Aim
Care bundles are a simple way of standardising practice and reducing variation in the treatment of a condition. They allow clinical teams to focus on measurable, evidence-based strategies to provide the highest standard quality care.

The overall aim of this project is to implement a Community Acquired Pneumonia (CAP) care bundle in the AAU and ED, with minimum overall compliance of 95% for 100% of CAP patients.

Thus a means of accurately determining the number of patients admitted with a primary diagnosis of CAP is required in order to determine the context for implementation of the bundle and drive improvement.

Method
Initially the project undertook a dual approach to measurement:
- Part 1: Weekly collection and analysis of CAP care bundle proformas completed by admitting doctors in the ED and AAU
- Part 2: Monthly reports for all patients coded as having a primary diagnosis of CAP (or synonym) on admission

The project team needed to validate this measurement strategy to ensure the data informing the improvement project was accurate. Thus a retrospective validation of trust coded data was completed by AAU medical staff.

Over a four month period from Dec 2011 - Mar 2012, cases identified by Part 1 and Part 2 were examined for supportive radiological evidence (CXR changes consistent with pneumonia) and documentation in the medical notes of a clinical diagnosis of CAP.

Results
Case review of coded data (Part 2) and bundle data (Part 1) together revealed:
- 234 patients had a coded primary diagnosis of CAP or synonym
- 154/234 had CXR changes consistent with pneumonia
- 14/154 had pneumonia that was not community acquired on review of the medical notes (e.g., hospital acquired or aspiration pneumonia)
- Overall, 40% of cases coded as CAP did not have radiological evidence or documentation of a diagnosis of CAP

Conclusions
- Using coding alone to identify cases of CAP is not adequate as a significant proportion of these patients did not have CAP, and we recommend combining coding with radiological confirmation.
- Unless the patients without CAP are excluded from the denominator group, it will be impossible to demonstrate 100% compliance with a care bundle.

Thus the validation of available data within a combined approach to measurement for improvement is vital when implementing change in acute clinical settings.

The project can now measure care bundle compliance against an accurate denominator of total CAP patients, and for the first time 100% is achievable.

Validation of project data must be continued going forward to ensure ongoing accuracy of results and therefore highest quality clinical care.

Discussion with the coding department revealed that the reason for discrepancies are usually due to an initial diagnosis of CAP or a synonym recorded in the notes, and no subsequent entry indicating a different diagnosis.

Educational sessions have been delivered for junior medical staff with regards to accurate identification and documentation of CAP patients and CAP bundle usage.

Unless practices can be changed, we recommend that CAP is identified by the two stage process described.