Commissioner's Guide to the NCEPOD Report 'Consolidation Required'

A review of the care provided to adults presenting to hospital with a diagnosis of community-acquired pneumonia.

INTRODUCTION

Community-acquired pneumonia (CAP) is very common, affecting between 0.5% and 1% of adults in the UK each year. CAP is diagnosed in 5 to 12% of all adult patients seeing their general practitioner for lower respiratory tract infection symptoms, and around 42% of these patients are admitted to hospital. CAP accounts for more than 100,000 admissions per year, a figure that was seen to be rising even before the COVID-19 pandemic. The number of admissions due to CAP, and average length of stay (5.4 to 10.9 days) have been reported to vary across regions, even when corrected for catchment population, highlighting the absence of a standardised approach to the care of patients with CAP.

CAP is more common in older people, who often have other medical conditions. For younger patients under 65 years of age, both death and readmission are also known to be associated with greater social deprivation. In 2019, pneumonia and other lower respiratory infections were the deadliest group of communicable diseases ranked as the fourth leading cause of death by the World Health Organization, with 30,000 deaths each year in the UK.

Readmission to hospital after an episode of CAP is common and is associated with a more than two-fold increased risk of mortality compared with readmission for other causes. The Getting It Right First Time (GIRFT) respiratory medicine report published in 2021 showed that readmissions were not related to a short initial length of stay and 38% were due to pneumonia while 21% were due to other respiratory disorders. BTS audit data have also shown that readmission rates are rising, further adding to the pressure on the healthcare system. The GIRFT report noted that '*there was surprisingly little infrastructure to support pneumonia care*' in place in hospitals compared with the infrastructure in place for other respiratory conditions that result in fewer hospital admissions.

There are established guidelines for the care of people with CAP, from admission through to discharge and follow-up. The BTS also have a template care bundle that describes four high-impact actions to ensure the best clinical outcome for patients admitted with CAP, comprising timely prescribing and administration of oxygen followed by timely antibiotics administered after assessment with a chest X-ray and CURB65 risk score. At admission, low-risk patients with CAP who may be suitable for ambulatory care should be identified. Use of a risk score can aid this and adds to the accuracy of clinical decision-making, the strategy for investigation and, for initial antibiotic treatment. A treatment escalation plan and monitoring for signs of deterioration in hospital are also important. Signs of deterioration influence both the location where care is delivered and the continuing antibiotic strategy. On discharge, clearly defined arrangements for follow-up need to be in place.

This study was proposed in 2019 by the BTS and the Intensive Care Society (ICS) to explore the perceived absence of a standardised approach to care. The beginning of this project coincided with the onset of the COVID-19 pandemic. Identification of patients to be included in the study was therefore deliberately delayed avoiding the peak of COVID-19 admissions.

The recommendations in this report support previous recommendations in this area, particularly the NICE clinical guideline 191, NICE quality standard 110, BTS guidelines for the management of CAP and GIRFT respiratory report.

PATIENT POPULATION

All patients aged 18 or over who presented to hospital between 1st October 2021 and 31st December 2021 with a primary admission diagnosis of CAP. Data were included from hospitals in England, Wales, Northern Ireland, and Jersey.

Exclusion criteria

Patients presenting to hospital within 10 days of being discharged from hospital where the discharge diagnosis of the previous admission was not CAP.

Sampling

A maximum of eight patients were selected from each hospital. Sampling was deliberately biased towards more severe cases of CAP, based on increased length of stay, admission to critical care and death, to ensure the inpatient pathway could be assessed. A sample of ambulatory/same day discharges were also included while minimising sampling patients with a length of stay of less than three days. Sampling for the study was delayed until after the peak of the COVID-19 pandemic.

CLINICAL ISSUES

- At the time of presentation to hospital, there were 333/673 (49.5%) patients with a temperature in the normal range.
- The CXR report differed from the findings noted by the clinical team in 205/665 (30.8%) patients.
- Clinicians identified room for improvement in CXR reporting in 163/673 (24.2%).
- A CURB65 score was documented for only 204/767 (26.6%) patients.
- A NEWS2 score was documented for 602/767 (78.5%) patients as part of the first hospital review.
- Additional blood tests should have been undertaken in 119/745 (16.0%) patients.
- Comorbid medical conditions were common, with at least one comorbidity present in 695/767 (90.6%) patients.
- There were 100/687 (14.6%) patients where the clinician considered that antibiotic guidance in their own hospital had not been followed.

