NSIDRC Journal Article Alert – March 2007

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• Hospital practice in neonatal period to prevent infant sudden death syndrome.
Pulmonary neuroendocrine cells (PNEC), including neuroepithelial bodies (NEB), are amine- and peptide (for example, bombesin)-producing cells that function as hypoxia/hypercapnia-sensitive chemoreceptors that could be involved in the pathophysiology of sudden infant death syndrome (SIDS). We assessed morphometrically the frequency and size of PNEC/NEB in lungs of infants who died of SIDS (n = 21) and compared them to an equal number PNEC/NEB in lungs of age-matched control infants who died of accidental death or homicide, with all cases obtained from the San Diego SIDS/SUDC Research Project database. As a marker for PNEC/NEB we used an antibody against chromogranin A (CGA), and computer-assisted morphometric analysis was employed to determine the relative frequency of PNEC per airway epithelial area (% immunostained area, %IMS), the size of NEB, the number of nuclei/NEB, and the size of the NEB cells. The lungs of SIDS infants showed significantly greater %IMS of airway epithelium (2.72 +/- 0.28 [standard error of the mean, SEM] versus 1.88 +/- 0.24; P < 0.05) and larger NEB (1557 +/- 153 mm(2) versus 1151 +/- 106 mm(2); P < 0.05) compared to control infants. The size of NEB cells was also significantly increased in SIDS cases compared to the controls (180 +/- 6.39 mm(2) versus 157 +/- 8.0 mm(2); P < 0.05), indicating the presence of hypertrophy in addition to hyperplasia. Our findings support previous studies demonstrating hyperplasia of PNEC/NEB in lungs of infants who died of SIDS. These changes could be secondary to chronic hypoxia and/or could be attributable to maturational delay. Morphometric assessment and/or measurement of the secretory products of these cells (for example, CGA, bombesin) could provide a potential biological marker for SIDS.

Full-text available at: http://www.springerlink.com/content/1615-5742/ (not a U.S. Government site)


Objective: The objective of this study was to critically examine potential artifacts and biases underlying the use of 'customised' standards of birthweight for gestational age (GA). Design Population-based cohort study. Setting: Sweden. Population A total of 782 303 singletons >/=28 weeks of gestation born in 1992-2001 to Nordic mothers with complete data on birthweight; GA; and maternal age, parity, height, and pre-pregnancy weight. Methods We compared perinatal mortality in four groups of infants based on the following classification of small for gestational age (SGA): non-SGA based on either population-based or customized standards (the reference group), SGA based on the population-based standard only, SGA based on the customized standard only, and SGA
according to both standards. We used graphical methods to compare GA-specific birthweight cutoffs for SGA using the two standards and also used logistic regression to control for differences in GA and maternal pre-pregnancy body mass index (BMI) in the four groups. Main outcome measures Perinatal mortality, including stillbirth and neonatal death. Results: Customization led to a large artifactual increase in the proportion of SGA infants born preterm. Adjustment for differences in GA and maternal BMI markedly reduced the excess risk among infants classified as SGA by customized standards only. Conclusion: The large increase in perinatal mortality risk among infants classified as SGA based on customized standards is largely an artifact due to inclusion of more preterm births.

(not a U.S. Government site)

Gold KJ. Navigating care after a baby dies: A systematic review of parent experiences with health providers.

Introduction: Health care providers are on the front lines of care when a baby dies, but there is no consensus about which behaviors are most helpful or harmful for families.

Materials and Methods: This systematic review of more than 1100 English-language articles from 1966 to 2006 addressed fetal and early infant loss and extracted information about interactions with health providers. Results: Sixty-one studies, covering over 6000 parents, met criteria. Nurses were generally viewed as more emotionally supportive than physicians. Parents valued emotional support, attention to mother and baby and grief education. Avoidance, insensitivity and poor staff communication were the most distressing behaviors encountered. Discussion: Interactions with health providers has profound effects on parents with perinatal losses. Grieving parents perceive many behaviors to be thoughtless or insensitive. Physicians and nurses may benefit from increased training in bereavement support

Full-text available at: http://www.nature.com (not a U.S. Government site)

Riley LP, LaMontagne LL, Hepworth JT, Murphy BA. Parental grief responses and personal growth following the death of a child.

Conceptualizing parental grief as a psychosocial transition, this cross-sectional study of bereaved mothers (N = 35) examined the relationship of dispositional factors, grief reactions, and personal growth. More optimistic mothers reported less intense grief reactions and less distress indicative of complicated grief. Additionally, mothers who usually coped actively had less intense grief reactions. Mothers who habitually coped using positive reframing had less intense grief reactions and less complicated grief. Personal growth, a positive dimension of grief, was associated with all three coping dispositions; mothers' active coping, support seeking, and positive reframing suggesting more personal growth occurred in mothers exhibiting more of these coping dispositions. These findings increase understanding of dispositional factors associated with bereaved
mothers' grief responses and expand knowledge concerning personal growth as an outcome of bereavement.

