionnaires and one face-to-face meeting).

RESULTS:
Congenital infections (i.e., cytomegalovirus, toxoplasmosis, and syphilis), a family history of hearing loss, consanguinity in (grand)parents, malformation syndromes, and foetal alcohol syndrome presented a 'high' level of evidence quality as neonatal risk factors for hearing loss. Because of the sensitivity of auditory function to bilirubin toxicity, hyperbilirubinaemia was assessed at a 'moderate' level of evidence quality. In contrast, a very low birth weight, low Apgar score, and hospitalisation in the neonatal intensive care unit ranged from 'very low' to 'low' levels, and ototoxic drugs were evidenced as 'very low'. Possible explanations for these 'very low' and 'low' levels include the improved management of these health conditions or treatments, and methodological weaknesses such as confounding effects, which make it difficult to conclude on individual risk factors. In the recommendation statements, the experts emphasised avoiding unidentified neonatal hearing loss and opted to include risk factors for hearing loss even in cases with weak evidence. The panel also highlighted the cumulative effect of risk factors for hearing loss.

CONCLUSION:
We revised the recommendations for the clinical management and follow-up of newborns exhibiting neonatal risk factors for hearing loss on the basis of the aforementioned evidence-based approach and clinical experience from experts. The next step is the implementation of these findings in the Belgian screening programme.

Newborn

Do antenatal corticosteroids in term elective cesarean sections reduce neonatal respiratory morbidity?

Petour Gazitúa F, Pérez Velásquez J.

INTRODUCTION:
Neonatal respiratory distress syndrome is closely related to gestational age and mode of birth. Lowest gestational ages and caesarean section are associated with higher risk of developing respiratory distress syndrome. The efficacy of antenatal corticosteroids is well established in the induction of lung maturation in premature births. Its use could be a beneficial intervention in term fetuses that will be born by elective caesarean section.

OBJECTIVE:
To find the best evidence available to determine whether the use of antenatal corticosteroids reduces the incidence of respiratory distress syndrome in term babies born by elective caesarean section.

METHODOLOGY:
We searched the available medical literature in different databases: PubMed, LILACS, UpToDate, Trip database, Scielo and Cochrane. We considered controlled, randomized therapeutic studies, performed on humans, in which the intervention included corticosteroids as a treatment in elective term cesareans.

RESULTS:
We selected two studies. In both, the intervention was two doses of 12 mg of dexamethasone before the caesarean section. The primary objective in both studies was to analyze the incidence of respiratory distress syndrome and the admission of the newborn into intensive care units. In both studies, there was less incidence of neonatal respiratory distress syndrome, with statistically significant results.

CONCLUSIONS:
We concluded that the use of corticosteroids in elective term caesarean section reduces the incidence of neonatal respiratory distress syndrome and the admission into intensive care units. However, we evidenced certain weaknesses that could modify the internal validity of both studies, so it is necessary to develop new studies that could support these findings in order to modify clinical protocols in term elective caesarean sections.

Global Burden of Neonatal Invasive Pneumococcal Disease - A Systematic Review and Meta-Analysis.

Billings ME, Deloria-Knoll M, O'Brien KL.

Abstract
BACKGROUND:
This study aimed to estimate the global burden of invasive pneumococcal disease (IPD) incidence among neonates during the pre-pneumococcal conjugate vaccine (pre-PCV) era.

METHODS:
A systematic search of published and unpublished data was undertaken. Bias assessment and qualitative synthesis of the included studies were carried out. Random effects models using the method of DerSimonian & Laird were constructed. Subgroup analyses, sensitivity analyses and meta-influence analysis were undertaken. Sources of heterogeneity were investigated.

RESULTS:
From 26 neonatal IPD data points in the pre-PCV era, the overall pooled neonatal IPD incidence, in the general population, combining all three UN country strata was estimated to be 36.0 per 100,000 live births (95% CI: 20.0 per 100,000 - 64.7 per 100,000). The pooled neonatal IPD incidence in the general population in the less developed UN country strata was estimated to be 16.0 per 100,000 live births (95% CI: 3.9 per 100,000 - 65.6 per 100,000) and in the more developed stratum was 41.1 per 100,000 live births (95% CI: 29.1 per 100,000 - 58.1 per 100,000). This counter-intuitive finding is likely to have been affected by data quantity and confounding by time. A pooled estimate for the least developed stratum was not computable as there was only one study in this stratum - a study from The Gambia with an unweighted IPD incidence of 369.5 per 100,000 (95% CI: 119.2 per 100,000 - 1138.5 per 100,000).

INTERPRETATION:
Pneumococcus was a recognized pathogen among neonates in all development regions of the world. The burden of neonatal IPD, particularly in the least developed UN country stratum requires substantial further evaluation.