**British Thoracic Society**
**Paediatric Pneumonia Audit**
**National Audit Period: 1 November 2016 – 31 January 2017**
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Number of records submitted: 7302
Number of participants: Part 1 = 144 hospitals (127 trusts); Part 2 = 136 hospitals (121 trusts)

## Summary/Abstract

This report summarises the results of the 2016/17 British Thoracic Society (BTS) National Paediatric Pneumonia Audit which took place from 1 November 2016 to 31 January 2017. The audit first took place in 2009/10 and this is the fifth time it has been undertaken. Participation in the audit has increased year on year, with the 2016/17 patient cohort being twice the size of the previous round (see table 1 for further details).

## Key Findings

1. 24% of children were given antibiotics prior to attending hospital and 60% of these children were given amoxicillin.
2. Where a causative organism was identified, the most common was respiratory syncytial virus (36% of organisms).
3. Reduction in the number of blood investigations (45% in 2016/17; 63% in 2012/13) and chest x-rays (73% in 2016/17; 88% in 2012/13) that were performed.
4. More children were prescribed oral amoxicillin as first line treatment (33% of prescribed oral antibiotics in 2016/17; 25% in 2012/13) and fewer children prescribed intravenous antibiotics (31% in 2016/17; 51% in 2012/13).

## National Improvement Objectives:

1. Less than 5% of children with community acquired pneumonia should undergo blood investigations (e.g. white cell count or CRP) that are not indicated by either the BTS Community Acquired Pneumonia or NICE Sepsis Guidelines.
2. Less than 10% of children with community acquired pneumonia should have a CXR performed where there is no clinical evidence of severe or complicated pneumonia.
3. Less than 10% of children with community acquired pneumonia who are able to tolerate oral fluids should receive intravenous antibiotics where there is no evidence of septicaemia or complicated pneumonia.
4. Less than 5% of children with community acquired pneumonia should have hospital follow-up where there is no evidence of severe pneumonia, complications, round pneumonia or collapse.

Timeframe: to be achieved by the time of re-audit in 3 years

### Background

The audit was restricted to patients with a primary diagnosis of community acquired pneumonia (CAP) defined as a clinical diagnosis of pneumonia caused by a community acquired infection[1]. CAP is a common and potentially serious illness with considerable morbidity[2].

The first BTS paediatric pneumonia audit took place in winter 2009/10, and has now been completed five times[3-7]. The 2016/17 audit was the largest sample to date and included an estimated 86% of eligible cases.

The audit results, until 2011/12, were assessed against the 2002 BTS Guidelines on CAP in children[8]. Subsequently, the 2011 BTS Guidelines on the management of CAP in children[1] have been used (the 'BTS Guideline'). The audit has demonstrated many improvements in standards of care over this period, although there is still evidence to suggest that guidelines are not being routinely followed.

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2016/17 |
|---|---|---|---|---|---|
| **Hospitals** | 27 | 77 | 101 | 127 | 144 |
| **Records** | 865 | 2136 | 2731 | 3571 | 7274 |
| **Hypoxaemia** | 39% | 37% | 39% | 41% | 33% |
| **Tachypnoea (RR ≥50 bpm)** | 33% | 28% | 33% | 30% | 29% |
| **Temperature >39°C** | 38% | 33% | 30% | 29% | 24% |
| **Wheeze** | 32% | 32% | 36% | 36% | 41% |
| **CXR during admission** | 95% | 93% | 90% | 88% | 73% |
| **IV antibiotics** | - | - | 52% | 51% | 31% |
| **CRP and/or White cell count** | - | - | 62% | 63% | 45% |
| **Median length of stay (days)** | 2 | 2 | 2 | 2 | 1 |
| **Follow-up CXR** | 16% | 14% | 12% | 11% | 7% |

**Table 1: Summary of data from all 5 audit years**

## Aims and objectives

The aim of the audit was to assess whether the BTS Guideline is being adhered to and to identify any trends over time, both positive and negative.

## Key objectives

1. To determine baseline demographics and to obtain more detailed information on the severity of CAP in children in the UK.
2. To examine whether blood investigations and chest x-rays are being carried out appropriately.
3. To assess current antibiotic practice and compliance with guidelines in this area.
4. To examine rates of complications and subsequent follow-up.
5. To identify areas for improvement in the management of childhood CAP.
6. To compare processes and facilities for the management of children with CAP across the country.