Full-text available at: [http://www.tandf.co.uk/journals/titles/07481187.asp](http://www.tandf.co.uk/journals/titles/07481187.asp) (not a U.S. Government site)

Velayuthaprabhu S, Archunan G, Balakrishnan K.  
**Placental thrombosis in experimental anticardiolipin antibodies-mediated intrauterine fetal death.**  

Anticardiolipin (aCL) antibodies are associated with stillbirths, recurrent miscarriages and recurrent in vitro fertilization implantation failure in women. Previous animal studies have demonstrated that these antibodies can cause early fetal demise and implantation failure in mice, but most previous studies have not allowed the immunized mice to proceed to the full term of gestation. Method of study Mice were immunized with either cardiolipin alone or cardiolipin in combination with beta2-glycoprotein I (beta2GPI) and have studied the effects of these antibodies on pregnancies which were allowed to progress to term. Results Immunization with cardiolipin alone induced significant levels of anticardiolipin antibodies in mice, but immunization with a combination of cardiolipin and beta2GPI produced even higher levels of antibodies. Mice with elevated levels of anticardiolipin antibodies had poor pregnancy outcomes. This study confirms previous results that anticardiolipin antibodies cause early pregnancy losses and also demonstrates that these antibodies cause stillbirth-like late fetal demise. This study further demonstrated that very high levels of anticardiolipin antibodies cause intrauterine death by facilitating the thrombotic episode in placenta. Conclusions: The present study concludes that the possible mechanism involves in stillbirth of aCL is possibly because of the thrombotic events of placenta.


**Lack of Evidence for a Causal Relationship between Hypoxic-Ischemic Encephalopathy And Subdural Hemorrhage in Fetal Life, Infancy and Early Childhood.**  
Pediatr Dev Pathol. 2007 Mar 22: 1 [E-pub ahead of print]

It has been asserted that hypoxic-ischemic encephalopathy (HIE) with cerebral swelling in the absence of marked trauma may be responsible for subural hemorrhage in the young. As this may have considerable implications in determining both the mechanism of death and the degree of force required to cause injury in certain cases of inflicted head injury in infancy, clarification is required. A retrospective study of 82 fetuses, infants and toddlers with proven HIE and no trauma was undertaken from forensic institutes in Australia, the United Kingdom, Germany, Denmark and the United States. The age range was 35 weeks gestation to 3 years, with a male to female ratio of 2:1. All cases had
histologically-confirmed HIE. Causes of the hypoxic episodes were temporarily resuscitated sudden infant death syndrome (SIDS) with delayed death (N = 30), drowning (N = 12), accidental asphyxia (N = 10), intrauterine/delivery asphyxia (N = 8), congenital disease (N = 6), aspiration of food/gastric contents (N = 4), inflicted asphyxia (N = 3), epilepsy (N = 1), dehydration (N = 1), drug toxicity (N = 1), complications of prematurity (N = 1), and complications of anesthesia (N = 1). In four instances the initiating event was not determined. In no case was there macroscopic evidence of subdural hemorrhage. In this study no support could be given to the hypothesis that HIE in the young in the absence of trauma causes subdural hemorrhage.

Full-text available at: http://www.springerlink.com/content/1615-5742/ (not a U.S. Government site)

Guntheroth WG, Spiers PS.

Active caspase-3 in the sudden infant death syndrome (SIDS) brainstem.
Acta Neuropathol (Berl). 2007 Mar 16; [E-pub ahead of print]

In a retrospective postmortem study, we examined the neuronal expression of active caspase-3, a specific apoptotic marker, in the brainstem of 67 infants dying from sudden infant death syndrome (SIDS), and 25 age-matched control infants (non-SIDS). Neuronal immunostaining for active caspase-3 was semi-quantitatively scored in nuclei from five brainstem levels: rostral, mid and caudal pons, and rostral and caudal medulla. Regardless of the cause of death (SIDS vs. non-SIDS), age-related differences in active caspase-3 expression were identified, predominantly in the medulla. No gender-related differences were identified. Comparing SIDS to non-SIDS cases, increased active caspase-3 expression was restricted to four nuclei in the caudal pons (abducens, facial, superior olivary, and pontine nuclei) and two nuclei in the rostral medulla (hypoglossal and dorsal motor nucleus of the vagus). We conclude that neuronal apoptosis is increased in the brainstem of SIDS compared to non-SIDS infants.

