



British Thoracic Society
National Adult Community Acquired Pneumonia Audit 2018/19
Protocol and Instructions
March 2019

Aims and Objectives

The aim of the BTS audit programme is to drive improvements in the quality of care and services provided for patients with respiratory conditions across the UK.

Audit Period and Scope

Audit period: 1 December 2018 – 31 January 2019

Data entry period: 1 December 2018 – 31 May 2019

The 2018/19 audit has two parts:

Part 1: Main adult CAP audit – one record per patient

Part 2: Organisational audit – one record to be submitted by each participating site to provide information on the audit process for your institution

The audit should be led by a Consultant Physician and the screening process/diagnosis review should be undertaken by a member of the direct care team.

Any UK hospital that directly admits patients for inpatient treatment of CAP can take part in the national audit.

Consent and Fair Processing

The audit has approval from the Health Research Authority Confidentiality Advisory Group under Section 251 of the NHS Act 2006 to collect patient identifiable data in England and Wales without consent (**ref 18/CAG/0147**). However, the following fair processing activities must be carried out by participating hospitals.

- Patient Information Posters should be displayed in all areas where CAP patients may be treated from 1 December 2018.
- If a patient asks for further information please provide them with a copy of the Patient Information Leaflet.
- If a patient asks to opt out from the audit, please make a clear record of this in the patient's notes and do not include their data in the audit.
- If a patient asks to opt out after their data has been entered please contact the BTS audit team.

PART 1: Main Adult CAP Audit

We strongly recommend that all eligible cases of community-acquired pneumonia hospitalised during the audit period should be included in the audit. This is in order to provide an accurate reflection of a participating institution's performance against audit standards. Where it is not possible to record all cases (for example, when the number of cases admitted during the audit period is very large) we recommend that at least 60 cases should be added to the audit tool. If fewer cases are admitted during the audit period, hospitals may still record a lower number of cases to participate in the audit, but please be aware that the comparative report for the hospital will be of limited value where very low numbers are entered into an audit.

If you are not able to screen all cases or enter all eligible cases into Part 1 of the audit please take care to avoid bias in case selection. For example you could restrict your search to selected ward areas or include consecutive cases.

1) Instructions for Case Identification

All adult cases **admitted** through an acute admission area during the BTS CAP Audit period (1/12/18 – 31/1/19) with a primary discharge code mapping to a clinical diagnosis of pneumonia should be identified. Acute admission areas include all Accident and Emergency departments, acute medical units, specialty admission and critical care areas within your institution. Patients referred directly to wards by GPs should also be included. Patients who are only seen in ED or equivalent areas i.e. who have 'attended' but have not been 'admitted' to hospital should not be included. The designation of ED-equivalent areas will vary from hospital to hospital but these may include clinical decision units or assessment units (including MAU). There is no minimum length of stay or requirement for the patient to have an overnight stay.

In the event that a patient is admitted to one hospital, and then transferred to another hospital, the case should be recorded at the admitting hospital, and should not be included in the audit at the second hospital.

The following codes (and all sub-codes) should be used to identify cases **aged >16 years** with a **primary discharge diagnosis** of pneumonia:

- J12 Viral pneumonia
- J13 Pneumonia due to S. Pneumoniae
- J14 Pneumonia due to H. Influenzae
- J15 Bacterial pneumonia not elsewhere classified
- J16 Pneumonia due to other infectious organism
- J17 Pneumonia in diseases classified elsewhere
- J18 Pneumonia: organism unspecified

The codes are listed in more detail on the ICD-10 website (<http://apps.who.int/classifications/apps/icd/icd10online/>).

2) Checking cases against the Audit Criteria

Ideally, **all identified cases** should be screened against the inclusion and exclusion criteria. Part 1 data entry should only be completed for cases that meet the inclusion criteria and none of the exclusion criteria. For excluded cases, the reason(s) for exclusion should be recorded on the screening data sheet provided and the aggregated results should be entered into Part 2 of the audit. The inclusion and exclusion criteria are listed below:

Inclusion Criteria

Include the patient in Part 1 of the audit if BOTH of the inclusion criteria apply:

- New infiltrates on chest x-ray performed within 24 hours of admission
- Acute onset of symptoms and signs of LRTI

AND NONE of the following **Exclusion Criteria** apply:

- Hospital admission within the 10 days prior to index admission
- Immunocompromised
- Treated for aspiration pneumonia
- Transfer from another hospital

Points to note:

To exclude patients with non-pneumonic LRTI please review the admission CXR of each case to ensure that new pulmonary infiltrates consistent with infection are present. If no new infiltrates are present on admission CXR or if no CXR was performed, please exclude from the audit and record the reason on the screening data sheet.

