Methods: This prospective cohort study involved administration of the survey by an in-person interviewer to parents of infants admitted for greater than seven days.

Results: Sixty-five parents were surveyed. Mothers were the sole respondents in 45 cases (70%). Most infants were born at ≤34 weeks (53 [82%]), with 29 (45%) weighing <1500 grams. Pre-admission, 13 (25%) of 53 parents with infants’ likely requiring admission to NICU were offered a tour of the Unit and only a minority spoke to a member of neonatal staff antenatally. Overall, most parents were satisfied with communication, but written information was insufficient for 52 (80%) parents. Additionally, 60 (92%) parents were inadequately informed about parent support groups. Most parents (48 [75%]) participated as much as they wanted to in their infants’ care. Common concerns regarding the environment included over-crowding, excessive noise and light levels.

Conclusions: Overall, a high level of satisfaction was noted with the service. Areas of improvement included pre-admission contact, provision of written communication and some aspects of the environment.

IMPORTANCE OF REVISING THE PRINCIPAL DIAGNOSIS OF MENTAL ILLNESS IN PREGNANCY

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Background: Mental illness is an important risk factor for, and outcome of, pregnancy. Many studies use data linkage to obtain maternal perinatal mental illness information from hospital data. The principal diagnosis is the main reason for the hospital admission. ICD10 coding rules require inpatient episodes that involve obstetric care to use the ‘O99.3’ to code mental illness and identify the specific condition as an additional code.

Objective: Determine the condition-specific false negative rate (Rfalse-ve) if the original versus the revised primary diagnosis is used during pregnancy or the puerperium (within 6 weeks of birthing).

Methods: Births in NSW 2000-2006 were linked by mother with hospital inpatient episodes. ‘O99.3’ principal diagnoses from all inpatient episodes were replaced with the specific diagnosis. Diagnostic groups were compiled from original and revised data. Rfalse-ve is the proportion of ‘true’ cases missed if the original diagnosis was used.

Results: Among the 14,106 mental illness episodes ‘O99.3’ was the primary diagnosis in 2,042 (14.5%) episodes commencing during pregnancy and 147 (9.7%) in the puerperium. For any mental illness, the Rfalse-ve was 56% in pregnancy and 14% in the puerperium. In pregnancy, Rfalse-ve was highest for substance use disorders (76%) followed by anxiety disorders (62%) and depression (52%). Rfalse-ve was in excess of 80% for cannabis, opiates and stimulants but 37% for alcohol use disorders in pregnancy. In the puerperium Rfalse-ve was highest for substance use (56%).

Conclusions: Failure to revise primary diagnoses grossly under-estimates perinatal admissions for mental illness, particularly those commencing during pregnancy.

OUTPATIENT PARENTERAL ANTIMICROBIAL THERAPY: USE, EFFICACY AND SAFETY FOR NEONATES

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Background: Outpatient parenteral antimicrobial therapy (OPAT) is increasingly used to treat children at home, but there are no studies in neonatal patients.

Methods: This was a 4-year observational study of the Hospital-in-the-Home (HITH) program of The Royal Children’s Hospital Melbourne. It aimed to describe the use, appropriateness and outcomes of OPAT in neonates (≤28 days of age), compared to older infants (1-12 months of age). Data were collected prospectively, with study design and analysis performed retrospectively.

Results: There were 38 neonates ≤28 days of age and 214 older infants 1-12 months of age admitted to HITH for OPAT from 2012-2016. Meningitis was the most common diagnosis requiring OPAT in both groups (66% and 38%). Venous access was most commonly a peripherally inserted central catheter (39%) for the neonatal group and tunnelled central venous catheter for the older infant group (39%). Positive bacterial cultures were more frequent in the older patients (62% vs. 42%, p=0.02). The most frequently prescribed antibiotic was ceftriaxone for both groups (65% and 45% respectively). Appropriate antibiotic prescribing rates were equivalent between the two cohorts (92% vs. 85%, p=0.3). Unplanned readmissions were uncommon: 5% of neonatal patients (2/39) and 4% of older patients (8/223). There was an overall vascular access complication rate of 13% in the neonatal group compared to 6% in the older infants (p=0.17).

Conclusions: OPAT is a safe and effective way of providing antibiotics to a subsection of clinically stable neonatal patients. Despite high rates of appropriate antibiotic use, improvements can still be made.

NEONATAL ENTEROVIRUS INFECTION: A TEN-YEAR AUDIT IN A TERTIARY PERINATAL CENTRE

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Background: Enteroviruses are picornaviruses that generally cause self-limiting infections in childhood. They can cause epidemic outbreaks and severe infections in newborn infants, with transmission spanning the antenatal, perinatal and postnatal periods.