Full-text available at: http://www.springerlink.com/content/r99102v4612k6555/ (not a U.S. Government site)

Jung V, Short R, Letourneau N, Andrews D.

Interventions with depressed mothers and their infants: modifying interactive behaviours.

Background: Postpartum depression (PPD) has a prevalence ranging from 3% to 30% and is associated with serious infant growth and developmental problems. Interventions directed at improving maternal mood have been unsuccessful in producing changes in observed face-to-face interactions between mother and infant. The Keys to Caregiving (KTC) is an intervention program that helps parents to understand and respond to infant behaviors, with a goal of increasing positive affective expressions in infants. In this pilot study, KTC was used with mothers suffering from mild to moderate PPD and their infants. Methods: PPD was confirmed by scores on the Edinburgh Postnatal Depression
Scale and the Beck Depression Inventory. Eleven dyads completed the study. KTC was carried out in 5 weekly group sessions, beginning at infant age of 3 months. Dyads were videotaped prior to and after KTC, using the Face-to-Face Still-Face paradigm, which assesses infants' responses during normal play and the effects of the Still-Face perturbation. The tapes were scored for infant facial emotion expressions. Results: After intervention, infants displayed a marked increase in Interest and Joy when interacting face-to-face with their mothers, even though mothers' depression ratings did not change. Limitations: This pilot study is limited by lack of control dyads, however, it provides the foundation necessary for a full trial. Conclusions: This study suggests that intervention that focuses on what mothers do with their infants instead of how they feel can be effective in increasing infants' positive responsiveness and improving infant outcomes. Such interventions can be an essential component of treatment when mothers present with postpartum depression.


Genetic studies in Sudden Infant Death Syndrome (SIDS) have been motivated by clinical, epidemiological, and/or neuropathological observations in SIDS victims, with subsequent pursuit of candidate genes in five categories: (1) genes for ion channel proteins based on electrocardiographic evidence of prolonged QT intervals in SIDS victims, (2) gene for serotonin transporter based on decreased serotonergic receptor binding in brainstems of SIDS victims, (3) genes pertinent to the early embryology of the autonomic nervous system (ANS) (and with a link to the 5-HT system) based on reports of ANS dysregulation in SIDS victims, (4) genes for nicotine metabolizing enzymes based on evidence of cigarette smoking as a modifiable risk factor for SIDS, and (5) genes regulating inflammation, energy production, hypoglycemia, and thermal regulation based on reports of postnatal infection, low birth weight, and/or overheating in SIDS victims. Evidence for each of these classes of candidate genes is reviewed in detail. As this review indicates, a number of genetically controlled pathways appear to be involved in at least some cases of SIDS. Given the diversity of results to date, genetic studies support the clinical impression that SIDS is heterogeneous with more than one entity and with more than one possible genetic etiology. Future studies should consider expanded phenotypic features that might help clarify the heterogeneity and improve the predictive value of the identified genetic factors. Such features should be evaluated to the extent possible in both SIDS victims and their family members. With 2,162 infants dying from SIDS in 2003 in the U.S. alone, and improved but still imperfect parent and caretaker compliance with known modifiable risk factors for SIDS, it behooves clinicians, researchers, and parents to combine efforts to reach a common goal. The message of the "Back to Sleep" campaign needs to be re-introduced/re-engineered to reach families and caretakers of all ethnic groups. Clinicians and researchers need to gently inform new SIDS parents about the opportunity to contribute tissue to the NICHD-funded University of Maryland Brain and Tissue Bank. By expanding the network of clinicians, scientists,
and families working together, and by combined efforts in a collaborative multi-center study of candidate genes and/or genomics, the discovery of the genetic profile of the infant at risk for SIDS can ultimately be determined.


Horsley T, Clifford T, Barrowman N, Bennett S, Yazdi F, Sampson M, Moher D, Dingwall O, Schachter H, Cote A.

Benefits and harms Associated with the practice of Bed Sharing: A Systematic Review.

