The study aims to compare long-term effects of artificial lung ventilation sustained in the neonatal period in dependence on newborn babies' gestational age and the mechanical parameters of ventilation.

Materials 127 patients aged 8–11 (84 full-term babies, 43 premature babies) who were treated in the intensive care unit of St. Petersburg Children's Hospital No. 1 in the neonatal period, underwent follow-up examination of respiratory system. Of them, 27 children were born with the gestational age of 30–34 weeks, 16 of 35–36 weeks, and 84 at the gestational age of 37–42 weeks. The control group consisted of 43 children with uncomplicated neonatal period.

Results In the neonatal period, pathology of the respiratory system was detected much more often in the premature infants (56% and 88%; $p < 0.001$). They developed 1st type respiratory distress syndrome (45%) more often than the full-term infants, while the amniotic fluid aspiration syndrome was detected in the full-term newborns more often than in the premature ones (36%). Transient tachypnea of the newborn was significantly more frequent in the group of full-term infants (28% and 8%; $p = 0.026$). Among infants with bronchopulmonary pathology, pneumonia developed in preterm babies more often (32% and 60%; $p = 0.009$). According to a follow-up survey, the incidence of pulmonary healthy children was comparable in the group of full-term children (74%) and in the control group (84%) at school age, while prematurely born children developed no bronchopulmonary pathology less often (63%, $p = 0.05$). Besides, prematurely born children with recurrent bronchitis developed neonatal pneumonia reliably more often ($p < 0.05$). All prematurely born children who developed recurrent bronchitis or chronic nonspecific lung diseases at school age (100%) had been on ALV with 'hard' settings in the neonatal period, whereas the same indicator among full-term infants was twice lower (50%). Family history analysis showed that family history of bronchopulmonary diseases accompanied bronchial asthma in most cases, both in full-term (67%) and premature children (63%).

Conclusions Neonatal pneumonia, along with iatrogenic effects of resuscitation, is the dominant factor in formation of chronic nonspecific pulmonary diseases in catamnesis. Children treated in ICU in the early neonatal period should be considered a high-risk group for development of bronchopulmonary system pathology later in life, and they must be carefully supervised by pediatrician and pulmonologist.

P552

BRITISH THORACIC SOCIETY (BTS) PNEUMONIA AUDIT: COMPLETING THE LOOP

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Aims Our aim was to collect data on children admitted to Midlands Regional Hospital, Portlaoise (MRHP) with a diagnosis of Community Acquired Pneumonia (CAP). We looked into presenting complaints, clinical signs, investigation, management and follow-up plan made on these patients. In winter 2016/17 this data was compared with data from 16 other hospitals across the UK and Ireland as part of the British Thoracic Society's (BTS) audit on CAP. Now, in winter 2018/

19, we did re-audit to look at progress of our own department in 2 years.

Methods A retrospective chart review was carried out to identify patients with CAP. Inclusion criteria included children presenting to MRHP aged 1–15 years with a diagnosis of CAP over Oct – Dec 2018.

Results There was a massive improvement regarding choice of antibiotics to treat CAP and we switched to amoxicillin in majority of cases, which is in line with recommendation of BTS, UK. Our data is comparable to international data and previous local data with regard to demographics and severity of pneumonia requiring O₂ therapy. We still are performing more blood tests (including acute phase reactants and microbiological investigations) and chest x-rays than other centers but there is decrease in these numbers as compared to our own previous data.

Conclusions The over diagnosis, over investigation and over treatment of CAP is leading to wasted resources and is not in adherence with best practice. After the recommendations from our first audit, there was big improvement in few domains and we are progressing towards best practice in others. We are also in the process of completion of our local guidelines and after their introduction; we expect our efficacy to improve even more.

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P553

IMPACT OF THE INTERNATIONAL GUIDELINES ON THE THERAPY OF BRONCHIOLITIS: SINGLE-CENTRE RETROSPECTIVE ANALYSIS

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The AAP bronchiolitis guidelines published in 2006 and updated in 2014 recommended supportive care with limited diagnostic testing and treatment. To comply with the international guidelines in 2014 we've started a campaign to improve the therapeutic practice of bronchiolitis at our hospital.

Aim To assess the effect of the therapeutic regime changes on the morbidity of bronchiolitis (need of PICU transmission, length of hospital stay) at our hospital.

Methods The data of 225 patients, aged 1–12 months, hospitalized in the period of April to October between 2013 and 2018 with the diagnosis of bronchiolitis at our Pulmonology Unit was analysed retrospectively.

Results Antibiotic treatment application decreased since 2013 in each year (In 80%–36%–27%–12%–2% of the patients respectively). Same as the antibiotic use, the systemic corticosteroid and inhalative B₂ agonist administration decreased significantly (60% – 28% – 17% – 2% – 0% and 80% – 39% – 40% – 13% – 14% of the cases). Use of 3% saline inhalation increased: 30% – 39% – 93% – 93% – 95%. Although the use of drug therapies decreased during the observational period, it did not cause an increase either in the length of hospital stay (median days 6.4 – 6.3 – 6.9 – 4.5 – 5.0) or in

PICU transmissions (patients/observational period 2 – 3 – 4 – 2 – 1).