### Methodology

Case definition for this audit was children over 1 year of age with a primary diagnosis of community acquired pneumonia admitted into a paediatric assessment unit, paediatric ward or equivalent in the UK, from 1 November 2016 to 31 January 2017. This is the first round of the audit where patients less than 1 year of age have been excluded in order to minimise confounding data from infants with a primary diagnosis of bronchiolitis. Data presented for previous audit periods has been re-analysed to exclude under 1s and allow a like for like comparison. Patients seen in accident and emergency only, those admitted directly to intensive care, and patients with hospital acquired pneumonia, cystic fibrosis, malignancies or Human Immunodeficiency Virus infection were excluded. Diagnosis and inclusion was confirmed by a clinician. Data were collected either prospectively or retrospectively from patient notes and entered onto the secure online BTS audit tool by clinicians and audit staff by 30 April 2017.

There were two parts to the audit. The clinical audit (Part 1) collected data on individual patient admissions including data on: patient demographics; severity of CAP during admission; radiological, general and microbiological investigations; management; antibiotics given; complications and follow-up. Each participating hospital was also asked to submit one record for the organisational audit (Part 2) giving details of the policies in place at their hospital.

### Response rate

Part 1 data were collected from 144 participating institutions; 7302 records were submitted. After data cleaning, there were 7274 records. This represents the largest number of cases submitted for the paediatric CAP audit (see table 1).

## Results

### Patient Demographics

The gender distribution has remained static over the years, with 52% of admissions in the current audit being boys. The patient population was very young, the median age was 2 years and the mean was 3.6 years, with a skew towards the younger age group: 52% were under 3 years, and 76% were less than 5 years (see figure 1).

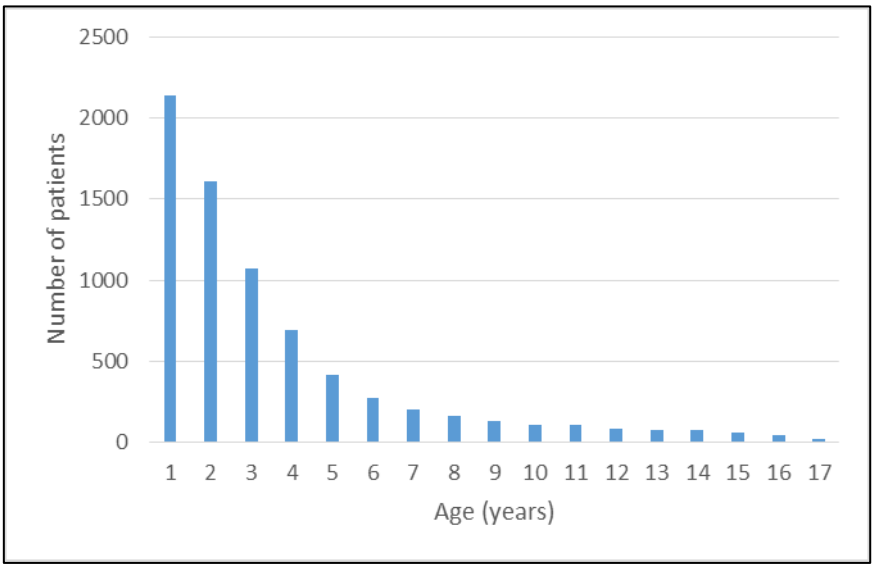


***Figure 1: Number of patients in each age group***

67% of patients admitted with CAP reported no co-morbidities. Asthma was reported in 9% of patients, cerebral palsy in 3% of patients and 1% were immunocompromised. 23% of patients reported 'other' co-morbidities. The co-morbidity rate is similar to that of previous audits.

**Treatment pre-admission**

24% of children were given antibiotics prior to admission to hospital; of these 60% of children were given amoxicillin. Oral antibiotics were given for a mean of 6 days and a median of 3 days prior to admission. This demonstrates that, in many cases, children were prescribed appropriate antibiotics in primary care with subsequent referral to secondary/tertiary care after oral antibiotic failure. The number of children receiving antibiotics prior to admission to hospital has reduced over the years; in previous audits 29-32% of patients were prescribed oral antibiotics prior to attending hospital.

94% of patients were admitted under the care of a general paediatrician, 4% under the care of a paediatric respiratory consultant and 2% were 'other'.

**Severity during admission**

The audit collected data on a variety of clinical parameters which enabled an assessment of disease severity as defined in the BTS Guideline, notably respiratory rate, oxygen saturations, work of breathing and temperature.

The mean respiratory rate was 44 breaths/min and, as expected, reduced with increasing age (see figure 2). 29% had a respiratory rate of 50 or above, which is similar to previous years: 33% in 2009/10; 28% in 2010/11; 33% in 2011/12 and 30% in 2012/13 (see table 1).

Hypoxaemia was defined as the lowest recorded oxygen saturation in air being less than 92%. 33% of patients were hypoxaemic, which is a lower percentage than in previous years: 39% in 2009/10, 37% in 2010/11, 39% in 2011/12 and 41% in 2012/13 (see table 1). There was no definite trend in oxygen saturations vs age (see figure 2). It should be noted that this question has changed for this audit period; for the first time centres were asked to document the lowest recorded oxygen saturation in air, whereas previous audits have simply asked if the lowest recorded oxygen saturation were above or below 92%.

