South-East Asia Network for Newborn & Birth Defects

Monthly E-blast

WHO Collaborating Centre for Training and Research in Newborn Care
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This Month...

Media centre

Guidelines on the management of chronic pain in children: web annexes A to K

This Web Annex provides detailed information on the processes, procedures and methods for developing Guidelines on the management of chronic pain in children.

Read full information

Birth Defects

Reducing the Burden of Anemia and Neural Tube Defects in Low- and Middle-Income Countries: An Analysis to Identify Countries with an Immediate Potential to Benefit from Large-Scale Mandatory Fortification of Wheat Flour and Rice

Vijaya Kancherla, Manpreet Chadha, Laura Rowe, Andrew Thompson, Sakshi Jain, Dylan Walters, Homero Martinez
PubMed: January 2021

Abstract

Using a predetermined set of criteria, including burden of anemia and neural tube defects (NTDs) and an enabling environment for large-scale fortification, this paper identifies 18 low- and middle-income countries with the highest and most immediate potential for large-scale wheat flour and/or rice fortification in terms of health impact and economic benefit. Adequately fortified staples, delivered at estimated coverage rates in these countries, have the potential to avert 72.1 million cases of anemia among non-pregnant women of reproductive age; 51,636 live births associated with folic acid-preventable NTDs (i.e., spina bifida, anencephaly); and 46,378 child deaths associated with NTDs annually. This equates to a 34% reduction in the number of cases of anemia and 38% reduction in the number of NTDs in the 18 countries identified. An estimated 5.4 million disability-adjusted life years (DALYs) could be averted annually, and an economic value of 31.8 billion United States dollars (USD) generated from 1 year of fortification at scale in women and children beneficiaries. This paper presents a missed opportunity and warrants an urgent call to action for the countries identified to potentially avert a significant number of preventable birth defects, anemia, and under-five child mortality and move closer to achieving health equity by 2030 for the Sustainable Development Goals.

Identifying environmental risk factors and gene-environment interactions in holoprosencephaly

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PubMed: January 2021

Abstract

BACKGROUND

Holoprosencephaly is the most common malformation of the forebrain (1 in 250 embryos) with severe consequences for fetal and child development. This study evaluates nongenetic factors associated with holoprosencephaly risk, severity, and gene-environment interactions.

METHODS

For this retrospective case control study, we developed an online questionnaire focusing on exposures to common and rare toxins/toxicants before and during pregnancy, nutritional factors, maternal health history, and demographic factors. Patients with holoprosencephaly were primarily ascertained from our ongoing genetic and clinical studies of holoprosencephaly. Controls included children with Williams-Beuren syndrome (WBS) ascertained through online advertisements in a WBD support group and fliers.

RESULTS

Difference in odds of exposures between cases and controls as well as within cases with varying holoprosencephaly severity were studied. Cases included children born with holoprosencephaly (n = 92) and the control group consisted of children with WBS (n = 56). Pregnancy associated risk associated with holoprosencephaly included maternal pregestational diabetes (9.2% of cases and 0 controls, p = .02), higher alcohol consumption (adjusted odds ratio [aOR], 1.73; 95% CI, 0.88-15.71), and exposure to consumer products such as aerosols or sprays including hair sprays (aOR, 2.46; 95% CI, 0.89-7.19). Significant gene-environment interactions were identified including for consumption of cheese (p < .05) and espresso drinks (p = .03).

CONCLUSION

The study identifies modifiable risk factors and gene-environment interactions that should be considered in future prevention of holoprosencephaly. Studies with larger HPE cohorts will be needed to confirm these findings.

Stillbirth

Stillbirth outcome capture and classification in population-based surveys: EN-INDEPTH study

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SpringerLink: February 2021

Abstract

BACKGROUND

Household surveys remain important sources of stillbirth data, but omission and misclassification are common. Classifying adverse pregnancy outcomes as stillbirths requires accurate reporting of vital status at birth and gestational age or birthweight for every pregnancy. Further categorisation, e.g. by sex, or timing (intrapartum/antepartum) improves data to understand and prevent stillbirth.

METHODS

We undertook a cross-sectional population-based survey of women of reproductive age in five health and demographic surveillance system sites in Bangladesh, Ethiopia, Ghana, Guinea-Bissau and Uganda (2017–2018). All women answered a full birth history with pregnancy loss questions (FBH+) or a full pregnancy history (FPH). A sub-sample across both groups were asked additional stillbirth questions. Questions were evaluated using descriptive measures. Using an interpretative paradigm and phenomenology methodology, focus group discussions with women exploring barriers to reporting birthweight for stillbirths were conducted. Thematic analysis was guided by an a priori codebook.