Conclusion Applying the international guidelines in to everyday-life practice did not result in increased morbidity. Besides there was a positive effect on cost effectivity and patient comfort.

P554 A REVIEW OF THE USE OF THE PNEUMOCOCCAL URINARY ANTIGEN PROTEIN AS A DIAGNOSTIC BIOMARKER IN THE PAEDIATRIC POPULATION AT UNIVERSITY HOSPITAL LIMERICK OVER THE LAST TWO YEARS

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Background The 'pneumococcal urinary antigen protein' assay is a commonly used, and widely accepted, aide in diagnosing pneumonia amongst adult patients. There is little evidence for its use in the paediatric population and it is not validated for use in patients 6 years of age and younger. Nevertheless, there has been an emerging trend in its use at our hospital in the paediatric setting. Interestingly, there seems to have been significant positive correlation between a positive result and clinical presentations consistent with Community Acquired Pneumonia (CAP).

Aim Our aim is to review the frequency of pneumococcal urinary antigen testing in the paediatric population over the last two years at UHL. We are assessing the relationship between a positive result and other markers of inflammation (WBC, Neutrophilia, Elevated CRP, Elevated Platelet count, Decreased serum albumin), the presence of consolidation on Chest X-Ray, vital signs at presentation in ED, first line antibiotic therapy prescribed, need for second line antibiotics and the presence of associated complications. Specifically, we endeavour to determine if a positive result in children and adolescent patients relates to a clinical outcome consistent with CAP.

Methods To search for all patients 16 years of age and under who had a positive result using the iLab software. iLab will also be used to assess other markers of inflammation, in the same patient cohort, at time of admission. Corresponding chest radiograph images and reports will be accessed via the NIMIS radiology software. Vital signs at time of presentation will be assessed using the 'Therefore' software. Information regarding antibiotic treatment and any complications can be accessed using the hospital's E-discharge summary system

Results There were X paediatric patients who had their pneumococcal urinary antigen protein tested in UHL from January 2017 to December 2018 inclusive, X of which tested positive. Of the positively resulted cohort, X had evidence of consolidation on CXR, X had corresponding markers of inflammation at ED. X% of patients required antibiotic therapy and a further X% required second line antibiotic therapy. X patients had clinical features of acute infection at presentation and X amount of patients had associated complications.

Conclusion The results of this review indicate a correlation between a positive result and clinical presentation of CAP. This may well support the use of the pneumococcal urinary antigen protein assay as part of the work up for paediatric patients presenting with symptoms concerning for CAP.

P555 A RARE CASE OF CONGENITAL LOBAR OVERINFLATION

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Background AF was born by normal vaginal delivery at 38+4 weeks gestation. A normal antenatal scan was performed at 22 weeks. Septic workup was performed and antibiotics commenced due to PROM and GBS carriage in the mother.

Clinical course and imaging

She was admitted to NICU with tachypnoea and increased work of breathing at three hours of age. Ambient incubator oxygen up to 33% was commenced to maintain O₂ saturations above 94%. The initial working diagnosis was of TTN. Initial chest x-ray showed a left lower lobe opacity and left pleural effusion. Oxygen was weaned and discontinued. Repeat imaging on day 3 showed left retrocardiac density and left lower lobe segmental atelectasis. The left upper lobe and lingula demonstrated hyperinflation. A decision was made to treat with IV antibiotics for 5 days for a suspected congenital pneumonia.

Imaging was repeated on day 4 due to deterioration in clinical condition with increasing tachypnoea and a further requirement for oxygen. Hi-flow oxygen was commenced, with FiO₂ of 35%. There was a further increase in hyperlucency of left upper lobe with contralateral midline shift and left lower lobe collapse. A lateral x-ray confirmed that hyperlucency was due to overexpansion and suggestive of congenital lobar overinflation (CLO) rather than pneumothorax.

Management High-frequency oxygen was discontinued and she remained on ambient O₂ and was nursed right side up. She remained in a stable condition until transfer to a tertiary hospital where CT thorax confirmed the diagnosis. She awaits pulmonary lobectomy.

Congenital lobar overinflation CLO is a rare disorder characterised by hyperinflation of one or more pulmonary lobes. It has a prevalence of 1 in 20,000 to 1 in 30,000. It most commonly affects the left upper lobe. A narrow bronchus causes collapse and air trapping during expiration. Cases can be diagnosed antenatally during foetal ultrasound. Although 50% of cases appear in the newborn period, symptoms of tachypnoea can develop into childhood. Chest x-ray and CT are diagnostic in full-term, non-ventilated babies. X-ray typically shows increased density in the affected lobe initially, transitioning to hyperlucency as the affected lobe overinflates. The CT confirms the lobar overinflation, absence of bullae etc, and evaluates for the possibility of an aberrant mediastinal vessel as a potential cause. Lobectomy of affected lobe is a widely accepted treatment.

Conclusion CLO is typically associated with progressive respiratory distress and mediastinal shift.

Although rare, CLO should remain a differential for respiratory distress in a term neonate.

P556 IMPORTANCE OF LUNG ULTRASOUND IN PEDIATRICS

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Acute respiratory conditions are frequent conditions in children which cause sudden respiratory function deterioration