

Current Literature

Targeting health visitor care: lessons from Starting Well.

Wright C. M., Jeffrey S. K., Ross M. K., Wallis L. & Wood R. (2009) *Archives of Disease in Childhood*, 94, 23–27.

Background UK child health promotion guidelines expect health visitors to assess family needs before new babies are aged 4 months and offer targeted care on that basis thereafter. Data from an intensive family support programme were used to assess how accurately family needs can be predicted at this stage.

Design A population-based cohort of 1202 families with new babies receiving an intensive health visiting programme. Analysis of routinely recorded data.

Setting Starting Well project, Glasgow, UK.

Predictors Health visitor rating of family needs.

Main outcome measures Families receiving high visiting rates or referred to social work services.

Results Of 302 families rated high need, only 143 (47%) were identified by age 4 months. Visiting rates in the first year for those initially rated high need were nearly double those for the remainder, but around two-thirds of those with high contact rates/referred to social work were not initially rated high need. Six family characteristics (no income, baby born preterm, multiple pregnancy, South Asian, prior social work/criminal justice involvement, either parent in care as a child) were identified as the commonest/strongest predictors of contact rates; 1003 (83%) families had one such characteristic and/or lived in a highly deprived area, including 228 (93%) of those with high contact rates and 157 (96%) of those referred to social work.

Conclusions Most families at risk will not be identified on an individual basis in the early weeks. Most families in deprived areas need continued input if the most vulnerable families are to be reliably identified.

This paper uses data from a study on an intensive health visiting programme for babies in a deprived district of Glasgow, UK, in order to make an obvious, but nonetheless important, point about identification of families in need of health visiting services. The background to this is that Scotland is implementing a more targeted system of health visiting, where health visitors are expected to be able to identify high-risk children by the time they have completed their primary immunizations at 4 months age. Those that are identified will receive an enhanced health visiting service, while those that fall into the low-risk group will

not receive further routine health visiting appointments apart from at scheduled immunization visits.

The findings are not surprising; health visitors identified less than half of the families who subsequently had demonstrably higher needs, while the risk factors which predicted higher needs affected the majority of families in this very deprived study area. The authors make the point that in these areas it would be more effective and more efficient to provide universal services rather than try and target them. However, if this were to be implemented, the same problem would be shifted to the somewhat less deprived neighbourhoods.

Health visitors are an effective and expensive resource. Health planners want to ensure they are used to their maximum effect. Evidence, particularly from the USA, shows how intensive and enhanced nurse-based home visiting services improve outcomes in the most disadvantaged families. However, it is well understood that even the most discriminating methods for identifying high-risk families tend to miss out more than are screened in. The authors seem understandably concerned that too rigid an implementation of the 4-month-age cut-off will be detrimental. They make the vitally important policy point that introducing a new service on a backdrop of no previous service is a different matter to replacing an existing universal service (even an inequitable one) with a targeted system of low sensitivity.

Richard Reading

Health systems and the right to health: an assessment of 194 countries.

Backman G., Hunt P., Khosla R., Jaramillo-Strouss C., Fikre B., Rumble C., Pevalin D., Paez D. A., Pineda M. A., Frisanca A., Tarco D., Motlagh M., Farcasanu D. & Vladescu C. (2008) *The Lancet*, 372, 2047–2085.

Sixty years ago, the Universal Declaration of Human Rights laid the foundations for the right to the highest attainable standard of health. This right is central to the creation of equitable health systems. We identify some of the right-to-health features of health systems, such as a comprehensive national health plan, and propose 72 indicators that reflect some of these features. We collect globally processed data on these indicators for 194 countries and national data for Ecuador, Mozambique, Peru, Romania and Sweden. Globally processed data were not available for 18 indicators for any country, suggesting that organizations that obtain such data give insufficient attention

to the right-to-health features of health systems. Where they are available, the indicators show where health systems need to be improved to better realize the right to health. We provide recommendations for governments, international bodies, civil-society organizations and other institutions, and suggest that these indicators and data, although not perfect, provide a basis for the monitoring of health systems and the progressive realization of the right to health. Right-to-health features are not just good management, justice or humanitarianism, they are obligations under human-rights law.

The year 2008 was the 60th anniversary of the signing of the Universal Declaration of Human Rights and one of the articles in this defining document was Article 12 – which asserts everyone's right to the highest attainable standard of health. Since then a great deal has been achieved by lawyers, activists, human rights workers and health professionals in driving through legal, political and administrative change in the pursuit of the right to health. Those interested in promoting children's rights, which also include the right to health and health care, could learn from much of this endeavour.