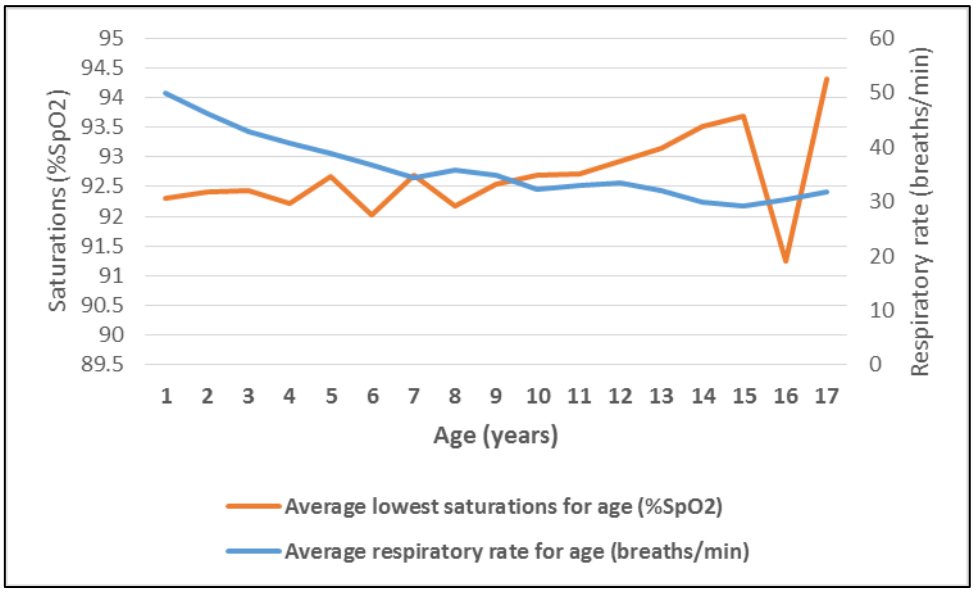


***Figure 2: Saturations and respiratory rate per age range***

5% of patients had severe recession and 52% had mild/moderate recession. This is the first audit cycle to classify recession by severity, making direct comparison with previous audits difficult. However, the overall percentages of patients with recession are similar (51-54% in previous years).

41% of patients had wheeze. A greater percentage of children less than 5 years of age had wheeze than previous years: in this audit cycle, 43% of patients under 5 years, and 33% of patients aged 5 years or above had wheeze (see table 2). 11% of patients with wheeze had a causative organism identified (55% were viruses, 20% were bacteria and the remainder were not stated).

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2016/17 |
|---|---|---|---|---|---|
| < 5 years | 34% | 35% | 40% | 39% | 43% |
| ≥ 5 years | 28% | 23% | 24% | 26% | 33% |
| All age groups | 32% | 32% | 36% | 36% | 41% |

***Table 2: Percentage of children admitted with wheeze per age range, for each audit year***

Temperature is an important measure of severity (a temperature of >38.5°C indicates severe CAP – see table 4 below). 24% of patients had a temperature greater than 39°C and 35% had a temperature of 38-39°C. The percentage of children with a temperature greater than 39°C has been gradually declining over the years; 38% in 2009/10, 33% in 2010/11, 30% in 2011/12 and 29% in 2012/13 (see table 1).

50% of patients had a history of poor feeding, a decrease from previous rounds of the audit. Incidence of apnoeas remained at 1% (see table 3).

| | 2009/10 | 2010/11 | 2011/12 | 2012/13 | 2016/17 |
|---|---|---|---|---|---|
| Poor feeding | 56% | 64% | 59% | 57% | 50% |
| Apnoeas noted | 1% | 1% | 2% | 1% | 1% |

***Table 3: Percentage of children with poor feeding or apnoeas noted, for each audit year***

The investigation and management of children with CAP is directed by both the BTS Guideline and the National Insitute for Health and Care Excellence (NICE) 2016 Sepsis Guideline[9] (the 'NICE Sepsis Guideline'). This is an important consideration when interpreting the results of the current CAP audit. There is considerable overlap between these guidelines, but there are a number of clinical scenarios where the proposed investigation and management differ considerably. The primary aim of the 2016/17 audit was to establish compliance with the BTS Guideline and, as such, did not collect some of the specific parameters (e.g. heart rate, mental state and skin appearance) that would enable a complete assessment of compliance with the NICE Sepsis Guideline. However, it is possible to estimate its potential impact from the data points available.