RESULTS

Overall 69,176 women reported 98,483 livebirths (FBH+) and 102,873 pregnancies (FPH). Additional questions were asked for 1453 stillbirths, 1528 neonatal deaths and 12,620 surviving children born in the 5 years prior to the survey. Completeness was high (> 99%) for existing FBH+/FPH questions on signs of life at birth and gestational age (months). Discordant responses in signs of life at birth between different questions were common; nearly one-quarter classified as stillbirths on FBH+/FPH were reported born alive on additional questions. Availability of information on gestational age (weeks) (58.1%) and birthweight (13.2%) was low amongst stillbirths, and heaping was common.

Most women (93.9%) were able to report the sex of their stillborn baby. Response completeness for stillbirth timing (18.3–95.1%) and estimated proportion intrapartum (15.6–90.0%) varied by question and site. Congenital malformations were reported in 3.1% stillbirths. Perceived value in weighing a stillborn baby varied and barriers to weighing at birth a nd knowing birthweight were common.

CONCLUSIONS

Improving stillbirth data in surveys will require investment in improving the measurement of vital status, gestational age and birthweight by healthcare providers, communication of these with women, and overcoming reporting barriers. Given the large burden and effect on families, improved data must be made available to end preventable stillbirths.

Associations between social and behavioural factors and the risk of late stillbirth – findings from the Midland and North of England Stillbirth case-control study

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BJOG: September 2020

Abstract

OBJECTIVE

To investigate behavioural and social characteristics of women who experienced a late stillbirth compared with women with ongoing live pregnancies at similar gestation.

DESIGN

Case-control study.

SETTING

41 maternity units in the UK.

POPULATION

Women who had a stillbirth ≥28 weeks' gestation (n = 287) and women with an ongoing pregnancy at the time of interview (n = 714).

METHODS

Data were collected using an interviewer-administered questionnaire which included questions regarding women's behaviours (e.g. alcohol intake and household smoke exposure) and social characteristics (e.g. ethnicity, employment, housing). Stress was measured by the 10-item Perceived Stress Scale.

MAIN OUTCOME MEASURE

Late stillbirth.

RESULTS

Multivariable analysis adjusting for co-existing social and behavioural factors showed women living in the most deprived quintile had an increased risk of stillbirth compared with the least deprived quintile (adjusted odds ratio [aOR] 3.16; 95% CI 1.47–6.77). There was an increased risk of late stillbirth associated with unemployment (aOR 2.32; 95% CI 1.00–5.38) and women who declined to answer the question about domestic abuse (aOR 4.12; 95% CI 2.49–6.81). A greater number of antenatal visits than recommended was associated with a reduction in stillbirth (aOR 0.26; 95% CI 0.16–0.42).

CONCLUSIONS

This study demonstrates associations between late stillbirth and socio-economic deprivation, perceived stress and domestic abuse, highlighting the need for strategies to prevent stillbirth to extend beyond maternity care. Enhanced antenatal care may be able to mitigate some of the increased risk of stillbirth.

Newborn

Preterm care during the COVID-19 pandemic: A comparative risk analysis of neonatal deaths averted by kangaroo mother care versus mortality due to SARS-CoV-2 infection

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ScienceDirect: February 2021

Abstract

BACKGROUND

COVID-19 is disrupting health services for mothers and newborns, particularly in low- and middle-income countries (LMIC). Preterm newborns are particularly vulnerable. We undertook analyses of the benefits of kangaroo mother care (KMC) on survival among neonates weighing ≤2000 g compared with the risk of SARS-CoV-2 acquired from infected mothers/caregivers.

METHODS

We modelled two scenarios over 12 months. Scenario 1 compared the survival benefits of KMC with universal coverage (99%) and mortality risk due to COVID-19. Scenario 2 estimated incremental deaths from reduced coverage and complete disruption of KMC. Projections were based on the most recent data for 127 LMICs (~90% of global births), with results aggregated into five regions.

FINDINGS

Our worst-case scenario (100% transmission) could result in 1,950 neonatal deaths from COVID-19. Conversely, 125,680 neonatal lives could be saved with universal KMC coverage. Hence, the benefit of KMC is 65-fold higher than the mortality risk of COVID-19. If recent evidence of 10% transmission was applied, the ratio would be 630-fold. We estimated a 50% reduction in KMC coverage could result in 12,570 incremental deaths and full disruption could result in 25,140 incremental deaths, representing a 2·3–4·6% increase in neonatal mortality across the 127 countries.

INTERPRETATION

The survival benefit of KMC far outweighs the small risk of death due to COVID-19. Preterm newborns are at risk, especially in LMICs where the consequences of disruptions are substantial. Policymakers and healthcare professionals need to protect services and ensure clearer messaging to keep mothers and newborns together, even if the mother is SARS-CoV-2-positive.