This paper describes a large international project that attempted to define measures, and then to monitor how well the different countries in the world were progressing towards the goal of Article 12. Data are not widely available, there are some deficiencies demonstrated in the reliability of the internationally available data in comparison with nationally available data, and some elements of the right to health are not measurable. Even given all these caveats, progress is patchy, and doesn't always correspond to economic development, although in general the greater resources of higher-income countries do seem to make a difference.

This is an important mark in the sand on which to monitor progress in the future.

Richard Reading

Outcomes of conduct problems in adolescence: 40-year follow-up of national cohort.

Colman I., Murray J., Abbott R. A., Maughan B., Kuh D., Croudace T. J. & Jones P. B. (2009) *BMJ*, 338, a2981.
DOI: 10.1136/bmj.a2981.

Objective To describe long-term outcomes associated with externalizing behaviour in adolescence, defined in this study as conduct problems reported by a teacher, in a population-based sample.

Design Longitudinal study from ages 13–53.

Setting The Medical Research Council National Survey of Health and Development (the British 1946 birth cohort).

Participants A total of 3652 survey members assessed by their teachers for symptoms of externalizing behaviour at age 13 and 15.

Main outcome measures Mental disorder, alcohol abuse, relationship difficulties, highest level of education, social class, unemployment and financial difficulties at ages 36–53.

Results A total of 348 adolescents were identified with severe externalizing behaviour, 1051 with mild externalizing behaviour and 2253 with no externalizing behaviour. All negative outcomes measured in adulthood were more common in those with severe or mild externalizing behaviour in adolescence, as rated by teachers, compared with those with no externalizing behaviour. Adolescents with severe externalizing behaviour were more likely to leave school without any qualifications (65.2%; adjusted odds ratio 4.0, 95% confidence interval 2.9 to 5.5), as were those with mild externalizing behaviour (52.2%; 2.3, 1.9 to 2.8), compared with those with no externalizing behaviour (30.8%). On a composite measure of global adversity throughout adulthood that included mental health, family life and relationships, and educational and economic problems, those with severe externalizing behaviour scored significantly higher (40.1% in top quarter), as did those with mild externalizing behaviour (28.3%), compared with those with no externalizing behaviour (17.0%).

Conclusions Adolescents who exhibit externalizing behaviour experience multiple social and health impairments that adversely affect them, their families and society throughout adult life.

I thought we knew, or at least strongly suspected, this but it still makes depressing reading for those of us who deal daily with children and young people who have externalizing behaviour and conduct problems. These young people have few friends, either among their peers, parents and professionals dealing with them. However, this paper has some more positive messages. First, we are learning more and more about the positive benefits of early intervention focused on appropriate emotional and behavioural responses, parenting skills and social and educational programmes. Although these programmes have mixed and sometimes modest effects, collectively at a population level they have major public health benefits. Second, the broad relationships presented here hide a range of outcomes. Conduct problems are a risk factor for future social and health impairments but not an automatic sentence. There is extensive research and interest in resilience factors, which may be genetic, constitutional, or be related to family and environmental circumstances. Whether this is all determined by adolescence or not is questionable although many would argue that interventions even at this stage can have positive long-term benefits.

Richard Reading

The relationship between maternal depression, in-home violence and use of physical punishment: what is the role of child behaviour?

Silverstein M., Augustyn M., Young R. & Zuckerman B. (2009) *Archives of Disease in Childhood*, 94, 138–143. DOI: 10.1136/adc.2007.128595.

Background The combined impact of maternal depression and in-home violence, and how their relationship with physical punishment varies with child behaviour are unknown.

Objectives To determine the combined impact of maternal depression and violence exposure on smacking and explore the role of child behaviours in this relationship.

Methods Multivariable regression analysis of a sample of kindergarten children. Maternal depressive symptoms, violence exposure and smacking were measured by parent interview. Child behaviours were reported by teachers.

Results A total of 12 764 mother–child dyads were examined. The adjusted odds ratio for smacking among depressed mothers was 1.59 (95% CI 1.40 to 1.80), mothers exposed to in-home violence 1.48 (95% CI 1.18 to 1.85) and dually exposed mothers 2.51 (95% CI 1.87 to 3.37). Adjusting for child self-control or externalizing behaviour did not change these associations, and no effect modification by child behaviour was detected. Among mothers smacking children, depression was associated with increased smacking frequency [adjusted incident rate ratio (aIRR) 1.12; 95% CI 1.01 to 1.24], but became borderline significant after adjusting for child self-control or externalizing behaviour (aIRRs 1.10; 95% CI 1.00 to 1.21). Depressed mothers exposed to violence demonstrated higher rates of smacking (aIRR 1.29; 95% CI 1.09 to 1.53); this remained stable when adjusting for child behaviours.