The BTS Guideline defines severe CAP using physiological parameters (see table 4). The NICE Sepsis Guideline defines a child as being high risk for sepsis if they present with one high risk criterion (see table 5).

- Temperature >38.5°C
- Respiratory rate >70 breaths/min in infants and >50 breaths/min in older children
- Moderate to severe recession or severe difficulty in breathing
- Nasal flaring, grunting or apnoeas
- Cyanosis or oxygen saturations <92%
- Significant tachycardia for age range (not included in this audit)
- Capillary refill time of ≥2 seconds (not included in this audit)

***Table 4: Physiological parameters defining severe CAP according to the BTS Guideline***

| Age (in years) | Respiratory Rate (breaths/min) | Oxygen saturations | Recessions | Other |
|---|---|---|---|---|
| 1 -2 | ≥ 50 | < 90 % | Moderate or Severe | Grunting or Apnoea |
| 3 - 4 | ≥ 40 | < 90 % | - | - |
| 5 | ≥ 29 | < 90 % | - | - |
| 6 - 7 | ≥ 27 | < 90 % | - | - |
| 8 - 11 | ≥ 25 | < 90 % | - | - |
| ≥ 12 | ≥ 25 | FiO2 >40% to maintain sats >92% | - | - |

***Table 5: NICE Sepsis Guideline: high risk criteria for severe sepsis, per age range, that were included in the current BTS CAP audit***

An analysis of the 2016/17 data shows 57% of patients had severe CAP according to the BTS Guideline and 59% of patients were high risk for sepsis using the NICE Sepsis Guideline. 77% of patients who were high risk for sepsis were also defined as severe CAP, highlighting the significant overlap between both guidelines.

**Investigations**

As detailed above, the investigation of children with CAP is directed by both the BTS Guideline and the NICE Sepsis Guideline. The BTS Guideline recommends that acute phase reactants, including C-reactive protein (CRP), should not be tested routinely in paediatric CAP and are not useful in distinguishing viral from bacterial CAP. Despite this, these investigations continue to be performed in a large proportion of children with possible CAP. This may be partially explained by the influence of the NICE Sepsis Guideline, which recommends performing blood investigations (including blood culture, white cell count (WCC) and CRP) in those children who are high risk for sepsis. The audit found that 45% of children diagnosed with CAP had CRP and WCC measured. This does, however, represent a reduction in comparison to previous years where these blood tests were performed in 62-63% of children.

The BTS Guideline recommends that CXRs should not be considered a routine investigation in children thought to have CAP. There has been a gradual reduction in the number of CXRs performed in children with CAP; 73% of children had a CXR during their admission. Contrastingly, this figure was 95% in 2009/10, 93% in 2010/11, 90% in 2011/12 and 88% in 2012/13 (see table 1). 83% of the CXRs were reported as abnormal with 37% of these CXRs demonstrating lobar pneumonia and 53% patchy changes (including peri-hilar bronchial wall thickening). Of the patients that had CXRs performed, only 63% were classified as severe CAP using the BTS Guideline, 4% had complications and 2% were admitted to PICU, suggesting that it is not simply disease severity or complications that are prompting clinicians to perform a CXR.

Microbiological investigations were performed to look for a causative organism in 40% of patients using the following means: 35% had blood cultures, 11% had nasopharyngeal sputum or nasal swabs, 2% had cough swabs, 2% had spontaneous sputum samples, 2% had throat swabs and 1% had induced sputum samples. The BTS Guideline recommends that microbiological investigations should be reserved for children needing paediatric intensive care or those with complicated CAP. The NICE Sepsis Guideline advises that children who are high risk for sepsis should have blood cultures taken. Of the patients that had blood cultures performed, 71% were high risk for sepsis, 4% were admitted to PICU and 6% had complications, again indicating that many had microbiological investigations that according to guidelines were unnecessary.

A causative organism was found in 10% of patients, which is similar to previous years (16% in 2009/10, 13% in 2010/11, 9% 2011/12 and 12% in 2012/13). Of those that had a causative organism identified,

50% were viruses, 25% were bacteria and the remainder were 'other'. The most common causative organism identified was respiratory syncytial virus in 36% of patients (see figure 3).

There was no correlation between the isolation of a virus or bacteria and specific CXR changes (of those with lobar changes and a causative organism found: 42% were viruses and 37% were bacteria). As mentioned previously those with wheeze were more likely to have a virus identified as a causative organism.

