95 GLOBAL CHILD ADVOCACY

doi:10.1136/archdischild-2012-302724.0095

S Berman. *Children's Hospital, University of Colorado School of Medicine, Aurora, CO, USA*

Pediatricians and other clinicians who care for children around the globe are aware of the need to address the social determinates of childhood illness and advocate for children and their families living in their communities. Pediatricians have a unique perspective on the health and wellbeing of children and families living in their communities since they are the only professionals who routinely care for and follow preschool children. Pediatricians throughout the world are usually highly regarded by families and respected within their communities. Because of this respect, they have special opportunities to influence child and family policy.

Advocacy is defined by the 4 P's: personal experience, persistence/patience, passion, and principles. Personal experience usually determines the population or issue for which you decide to advocate. An effective advocate must be persistent and patient because it is difficult to change both policy and health care systems. Passion is also necessary for effective advocacy. An effective advocate feels personally connected to his or her issue. The final P in advocacy is to be principled. This means having a strong sense of integrity, credibility, fairness, and responsibility. Having integrity means a commitment to gain as complete an understanding of the issue as possible. Having credibility means that you will serve the best interests of children. Being fair means your policy recommendations will be based on a uniform standard of care for all children. Finally being responsible means recognizing how the consequences of the policy or advocacy efforts might have unintended effects.

96 WHY IS IT IMPORTANT TO INVEST IN PAEDIATRIC HEALTH CARE?

doi:10.1136/archdischild-2012-302724.0096

F Waldhauser. *Platform Political Paediatrics ('Politische Kindermedizin'), Vienna, Austria*

The knowledge about a positive correlation between life expectancy and gross domestic product (GDP) is a commonplace. Also a positive correlation between mortality of children less than 5 yrs (U5MR) and health expenditure is well established. The drastic difference in child mortality between economically developed and economically underdeveloped countries is a point in case. Likewise, after the first gulf war child mortality increased by more than 100% in Iraq on economic sanctions.

In economically developed countries, which finance their health system sufficiently, a fundamental question is whether this money does arrive at all patients, who need it, or does it get lost for supplementation of outdated structures, bureaucracy and administration or for unjustified profits of stakeholders. For example, health expenditure and child mortality are 16.0% (GDP) and 7.8 ‰ (U5MR) in the USA vs. 9.1 and 3.0 in Sweden. In the early 2000's Eastern Austria supplied 1.385 hospital beds for its sick children, the German part of Switzerland (with a similar population of just below 5 millions) supplied 762 beds, although U5MR was the same (5.5 ‰; in 2001) in both countries.

However, because of a dramatic lake of international, comparable data it is difficult to pinpoint strength and weaknesses of paediatric health care systems of different countries.

In coming years, child advocacy should fight for

a. adequate economic support of paediatric health care,
b. for the direct benefit of all sick children from health expenditure and
c. for provision of international comparable data on paediatric patients.

97 WHAT IS THE ASSOCIATION BETWEEN SCREEN TIME AND OUTCOMES FOR CANADIAN CHILDREN?

doi:10.1136/archdischild-2012-302724.0097

[1,2]SC Tough, [1]SW McDonald, [1,3]M Vekved, [4]K Benzies, [1]M Hicks, [3]J Siever. *[1]Paediatrics; [2]Community Health Sciences, University of Calgary; [3]Public Health Innovation and Decision Support, Alberta Health Services; [4]Nursing, University of Calgary, Calgary, AB, Canada*

Background and aims To determine the association between screen time and child outcomes.
Methods 706 mothers who were part of a longitudinal pregnancy cohort were mailed a questionnaire when children were 6 to 8 years of age. Mothers reported the amount of time children spent with computers, television, and video games on an average school day (screen time), BMI, child behavior, and physical activity. Using Pearson chi-square tests or independent sample t-tests, children who had more than 2 hours screen time on an average school day were compared to those who had 2 hours or less.
Results 450 mothers completed the questionnaire (response rate 64%). 30% of children had more than 2 hours of screen time during school days, and these children were more likely to take longer than 30 minutes to fall asleep (25% vs. 15%, p=0.006) and less likely to exhibit prosocial behavior (mean 12.88 vs. 13.71, p=0.028). There was no association between screen time and BMI or time spent in physical activity. Compared to mothers of children had 2 hours or less of screen time, mothers of children who had more than 2 hours of screen time were less likely to be satisfied with their child's level of physical activity (76% vs. 89%, p<0.001).
Conclusions The Canadian Paediatric Society guideline recommends no more than 2 hours of screen time per day. More than a third of children exceed this limit on school days, and this may have important implications for children's sleep and behavior in childhood.