Conclusion Maternal depression and violence exposure are associated with smacking, particularly when depression and violence coexist, when they are also associated with smacking frequency. Child self-control and externalizing behaviour do not substantially impact the association between maternal depressive symptoms, violence exposure and smacking.

This is a complex paper on a complex subject. Paediatricians and psychologists are interested in physical punishment for two main reasons (three if you count the violation of children's rights) – the association with physical maltreatment and the negative outcomes of this type of behaviour modification. This study uses a very large questionnaire-based US study to measure the associations between in-home violence, maternal depression, and the use of physical punishment before and after child behavioural or temperamental characteristics are accounted for. The big question here is whether certain aspects of a child's temperament or behaviour can act as either protective or poten-

tiating factors, which might mediate the relationship between family risk factors and physical punishment.

The results need to be interpreted fairly carefully. Maternal depression and in-home violence both increase the chances of mothers using physical punishment and this does not seem to be modified by child temperamental factors. However, one result which is not highlighted in the abstract is that externalizing behaviour and lower self-control both also increase the risk of physical punishment. So the initial assumption that smacking seems related only to maternal depression or in-home violence is not entirely correct. This is the basis for the paper's final sentence which says that further research on physical punishment needs to examine what both parent and child bring to the punishment interaction.

Richard Reading

Currently recommended treatments of childhood constipation are not evidence based: a systematic literature review on the effect of laxative treatment and dietary measures.

Pijpers M. A. M., Tabbers M. M., Benninga M. A. & Berger M. Y. (2009) *Archives of Disease in Childhood*, 94, 117–131. DOI: 10.1136/adc.2007.127233.

Introduction Constipation is a common complaint in children and early intervention with oral laxatives may improve complete resolution of functional constipation. However, most treatment guidelines are based on reviews of the literature that do not incorporate a quality assessment of the studies.

Objective To investigate and summarize the quantity and quality of the current evidence for the effect of laxatives and dietary measures on functional childhood constipation.

Methods The Medline and Embase databases were searched to identify studies evaluating the effect of a medicamentous treatment or dietary intervention on functional constipation. Methodological quality was assessed using a validated list of criteria. Data were statistically pooled, and in case of clinical heterogeneity results were summarized according to a best evidence synthesis.

Results Of the 736 studies found, 28 met the inclusion criteria. In total 10 studies were of high quality. The included studies were clinically and statistically heterogeneous in design. Most laxatives were not compared with placebo. Compared with all other laxatives, polyethylene glycol (PEG) achieved more treatment success (pooled relative risk: 1.47; 95% CI 1.23 to 1.76). Lactulose was less than or equally effective in increasing the defecation frequency compared with all other laxatives investigated. There was no difference in effect on defecation frequency

between fibre and placebo (weighted standardized mean difference 0.35 bowel movements per week in favour of fibre, 95% CI 0.04 to 0.74).

Conclusion Insufficient evidence exists supporting that laxative treatment is better than placebo in children with constipation. Compared with all other laxatives, PEG achieved more treatment success, but results on defecation frequency were conflicting. Based on the results of this review, we can give no recommendations to support one laxative over the other for childhood constipation.

Macrogol (polyethylene glycol) laxatives in children with functional constipation and faecal impaction: a systematic review.

Candy D. & Belsey J. (2009) *Archives of Disease in Childhood*, **94**, 156–160.

DOI: 10.1136/adc.2007.128769.

As the evidence base supporting the use of laxatives in children is very limited, we undertook an updated systematic review to clarify the issue. A comprehensive literature search was carried out to identify randomized controlled trials of polyethylene glycol (PEG) versus either placebo or active comparator, in patients aged <18 years with primary chronic constipation. Outcomes were assessed as either global assessments of effectiveness or differences in defecation rates. Seven qualifying studies involving 594 children were identified. Five were comparisons of PEG with lactulose, one with milk of magnesia and one with placebo. Study duration ranged from 2 weeks to 12 months. PEG was significantly more effective than placebo and either equivalent to (two studies) or superior to (four studies) active comparator. Differences in study design precluded meaningful meta-analysis. Lack of high-quality studies has meant that the management of childhood constipation has tended to rely on anecdote and empirical treatment choice. Recent publication of well-designed randomized trials now permits a more evidence-based approach, with PEG-based treatments having been proven to be effective and well-tolerated first-line treatment.