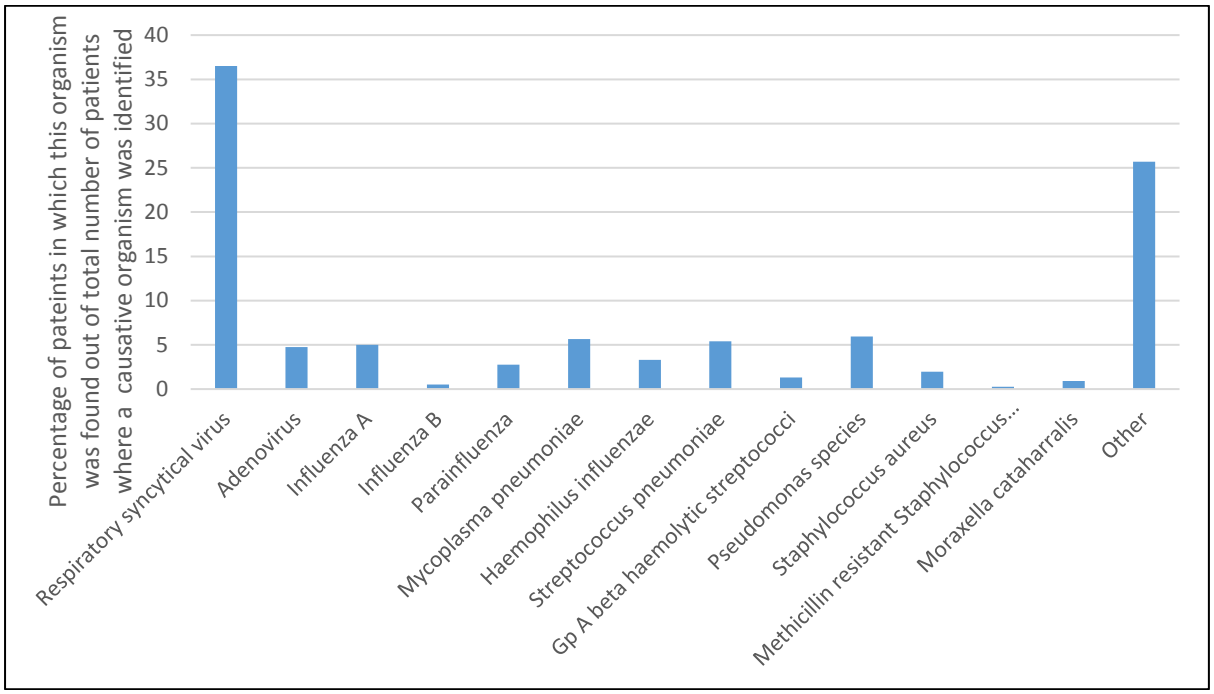


***Figure 3: Causative organism identified***

**Management**

42% of patients were given oxygen during their admission despite only 33% of patients reportedly being hypoxaemic (lowest recorded saturation of below 92% in air). It is unclear from the audit data why there is a discrepancy. A possible explanation would be that those given oxygen may not have had their low saturations in air recorded because they were acted on immediately by administering oxygen.

Bronchodilator use has increased over the last few years: 35% in 2009/10, 40% in 2010/11, 43% in 2011/12, 43% in 2012/13 and 48% in this audit period. This may be due to a number of factors including an increased percentage of cases with viruses identified as a causative organism and a potentially increased overlap of the patient population with viral-induced wheeze.

Intravenous (IV) fluids were given to 18% of children, representing a significantly decreased proportion compared to previous audits where between 27% and 32% of cases received IV fluids. Not all children that were given IV antibiotics were given IV fluids, demonstrating that IV fluids are not a default when an IV cannula is in situ.

The BTS Guideline recommends that nasogastric feeding is avoided in severely ill children because it can compromise their breathing, despite this 3% of children were given nasogastric feeds in the current audit period.

At least one type of extra respiratory support was required in 9% of patients: 8% were given high flow nasal oxygen (HFNO), 1% received bilevel positive airway pressure (BiPAP) or continuous positive airway pressure (CPAP), and 1% required mechanical ventilation. This perhaps reflects the growing use of HFNO in the UK for acute respiratory disease[10]. Questions about non-invasive respiratory support were not included in previous years so a comparison cannot be made. Intensive care admission was required for 2% of patients which indicates that the need for mechanical ventilation was not the only reason for admission to intensive care. This may be because in some centres intensive care admission is needed for administration of non-invasive ventilation (see organisational data below).

The BTS Guideline does not recommend chest physiotherapy in children with CAP, yet it remains widely used. In this audit period, 10% of patients received chest physiotherapy, which is a reduction from 13-17% of patients in previous years. Further analysis reveals that chest physiotherapy was administered in 17% of patients with a lobar pneumonia. This suggests a continued belief that chest physiotherapy is beneficial for children with lobar pneumonia.