98 LEAD, MERCURY AND CADMIUM LEVELS IN CORD BLOOD, BREAST MILK AND NEWBORN HAIR

doi:10.1136/archdischild-2012-302724.0098

[1]A Dursun, [1]K Yurdakok, [1]SS Yalcin, [1]G Tekinalp, [2]O Aykut, [2]G Orhan, [2]GK Morgil. *[1]Department of Pediatrics, Hacettepe University Faculty of Medicine; [2]Analytic Toxicology Laboratory, Refik Saydam National Public Health Agency, Ankara, Turkey*

Background and aim Lead, mercury and cadmium are widely exposed environmental pollutants throughout the world. In this study, we aimed to investigate the level of exposure to lead(Pb), mercury(Hg) and cadmium(Cd) during intrauterine life.
Methods We included 123 mother-infant pairs between December 2006 and January 2007. Umbilical cord blood collected immediately after delivery while breast milk and newborn hair samples collected between 3–10th postpartum days. All the specimens analyzed by Inductively Coupled Plasma Mass Spectrometry.
Results Cord blood samples Pb was present in 99.2%(the mean 1.66±1.6μg/dl) while Hg in only 1.7% and Cd in 19.8%(ranged 0–6.71μg/L). Cord blood Pb was higher than ≥2μg/dl in 29% of the samples. Pb, Hg and Cd were detectable in all the newborn hair samples. Among breast milk samples 83.2% had detectable lead levels(mean 14.5±12.1μg/L). Presence of Hg and Cd in breast milk samples were 53.3% and 9% respectively. Cord blood lead levels were significantly higher when maternal age >35 years. Breast milk Cd levels were significantly higher in women who were residing close to the major city waste site. Cord blood Cd levels were significantly higher in women consuming more than two fish weekly. Maternal exposure to environmental tobacco smoking(ETS) resulted increased newborn hair Pb and Cd levels.
Conclusion Intrauterine heavy metal exposure is an important concern for pediatricians. Most samples had detectable levels for Pb, Hg, Cd indicating long term maternal exposure and considerable

number exceeds the present accepted safety levels at cord and breast milk samples. Preventing ETS, limiting fish consumption and improved living conditions for pregnant women may decrease exposure levels.

99 PELOD-2: AN UPDATE OF THE PEDIATRIC LOGISTIC ORGAN DYSFUNCTION SCORE

doi:10.1136/archdischild-2012-302724.0099

[1,2]S Leteurtre, [2,3]A Duhamel, [2,3]J Salleron, [2,4]B Grandbastien, [5]J Lacroix, [1,2]F Leclerc, *on behalf of the Groupe Francophone de Réanimation et d'Urgences Pédiatriques (GFRUP). [1]Pediatric Intensive Care Unit, Jeanne de Flandre University Hospital; [2]EA2694, Univ Lille Nord de France, UDSL; [3]Department of Biostatistics, CERIM, University of Medicine; [4]Department of Epidemiology and Public Health, Calmette Hospital, Lille, France; [5]Pediatric Intensive Care Unit, Sainte-Justine Hospital, Université de Montréal, Montréal, QC, Canada*

Background and aims Organ dysfunction scores, such as the PEdiatric Logistic Organ Dysfunction (PELOD) score developed in 1999, are primarily designed to describe the severity of organ dysfunction. This study was undertaken to update and improve the PELOD score, using a larger and more recent dataset.

Methods We did a prospective, observational, multicentre cohort study in nine French-speaking multidisciplinary, tertiary-care PICUs of university-affiliated hospitals between June 2006 and October 2007. We collected data on variables considered for the PELOD-2 score at seven time-points after PICU admission: days 1, 2, 5, 8, 12, 16 and 18, plus PICU discharge. For each variable, the most abnormal value observed during each time point was collected. Identification of the best variable cutoffs was performed using bivariate, multivariate regressions and bootstrap process. The outcome was vital status at PICU discharge. We used area under receiver operating characteristic curve (AUC) to evaluate discrimination and Hosmer-Lemeshow goodness-of-fit test to evaluate calibration.

Results We included 3671 consecutive patients (median age 15.5 months IQR 2.2–70.7). Mortality rate was 6.0% (222 deaths). Discrimination and calibration of the PELOD 2 score were 0.93 and 9.31 (p=0.317) respectively.

Conclusion We developed and validated the PELOD-2 score, which allows assessment of the severity of cases of MODS in PICU with a continuous scale. The score will be in the public domain, which means that it can be freely used in clinical trials.