PART 2: Organisational Audit

This part of the audit is divided into three parts and asks questions about local selection of the audit cohort, your institution and how previous participation in the CAP audit has affected clinical practice.

In addition to auditing CAP management nationally against recognised standards from the BTS guidelines, the BTS CAP 2018/19 audit aims to assess variation in processes of care and management for patients hospitalised with CAP. There is evidence that regional variation in pneumonia incidence, emergency admission rates and mortality exists across the UK. In 2012, incidence rates of pneumonia recorded from GP databases were twice as high in the north-east and north-west of England when compared to the south of England, Wales and Northern Ireland. The NHS Atlas of Respiratory Disease in 2012 showed considerable variation in standardized mortality rates from pneumonia in people under the age of 75 across 151 Primary Care Trusts with the rate ranging from 2.6 to 22.3 per 100,000 population.

Part two of the audit asks questions about local hospital factors that may affect variation in care of CAP patients. These questions should be completed in conjunction with your hospital's audit and coding departments.

Accessing the BTS Audit Tools:

Data is entered onto the online data collection tool via the BTS audit system (user registration required – log in details should not be shared): <https://audits.brit-thoracic.org.uk/>

The Adult CAP Audit appears under the list of adult audit tools and is organised in two parts. For each part of the audit, click on the Period name "1 December 2018– 31 January 2019 (National Audit)" and then click "Add record" to access the data entry screens.

You can save the record you are working on and return to it at any point. When you have completed data entry you will need to click "Commit" to submit your data to the database. At this point you can see the record but will not be able to edit the contents further.

You will only be able to submit Part 2 of the audit once case screening for Part 1 is complete, as some questions will require aggregated points from the Screening sheet.

Analysis and Reporting

Audit participants can generate local reports from the audit system which present that institution's data as a comparison to the national dataset, and reports comparing data from different audit periods. Click the 'Reports' link on the audit system home page, then select the type of report and the relevant audit period(s) from the links at the bottom of the reports page.

The national dataset for the Adult CAP audit is reviewed by the BTS clinical audit lead and a summary report providing an overview of the findings of the audit will be produced approximately six months after the close of the audit. Outputs from the audit will include an analysis of hospital-level variation and an outlier review which will be risk-adjusted to take account of local hospital factors.

NHS England Quality Accounts List

This audit is on the 2018/19 List and should therefore be reported in English Trusts' Quality Accounts.

Contacts

Any queries should be referred to audittools@brit-thoracic.org.uk or 020 7831 8778.

Appendix 1 - Audit Standards

The source of the standards for the BTS adult community acquired pneumonia audit is the **BTS Guideline for community acquired pneumonia in adults (2009)** <https://www.brit-thoracic.org.uk/standards-of-care/guidelines/bts-guidelines-for-the-management-of-community-acquired-pneumonia-in-adults-update-2009/>