**Antibiotics**

All patients included in this audit were given antibiotics. This demonstrates close adherence to the BTS Guideline, which states that all children with a clear diagnosis of CAP should be given antibiotics because it is not possible to distinguish between viral and bacterial pneumonia. Nationally, amoxicillin is increasingly being used as the first line oral antibiotic as per the BTS Guideline; this year 33% of oral antibiotic prescriptions were for amoxicillin whereas in 2012/13 this figure was only 25%. The next most common oral antibiotic given this year was co-amoxiclav at 31% of oral antibiotic prescriptions, 19% were given for azithromycin and 13% clarithromycin (see figure 4).

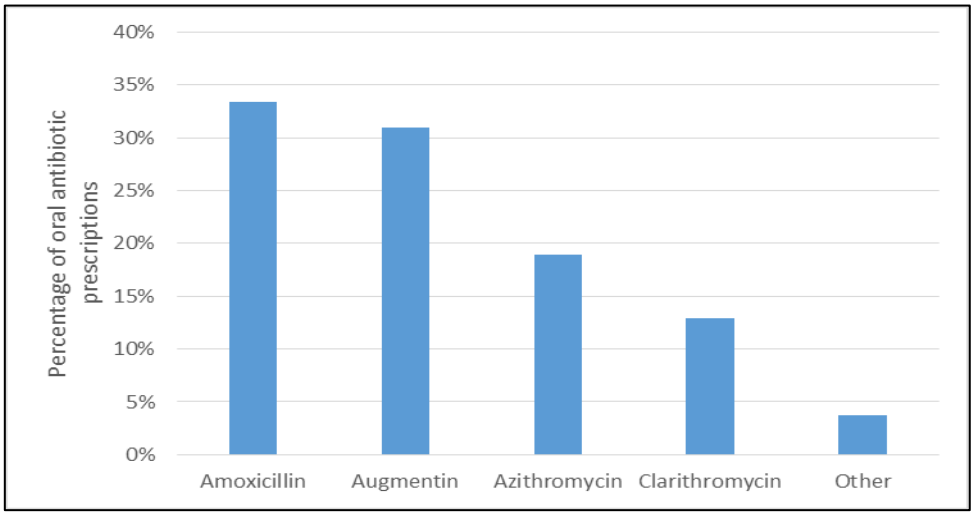


**Figure 4: Oral antibiotic prescriptions (others included erythromycin, cefaclor, clindamycin, cefuroxime, penicillin, flucloxacillin, cefotaxime)**

There were 2556 prescriptions for IV antibiotics in 2274 patients (31% of all patients). This is considerably less than in 2012/13 when 51% of all patients had IV antibiotics prescribed. The BTS Guideline advises that IV antibiotics should be reserved for children who are unable to tolerate oral fluids or absorb antibiotics, or those that present with signs of septicaemia or complicated pneumonia. In addition, the NICE Sepsis Guideline indicates that children who are high risk for sepsis should be given IV antibiotics. Out of the patients given IV antibiotics 69% were classified as severe CAP, 74% of patients were high risk for sepsis, 5% were admitted to PICU and 7% had complications. Similar to previous years, more children were given IV antibiotics than IV fluids which implies that an inability to tolerate oral fluids is not the sole rationale for commencing IV antibiotics.

The most common IV antibiotic prescribed was co-amoxiclav in 41% of all IV antibiotic prescriptions, followed by cefuroxime in 15% and amoxicillin in 9%. It is worth noting that IV ceftriaxone was not included in the current audit as a named selection. The NICE Sepsis Guideline suggests ceftriaxone as the first line IV antibiotic in children who are high risk for sepsis, it is therefore likely that this antibiotic is a large contributor to the 'other' group of 26% of IV antibiotic prescriptions.

**Complications, outcomes and follow-up**

In order to increase the granularity of the data, the 2016/17 audit collected information on both date and time of admission and discharge (previous audits collected date only). Additional records were excluded from this part of the analysis due to illogical or missing data. The median length of stay (days) was 1 day, compared to a median of 2 days for all previous audits (see table 1). The median length of stay in hours was 25 hours.

The mean length of stay was short: 49% were admitted for less than 24 hours and 18% were admitted less than 4 hours (see figure 5). A higher proportion of patients were admitted for less than 3 days: 82% in 2016/17, 60% in 2009/10, 65% in 2010/11, 67% in 2011/12 and 66% in 2012/13. Fewer patients were admitted for more than 5 days, only 8% in this audit period versus 14-21% in previous years.