Objective: To examine evidence of benefits and harms to children associated with bed sharing, factors (eg, smoking) altering bed sharing risk, and effective strategies for reducing harms associated with bed sharing. Data Sources: MEDLINE, CINAHL, Healthstar, PsycINFO, the Cochrane Library, Turning Research into Practice, and Allied and Alternative Medicine databases between January 1993 and January 2005. Study Selection: Published, English-language records investigating the practice of bed sharing (defined as a child sharing a sleep surface with another individual) and associated benefits and harms in children 0 to 2 years of age. Data Extraction: Any reported benefits or harms (risk factors) associated with the practice of bed sharing. Data Synthesis: Forty observational studies met our inclusion criteria. Evidence consistently suggests that there may be an association between bed sharing and sudden infant death syndrome (SIDS) among smokers (however defined), but the evidence is not as consistent among nonsmokers. This does not mean that no association between bed sharing and SIDS exists among nonsmokers, but that existing data do not convincingly establish such an association. Data also suggest that bed sharing may be more strongly associated with SIDS in younger infants. A positive association between bed sharing and breastfeeding was identified. Current data could not establish causality. It is possible that women who are most likely to practice prolonged breastfeeding also prefer to bed share. Conclusion: Well-designed, hypothesis-driven prospective cohort studies are warranted to improve our understanding of the mechanisms underlying the relationship between bed sharing, its benefits, and its harms.


Marchetti D, Belviso M, Marino M, Gaudio R.

Evaluation of the placenta in a stillborn fetus to estimate the time of death.

The authors present a case of a presumably unknown pregnancy, in which the newborn was found dead in the bathroom. The child was considered stillborn and the death due to natural causes. The literature on estimation of the time of fetal death is reviewed. It has been reported that certain placental histological changes are useful in predicting the time
of death in stillborn fetuses, but little has been published about their potential role. Furthermore, parameters evaluated by literature in examining the placenta for determining time of fetal demise in cases of stillbirth are not uniform in the few studies that have been published. We emphasize that any attempt to estimate the time of fetal death without an adequate knowledge of placental morphological changes is futile and forensically unjustifiable, and that a comprehensive placental, external, and histological examination of the fetus is still the method of choice to gain a reliable forensic answer.

Full-text available at: http://www.amjforensicmedicine.com (not a U.S. Government site)

Balchin I, Whittaker JC, Patel RR, Lamont RF, Steer PJ.
Racial variation in the association between gestational age and perinatal mortality: prospective study.
BMJ. 2007 Mar 2; [E-pub ahead of print]

Objectives: To determine if the risks of perinatal mortality and antepartum stillbirth associated with post term birth increase earlier during pregnancy in South Asian and black women than in white women, and to investigate differences in the factors associated with antepartum stillbirth between the racial groups. Design: Prospective study using logistic regression analysis. Setting: 15 maternity units in northwest London from 1988 to 2000. Participants: 197 061 nulliparous women self reported as white, South Asian, or black, who delivered a single baby weighing at least 500 g at 24-43 completed weeks' gestation. Main Outcome Measures: Gestation specific perinatal mortality, antepartum stillbirth rates, and independent factors for antepartum stillbirth by racial groups. Results: The crude gestation specific perinatal mortality patterns for the three racial groups differed (P<0.001). The perinatal mortality rate among black women was lower than among white women before 32 weeks but was higher thereafter. Perinatal mortality was highest among South Asian women at all gestational ages and increased the fastest at term. After adjusting for the confounders of antepartum stillbirth (placental abruption, congenital abnormality, low birth weight, birth weight <10th centile, meconium passage, fever, maternal body mass index >/=30, and maternal age >/=30), the excess mortality among black women after 32 weeks was not significant. After adjusting for confounding, South Asian women still had a significantly higher risk of antepartum stillbirth (odds ratio 1.8, 95% confidence interval 1.2 to 2.7).Conclusions The risk of perinatal mortality increased earlier in gestation among South Asian women than among white women. The most important factor associated with antepartum stillbirth among white women was placental abruption, but among South Asian and black women it was birth weight below 2000 g.

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Latin America, and especially Chile, has done well in reducing infant mortality, with rates of around twenty-five per thousand live births. There are two clear phases of declining mortality: one largely influenced by poverty reduction, primary health care, and environmental and demographic factors; and a second one more sensitive to focused health care interventions. In 2000 Chile reached 8.9 infant deaths per 1,000, using interventions that represent an increase in the provision of services related to perinatal risks, acute respiratory diseases, congenital heart conditions, and certain vaccine-preventable infections. Chile, with per capita income near 5,000 US dollars in 2000, has infant mortality that compares with that of wealthier countries.

Full-text available at: [http://content.healthaffairs.org](http://content.healthaffairs.org) (not a U.S. Government site)

Forsyth L, Scott H, Howatson A, Busuttil A, Hume R, Burchell A.

Genetic variation in hepatic glucose-6-phosphatase system genes in cases of sudden infant death syndrome.

