Conclusion We have shown that hands can be vehicles for transmission of *Streptococcus pneumoniae* and that wet particles increased transmission. This reinforces the imperative for good hand hygiene especially in populations at risk of invasive pneumococcal disease or pneumonia such as young children, elderly and immunosuppressed people

P120

WHICH SCORING SYSTEM IS BETTER AT PREDICTING LIKELY MORTALITY AND INTENSIVE CARE UNIT (ICU) ADMISSION IN COMMUNITY ACQUIRED PNEUMONIA RELATED SEPSIS?

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Introduction and Aim Sepsis and pneumonia commonly present together, however the preferred clinical scoring system to use is unclear. NEWS (National Early Warning Score) and SIRS (Systemic Inflammatory Response Syndrome) and SOFA (Sequential Organ Failure Assessment) scores can be used to evaluate patients admitted with sepsis. Due to complexity of SOFA scoring, qSOFA has been proposed for routine practice.¹ We compared sepsis scores in patients with community acquired pneumonia related sepsis (CAP sepsis) and compared this to sepsis from other causes (non-CAP sepsis). We also evaluated how sepsis scoring systems compared with the CURB-65 score to predict mortality and ICU admission in CAP sepsis.

Methods Medical records were audited between 01/09/2016–20/03/2017 at Barking Havering and Redbridge University Hospitals NHS Trust. Adult patients were included if ICD-10 codes on discharge/death were Sepsis A40/A41. Physiological and blood parameters were collected at time of trigger from medical/electronic records. All plain chest x-rays (CXR) and CT-chest scans were reviewed independently by two respiratory registrars to confirm consolidation. We calculated the positive predictive value (PPV) and negative predictive value (NPV) of each sepsis scoring system against two outcome measures; i)ICU Admission <24 hours ii)mortality(death) at 30 days.

Outcomes/Results We identified 114 cases of sepsis. Median age-78 years. Male:female ratio 56:58. We found 22/114 (19%) of patients had a diagnosis of CAP sepsis with CXR/CT-chest confirming consolidation <48 hours from admission. Scores for CAP sepsis (n=22) triggered more often than non-CAP sepsis(n=92) for NEWS ≥ 4 (77% vs 54%,p=0.05),

SOFA ≥ 2 (86% vs 54%,p<0.01). For CAP sepsis and non-CAP sepsis, the PPV and NPV for each sepsis score including CURB-65 were calculated for <24 hour ICU admission and 30 day mortality (Table.1). In patients with CAP sepsis, scores for NEWS/SIRS/SOFA had a high PPV for ICU admission and mortality. CURB-65 ≥ 3 had a low PPV but higher NPV.

Conclusion Patients with CAP sepsis triggered more often with NEWS ≥ 4 and SOFA ≥ 2 compared to non-CAP sepsis. Our data suggests that NEWS ≥ 4 ,SIRS ≥ 2 ,SOFA ≥ 2 or CURB-65 ≥ 2 may be used as initial screening for CAP sepsis. However, all had low NPV for ICU admission and 30 day mortality. Further studies are needed to evaluate the best scoring system to assess clinical severity for CAP sepsis and avoid unnecessary duplication.

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P121

THE RESPIRATORY INFECTIONS TEAM – A NOVEL PARADIGM IN THE MANAGEMENT OF COMMUNITY-ACQUIRED PNEUMONIA

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Background The recent British Thoracic Society national audit of community-acquired pneumonia (CAP) has shown that guideline concordance and antimicrobial stewardship remain poor in the UK. Furthermore, mis- and over-diagnosis are common.¹

Methods A Respiratory Infections Team was developed, comprising a specialist nurse supported by a respiratory consultant and antimicrobial pharmacist. Its aims were to review patients admitted to hospital with CAP, and to a) identify patients with low severity CAP for remote outpatient management with early supported discharge; b) facilitate streamlined antibiotic regimens using bedside point-of-care (POC) tests (Binax-NOW pneumococcal and legionella urinary antigens, and nasopharyngeal swab for influenza PCR), reducing total amount of antibiotic prescribed both in route and spectrum; and c) improve diagnostic accuracy, communication with clinical coders, and concordance with the BTS pneumonia care bundle. Outcomes were compared with a prospective cohort of consecutive radiographically-confirmed CAP admissions from winter 2013/2014.

Abstract P120 Table 1 Triggering of sepsis scoring systems and CURB-65 scores for predicting ICU admission within 24 hours and 30 day mortality in patients with community acquired pneumonia related sepsis and non-community acquired pneumonia related sepsis

Sepsis Scoring System	CAP sepsis (n=22)	non-CAP sepsis (n=92)							
		Admission to ICU<24 hours				Mortality<30 days			
		PPV	NPV	PPV	NPV	PPV	NPV	PPV	NPV
NEWS ≥ 4	17 (77.2%)	100.0%	33.3%	91.6%	40.0%	50 (54.3%)	57.1%	45.8%	65.3%
SIRS ≥ 2	18 (81.8%)	100.0%	26.6%	91.6%	30.0%	66 (71.7%)	100.0%	30.5%	80.7%
SOFA ≥ 2	19 (86.3%)	100.0%	20.0%	100.0%	30.0%	50 (54.3%)	85.7%	48.2%	76.9%
qSOFA ≥ 2	7 (31.8%)	57.1%	80.0%	41.6%	80.0%	15 (16.3%)	28.5%	84.7%	34.6%
CURB 65 ≥ 2	16 (72.7%)	85.7%	33.3%	83.3%	40.0%	CURB 65 was not used for non-CAP sepsis			
CURB 65 ≥ 3	7 (31.8%)	28.5%	66.6%	41.6%	80.0%				