Two systematic reviews in the same issue of a journal which address virtually the same point but come to different conclusions: a fairly familiar scenario! However, it is possible to reconcile the two. The first review asked whether laxatives as a treatment for constipation were supported by good evidence and the conclusions seem to be they are not. The quality of studies is generally poor, which is often the case for treatments that have been used for many years. The second study compares polyethylene glycol laxatives with others and again finds a poor

quality of evidence. Both studies, however, suggest that the available evidence suggests that polyethylene glycol laxatives seem to be more effective, at least on some measures of outcome.

Richard Reading

Infant feeding, solid foods and hospitalization in the first 8 months after birth.

Quigley M. A., Kelly Y. J. & Sacker A. (2009) *Archives of Disease in Childhood*, **94**, 148–150.

DOI: 10.1136/adc.2008.146126.

Most infants in the UK start solids before the recommended age of 6 months. We assessed the independent effects of solids and breastfeeding on the risk of hospitalization for infection in term, singleton infants in the Millennium Cohort Study ($n = 15\,980$). For both diarrhoea and lower respiratory tract infection (LRTI), the monthly risk of hospitalization was significantly lower in those receiving breastmilk compared with those receiving formula. The monthly risk of hospitalization was not significantly higher in those who had received solids compared with those not on solids (for diarrhoea, adjusted odds ratio 1.39, 95% CI 0.75 to 2.59; for LRTI, adjusted odds ratio 1.14, 95% CI 0.76 to 1.70), and the risk did not vary significantly according to the age of starting solids.

One reason for describing this study is that it offers reassurance that early weaning does not predispose to increased infection risks. There appears little evidence that it predisposes to other health risks either although I am sure there will be those that argue it raises risks for immune mediated bowel disease such as celiac disease. However, the second reason is to bring attention to the associated editorial [Ward Platt M. P. (2009) Demand weaning: infants' answer to professionals' dilemmas. *Archives of Disease in Childhood*, **94**: 79–80. DOI: 10.1136/adc.2008.150011.], which ought to be prescribed reading for all paediatricians, midwives, health visitors, primary care physicians, etc. Martin Ward Platt argues eloquently for letting our advice be led by infants and mothers good sense. This applies to weaning as much, if not more so, than to other aspects of child welfare.

Richard Reading

Child abuse and neglect: is it time for a public health approach?

O'Donnell M., Scott D. & Stanley F. (2008) *Australian and New Zealand Journal of Public Health*, **32**(4): 325–330.

DOI: 10.1111/j.1753-6405.2008.00249.x.

Australia is seeing an unprecedented increase in the rate of child protection notifications and children being taken into care. The

burden of such high levels of notifications and removals impact not only the children and families but also the system that is trying to resource them. The concern is that these increases are unsustainable and overloaded child protection systems can be dangerous for the vulnerable families and children they are trying to protect and support. This paper hopes to raise some alternative thinking as to the overall approaches to child abuse and neglect with a greater focus on prevention. Is it time to consider a public health approach, using population-based measures of child abuse and neglect to accurately describe the epidemiology of population risk and protective factors? Should we investigate the potential of universal health, welfare and education services as platforms for prevention? And should we investigate whether the provision of secondary prevention for vulnerable families that address major contributing factors, such as parental substance dependence and mental health issues are effective in reducing abuse of children in these families?

A lot is said about adopting a public health approach to child maltreatment and this paper describes many aspects of this type of approach. There is of course, nothing new under the sun, and the public health approach embodies preventive principles that we have been aware of for many years. However, in addition it argues for accurate and up to date data collection and epidemiological monitoring systems, reliable definitions, sophisticated health economic cost-benefit analyses of different options and strategies, a realization that child maltreatment is a chronic long-term problem for children, and a focus on outcomes and consequences rather than on the acute event. It is only by doing this that the real importance of emotional abuse and neglect can be emphasized to other professionals, politicians, the media and the general public. The authors finish by making the point, which I feel is key, that this is fundamentally a question of children's rights and any country that has ratified the UN Convention on the Rights of the Child has a legal obligation to implement many of the strategies described in this paper. Many countries already are making headway, and perhaps this underlies some of the progress described from the USA and Sweden. (see for example, the final chapter of the book by David Finkelhor on Child Victimization).

Richard Reading

Population-based prevention of child maltreatment: the U.S. 'Triple-P System' population trial.