FUNDING

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Evidence-based interventions to reduce mortality among preterm and low-birthweight neonates in low-income and middle-income countries: a systematic review and meta-analysis

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PubMed: February 202

Abstract

BACKGROUND

Preterm birth is the leading cause of under-five-mortality worldwide, with the highest burden in low-income and middle-income countries (LMICs). The aim of this study was to synthesise evidence-based interventions for preterm and low birthweight (LBW) neonates in LMICs, their associated neonatal mortality rate (NMR), and barriers and facilitators to their implementation. This study updates all existing evidence on this topic and reviews evidence on interventions that have not been previously considered in current WHO recommendations.

METHODS

Six electronic databases were searched until 3 March 2020 for randomised controlled trials reporting NMR of preterm and/or LBW newborns following any intervention in LMICs. Risk ratios for mortality outcomes were pooled where appropriate using a random effects model (PROSPERO registration number: CRD42019139267).

RESULTS

1236 studies were identified, of which 49 were narratively synthesised and 9 contributed to the meta-analysis. The studies included 39 interventions in 21 countries with 46 993 participants. High-quality evidence suggested significant reduction of NMR following antenatal corticosteroids (Pakistan risk ratio (RR) 0.89; 95% CI 0.80 to 0.99|Guatemala 0.74; 0.68 to 0.81), single cord (0.65; 0.50 to 0.86) and skin cleansing with chlorhexidine (0.72; 0.55 to 0.95), early BCG vaccine (0.64; 0.48 to 0.86; I2 0%), community kangaroo mother care (OR 0.73; 0.55 to 0.97; I2 0%) and home-based newborn care (preterm 0.25; 0.14 to 0.48|LBW 0.42; 0.27 to 0.65). No effects on perinatal (essential newborn care 1.02; 0.91 to 1.14|neonatal resuscitation 0.95; 0.84 to 1.07) or 7-day NMR (essential newborn care 1.03; 0.83 to 1.27|neonatal resuscitation 0.92; 0.77 to 1.09) were observed after training birth attendants.

CONCLUSION

The findings of this study encourage the implementation of additional, evidence-based interventions in the current (WHO) guidelines and to be selective in usage of antenatal corticosteroids, to reduce mortality among preterm and LBW neonates in LMICs. Given the global commitment to end all preventable neonatal deaths by 2030, continuous evaluation and improvement of the current guidelines should be a priority on the agenda.

Quality Improvement

First do no harm: practitioners' ability to 'diagnose' system weaknesses and improve safety is a critical initial step in improving care quality

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Abstract

Healthcare systems across the world and especially those in low-resource settings (LRS) are under pressure and one of the first priorities must be to prevent any harm done while trying to deliver care. Health care workers, especially department leaders, need the diagnostic abilities to identify local safety concerns and design actions that benefit their patients. We draw on concepts from the safety sciences that are less well-known than mainstream quality improvement techniques in LRS. We use these to illustrate how to analyse the complex interactions between resources and tools, the organisation of tasks and the norms that may govern behaviours, together with the strengths and vulnerabilities of systems. All interact to influence care and outcomes. To employ these techniques leaders will need to focus on the best attainable standards of care, build trust and shift away from the blame culture that undermines improvement. Health worker education should include development of the technical and relational skills needed to perform these system diagnostic roles. Some safety challenges need leadership from professional associations to provide important resources, peer support and mentorship to sustain safety work.
Read full article

How to do no harm: empowering local leaders to make care safer in low-resource settings

Charles A Vincent, Mwanamvua Mboga, David Gathara, Fred Were, Rene Amalberti, Mike English

PubMed: February 2021

Abstract

In a companion paper, we showed how local hospital leaders could assess systems and identify key safety concerns and targets for system improvement. In the present paper, we consider how these leaders might implement practical, low-cost interventions to improve safety. Our focus is on making immediate safety improvements both to directly improve patient care and as a foundation for advancing care in the longer-term. We describe a 'portfolio' approach to safety improvement in four broad categories: prioritising critical processes, such as checking drug doses; strengthening the overall system of care, for example, by introducing multiprofessional handovers; control of known risks, such as only using continuous positive airway pressure when appropriate conditions are met; and enhancing detection and response to hazardous situations, such as introducing brief team meetings to identify and respond to immediate threats and challenges. Local clinical leaders and managers face numerous challenges in delivering safe care but, if given sufficient support, they are nevertheless in a position to bring about major improvements. Skills in improving safety and quality should be recognised as equivalent to any other form of (sub)specialty training and as an essential element of any senior clinical or management role. National professional organisations need to promote appropriate education and provide coaching, mentorship and support to local leaders.
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