effect is always lower than in singletons. Given the high prevalence of twins among preterm infants, this matter should be further investigated.

PS-319 CORD BLOOD VITAMIN D STATUS AND NEWBORN BODY COMPOSITION

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Background and aims Previous studies in newborns have found a positive association between adiposity and maternal and cord blood 25-hydroxy-vitamin D status (vit-D). It has been hypothesised that vit-D play a role in adipocyte metabolism and that this can be linked to obesity. Cord blood vit-D is closely associated with maternal vit-D concentration and is further affected by maternal obesity. The aim with our study was to examine the association between newborn cord blood vit-D and body composition where analyses were stratified by maternal pre-pregnancy obesity since this is a strong determinant of newborn body composition.

Methods Pre-pregnancy obese and normal weight mothers were included. Cord blood was collected at birth and newborn body composition was assessed using dual-energy X-ray absorptiometry within 48 h of birth. Sufficient cord blood and scans were obtained in 173(55%) mother-newborn dyads. Multiple linear regressions with vit-D was as a dependent variable were performed.

Results We included 41 pre-pregnancy normal weight-newborn dyads and 132 pre-pregnancy obese–newborn dyads. There was no difference in mean cord blood vit-D between offspring of normal weight and obese mothers (59.6 vs. 62.4 nmol/l ($p = 0.64$)). Vit-D was significantly associated with normal weight offspring body composition, positively with lean mass ($p = 0.031$) and inversely with fat% ($p = 0.037$) but was not associated with obese offspring body composition. See Table 1.

Conclusion We found an association between vit-D and newborn body composition in normal weight offspring. This implies that the effect of vit-D on newborn body composition may be determined by maternal weight.

Abstract PS-319 Table 1 Association between newborn cord blood vitamin D (nmol/l) and maternal age and parity and newborn body composition in normal weight and obese mothers offspring

	Vitamin D (nmol/l) Normal weight		Vitamin D (nmol/l) Obese offspring	
Dependant	offspring (n = 41)		(n = 132)	
Determinants	ß*	P- value	ß*	P- value
Maternal age (years)	2.5	0.026	0.5	0.46
Primiparity (y/n)	34.5	0.004	9.8	0.10
Lean mass (g)	0.04	0.031	0.01	0.083
Fat (%)	-3.5	0.037	0.21	0.76

Perinatology

PS-319a EXTREMELY LOW EXCLUSIVE BREAST FEEDING (EBF) RATE AMONG THE SYRIAN REFUGEE COMMUNITIES IN JORDAN

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A total of 31,485 Syrian refugee households have been reached by the Medair nutrition programme covering 35% of the estimated number of refugees in Jordan urban areas. In April of 2014, a household survey was conducted to estimate exclusive breastfeeding (EBF) rates among those households reached by Medair with IYCF messages. 990 out of 31,485 households were selected by systematic random sampling for a telephone survey. Among those sampled, 12.9% (128 households) had children less than 6 months of age; 24.2 ± 7.7% of these reported practicing exclusive breastfeeding within the previous 24 h. This value is much lower than levels of EBF reported in Syria prior to the crisis (42.6%) despite effective IYCF promotion activity reflected by the fact that 71.3% (± 6.4%) of lactating mothers surveyed were able to state more than two benefits of EBF covered. Considering EBF is one of the most effective way to save the lives of young children, this deterioration in EBF among refugees placing young children at an increased risk of death should serve as a warning to the humanitarian community that measures to improve EBF is needed immediately. Additionally the survey implies other interventions are needed to address the other potential obstacles to EBF practices such as cultural and social barriers. Group sessions to monitor the barriers and promoters of IYCF as well as developing a self-supporting system among caregivers influencing the social and cultural aspects of EBF may be helpful to facilitate dissemination of lessons learned among the refugee communities.

Pneumonia

PS-320 THE RELATION OF TRAFFIC LOAD TO TRAFFIC-DEPENDENT POLLUTANTS AND CROUP

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Objective Some studies have compared the occurrence of croup with air pollution. Results have so far remained contradictory. Motor vehicles represent the principal source of air pollution in the city of Vinnytsya, Ukraine. The objective of this study was to determine the relation of traffic load to traffic-dependent pollutants and croup.

Methods Among a population of 8.067 children in residence near areas of high traffic density (>1.500 motor vehicles/ hour) and 2.473 children in residence near areas of low traffic density (<300 motor vehicles/ hour) cases of croup were registered by physicians during a 4 years period in 2000–03. Air pollution by sulfur dioxide (SO2), nitrogen dioxide (NO2), particulate matter, carbon monoxide (CO) were locally measured.

Results Areas with high traffic load are characterised by higher concentration of traffic-dependent pollutants and higher annual incidence of croup (Table).

