

MMR safety, and nearly a quarter (22.7%,  $n = 60$ ) were rated as “mixed”. In 2000, despite growing public concerns and widespread media coverage, fewer than 20 comment pieces were published. From 2001–2003 the tone of many articles was negative, mixed or neutral, thus conveying ambiguous or negative messages about MMR safety to health professionals, though from 2004 the tone changed and most comment pieces were broadly positive. Overall less than a quarter of comment pieces ( $n = 196$ , 22.7%) included reference to current recommendations or other guidance on MMR. This was particularly notable in the period from 1998–2001, following publication of the Wakefield paper in 1998.

**Conclusion:** During the MMR controversy journals and magazines aimed at health professionals may have added to uncertainty among practitioners by failing to reinforce current practice with evidence-based recommendations about MMR safety. The findings raise questions about how far journals and magazines should go in supporting current public health policy, and how far they should leave readers to make up their own minds.

### 077 ASSOCIATION BETWEEN VOLUME AND OUTCOME FOR ADULT GENERAL CRITICAL CARE UNITS IN ENGLAND, WALES AND NORTHERN IRELAND

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**Introduction:** Volume: outcome associations are well established in the surgical literature. In 1995, ICNARC first investigated whether a potential volume: outcome association existed in critical care but found no evidence. Since then, other international studies have investigated this both for all admissions and for admissions receiving mechanical ventilation. Most of these studies have found an association. This study re-investigates the volume: outcome association for admissions to critical care units in the UK, now using a much larger, more representative sample of critical care units.

**Methods:** Data were extracted from the Case Mix Programme Database (CMPD) for 672 626 admissions to 199 adult, general critical care units from 1995 to 2008. The critical care units were split into quartiles by volume of admissions over a two-year period from 1/1/06 to 31/12/07 (units with less than two years' data were scaled up). Multilevel logistic regression was performed to investigate the association between ultimate acute hospital mortality and quartile of volume, adjusted for case mix and hospital type. This analysis was then repeated solely for admissions receiving mechanical ventilation.

**Results:** Between 1/1/06 and 31/12/07 there were 154 905 admissions to 172 units. For all admissions and for mechanically ventilated admissions, crude ultimate acute hospital mortality decreased as volume increased across each quartile. The decrease in mortality was explained by case mix with lower severity of illness of admissions in units with higher volume. The results of a multilevel logistic regression analysis for all admissions found no evidence of an association between ultimate acute hospital mortality and quartile of volume, adjusted for case mix and hospital type ( $p = 0.126$ ). However, odds ratios for ultimate acute hospital mortality for mechanically ventilated admissions did decrease as volume increased across each quartile, but the association was not statistically significant ( $p = 0.182$ ).

**Conclusion:** For all admissions and for mechanically ventilated admissions to adult, general critical care units in England, Wales and Northern Ireland, this study found no evidence of an association between ultimate acute hospital mortality and the volume of admissions to the critical care unit.

### 078 INDEPENDENT SECTOR TREATMENT CENTRES: LEARNING FROM A SCOTTISH CASE STUDY

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**Objective:** The English Independent Sector Treatment Centre (ISTC) programme uses the private health care industry to provide elective surgery and other clinical services at a projected total cost of £5 billion. To date the government has contracted for £2.7 billion worth of services but the programme remains unevaluated because of a lack of published contract data and poor quality data returns. Scotland has a three year pilot ISTC, the Scottish Regional Treatment Centre (SRTC) worth £18.7 million the contract for which is now in the public domain. This study aims to conduct an independent evaluation of the performance of the SRTC during the first year of operation.

**Design:** A retrospective analysis of the SRTC comparing activity as reported by hospital episode statistics returned to ISD Scotland with volume and cost data in the SRTC contract and a 10-month audit carried out by management consultants Price Waterhouse Coopers (PWC).

**Setting and Participants:** All day case and inpatient activity at the SRTC from 1 December 2006 to 31 December 2007.

**Main Outcome Measure:** Activity and cost.

**Results:** The annual contract was based on payment for referrals to the SRTC, not actual treatments and specifies a 90% minimum payment on referral value. The contract was awarded on the basis of 2624 referrals a year at a total value of £5 667 464. According to ISD data, the SRTC performed 831 procedures (32% of annual contract volume) in the first 13 months worth £1 035 603 (18% of annual contract value). PWC's figures report 2200 referrals (84% to the SRTC at a cost of £2 642 000 (47%) in the first 10 months.

**Conclusions:** The SRTC contract is based on payments for referrals and not actual treatment, as were the wave one English ISTC contracts. This represents a major departure from the normal standards of reporting and commissioning. Also the non-default event exemption clause in the contract means referring health boards retain the risk for many situations where treatment is not completed. This appears to be resulting in payment for non activity which may mean as much as three quarters of the work paid for as referrals haven't been completed as treatments. Neither PWC's analysis nor claim of value for money can be substantiated. We recommend a moratorium on all ISTC contracts until the contracts have been published and properly evaluated with respect to work paid for and actual work carried out and quality of care.

## Measurement and recognition of adiposity

### 079 ACCURACY OF HEIGHT AND WEIGHT DATA FROM CHILD HEALTH RECORDS

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**Background:** Height and weight measurements routinely collected for child health records are potentially useful for both clinical practice and research, but there is limited knowledge of their accuracy.