Prinz R. J., Sanders M. R., Shapiro C. J., Whitaker D. J. & Lutzker J. R. (2009) *Prevention Science*. Published online. DOI: 10.1007/s11121-009-0123-3.

The prevention of child maltreatment necessitates a public health approach. In the U.S. Triple-P System Population Trial,

18 counties were randomly assigned to either dissemination of the Triple P-Positive Parenting Program system or the services-as-usual control condition. Dissemination involved Triple P professional training for the existing workforce (over 600 service providers), as well as universal media and communication strategies. Large effect sizes were found for three independently derived population indicators: substantiated child maltreatment, child out-of-home placements, and child maltreatment injuries. This study is the first to randomize geographical areas and show preventive impact on child maltreatment at a population level using evidence-based parenting interventions.

Potentially this is a very important trial. It measures the overall effect of a strategy delivered to a whole population. This is the information policy makers' need and because it reflects what can be achieved in the real world, with a policy, rather than what is possible in the constrained confines of a randomized clinical trial. The intervention was ambitious and extensive, but followed public health principles of providing the least intervention to get an effect. The intervention was also stratified, so everyone was exposed to the media programme, most parents were exposed to the basic level of a brief awareness raising opportunity, and families at increasing levels of need were exposed to increasing intensity of intervention.

The trial was robustly conducted and inspire confidence in both the reliability and generalizability of the results. The paper describes some of the potential weaknesses of the study and tries to discount many of these. The authors' arguments are on the whole fairly convincing, and I believe this will be a key study in determining future policy, nevertheless interpretation of the results depends on taking underlying trends, some of which are counterintuitive, into account. For example, substantiated maltreatment cases increased in both study and control counties, but more so in the control counties, and while out-of-home placements and emergency department visits both fell in the study counties, they fell only to the pre-intervention levels in the control counties. The results were all strongly significant and in the expected direction but the anxiety that remains about the results is that they may simply reflect year-to-year variations in the underlying measures unrelated to preventive activities. The abstract does not give enough detail to appreciate this, it is worth reading the paper and judging for yourself. I have hesitated to air these criticisms of what seems an admirable trial, but for such important studies it is important to dissect the results in detail.

Richard Reading

Measles in Europe: an epidemiological assessment.

Muscat M., Bang H., Wohlfahrt J., Glismann S. & Mølbak K., for the EUVAC.NET Group. (2009) *The Lancet*, 373, 383–389.

Background Measles persists in Europe despite the incorporation of the measles vaccine into routine childhood vaccination

programmes more than 20 years ago. Our aim was therefore to review the epidemiology of measles in relation to the goal of elimination by 2010.

Methods National surveillance institutions from 32 European countries submitted data for 2006–2007. Data for age-group, diagnosis confirmation, vaccination, hospital treatment, the presence of acute encephalitis as a complication of disease and death were obtained. A total of 30 countries also supplied data about importation of disease. Clinical, laboratory-confirmed, and epidemiologically linked cases that met the requirements for national surveillance were analysed. Cases were separated by age: younger than 1 year, 1–4 years, 5–9 years, 10–14 years, 15–19 years, and older than 20 years. Countries with indigenous measles incidence per 100 000 inhabitants per year of 0, less than 0.1, 0.1–1, and more than 1 were grouped into categories of zero, low, moderate, and high incidence, respectively.

Findings For the 2 years of the study, 12 132 cases of measles were recorded with most cases ($n = 10\,329$; 85%) from five countries: Romania, Germany, UK, Switzerland and Italy. Most cases were unvaccinated or incompletely vaccinated children; however, almost a fifth were aged 20 years or older. For the same 2 years, seven measles-related deaths were recorded. High

measles incidence in some European countries revealed suboptimum vaccination coverage. Of the 210 cases that were reported as being imported, 117 (56%) came from another country within Europe and 43 (20%) from Asia.

Interpretation The suboptimum vaccination coverage raises serious doubts that the goal of elimination by 2010 can be attained. Achievement and maintenance of optimum vaccination coverage and improved surveillance are the cornerstones of the measles elimination plan for Europe.

This report describes the extent of measles in Europe – and shows a continuing problem localized to some specific countries associated with low coverage of immunization. The World Health Organization policy for Europe is for over 95% coverage of both MMR (Measles Mumps and Rubella) vaccinations – a target that some countries are falling far short of. This does not just have implications within those countries but results in increased numbers of imported cases in other countries. The other important finding in this study is the high burden of cases and morbidity among older children and among adults. Measles is a disease that could be eradicated if immunization coverage could be raised to consistently high levels.

Richard Reading