J Pathol. 2007 Mar 12; [E-pub ahead of print]

Genetic deficiencies of the hepatic glucose-6-phosphatase system, either of the enzyme (G6PC1) or of the glucose-6-phosphate transporter (G6PT1), result in fasting hypoglycaemia. Low hepatic G6PC1 activities were previously reported in a few term sudden infant death syndrome (SIDS) infants and assumed to be due to G6PC1 genetic deficiencies. In preterm infants, failures of postnatal activation of G6PC1 expression suggest disordered development as a novel cause of decreased G6PC1 activity in SIDS. G6PC1 and G6PT1 functional and mutational analysis was investigated in SIDS and non-SIDS infants. G6PC1 hepatic activity was abnormally low in 98 SIDS (preterm, n = 13; term, n = 85), and non-SIDS preterm infants (n = 35) compared to term non-SIDS infants (n = 29) and adults (n = 9). Mean glycogen levels were elevated, except in term non-SIDS infants. A novel G6PT1 promoter polymorphism, 259C --> T was found; the -259*T allele frequency was greater in term SIDS infants (n = 140) than in term control infants (n = 119) and preterm SIDS infants (n = 30). Heterozygous and homozygous prevalence of 259C --> T was 38.6% and 7.1%, respectively, in term SIDS infants. In cell-based expression systems, the presence of -259T in the promoter decreased basal luciferase activity by 3.2-fold compared to -259C. Glucose-6-phosphatase latency in hepatic microsomes was elevated (indicating decreased G6PT1 function) in heterozygous and homozygous -259T states. Delayed postnatal appearance of hepatic glucose-6-phosphatase in infants makes them vulnerable to hypoglycaemic episodes and this may occur in some SIDS infants. However, SIDS may be an association of more complex phenotypes in which several genes interact with multiple environmental factors. A UK-wide DNA Biobank of samples from all infant deaths, with an accompanying epidemiological database, should be established by pathologists to allow cumulative data to be collected from multiple genetic investigations on the same large cohort of samples,
with the aim of selection of the best combination of genetic markers to predict unexpected infant death.


Schempf A, Kroelinger C, Guyer B.  
**Rising Infant Mortality in Delaware: An Examination of racial differences in secular trends.**  
Matern Child Health J. 2007 Mar 6; [E-pub ahead of print]

Objectives: Recent increases in the Delaware Infant Mortality Rate (IMR) have been attributed to a rise in the mortality of very low birth weight (VLBW, <1500 g) infants born to mothers of higher socioeconomic status. This study examines whether the determinants of infant mortality trends in Delaware vary by race. Methods: Linked birth/infant death cohort files for the two periods 1993-1997 and 1998-2002 were used to evaluate the determinants of infant mortality trends separately for White and Black racial groups. Kitagawa analyses determined the components of race-specific infant mortality trends attributable to changes in both the birthweight distribution and birthweight-specific mortality rates. Maternal characteristics were examined to identify factors associated with IMR changes. Results: Between the two time periods, infant mortality increased 23% among White infants and 17% among Black infants. For both races, the infant mortality increase was explained by increases in the incidence and mortality of VLBW infants, specifically below <500 grams for Blacks and <1,000 grams for Whites. The increased incidence of VLBW deliveries was statistically significant only among Whites, almost 40% of which was explained by an increase in multiple births. For both Whites and Blacks, the increase in VLBW mortality occurred mainly among births to more traditionally advantaged women who were twenty or older, at least high school educated, married, privately insured, had received first trimester prenatal care, and those who delivered multiple births. Conclusions: These findings suggest that conventional strategies of increasing access to prenatal care among disadvantaged women may be insufficient to reverse recent IMR increases in Delaware, irrespective of race. Future efforts should focus on understanding the causes of the increased infant mortality associated with higher socioeconomic status, including changes in assisted reproductive technology utilization, maternal health status, and obstetric practice.

Full-text available at: [http://www.springerlink.com](http://www.springerlink.com) (not a U.S. Government site)

Sharma BR.  
**Sudden infant death syndrome: A subject of medicolegal research.**  

During the last decade, much attention has been paid to the risk factors of sudden infant death syndrome (SIDS). Many researchers have demonstrated that infant-care practices are linked to the risk of SIDS. Prone sleeping, bed sharing, maternal substance abuse, and cigarette smoking have been reported to be significant potentially modifiable risk factors.
for SIDS. Despite the reports that the incidence of SIDS has decreased by 38% in the United States, it remains the leading cause of death in the first year of life. Deaths resulting from child abuse or neglect inflicted or permitted by their caretakers being second only to SIDS in infant mortalities and some recommendations regarding the differentiation of SIDS and child abuse have generated speculation that some cases of infanticide were misdiagnosed as SIDS. To reach a proper conclusion as to the cause and manner of death of an infant who died suddenly and unexpectedly, investigation must be thorough and professional.

