MONITORING FOR HYPOGLYCAEMIC NEWBORNS – SHOULD WE EXPAND OUR RISK CATEGORIES?

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Background and objectives Universal hypoglycaemia monitoring of newborns is not recommended. We wished to determine the incidence, presentation and case characteristics of hypoglycaemic newborns that were not being monitored.

Methods Through the Canadian Paediatric Surveillance Program we conducted a national study of severe hypoglycaemia in apparently low-risk full-term newborns. Inclusion criteria were: an otherwise healthy infant less than 96 hours old; gestational age 37–42 weeks; birth weight 2500–3999 grams; whole blood or serum glucose less than 2.0 mmol/L and IV dextrose used to treat the hypoglycaemia. Data were managed and analysed using IBM SPSS Statistics for Windows, Version 24.0 (Armonk, NY: IBM Corp.).

Results From April 2014 to March 2016, 177 cases were reported. There were 5 duplicates, 33 cases did not meet inclusion criteria and 46 questionnaires were not returned, leaving 93 confirmed cases. The estimated incidence was 1 in 3000 births. All cases were singletons, 56% were first-borns and 65% were male. An 8% rate of First Nations cases was 3-fold the population rate. Maternal hypertension was present in 20%, 4-fold the overall pregnancy rate. Maternal obesity was double the overall pregnancy rate at 23%. Concerning signs or feeding issues were present at diagnosis in 98%. Median time to diagnosis was 4.1 hours. Mean blood glucose was 1.4±0.5 hours (SD). Seventy eight percent had at least one of 4 potential perinatal stress indicators (emergency Caesarean Section, meconium at delivery, requiring resuscitation or cord artery pH <7.10). Those cases were more likely to be diagnosed before 6 hours (p=0.03). Twenty five percent (23 cases) were small for gestational age (SGA) with birth weight <10th centile, of which 5 had seizures and 5 had hyperinsulinism. Presentation with major clinical signs (seizure, apnoea or cyanosis) occurred in 20%. Neurodevelopmental concern was present in 20% of all cases. Amongst 13 cases which had brain MRI, 11 were abnormal.

Conclusion While acknowledging the study’s limitations, the impact of First Nations origin, maternal obesity, maternal hypertension and perinatal stress indicators warrant further study and possible incorporation into glucose monitoring guidelines. The data further supports adoption of norm-based standards to identify and monitor all SGA infants.

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NUTRITIONAL RICKETS PRESENTING TO SECONDARY CARE IN CHILDREN (<16 YEARS) – A UK SURVEILLANCE STUDY

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Aims Rickets is a disease of growing children with serious short and long-term complications. Although the prevalence of rickets has been reported widely to be increasing the actual national incidence of nutritional rickets (NR) in the United Kingdom (UK) is unknown. This study aims to describe the incidence, presentation, and clinical management of children with NR in the UK and ROI.

Methods Data was collected prospectively monthly between March 2015-March 2017 from 3500 paediatricians using British Paediatric Surveillance Unit reporting methodology with the following definition (table 1):

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<thead>
<tr>
<th>Clinical rickets with any of the following:</th>
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<tr>
<td>• Leg deformity/Swollen wrists or knees or ribs AND 250 hour vitamin D&lt;25 nmol/L with one or more abnormalities of serum calcium, alkaline phosphatase, phosphate, parathyroid hormone</td>
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<td>OR</td>
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<td>Radiological rickets with:</td>
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<tr>
<td>• Widening, cupping, splaying of metaphysis (of any long bone) AND 250 hour Vitamin D&lt;25 nmol/L</td>
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Reduced Rates of Juvenile Onset Recurrent Respiratory Papillomatosis in Australia After Implementation of a National HPV Vaccination Program

Aims Juvenile onset Recurrent Respiratory Papillomatosis (JoRRP) is a rare chronic disease caused by human papillomavirus (HPV) types 6 and 11. Children with RRP require multiple surgical interventions; tracheostomy may be needed and sometimes the disease is fatal. Infections are now preventable through HPV vaccination. Following an extensive quadrivalent HPV vaccine catch-up program for females aged 12–26 years in 2007–2009, in Australia, we aimed to monitor the changes in incidence and demographics of JoRRP over time.

Methods The Australian Paediatric Surveillance Unit (APSU) conducted national surveillance for JoRRP using its well-established reporting system. In addition to the ~1450 paediatricians who report to the APSU each month, paediatric otorhinolaryngologists were also enrolled in the APSU and offered HPV typing. We report findings for the five-year period to end 2016.

Results The average annual incidence rate was 0.0715 per 100,000 children aged <16 years. The largest number of cases was reported in the first year, with decreasing annual frequency thereafter. The rate declined significantly from 0.163 per 100,000 in 2012 to 0.024 per 100,000 in 2016 (p=0.034). Among the 15 incident cases 60% male, 60% were first born children and 13 (87%) were born vaginally.

None of the mothers of these children had received the HPV vaccine before pregnancy, and 3 (20%) of the mothers had a history of genital warts. Seven genotyped cases were positive for HPV including 4 that were HPV6 positive and 3 that were HPV11 positive.

Conclusion To our knowledge this is the first report internationally documenting a decline in JoRRP incidence in children following a quadrivalent HPV vaccination program.

The National Congenital Anomaly and Rare Disease Registration Service (NCARDRS): The First Year

Background Congenital anomalies (CA) cause around a fifth of infant deaths and are a major contributor to subsequent illness and disability. Regional registers of CA have existed for over 30 years but an effective national registration system has long been needed. More recently, in recognition that collectively Rare Diseases are thought to affect up to 3.5 million people in UK, rare disease registration has been planned which will align with parallel European initiatives.

Methods From April 2015 Public Health England launched NCARDRS, incorporating the 7 existing regional CA registers and the National Down Syndrome Cytogenetic Register. Those regions not previously covered (51% of England) were added. A central database was developed for the accrual of new cases and into which to import data held in the pre-existing registers. New data sources for case ascertainment and import of supporting data, such as cytogenetic laboratory feeds, links to BadgerNet neonatal, and Hospital Episode data, have been developed. Pilot work and database development for Rare Disease ascertainment is ongoing. The analysis we report was based on data aggregated from 4 of the pre-existing NCARDRS regions.

Results There were 2903 cases with at least one congenital anomaly among 1,414,747 (21%) of births in England in 2015. CA accounted for 17% of infant deaths, half of which were from cardiac anomalies. Two thirds of anomalies were diagnosed prenatally; of those diagnosed postnatally for which there was information on timing, three quarters were diagnosed in the first postnatal week. Rates of non-genetic