Results Over the first year the team reviewed 351 patients with suspected CAP; 50 had a chest radiograph reported as clear and were excluded, leaving 301 for analysis. Length of hospital stay (LOS) was reduced when compared with pre-intervention after adjustment for disease severity using CURB-65 (low severity, 2.8 vs 4.4 days, $p<0.01$; moderate severity, 4.3 vs 7.6 days, $p<0.01$; high severity, 6.0 vs 8.9 days, $p=0.07$). Readmission rate at 30 days was unchanged (54/301, 17.9% vs. 50/324, 15.4%, $p=0.45$). Early supported discharge was appropriate in 51/172 (30.0%) patients with low severity CAP; in this group median LOS was 1.4 days and readmission rate 6/51 (11.8%). A positive microbiological diagnosis was made in 69/301 (22.9%) patients compared with 16/324 (4.9%) pre-intervention; 60/301 (19.9%) had a positive POC test with a result available within the acute admitting area. As a result, broad spectrum antibiotic regimens were streamlined in 43 (14.3%) patients.

Conclusion A dedicated respiratory infections team can significantly reduce LOS for patients admitted with CAP. A robust microbiological diagnosis early in the admission episode Results in an improvement in antibiotic stewardship.

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P122 THE EFFECT OF ALCOHOL ON SEVERE RESPIRATORY DISEASES: A SERIES OF SYSTEMATIC REVIEWS AND META-ANALYSES

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Introduction and Objectives Alcohol consumption is a well-recognised risk factor for a range of diseases, but there is relatively little knowledge on the association between alcohol consumption and respiratory disease risk. We present systematic reviews of alcohol effects on Adult Respiratory Distress Syndrome, asthma, COPD, community acquired pneumonia, obstructive sleep apnoea and tuberculosis.

Methods Systematic reviews identified comparative observational studies listed on Medline, EMBASE and Web of Science, published between 1985 and December 2015, with the exception of tuberculosis, for which we performed a separate search from 2005 to 2017. The reference lists of the eligible studies were also searched. We imposed no language restrictions. Random effects meta-analysis was used to estimate pooled effect sizes with 95% confidence intervals (CI). Heterogeneity was explored using subgroup analyses. Funnel plots and Egger's asymmetry test were used for the assessment of publication bias.

Results A total of 120 papers were included in these reviews (see Table 1). Our reviews confirmed an approximate doubling in the risk of CAP among drinkers. In addition, we found that there is an 8% increase in the risk of CAP for every 10–20 grams higher alcohol intake per day. Also, heavy alcohol consumption was found to significantly increase the odds of ARDS/ALI. Furthermore, a subgroup analysis indicated that this association was primarily due to alcohol abuse. Alcohol consumption increased the risk of TB between 2 and 3- fold, depending on study design. We found no evidence of an effect of alcohol consumption on the risk of asthma and COPD.

Conclusions Our review highlights that high alcohol intake is linked to the risks of several respiratory diseases, and that reducing alcohol intake may have an important role to play in respiratory disease prevention.

Abstract P122 Table 1 Alcohol consumption and respiratory diseases

Alcohol consumption			
Respiratory Diseases	Number of studies included in the review	Number of high quality studies	Effect estimate
ARDS/ALI	11	7	OR=1.98,95% CI: 1.50–2.60
Asthma	15	2	RR=1.00,95%CI: 0.83–1.20
COPD	13	7	RR=1.05,95%CI: 0.86–1.28
CAP	11	7	RR=1.98,95% CI:1.45–2.69
OSA	31	1	RR=1.23,95% CI:1.12–1.36
TB	39	20	OR=1.99,95% CI: 1.63–2.43

Ventilatory strategies for patients with respiratory failure

P123 REVIEW OF PATIENT CHARACTERISTICS AND THEIR ASSOCIATION WITH SURVIVAL IN PATIENTS WITH COPD ON HOME NON – INVASIVE VENTILATION FOR HYPERCAPNIC RESPIRATORY FAILURE: 5 YEAR RETROSPECTIVE STUDY

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Introduction Home non-invasive ventilation (NIV) can improve outcomes in some patients with chronic obstructive pulmonary disease (COPD) and chronic hypercapnic respiratory failure. It remains unclear how to identify which patients will benefit most from this treatment. We have assessed patient characteristics and ventilator settings, and their association with survival, in individuals with COPD referred to our home NIV service

Methods Database and case notes of patients with COPD referred to our centre for home NIV between April 2011 and January 2017 were retrospectively analysed. We compared patient characteristics and ventilator settings in those who survived ≥ 12 months, to those who died earlier.

Results 150 patients were referred for home NIV. 41 patients did not tolerate NIV and discontinued treatment. Of the 109 who used NIV, 50 were alive in July 2017. Full data was available for 87 (58%) patients. Median survival in patients who used NIV (n=73) was 14.2 months (Interquartile Range (IQR) 3.2–28.8). In patients who discontinued NIV (n=14), survival was 21 months (IQR 5.2–38.2; $p=0.81$). Characteristics and NIV settings in the 79 patients who used NIV are shown in Table 1.