Full-text available at: http://www.amjforensicmedicine.com (not a U.S. Government site)

Wells M.
The pathology of gestational trophoblastic disease: Recent advances.

When inundated with numerous specimens of products of conception as the consequence of miscarriage, it is all too easy for histopathologists to forget that the biology of trophoblast and the events of early placental implantation continue to fascinate because of the inherently invasive properties of the non-villous (extravillous) trophoblast. However, unlike the invasion of a malignant tumour, the invasion of trophoblast is controlled. The failure of adequate conversion of maternal uteroplacental arteries is a major pathogenetic phenomenon of important disorders of pregnancy including pre-eclampsia. However, it is in the field of gestational trophoblastic disease that diagnostic acumen is most called for. There are several problematic areas that give rise to diagnostic error; e.g., the diagnosis of early complete mole as partial mole, the over-diagnosis of hydatidiform mole in tubal pregnancy and the diagnosis of placental site non-villous trophoblast as placental site trophoblastic tumour or choriocarcinoma, particularly if associated with atypia, as frequently observed in complete mole. The chorionic villi of early diploid complete mole show characteristic features of villous profile, stromal mucin and stromal nuclear debris. The distinction between complete mole and triploid partial mole can be facilitated by ploidy analysis and immunohistochemistry for the product of the paternally imprinted, maternally expressed gene, p57kip2. Persistent trophoblastic disease (PTD) is a clinical not a histopathological diagnosis and the role of the histopathologist once a diagnosis of PTD has been made is limited. Invasive mole and choriocarcinoma are encompassed by PTD. Tumours of the non-villous trophoblast are placental site trophoblastic tumour and the more recently recognised epithelioid trophoblastic tumour. The role of immunohistochemistry in the elucidation of trophoblastic lesions is discussed pragmatically.

Wu JC, Chiang TL.
Comparing child mortality in Taiwan and selected industrialized countries.
J Formos Med Assoc. 2007 Feb; 106(2):177-80

This study compares the mortality rates of children in Taiwan with selected industrialized countries, and identifies the explanations of cross-national variations. We ranked all comparison countries by infant mortality rate (IMR) and under-five mortality rate
(U5MR). Multiple regression models were used to examine the relationship of child mortality with gross domestic product, national health expenditure, public social expenditure, and Gini coefficient. For 2002, the IMR and U5MR in Taiwan were 6 per thousand and 8 per thousand, respectively, both ranking 20th among 21 industrialized countries. In explaining cross-national differentials in child mortality, we found that Gini coefficient, an indicator of income inequality, was positively associated with IMR and U5MR, and that social expenditure was negatively associated with U5MR. Our study shows that prevention of child mortality in Taiwan has not yet reached the highest attainable standard, and underscores the importance of a fairer income distribution and social investment in child health care.


Background: Little is known on the actual diagnostic and therapeutic management of recurrent miscarriage and the impact of introducing guidelines on this topic. The objective of this study was to evaluate any changes in the management of recurrent miscarriage among Dutch gynaecologists after the introduction of the Dutch guideline 'Recurrent Miscarriage' in 1999. Methods: Questionnaires were sent to all practices for obstetrics and gynaecology in the Netherlands. Data concerned definition, diagnosis and treatment of recurrent miscarriage. Results were compared with a similar study conducted before the introduction of the guideline and with the recommendations in the guideline. Results: The response rate was 83%. Regarding gestational age, only 3% of the respondents used the definition as advised in the guideline. After the introduction of the guideline, thrombophilia factors were tested more frequently, anticoagulants were prescribed more frequently and more respondents reported to correct uterine malformations. Therapies not described in the guideline, e.g. donor insemination and oocyte donation, were still applied. Conclusions: The adherence to the Dutch guideline 'Recurrent Miscarriage' was rather poor, presumably due to guideline-related as well as physician-related barriers. Too many diagnostic tests and ineffective therapeutic interventions were performed. This study demonstrates the importance of appropriate implementation and revision.


Emerging evidence has suggested that miscarriage could be associated with significant and possibly enduring psychological consequences. As many as 50% of miscarrying
women suffer some form of psychological morbidity in the weeks and months after loss. About 40% of miscarriage women were found to be suffering from symptoms of grief shortly after miscarriage, and pathological grief can follow. Elevated anxiety and depressive symptoms are common, and major depressive disorder has been reported in 10-50% after miscarriage. Psychological symptoms could persist for 6 months to 1 year after miscarriage. The underlying risk factors predisposing a miscarriage woman to psychological morbidity include a history of psychiatric illness, childlessness, lack of social support or poor marital adjustment, prior pregnancy loss, and ambivalence toward the fetus. In addition, care-givers should be aware of the possible moderating effect of clinical practices such as surgical treatment and ultrasound findings on the psychological impact on a miscarriage woman. Unlike in postpartum depression, simple and effective screening measures of psychological morbidity in the context of miscarriage have not been well established. While studies have highlighted that psychological follow-up was highly desired by miscarriage women, and that psychological intervention was potentially beneficial, there is a substantial lack of randomized controlled intervention studies in this area.


