Improving Antibiotic prescription for Community Acquired Pneumonia in the elderly

Belfast Health and Social Care Trust
caring supporting improving together

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Safety & quality

Introduction and Background

A current priority of the Department of Health and the BHSCT is to reduce inappropriate antibiotic consumption and improve the quality of antibiotic stewardship. The potential benefits of more prudent antibiotic use are:

- ❑ **Reduce unwanted antibiotic side effects** e.g. C.difficile infection therefore improving patient safety
- ❑ Reduce risk of developing **resistant organisms**
- ❑ **Preserve antibiotics** for those with greatest need
- ❑ **Reduce treatment costs** and hospital length of stay

Previous audits of antibiotic use in elderly care showed:

- ❑ **Duration** of antibiotics not in keeping with guidelines i.e. too long so this was chosen as a focus of the QI project

These findings combined with the potential benefits of improved stewardship led the antimicrobial steering committee for elderly care to explore **the QI methodology as a way to improve practice in this area.**

Constructing the Multidisciplinary QI team:
It was important for us to have representation from **clinicians, microbiologists, pharmacists and nurses** to ensure maximum impact of the project.

Aim Statement

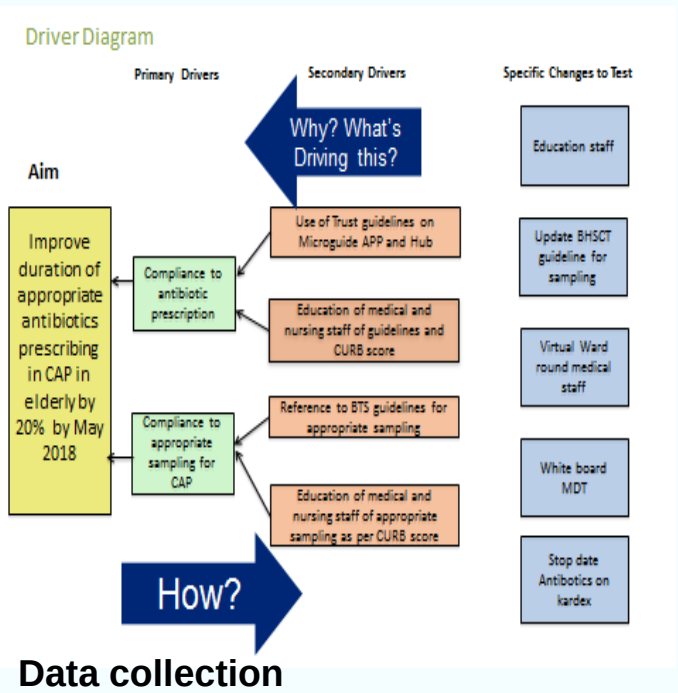
Improve duration of appropriate antibiotics prescribing in community acquired pneumonia in elderly by 20% by May 2018

Change Ideas & Driver Diagram

1. **Education -** medical, nursing , pharmacy
   - Pharmacist and microbiologists carried out antibiotic stewardship education with ward doctors at changeover
   - Pharmacist carried out education of nursing staff aiming to improve knowledge of antibiotic use in CAP and empower nurses to prompt medical staff on duration and choice of antibiotic.

2. Guideline update – the guideline for appropriate **sampling in CAP** was updated on Hub and app in keeping with BTS with the aim of impacting antibiotic choice and duration.

3. White board MDT – highlight patients on antibiotics and discuss duration

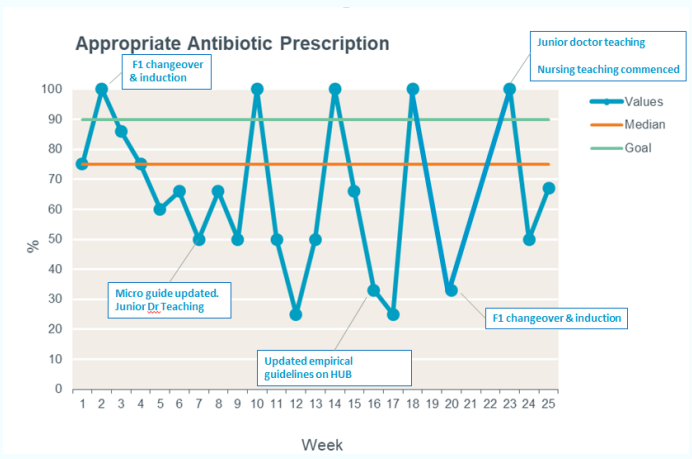


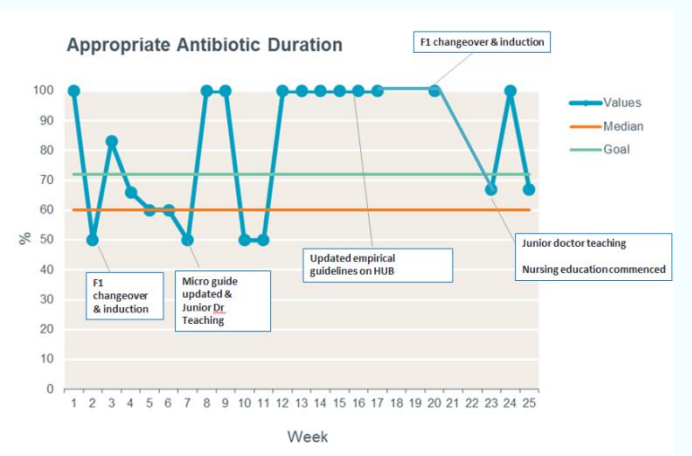
Data collection

On a weekly basis, all patients with community acquired pneumonia had their notes and drug chart analysed. This was carried out for 27 weeks with change ideas being introduced throughout. Data was collected on:

- Antibiotic prescribed
- Duration of antibiotic therapy
- Documentation of duration in notes and drug chart
- Microbiological samples requested
- Microbiological samples sent
- Microbiological results checked

Results





Achievements and learning

Achieved the overall aim of reducing duration of antibiotic treatment – improving the compliance with guidelines from a median baseline of 60% to 100% (mean 80%).

Did not see any improvement in choice of appropriate antibiotic with these measures although many factors influence this (see below).

Project taking place has **raised awareness** of antibiotic stewardship among the MDT

Has provided a **basis for the antimicrobial steering committee** moving forward.

Constant **awareness and education is key to achieving sustained improvement.**

Factors usually associated with improved stewardship e.g. microbiological sampling, documentation of duration have not been easy to improve in this setting. It is therefore difficult to know if improvements in these necessarily lead to better stewardship.

Difficulties

1. **Small sample size** – when measuring on a weekly basis, it meant that patient number was very small in some weeks which affected reliability of results.
2. **Antibiotic choice is often made prior to arrival in BCH** e.g in A&E therefore less likely to be able to influence this with ward based QI measures.
3. **Diagnostic uncertainty** affects antibiotic choice e.g. CAP vs UTI in elderly – hard to improve on choice of antibiotic when diagnosis is unknown.

What next for the project?

Antibiotic stewardship needs constant attention and identification of new priorities.

- responsibility of the elderly care antimicrobial steering committee
- Roll out beyond CAP – ensure choice and duration are appropriate in all infections.

This project has highlighted the difficulties in sustaining change. Intermittent educational sessions appear to have short lived benefit – more regular education / reminders are required.

Introduction of white board round – a method to have the multidisciplinary clinical team reminded on a daily basis of which patients are on antibiotics and need managed.

Continue to use education as a vehicle to empower the whole team to be responsible for antibiotics – nurses, pharmacists and doctors.

Maybe even look towards patient/relative education in the future.