Introduction and Background

- Clostridium difficile infection (CDI) is easily transmissible and potentially fatal.
- Increased incidence of CDI can lead to reputational damage for affected organisations.
- Scottish NHS Boards report CDI in patients aged 3 years and over to Health Protection Scotland (HPS) as defined in the current protocol.
- The incidence of CDI in Scotland is openly reported by HPS.
- Increased incidence of CDI can lead to reputational damage for affected organisations.

Evidence of Improvement

- Interventions led to Board-wide reduction of CDI within 12 months.
- The Scottish LDP target for all health boards is to achieve a rate of 0.32 (or less) per 1000 total occupied bed days (OBDS) by March 2017.
- NHS Lothian rate was 0.27 per 1000 OBDS by March 2017.
- A multidisciplinary and multifaceted approach to CDI has been effective at reducing the incidence of CDI in NHS Lothian.
- Ongoing work by NHS Lothian Infection Service with engagement from clinical staff continues to monitor the incidence of CDI.
- Provisional data shows that NHS Lothian rate for the period April – September 2017 is 0.22 per 1000 OBDS which is lower than the same period in the previous year.

Interventions to Reduce Clostridium difficile Infection

Active Case Management by Infection Specialist

- Laboratory confirmed positive results for hospitalised patients are phoned to the clinical teams to ensure appropriate infection control precautions are in place.
- Infection Specialists visit hospitalised patients to ensure optimal clinical management of patients with CDI.
- Factors which may trigger toxin production are addressed and avoided when feasible.
- Antimicrobial use is reviewed and optimised where required.
- Aspects of overall care and relevant documentation are assessed in keeping with the recommendations of the Vale of Leven enquiry.

Monthly Reports and Feedback

- Statistical Process Control (SPC) charts or p-charts are incorporated into the monthly reports highlighting key interventions.
- Outcome from the multidisciplinary case reviews are reported to Clinical Management Teams and Infection Specialists.
- Issues and learning outcomes are highlighted with recommendations to aid improvement.

Laboratory Interventions

- Ensure specimens for C. difficile testing arrive at the laboratory promptly and are tested as soon as possible.
- Empower Biomedical Scientists not to process inappropriate specimens, for example formed stools for C. difficile.
- Results are authorised without delay using automatic authorisation rules.
- Laboratory reporting comments were revised to educate staff on the significance of C. difficile toxin positive and equivocal results.
- Direct staff where to obtain guidance on the prevention, diagnosis and management of CDI patients.

Antimicrobial Prescribing

- Adult empirical prescribing guidelines were changed to discourage the use of ‘4C’ antibiotics (clindamycin, cephalosporins, co-amoxiclav and ciprofloxacin) when feasible.
- Figure 5 shows the reduction in defined daily dose of ‘4C’ antibiotic prescribing in acute sites over time.

Multidisciplinary Case Reviews

- Infection Prevention and Control Team collate data from the local enhanced CDI surveillance programme including relevant medical history, antibiotic exposures, disease severity and treatment.
- Data from each review is compiled into a spreadsheet for a monthly multidisciplinary case review.
- Multidisciplinary team includes Microbiologists, Nurses, Scientists, Antimicrobial Pharmacists.
- Issues relating to non-optimal management of patients with CDI are documented for learning and tagged for senior clinicians.

Education Awareness

- Provide general staff education including:
  - When and how to not submit specimens to test for C. difficile for example loose stools following treatment with laxatives.
  - Further specimens to demonstrate clearance are not required.
- Provide General Practice education including succinct key messages.
- Ensure the optimal CDI treatment and duration is used.
- Patients with CDI can relapse in the 12-weeks following completion of treatment.
- Treatment with antibiotics during this 12-week period should be avoided where possible.
- Avoid the use of ‘4C’ antibiotics.
- Where antibiotics are needed, ensure the optimal choice and duration of treatment is used.

References

2. Vale of Leven Hospital Inquiry 2014 available from www.valeoflevenhospitalinquiry.org