ORGANISATIONAL ISSUES

- 58/149 (38.9%) hospitals reported there was no process in place to ensure that a CXR was carried out within four hours of admission.
- 52/149 (34.9%) hospitals the CXR was not routinely reported by a radiologist.
- There were 34/127 (26.8%) hospitals where respiratory nurses (unknown for 22) were involved in the care of patients with CAP, but the extent of this involvement varied considerably.
- 56/149 (37.6%) hospitals reported they had a lead clinician for pneumonia.
- A patient information leaflet was only available at 28/149 (18.8%) hospitals.
- Only 12/149 (8.1%) hospitals used age >50 to select patients for follow-up and only 17/149 (11.4%) used smoking status.

KEY FEATURES OF A SERVICE

1. Accurate diagnosis of community acquired pneumonia

The typical features associated with acute respiratory illness such as CAP include cough, dyspnoea, wheeze, pleuritic pain, haemoptysis, and fever. However, a significant proportion of CAP patient's present with atypical features. Diagnostic uncertainty has previously been identified as a cause of delay in appropriate treatment for CAP. The absence of typical features of CAP (or infection in general) emphasises the importance of rapid and thorough investigation on admission to hospital to ensure an accurate diagnosis and initiation of appropriate treatment.

2. Clinical decision making

Assessment of the severity of community-acquired pneumonia (CAP) influences the location where treatment is provided, the number and type of investigations required and the initial choice of antibiotics. Clinical judgement alone has been shown to underestimate the severity of CAP, but can be supported by decision tools such as pneumonia-specific severity assessments (CURB65) or non-specific severity assessments (NEWS2). Guidelines recommend use of the CURB65 score (combined with clinical judgement) to assess CAP severity. The BTS recommends that '*there should be a regular assessment for all patients following hospital admission' and that 'disease severity assessment should form part of the clinical review*.'

3. Antibiotic management

Antibiotics are the standard treatment for most patients with community-acquired pneumonia (CAP). Prescribing should follow local guidelines which consider the likely pathogens and resistance profiles. NICE guidelines have set out an antimicrobial prescribing strategy for CAP. These aim to optimise antibiotic use and to reduce antibiotic resistance, and the UK Health Security Agency describes best practice for antibiotic stewardship for English hospitals in the 'Start Smart, then Focus' toolkit. Guidelines are also in place to promote systems and processes that deliver effective antimicrobial use.

4. Follow up arrangements

Guidance recommends that all patients who have been admitted with CAP should have a clinical follow-up at six-weeks either with their GP or in a hospital clinic. All patients admitted to hospital should have access to follow-up in primary care or a hospital outpatient clinic when needed. Guidelines recommend targeting chest X-ray (CXR) follow-up after about 6 weeks for patients who have persistence of symptoms or physical signs or who are at higher risk of underlying malignancy (specifically patients who smoke and those aged >50 years)

5. Service organisation

To deliver the improvements highlighted in this report and support the best outcomes for patients with CAP, it is important to have identified leadership for pneumonia care in hospitals.
In addition, audit of practice has the potential to identify future areas for improvement to local leadership and service organisation.
The GIRFT report recommends that all hospitals in England have a respiratory consultant appointed as a clinical lead for pneumonia.
There is evidence to show that hospitals which have developed a specialist nurse-led pneumonia service have improved adherence to published guidelines and overall outcomes for patients.
Introducing such a service represents an opportunity for the hospitals without this to re-organise their services for the benefit of patients.

SUPPORTING DOCUMENTS

NICE: Clinical Guideline 191 - Pneumonia in adults: diagnosis and management

NICE: Quality standard 110 - Pneumonia in adults

BTS: Guidelines for the management of community acquired pneumonia

GIRFT: Respiratory report