The aim of this study was to investigate the causes of intrapartum asphyxia and its relationship to placental abnormalities. Twenty intrapartum fetal death autopsies carried out over a 10-year period in one hospital pathology department associated with a large obstetric unit were reviewed. All the intrapartum fetal deaths occurred in the hospital, while the mothers were being monitored during and after labor. On morphologic grounds, all the fetal deaths were thought to be caused by intrapartum asphyxia. Seven of the intrapartum fetal deaths were associated with intrauterine infection causing funisitis, and in 6 of these cases, chorioamnionitis was present as well. Two cases were caused by placental abruption, and 1 case was caused by cord compression. In 8 of the 10 remaining cases in which the placenta was examined, a minor placental abnormality was detected in only 1 case. Five of the 10 cases had a mild astrocytosis in the intracerebral periventricular white matter, suggestive of intrauterine ischemia at least 12 hours before death. Five of the 10 cases were thought by the delivering obstetrician to have umbilical cord abnormalities. The main conclusions from this study are that, except in cases of intrauterine infection, placental vascular abnormalities are unlikely to be associated with intrapartum asphyxia leading to fetal death during labor. The number of cases with umbilical cord abnormalities raises the possibility that cord accidents may be a significant cause of intrapartum stillbirth.

Full-text available at: http://www.springerlink.com/content/1615-5742/ (not a U.S. Government site)
MacDorman MF, Hoyert DL, Martin JA, Munson ML, Hamilton BE.  
Fetal and Perinatal Mortality, United States 2003.  

Objectives: This report presents 2003 fetal and perinatal mortality data by a variety of characteristics, including maternal age, marital status, race, Hispanic origin, and state of residence; and by infant birthweight, gestational age, plurality, and sex. Trends in fetal and perinatal mortality are also examined. Methods: Descriptive tabulations of data are presented and interpreted. Results: The U.S. fetal mortality rate in 2003 was 6.23 fetal deaths of 20 weeks of gestation or more per 1,000 live births and fetal deaths. Fetal and perinatal mortality rates have declined slowly but steadily from 1990 to 2003. Fetal mortality rates for 28 weeks of gestation or more have declined substantially, whereas those for 20-27 weeks of gestation have not declined. Fetal mortality rates are higher for a number of groups including non-Hispanic black women, teenagers, women aged 35 years and over, unmarried women, and multiple deliveries. Over one-half (51 percent) of fetal deaths of 20 weeks of gestation or more occurred between 20 and 27 weeks of gestation.

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http://www.cdc.gov/nchs/pressroom/07newsreleases/stillbirths.htm

Cameron J, Taylor J, Greene A.  
Midwifery. 2007 Jan 20; [E-pub ahead of print]

Objective: to assess the evolution of attitudes and practices relating to perinatal loss through an analysis of British midwifery textbooks. Design: a literature review of midwifery textbooks, written or edited by midwives, published in the UK after 1902, and a critical analysis of textbooks to determine the ideological and professional standpoints presented to readers. Findings: the rhetoric and ritual relating to perinatal loss as portrayed in British midwifery textbooks has changed, with the most dramatic changes taking place in the past 30 years. Evidence to support the changes is largely anecdotal, and little reference is made to research relating to perinatal death. The 'dirty' elements of perinatal death relating to the decay that takes place in the baby's body after death are not addressed. The critique of psychological theory relating to loss is absent, as are alternatives to the model proposed by Kubler Ross. Cultural aspects of loss and bereavement are rarely addressed. Key Conclusions: the review of midwifery textbooks suggests that an ideological shift has taken place in relation to perinatal loss. The changing demographic trends, and the shift of birth and death from home to hospital, have altered the expectations and experiences of parents and professionals. Midwifery textbooks provide readers with a prescribed and formulaic approach to perinatal loss. Implications For Practice: the absence of information relating to the appearance of the
dead baby, together with the lack of clinical exposure, may mean that midwives are unable to provide parents with appropriate information. The lack of reference to an evidence base that may conflict with the ideology presented in the midwifery textbooks leaves readers with an incomplete understanding of the professional issues relating to perinatal loss.