100 NEONATAL DISEASE SEVERITY SCORES AND THEIR PREDICTIVE VALUE 3FOR EARLY MORTALITY: A POPULATION-BASED STUDY ON SUBGROUPS OF VLBW INFANTS

doi:10.1136/archdischild-2012-302724.0100

[1]R Hentschel, [1]K Günther, [2]W Vach, [3]M Teufel, [4]T Böhler, [5]M Mohrmann, [6]J Arand, [7]I Dick, [8]I Bruder, [9]W Kachel. *[1]Neonatology/Intensive Care, Center for Pediatrics and Adolescent Medicine University of Freiburg; [2]Div. Clinical Epidemiology, Institute of Medical Biometry and Medical Informatics, University Medical Center Freiburg, Freiburg im Breisgau; [3]Dept. Pediatrics, Academic Hospital Sindelfingen-Böblingen, Böblingen; [4]Medical Service of Statutory Health Insurance Companies (MDK) Baden-Württemberg, Karlsruhe; [5]Medical Service of Statutory Health Insurance Companies (MDK) Baden-Württemberg, Lahr; [6]Div. Neonatology, Univ. Children's Hospital Tübingen, Tuebingen; [7]Registry of Neonatal Quality Assurance Program, Baden-Württemberg Chamber of Physicians; [8]Registry of Baden-Württemberg Hospital Quality Assurance (GeQiK), Stuttgart; [9]Dept. Pediatrics, Academic Hospital Heilbronn, Heilbronn, Germany*

Background and aims Benchmarking of newborn mortality needs risk-adjustment of data for heterogeneous sub-populations. To assess utility of neonatal disease severity scores CRIB, CRIB-II and PREM and impact of influenceable items (FiO_2max, FiO_2min, body temperature (BT) base excess (BE)) to predict mortality in VLBW infants (*VLBW*), ELBW infants < 750g (*BW750*), g.a. 22–25 weeks (*GA22–25*).

Methods Analysis of birth cohorts of years 2003–2008 from the Baden-Württemberg registry. Inclusion criteria: GA < 33 weeks and BW < 1.500g. Variables considered: GA; BW; gender; BT; FiO_2max; FiO_2min; BE; malformation; death. Calculation of standard CRIB, CRIB-II and PREM with/without omission of selective items. Calculation of predictive value of scores/subscores for whole cohort *VLBW*, subgroups *BW750* and *GA22-25* using AUC of ROC curves. Wilcoxon/Mann-Whitney U-test, Fishers exact test, Pearson-Chi-Square test.

Results Total of 5.340 cases, 862 cases < 750g. AUC for *VLBW/BW750*: CRIB 0.89*/0.77, CRIB-II 0.86*/0.78, PREM 0.86*/0.77 (*p<0.01). For *GA22-25* AUC of CRIB/PREM was 0.80/0.70. Lower AUC of all 3 modified scores without BT and/or BE, for instance PREM=0.82 *(VLBW)* and 0.73 *(BW750)*. AUC of CRIB without influenceable parameters dropped for *VLBW* from 0.89 to 0.81, for *BW750* from 0.77 to 0.66 (compared to modified CRIB-II=0.71, modified PREM=0.73).

Conclusions Standard CRIB is superior to standard CRIB-II, standard PREM, and all score modifications without influenceable items. No difference exists between the 3 scores when omitting influenceable parameters. For ELBW infants < 750g all standard scores are equally predictive, but without influenceable parameters AUC of CRIB is inferior to that of CRIB-II or PREM.

101 FETAL NUTRITION—WHAT CAN WE LEARN TO BETTER NOURISH THE PRETERM INFANT?

doi:10.1136/archdischild-2012-302724.0101

WW Hay. *Department of Pediatrics, University of Colorado School of Medicine, Aurora, CO, USA*

Most preterm infants fail to grow after birth and end up growth restricted by term. The main reason is inadequate nutrition. From studies of normal fetal growth and development, we have gained important insight into the requirements for such growth and development that could be applied to the preterm infant of the same preterm gestational age. Maintaining normal blood **oxygen** content values to support the high rates of cellular metabolism and protein synthesis is essential to promote normal rates of growth. **Glucose** should be supplied at rates that maintain normal fetal glucose concentrations. Normal human fetal development involves considerable body **fat** deposition, but more emphasis should be placed on providing essential fatty acids to promote membrane development in neural tissue. Amino acid utilization rates based on fetal animal growth data, when scaled to human fetal growth rates, predict amino acid requirements of 3.6–4.8 g//kg/day at ~24–30 weeks gestation. There is a linear correlation between **amino acid** supply to preterm infants and **protein** balance, at least through 3 g/kg/day. While energy is required for protein synthesis, above 80–90 non-protein kcal/kg/d, there is no further increase in protein gain for an increase in energy intake. Improved protein and energy intake in preterm infants that more closely matches fetal nutrition is associated with improved brain growth and neurocognitive outcomes. **Insulin** concentrations that result from such nutrition probably are sufficient for normal growth; insulin infusions do not add more to promote growth than increased amino acid/protein nutrition and produce significant adverse effects.

102 RANDOMIZED, CONTROLLED TRIAL OF SLOW VERSUS RAPID ENTERAL FEEDING ADVANCEMENTS ON THE CLINICAL OUTCOMES OF PRETERM INFANTS 750–1250G

doi:10.1136/archdischild-2012-302724.0102