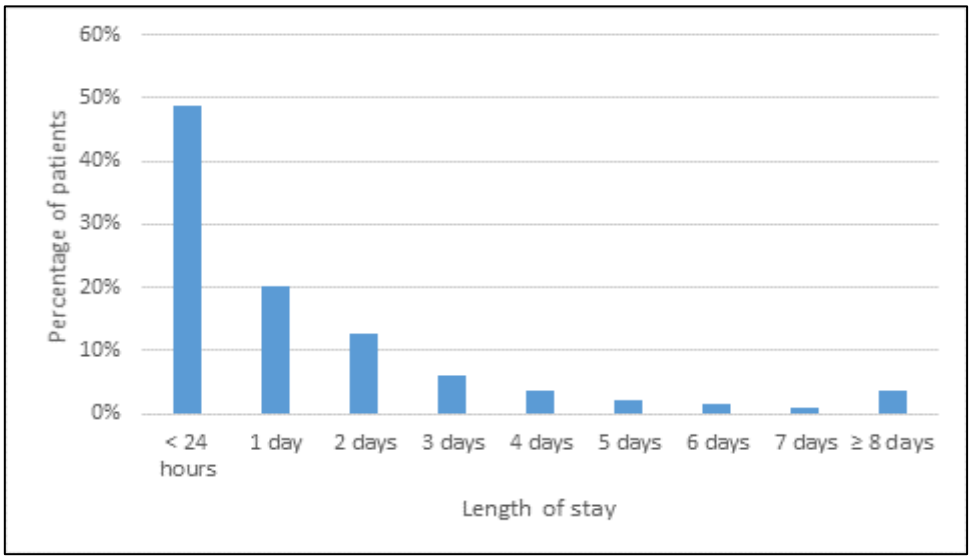


***Figure 5: Length of admission***

The overall complication rate was low; 1% of patients developed an empyema, 1% developed a pleural effusion, and 0.3% developed a lung abscess. The total complication rate of 3% continued the downward trend of previous years: 9% in 2009/10, 7% in 2010/11 and 4% in 2012/13. Despite this low complication rate, 24% of patients had hospital follow-up. The BTS Guideline states that children with severe pneumonia, empyema and lung abscesses should have follow-up. The follow-up rate, therefore, appears high and, in addition, there is some evidence from this audit that some complicated cases are not being reviewed again: only 76% of those that had an empyema and 63% of those that had a lung abscess had hospital follow-up arranged.

The audit collected data on CXRs at follow-up where follow-up had occurred before the close of the audit, or where there was evidence that a follow-up CXR was due to occur. 6% of patients already had a follow-up CXR by the close of the audit, and a further 1% were due to have a follow-up CXR. This represents a significant reduction in the number of follow-up CXRs being performed. In previous years, the audit only asked if there was a CXR at follow-up: between 11% and 16% of patients had follow-up CXRs in previous years. The BTS Guideline states that a repeat CXR should be performed for those with

round pneumonia, collapse or persisting symptoms. These precise criteria were not assessed in this or previous audits so it is not possible to comment specifically on adherence to the Guideline's recommendations. A similar downward trend is seen in the number of hospital follow-up appointments arranged (36% in 2009/10; 32% in 2010/11; 33% in 2011/12; 31% in 2012/13 and 24% in this audit).

**Organisational Audit**

A local clinical guideline for paediatric CAP was in place at the time of the audit in 74% of institutions. Of those that did not have a guideline in place; 4% were working on a local version and its ratification, 1% had submitted a guideline to a local committee for approval, 1% had a guideline approved by their trust but not yet implemented, 13% had taken no action to implement a local guideline, and others used the BTS Guideline.

The organisational audit enquired about where children were managed if they required non-invasive ventilation. The most common location was a distinct High Dependency (HD) area with HD staffing provided from the ward compliment to maintain a 1 bed to 2 nurse staffing ratio (29%), followed by a paediatric intensive care unit not located within the institution (21%) (see figure 6 below). It is interesting to note that in 21% of hospitals transferred patients to a PICU in another institution and 6% of hospitals admitted patients to their own PICU for non-invasive ventilation. This is at a huge cost to not only the NHS but also to the parents. The Royal College of Paediatrics and Child Health (RCPCH) recommends that children on NIV should ideally be cared for in local district general hospitals in order to reduce pressure on PICUs[11].