Full-text available at: http://intl.elsevierhealth.com/journals/midw/ (not a U.S. Government site)

Gurbutt D, Gurbutt R.  
**Risk reduction and sudden infant death syndrome.**  

This article explores the concepts of 'risk' and 'risk reduction' in relation to sudden infant death syndrome (SIDS) and the implications for practice. Risk reduction is a term utilized in public health, which is usually linked to evidence-based outcomes. The Back to Sleep campaign is a high profile initiative which seeks to raise awareness of risk factors relating to SIDS and is largely credited with contributing to a significant reduction in the incidence of SIDS in the UK. Misunderstandings may occur between the terms 'risk reduction' and 'prevention' of health conditions and parents may feel that one equates to the other. There are also tensions which are inherent in defining risk in the context of SIDS. Certain measures may become 'shorthand' for a range of interventions and contributing factors. The practice of offering additional monitoring as support may reinforce a (mis)understanding about risk reduction and SIDS. There are implications for practice regarding how health professionals approach this issue, explain the guidelines and offer support. A clearer understanding of risk reduction would potentially enable bereaved parents to articulate their experiences without becoming too self critical in questioning their own consistent adherence to the accepted guidelines.

Wilson AL.  
**The state of South Dakota's child: 2006.**  

The year 2005 brought an increase in the number of births in South Dakota and a decrease in both low birth weight and infant mortality for both its white and American Indian babies. Paralleling national trends, this report shows that South Dakota has declining rates of smoking during pregnancy, births to women less than 18 years of age, and failure to access prenatal care or to access it during the final months of pregnancy. The South Dakota rates on these indicators of perinatal health, however, are higher for American Indian women than for white women. Relationships between the rates of maternal smoking, youthful mothers, prenatal care and birth weight to infant mortality are discussed. Another positive observation in the South Dakota 2005 data is a decrease in the rate of death due to Sudden Infant Death Syndrome (SIDS). The current South Dakota SIDS rate reflects a decline that is approaching what is observed nationally.
Morrissey MV.
Our first child was incompatible with life: understanding miscarriage as a lived experience.

Miscarriage as a medical experience is removed several times from the lived experience of a mother, partner and family. Often there is no space to grieve and mourn to facilitate that. In this article it will be shown that the lived experience of a miscarriage challenges the notion of care and loss forever. Ask a woman the memory is always there and very often the pain. It's important to let the wisdom of sadness speak and emotions to flow unhurried. Emotions need to be set free. What is less appreciated is that professional carers often feel at a loss themselves and they too need love and support. Staff and relatives are sometimes in different contexts of awareness and information about diagnosis and all aspects of care often need to be translated. The experience of loss is not only related to death but to loss of hope, dreams, function and handing over care to another carer. Dealing with loss is a feature of being human, but dealing with multiple losses is sadly often a part of being a practicing nurse and midwife. It is time to really appreciate what it means to live through a miscarriage. What we need now to do is move beyond a medical experience into creating a space where a woman can feel safe and loved to grieve for all that is lost and all that could have been.

Full-text available at: http://drogoresearch.com/ (not a U.S. Government site)

Edirisinghe A, Samarasekara A.
Sudden unexpected death of an infant.

In the sudden infant death syndrome (SIDS) a sleeping infant is discovered lifeless. SIDS is a recognized medical disorder in the International Classification of Deaths. However, the Annual Health Bulletin of Sri Lanka has not documented any death due to SIDS. A post-mortem examination was performed according to the SIDS Autopsy Protocol of the National SIDS Council of Australia, on an infant who had died unexpectedly. This case illustrates the importance of having a protocol of our own to diagnose SIDS.

Hospital practice in neonatal period to prevent infant sudden death syndrome.

Objective: To describe hospital care for newborns in the Instituto Mexicano del Seguro Social (IMSS), as well as all the recommendations given to parents to prevent sudden infant death syndrome (SIDS) at home. Material and Methods: There were twenty-eight IMSS hospitals randomly selected from four geographical areas of the country, under a stratified sampling method according to the number of births per year. The method used was newborns direct observation in the neonatal care areas, and to fill out a questionnaire
applied by trained observers. This questionnaire was adapted from the Maternity Advice Study that includes hospital care for newborns and all the recommendations that parents have to do for newborns at home. Results: The newborns in neonatal areas used to sleep in lateral position (80 and 67%). Baby cradles with medium firmness and elevated headrest were predominant in the areas surveyed. Babies were generally wrapped-up from the neck to down, tightly enough that it prevented arm and leg movement. Parents received information on how to prevent SIDS at home, and up to 21% of them received no information at all. Conclusions: There were no specific practices at all the hospitals in this survey to diminish SIDS. It is necessary to organize specific health actions to diminish the risk of SIDS at home.