Abstract PS-320 Table 1

Pollutants and Croup incidence	Areas with traffic load >1.500 motor vehicles/ hour	Areas with traffic load <300 motor vehicles/ hour	P*
SO2 (mg/m^3)	0.148 ± 0.104	0.000 ± 0.000	<0.01
NO2 (mg/m^3)	0.045 ± 0.016	0.009 ± 0.008	<0.01
Particulate matter (mg/m^3)	0.274 ± 0.082	0.190 ± 0.079	<0.05
CO (mg/m^3)	3.317 ± 0.716	2.275 ± 0.411	<0.01
Annual incidence of croup in children (cases per 1000 child population)	10.78	1.08	<0.01

Table. Traffic load, traffic-dependent pollutants and annual incidence of croup in children (Vinnytsya, Ukraine, 2000–2003)

Conclusions Croup in children is related to traffic load and traffic-dependent pollutants (SO2, NO2, particulate matter, CO).

PS-321 BACTERIAL LOAD AND INFLAMMATORY MEDIATORS IN RELATION TO THE SEVERITY OF NECROTIZING PNEUMOCOCCAL PNEUMONIA

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Background and aims The incidence of necrotizing pneumococcal pneumonia has increased over the last two decades. We hypothesized that increased pneumococcal load or augmented inflammatory cytokine production may lead to destructive pneumococcal lung disease.

Methods This study prospectively enrolled children aged 0–18 years with a diagnosis of community-acquired pneumonia with pleural effusion admitted to 6 medical centres. Children were diagnosed with pneumococcal empyema if the pleural fluid tested positive for quantitative pneumococcal (lytA) detection by real-time polymerase chain reaction (RT-PCR). Pneumococcal empyema cases were further divided into four groups accoring to necrosis severity scaled by radiographic image findings: 0) non-necrosis, 1) mild necrosis, 2) cavitation, and 3) bronchopleural fistula (BPF). Nasopharyngeal and pleural pneumococcal load, as well as proinflammatory cytokines (TNF-α, IL-1β, IL-6, IL-8), Th1-(IL-2, IFN-γ), Th2-(IL-4, IL-10), and Th17-cytokines (IL-17) in the pleural fluid were measured.

Results Serotypes 19A and 3 accounted for 65.3% and 4.2% (respectively) of 72 cases of pneumococcal empyema. In multivariate analysis, pleural pneumococcal density (adjusted odds ratio [aOR], 1.79; 95% confidence interval [CI], 1.03–3.06), and IL-8 (aOR, 2.64; 95% CI, 1.21–5.75) were independent factors associated with the severity of lung necrosis. There was a good correlation between nasopharyngeal and pleural pneumococcal density (ρ = 0.42; p = 0.001). A *lyt*ART-PCR pleural density ≥ 50,000 copies/mL had a sensitivity of 88.2% and a specificity of 70.9% for predicting bronchopleural fistula.

Conclusion Evolution of *S. pneumoniae* toward increased fitness in their interaction with host and exaggerated IL-8 expression are responsible for the increase of necrotizing pneumococcal pneumonia.

PS-322 A NEW SCREENING APPROACH FOR THE MANAGEMENT OF RSV INFECTION USING INNOVATIVE COMPUTERISED INFERENCE ALGORITHM TECHNOLOGY

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Background and aims Minimising invasive laboratory testing on children is considered to be the top priority. Respiratory Syncytial Virus (RSV) is the leading cause of lower respiratory tract infection and the hospitalisation in infants. Identifying respiratory pathogens within the population is difficult because numerous invasive sample collections are required. Collecting precise information and estimating the severity of respiratory symptoms using the Innovative Computerised Inference Algorithm (ICIA) technology will minimise RSV screening tests.

Methods Children aged 1 month15 years at Paediatric Emergency Department (PED) of Yokohama Citizen's Hospital (Yokohama, Japan) who were evaluated with respiratory symptoms had swab samples collected for the RSV test. ICIA prompts the guardian to input symptoms at time of registration, assessing the Disease Severity from 3 levels (mild/ moderate/ serious).

Results There were 23,851 PED visits from January 1, 2012 to December 31, 2013. Of those, 6742 patients had respiratory symptoms and swab samples were collected accordingly. There were 654 RSV infected patients. The severity level, over moderate was 632 and, mild was 22. These results proved that the sensitivity and specificity of ICIA were 96.6% and 87.9% respectively, negative and positive predictive values were 99.6% and 46.3% respectively.

Conclusion ICIA decreases 90% of invasive RSV tests. ICIA supports Paediatricians at each phase of their clinical decision making: i.e., diagnosis, severity assessment and treatment that used to depend on the amount of a paediatricians' knowledge and experience. Thus, ICIA leads to minimising the invasive RSV laboratory tests, in addition to shortening the time of clinical decision making process.

PS-323 THE GENE POLYMORPHISM OF IL-17 G-152A IS ASSOCIATED WITH INCREASED COLONISATION OF STREPTOCOCCUS PNEUMONIAE IN CHILDREN

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Background and aims *Streptococcus pneumoniae* is a common respiratory pathogen and up to 50% of children acquire *S. pneumoniae* in their nasopharynx during the first 12 months of life. The cytokine interleukin-17A (IL-17A) plays an important role in host defense against extracellular bacterial pathogens.