EVERY NEWBORN: An action plan to end preventable deaths

Newborns now account for 44% of the 18,000 children under age five dying every day. Nearly 2.9 million newborns die each year, and an additional 2.6 million babies are stillborn. Through a consultative process, the Every Newborn effort will develop an action plan to take forward the Global Strategy for Women’s and Children’s Health by focusing specific attention on newborn health and identifying actions for improving the linkages between reproductive, maternal and child health. Convened by UNICEF and WHO, with the support of more than three dozen partner organizations from government, donors, civil society, health professionals, the private sector and academia, this action plan will be launched in May 2014 at the World Health Assembly. For further details: http://www.everynewborn.org

This Month's Headlines

- Health economics of rubella: a systematic review to assess the value of rubella vaccination
- Dextrose gel for neonatal hypoglycemia (the Sugar Babies Study): a randomised, double-blind, placebo-controlled trial
- Diagnostic utility of isoelectric focusing and high performance liquid chromatography in neonatal cord blood screening for thalassemia and non-sickling hemoglobinopathies.
- Randomized, controlled trial evaluating a baby wash product on skin barrier function in healthy, term neonates.

Publications

Prevention and control of birth defects in South-East Asia:

Report of Regional Programme Manager’s Meeting, March 2012, World Health Organization - Regional Office for South-East Asia
Health economics of rubella: a systematic review to assess the value of rubella vaccination.

Most cases of rubella and congenital rubella syndrome occur in low- and middle-income countries. The World Health Organization (WHO) has recently recommended that countries accelerate the uptake of rubella vaccination and the GAVI Alliance is now supporting large scale measles-rubella vaccination campaigns. In this study a review of health economic evaluations of rubella and CRS to identify gaps in the evidence base and suggest possible areas of future research to support the planned global expansion of rubella vaccination and efforts towards potential rubella elimination and eradication was performed. A total of 27 studies: 11 cost analyses, 11 cost-benefit analyses, 4 cost-effectiveness analyses, and 1 cost-utility analysis were identified. There were no studies from low-income countries. CRS was estimated to cost (in 2012 US$) between $4,200 and $57,000 per case annually in middle-income countries and up to $140,000 over a lifetime in high-income countries. Rubella vaccination programs, including the vaccination of health workers, children, and women had favorable cost-effectiveness, cost-utility, or cost-benefit ratios in high- and middle-income countries. Read full text

Diagnostic utility of isoelectric focusing and high performance liquid chromatography in neonatal cord blood screening for thalassemia and non-sickling hemoglobinopathies.

Thalassaemia syndromes are highly prevalent in Southeast Asia. In this study the diagnostic utility of IEF and HPLC in neonatal screening for thalassemia and non-sickling haemoglobinopathies was compared. Two-hundred and forty-one cord blood samples were analyzed using IEF and HPLC, β-thalassemia short program. The results were correlated with red cell indices and molecular analyses. Hemoglobin (Hb) Bart's was quantified only on IEF. Of 241 newborns, IEF and HPLC yielded 85.4% and 76.4% sensitivity to identify α-thalassemia syndrome, respectively. HbBart's≥2% yielded 100% sensitivity to identify 2 α-globin gene deletions and/or mutations, while MCV≤95fl and MCH≤30pg yielded 100% sensitivity to identify 2 α-globin gene deletions. DNA analysis revealed HbE mutation in all 61 subjects with HbA2>1% on both IEF and HPLC. IEF is an effective method in neonatal screening for thalassemia and non-sickling hemoglobinopathies. The HbBart's level, MCV and MCH are helpful for identifying α-thalassemia. The presence of HbA2 higher than 1% in cord blood indicates HbE carriers in South-East Asian newborns. Read full text

Dextrose gel for neonatal hypoglycemia (the Sugar Babies Study): a randomised, double-blind, placebo-controlled trial
Deborah L Harris PhD ab, Philip J Weston MBChB a, Matthew Signal BE [Hons] c, Prof J Geoffrey Chase PhD c, Prof Jane E Harding FRACP. The Lancet, Early Online Publication, 25 September 2013.

Neonatal hypoglycaemia is common, and a preventable cause of brain damage. Dextrose gel is used to reverse hypoglycaemia in individuals with diabetes; however, little evidence exists for its use in babies. This randomised, double-blind, placebo-controlled trial at a tertiary centre in New Zealand aimed to assess whether treatment with dextrose gel was more effective than feeding alone for reversal of neonatal hypoglycaemia in at-risk babies. The primary outcome was treatment failure, defined as a blood glucose concentration of less than 2.6 mmol/L after two treatment attempts. Of 514 enrolled babies, 242 (47%) became hypoglycaemic and were randomised. Five babies were randomised in error, leaving 237 for analysis: 118 (50%) in the dextrose group and 119 (50%) in the placebo group. Dextrose gel reduced the frequency of treatment failure compared with placebo (16 [14%] vs. 29 [24%]; relative risk 0.57, 95% CI 0.33—0.98; p=0.04). No serious adverse events were noted thus concluding that treatment with dextrose gel is inexpensive and simple to administer and it should be considered for first-line treatment to manage hypoglycaemia in late preterm and term babies in the first 48 h after birth. Read full text
Randomized, controlled trial evaluating a baby wash product on skin barrier function in healthy, term neonates.

This study examined the hypothesis that the use of a wash product formulated for newborn (<1 month of age) bathing is not inferior (no worse) to bathing with water only. It was conducted in a teaching hospital in the Northwest of England and in participants' homes. Three-hundred-and-seven healthy, term infants recruited within 48 hours of birth. The primary outcome was transepidermal water loss (TEWL) at 14 days post birth; the predefined difference deemed to be unimportant was 1.2. Secondary outcomes comprised changes in stratum corneum hydration, skin surface pH, clinical observations of the skin, and maternal views. Complete TEWL data were obtained for 242 (78.8%) infants. Wash was noninferior to water alone in terms of TEWL (intention-to-treat analysis: 95% confidence interval [CI] for difference [wash-water, adjusted for family history of eczema, neonate state, and baseline] -1.24, 1.07; per protocol analysis: 95% CI -1.42, 1.09). No significant differences were found in secondary outcomes. Read full text

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