Methods: A retrospective observational study of newborns with enterovirus infection over a 10-year period from October 2006- October 2016 at the Royal Women’s Hospital, Melbourne. Demographics, clinical presentation, morbidity and mortality data were collected.
**Results:** Twenty-eight neonates were admitted with enterovirus infection over the 10-year period. Fourteen (50%) were born at term (>37 weeks). Median age at admission was 9 days (range 0-101 days). Median length of stay was 8 days (range 2-68 days). Clinical presentation was predominantly non-specific: fever (50%), lethargy (18%) or irritability (18%). Screening for haematological, hepatic or neurological complications was performed only if clinically indicated. Severe disease was evident in 2 babies (7%) who developed myocarditis and 6 (21%) who developed seizures. Both patients with myocarditis required Extracorporeal Membrane Oxygenation (ECMO) and 1 did not survive.

**Conclusions:** Although neonatal enterovirus infections are rare overall, serious complications are not uncommon and can be fatal. These data provided the basis for development of a clinical practice guideline, to standardise the approach to investigation, management and follow up of enteroviral infections in newborns.

**THE ROLE FOR NON-OPERATIVE MANAGEMENT OF NEONATAL OESOPHAGEAL PERFORATION**

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**Background:** Isolated oesophageal perforation in neonates is a rare but potentially life-threatening condition. Although management has historically been operative, conservative management (antibiotics, bowel rest, parenteral nutrition) is now more routinely used. The aim of this study was to evaluate the management of this condition in two large neonatal surgical centres.

**Methods:** A retrospective cohort study was conducted for neonates admitted to the Hospital for Sick Children (Toronto, Canada) or The Royal Children's Hospital (Melbourne, Australia) with a diagnosis of oesophageal perforation, from 2006-2016. Patients with oesophageal atresia or tracheo-oesophageal fistula were excluded. Data were collected from chart review regarding demographics, clinical course, management and outcomes and were expressed as median (range).

**Results:** Eleven neonates with oesophageal perforation were identified over a 10-year period at the two centres. The gestational age at birth was 25.3 weeks (23.7-40.9) and the majority (7/11, 64%) of neonates were extremely low birth weight. The diagnosis was made on day 1 of life for 9/11 (81%) neonates and was secondary to nasogastric tube insertion in 10/11 (91%). Only 4 (36%) neonates had symptomatic complications (pneumothorax or pneumomediastinum). All neonates were managed with bowel rest and intravenous antibiotics for 7 (5-13) days; 2 patients required operative intervention. Three neonates developed chronic lung disease and two (19%) died prior to discharge.

**Conclusions:** Oesophageal perforation is a severe complication secondary to instrumentation of the upper gastrointestinal tract in neonates. Prompt and accurate diagnosis is crucial. Non-operative management is effective in the majority of cases, though significant morbidity is common.

**PREGNANCY OUTCOMES FOLLOWING APPENDICITIS AND APPENDICECTOMY DURING PREGNANCY**

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**Background:** Suspected appendicitis is a common non-obstetric indication for emergency abdominal surgery during pregnancy. The aim of the study is to assess the risk of preterm birth and other maternal and neonatal adverse birth outcomes following appendicectomy during pregnancy.

**Methods:** Population-based data linkage study of women with singleton births in New South Wales, 2002-2014. Pregnancies with appendicitis and appendicectomy were compared to pregnancies without appendicitis. Crude and adjusted hazard ratios with 95% confidence intervals for preterm birth were estimated. Modified Poisson regression with robust variance was used to estimate crude and adjusted risk ratios with 99% confidence intervals for other outcomes.

**Results:** Of 1,124,551 pregnancies, 1024 (0.9/1000 pregnancies) had appendicitis and appendicectomy. Of these, 566 (55.3%) had laparoscopic and 458 (44.7%) had open appendicectomy. Appendicectomy at later gestational ages was associated with increasing rates of preterm birth. After adjustment for maternal and pregnancy factors, appendicectomy was associated with increased risk of preterm birth (overall aHR 1.73, 95% CI 1.42-2.09; planned aHR 2.08, 95% CI 1.60-2.72), maternal morbidity (aRR 2.84, 99% CI 2.01-4.01) and neonatal morbidity (aRR 1.42, 99% CI 1.03-1.94). However, there was no difference in perinatal mortality rates.

**Conclusions:** Appendicectomy during pregnancy is associated with increased risk of spontaneous and planned preterm birth, maternal and neonatal morbidity. Availability of resources to prevent or manage preterm labour should be considered when appendicectomy is performed in the second and third trimesters.

**THE PRONOSE STUDY: A RANDOMISED CONTROLLED TRIAL OF A NASAL BARRIER DRESSING TO REDUCE INJURY IN PRETERM INFANTS RECEIVING BINASAL NON-INVASIVE RESPIRATORY SUPPORT**

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**Background:** Use of a hydrocolloid barrier dressing has been proposed as a strategy to prevent nasal injury in preterm infants receiving continuous positive airway pressure (CPAP). However, no large trials have been conducted in very preterm infants most at risk of CPAP-related pressure injuries.

**Methods:** Infants admitted to the neonatal intensive care unit at The Royal Women's Hospital were randomised to have a nasal barrier dressing applied during CPAP treatment (Barrier group), or to standard care (No Barrier group). Primary outcome was...