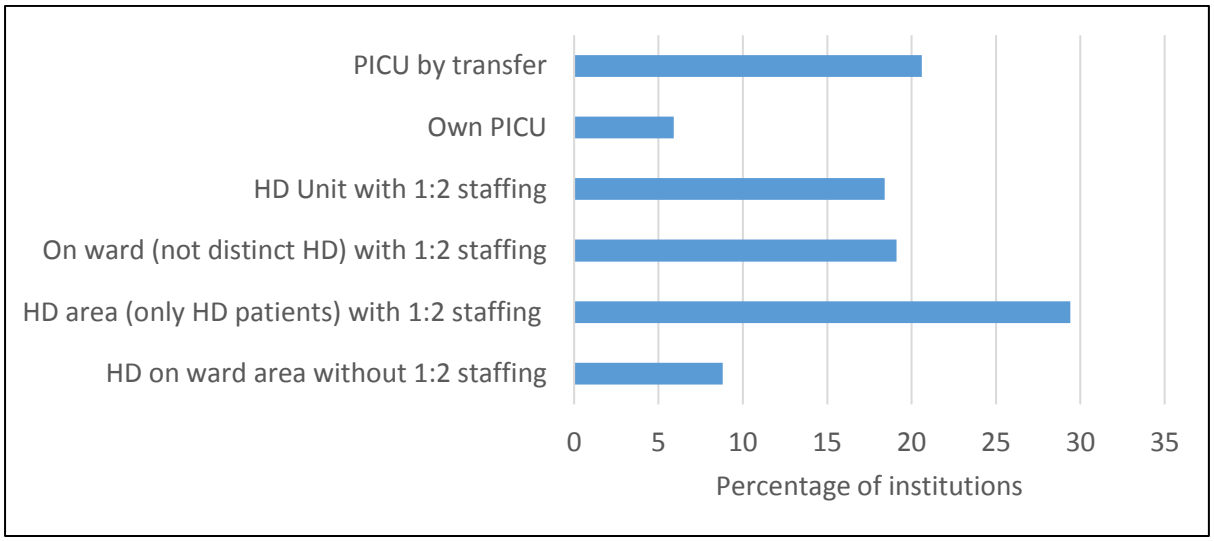


***Figure 6: Location of patients treated with non-invasive ventilation***

The most common changes institutions have made following the last audit were: creation of local guidelines, fewer blood tests, fewer CXRs, increased use of oral amoxicillin, less use of IV antibiotics, less physiotherapy and less use of IV fluids.

**Conclusions**

The 2016/17 paediatric CAP audit had the largest response rate of all of the BTS national CAP audits to date. Patient demographics have remained fairly static through the years: a male predominance of around 52%, a young patient group with the majority under 3 years of age, and a previously well population group with only 33% having pre-existing disease. The management of CAP in primary care

has increasingly followed the BTS Guideline – the current audit demonstrates a growing use of oral amoxicillin as first line treatment out of hospital.

There is some evidence to suggest that those admitted during this audit period had a lower disease severity than in previous years. Whilst the work of breathing was similar, fewer patients were hypoxaemic, tachypnoeic or pyrexial. Potential explanations for this include changing referral patterns and admission thresholds.

The assessment and management of children with suspected CAP are, in many cases, dictated by both the BTS Guideline and the NICE Sepsis Guideline. Whilst the current audit was not designed specifically to address the impact of the NICE Sepsis Guideline, it was possible to identify that at least 59% of the included patients were at high risk for sepsis. The NICE Sepsis Guideline recommends commencing IV antibiotics in these high risk individuals. The fact that only 39% of children that were high risk for sepsis were given IV antibiotics suggests that, in practice, other factors, including the BTS Guideline, are being considered when determining the treatment of children with CAP. Ideally, national guidelines should concur in their recommendations for varying clinical scenarios. This is not currently the case for children with CAP and is an important area for consideration in future guideline revisions and audits.

Despite increased compliance with the BTS Guideline, there remains room for significant improvement in many areas. Investigations continue to be performed more frequently than recommended including blood tests, CXRs and microbiological investigations. In addition, too many children receive IV fluids and antibiotics, when they would likely tolerate oral fluids and antibiotics. Many factors may account for these practices including guideline awareness, training and, as outlined above, the presence of multiple relevant guidelines.

The 2016/17 audit demonstrated a reduced length of stay to a median of 1 day. Reducing admission times are a well-recognised phenomenon in paediatric healthcare with many possible explanations including increased availability of paediatric assessment/decision units, improved efficiency, increased morbidity and changes in health-seeking behaviour of parents[12].

Follow-up is infrequently necessary after an admission with CAP and indeed follow-up rates have reduced compared to previous years. However, the current rate of 24% of all admissions remains ostensibly high and represents an inefficient use of scant healthcare resources.

Overall the audit was very encouraging with good evidence of improved compliance with the BTS Guideline across the board. However, there remain many areas where improvements are needed and this will only be possible with ongoing education and increased awareness of the BTS Guideline.

We would like to thank everyone who contributed data to this audit and hope that you will continue to participate in future years.

15 January 2018

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# Clinical Audit Action Plan

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|---|---|
| **Project title** | |

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| **Action plan lead** | Name: | Title: | Contact: |

Ensure that the recommendations detailed in the action plan mirror those recorded in the “Recommendations” section of the report. The “Actions required” should specifically state what needs to be done to achieve the recommendation.

| **Recommendation** | **Actions required** *(specify “None”, if none required)* | **Action by date** | **Person responsible** *(Name and grade)* | **Evidence required to show recommendation has been implemented** (Training log, minutes, new documentation) |
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