**Data and Methods:** Height/length and weight measurements from clinics of the Avon Longitudinal Study of Parents and Children (ALSPAC) were used as a gold standard against which to assess the accuracy of routinely collected measurements recorded in the Personal

Child Health Record (PCHR). The study population was a subsample of children from ALSPAC who had height/length or weight measured both at an ALSPAC clinic and in the PCHR within two months of the ALSPAC clinic. Since ALSPAC and PCHR measurements were taken at slightly different ages, and since young children grow rapidly, comparisons needed to take account of age differences of measurements. To allow for this, comparisons were made between standard deviation scores (sds) using the 1990 growth reference. The difference between sds from clinic and PCHR measurements was assessed. If PCHR measurements are accurate, a mean difference of zero could be expected, assuming most children will not cross centiles of the reference curves in the (maximum) two months between measurements. Differences between height/length and weight measurements were assessed at age four months (N = 345), eight months (N = 1051), 12 months (N = 139), 18 months (N = 649), 25 months (N = 183), and 43 months (N = 123). Differences were examined using summary statistics and Bland-Altman plots; predictors of the differences were explored using linear regression.

**Results:** Accuracy of the routinely collected measurements was generally good. For weight, all mean differences were less than 0.08 sds (e.g. mean sds differences: at 4 months 0.049, 95% level of agreement -1.07 to 0.97, at 12 months 0.0025, 95% level of agreement -0.77 to 0.76). For height/length, mean sds differences were somewhat bigger than for weight, but still generally small (e.g. mean sds differences: at 4 months 0.43, 95% level of agreement -2.16 to 1.29, at 12 months 0.16, 95% level of agreement -1.32 to 1.00). The observed differences were not strongly or consistently affected by child anthropometry, sex, social class, birth weight, birth length, or maternal anthropometry.

**Conclusion:** Routinely collected height/length and weight data appear to have generally good accuracy, supporting their use in both clinical practice and research.

#### 080 PARENTAL RECOGNITION OF OVERWEIGHT IN CHILDREN AGED 6–8 YEARS: FINDINGS FROM THE GATESHEAD MILLENNIUM STUDY

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**Objectives:** To investigate parental recognition of childhood overweight and explore parents' understanding of and attitudes to adiposity in childhood.

**Design:** Questionnaires and focus groups within a longitudinal birth cohort study.

**Setting:** Gateshead, UK.

**Participants:** 539 parents of children in the Gateshead Millennium Study, of which 27 attended 6 focus discussion groups.

**Main Outcome Measures:** Parental perception of their child's weight status according to actual weight status as defined by International Obesity Taskforce (IOTF) cut-offs. Outcomes from focus groups included parental awareness of childhood overweight nationally, methods used by parents to identify overweight children and grounds for not engaging with the issue.

**Results:** There was poor agreement between perceived child weight status and actual weight status ( $k = 0.297$ ). More than two-thirds (68.8%) of parents of overweight or obese children identified their child as being of "normal" weight. Of those children correctly identified as being "overweight", 66.7% were in fact obese according to IOTF criteria. Although during focus groups parents demonstrated an awareness of childhood overweight being a problem nationally, they underestimated its

prevalence amongst the population. Parents tended to identify childhood overweight by using visual assessments and by comparing children within a class, school or area where only extreme cases were again categorised as "overweight". Consequently, the apparent lack of relevance of the problem to their children's school or own community, together with scepticism towards both media messages and clinical guidelines used to identify childhood overweight, commonly emerged as grounds for failing to recognise the issue. Parents also stated that diagnoses should be treated with caution as a child's body continually changes during the maturation process and phases of "chubbiness" may eventually be overcome during "growth spurts".

**Conclusions:** Parental recognition of both their child's overweight status and the scale of the problem nationally were poor. Parents neither use nor trust clinical measures and rely on extreme cases to identify unhealthy weight status in children. There is an urgent need to find methods to improve parental recognition of childhood overweight and obesity if parents are to play a full role in preventing this increasing public health problem.

#### 081 A 10-YEAR DECLINE IN SELF-RECOGNITION OF OBESITY: TRENDS IN SENSITIVITY AND SPECIFICITY FROM THREE POPULATION SURVEYS IN IRELAND

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**Objectives:** To examine trends in sensitivity and specificity of self-reported vs clinically measured body mass index (BMI) from three adult national lifestyle surveys over a 10 year period.

**Design and Participants:** Cross-sectional studies involving nationally representative samples in 1998, 2002 and 2007. Data on both self-reported and measured height and weight were available from 66 men and 142 women in 1998, 147 men and 184 women in 2002 and 909 men and 1128 women in 2007.

**Setting:** Interview based survey/measurement in mobile clinic or household of three representative samples in Ireland.

**Main Outcome Measures:** Trends in sensitivity and specificity in BMI classification of normal weight, overweight and obesity based on self-reported vs clinically measured height and weight.

**Results:** Sensitivity scores for the normal category improved across time but decreased for the overweight (75.3%→67.6%→66%) and obese categories (79.5%→64%→53.4%), demonstrating a decrease in the capacity for self-diagnosis of obesity. Simultaneously, specificity levels in the obese category remained consistently high (100%→98%→98.2%). In all three surveys, the sensitivity for the normal BMI category was high (>94%) indicating truly healthy subjects self-reported as healthy. Sensitivity and specificity varied by gender. Trends in measured obesity levels increased between SLÁN1998 and SLÁN2002 (21.2%→26%) but decreased to 24.4% in SLÁN2007. The differential between self-reported and measured obesity increased across the three surveys (4.4%→7.9%→10%).

**Conclusion:** While the capacity for self-recognition of normal BMI has improved over time, increasing numbers of overweight and obese people underreport their weight. Problems of misclassification are greatest in the overweight and obese categories resulting in an underreporting of true overweight and obesity levels in the Irish population. The declining sensitivity, accompanied by rising levels of obesity in the population, suggests social norms may be at play, and has important implications for future public health interventions.