Standards for Part 1

Audit Q. no	Data Field Required	Guideline Reference	Usage of data field
Section 1: Patient information & Index Admission Information			
1.1	NHS number	N/A	Allow HES linkage
1.2	Home Postcode	N/A	Allow linkage to socio-economic data
1.3	Sex	N/A	Demographic details. To describe cohort.
1.4	Date of Birth	N/A	Demographic details. To describe cohort. Enable age-adjusted analyses.
1.5	Confirmation of chest x-ray (CXR) review	Inclusion criteria	Case based inclusion criteria
1.6a	Admission date	N/A	Index admission details. To calculate LOS.
1.6b	Admission time	5.2	Required for time to CXR and time to antibiotics analysis
1.7a 1.7b	Admission source	N/A	Index admission details. Analysis of proportion of admissions from A&E
1.8	Admission from residential care	N/A	Index admission details. Demographic details. Indication of pre-morbid status.
1.9	Death as inpatient	N/A	Index admission details Required for outcome analysis
1.10	Discharge date/date of death	N/A	Index admission details. Required for length of stay calculation and outcome analysis.
1.11	Primary and secondary diagnosis code(s)	N/A	Index admission details. Co-morbidity data. Required for outcome analysis
1.12	Presenting symptoms	Inclusion criteria	Case based inclusion criteria
1.13	Antibiotics in last 7 days	N/A	Index admission details. Required for outcome analysis
1.14	Smoking status	5.6	Co-morbidity data. Required for outcome analysis. Risk stratification for follow up CXR
Section 2: Initial Investigations			
2.1	Time of initial CXR	5.2; 5.8; 8.9	Radiological confirmation of CAP Required for time to CXR analysis
2.2	Date of initial CXR	5.2; 5.8; 8.9	Radiological confirmation of CAP Required for time to CXR analysis
2.3	Time of first antibiotic	8.9;	Required for time to antibiotics analysis
2.4	Date of first antibiotic	8.9;	Required for time to antibiotics analysis
2.5	CXR within the first 4 hours of presentation?	5.8; 8.9	Outcome measure
2.6	CXR obtained before antibiotics given in hospital?	5.8; 8.9	Outcome measure.
2.7	Time interval between CXR and the first ABX.	8.9	Outcome measure
2.8	Was CURB 65 score recorded?	6.6	Outcome measure.

2.9	Elements of CURB 65 present	5.8; 6.6	Outcome measure. Recording and use of severity assessment tools
2.10	Co-morbid illnesses	5.8	Baseline patient characteristics. Required for outcome analysis
2.11	Hypoxic on admission?	5.8; 7.3	Initial hospital management of CAP. Required for outcome analysis
2.12	Supplementary oxygen given?	5.8; 7.3	Initial hospital management of CAP. Required for outcome analysis
Section 3: Antibiotics			
3.1	Initial antibiotics prescribed	8.10; 8.11; 8.12	Antibiotic guideline adherence. Outcome measure.
3.2	Were antibiotics in line with CAP guidelines?	8.10; 8.11; 8.12	Antibiotic guideline adherence. Outcome measure
3.3	Total duration of IV antibiotics	8.13; 8.14; 8.18	Antibiotic guideline adherence – parental vs oral route. Outcome measure.
3.4	Total duration of antibiotics for CAP	8.16	Adherence to recommendations depending on severity. Outcome measure.
Section 4: Microbiological Investigations			
4.1	Pneumococcal urinary antigen performed?	5.11	Measuring adherence to investigation standards. Outcome measure.
4.2	Legionella urinary antigen performed?	5.11	Measuring adherence to investigation standards. Outcome measure.
4.3	Respiratory viral testing performed?	5.11	Measuring adherence to investigation standards. Outcome measure.
4.4	Sputum cultures performed?	5.11	Measuring adherence to investigation standards. Outcome measure.
4.5	Blood cultures performed?	5.11	Measuring adherence to investigation standards. Outcome measure.
Section 5: Treatment			
5.1a	Timing to Senior review	6.7; 8.18	Outcome measure.
5.1b	Specialty of initial consultant on post-take ward round	6.7; 8.18	Outcome measure.
5.2	Critical care advice?	6.6; 7.4	Outcome measure.
5.3	Critical care admission?	7.4	Marker of disease severity. Outcome measure.
5.4	Ventilatory and Inotropic support	7.4	Marker of disease severity and multi-organ dysfunction. Outcome measure.
5.5	Readmission within 30 days	N/A	Outcome measure
5.6	Death within 30 days	N/A	Outcome measure
Section 6: Outcome & Discharge Arrangements			
6.1	Observations within 24 hours of discharge	7.3	Measuring adherence to discharge standards. Outcome measure.
6.2	Discharge observations	7.3	Measuring adherence to discharge standards. Outcome measure.
6.3	Follow up arrangements made on discharge	7.5	Measuring adherence to follow up standards. Outcome measure.
6.4	Follow up CXR arranged	5.6; 7.5	Measuring adherence to follow up standards. Outcome measure.