An audit of the quality of antimicrobial prescribing

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ICE Score 2
Introduction & Aims

- Prudent antimicrobial prescribing
- Antimicrobial stewardship – optimise prescribing
- SHA 2010–11 C. difficile targets for this Trust was 53 and as of December the Trust was below trajectory at 11 cases
- 2011–12 target sees a further reduction in the Trusts C. difficile target down to 20 cases
- To provide a robust, objective evaluation of antimicrobial prescribing quality, suitable for ongoing prescriber feedback
- Indicators of quality prescribing audited nationally
  - European Surveillance of Antimicrobial Consumption
## Standards

<table>
<thead>
<tr>
<th>Standard</th>
<th>Target</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Documented Allergy status</td>
</tr>
<tr>
<td>2</td>
<td>Documented Stop/review date</td>
</tr>
<tr>
<td>3</td>
<td>Documented Indication</td>
</tr>
<tr>
<td>4</td>
<td>Appropriateness/Adherence to guidelines</td>
</tr>
<tr>
<td>5</td>
<td>Appropriate Intravenous (IV) duration</td>
</tr>
<tr>
<td>6</td>
<td>Appropriate Total duration</td>
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</tbody>
</table>
Methodology

- Point prevalence survey
- Sample of up to 7 patients on each ward
- Paediatrics, DCU & A&E excluded
- Inpatients admitted to adult wards currently prescribed an antimicrobial agent included
- Ongoing bi-annual audit - conducted March & November 2010
## Results

- **Patient data**

<table>
<thead>
<tr>
<th></th>
<th>March 2010</th>
<th>November 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of patients</td>
<td>62</td>
<td>53</td>
</tr>
<tr>
<td>No. of antimicrobial prescriptions</td>
<td>90</td>
<td>81</td>
</tr>
<tr>
<td>Average no. of antimicrobial prescriptions per pt</td>
<td>1.45</td>
<td>1.5</td>
</tr>
<tr>
<td>IV prescriptions</td>
<td>65</td>
<td>58</td>
</tr>
<tr>
<td>Oral prescriptions</td>
<td>25</td>
<td>23</td>
</tr>
</tbody>
</table>
Standard 1 – Documented Allergy status

- Excellent
- 98% March 2010
- 100% November 2010
- Must be completed
- Multi-professional responsibility
Standard 2 – Documented Stop/review date

Antimicrobial prescriptions with a stop/review date documented on drug chart/medical notes

- Poor adherence to this standard
- This standard will need to be reinforced with prescribers across the Trust
- Multi-disciplinary reminder for review to minimise excessive treatment durations
Standard 3 – Documented Indication

- Indication/Provisional diagnosis was documented in only 78% of prescriptions in November 2010 compared with 88% in March 2010.

- All antimicrobial prescriptions should have a documented indication either on the drug chart or in the patient’s notes.
Standard 4 – Appropriateness

- Total of 68% of prescriptions were compliant in November 2010 compared to 76% in March 2010.
- Appropriateness was defined as prescriptions adhering to Trust guidelines.
- Prescriptions with valid reasons for off-guideline prescribing such as contra-indication to guideline antibiotics (e.g. allergy), expert advice from Consultant Microbiologist or based on culture and sensitivity result were deemed appropriate.
Standard 5 – Appropriate IV duration

- Recommendations followed in 83% of eligible prescriptions in November 2010 compared to 88% in March 2010
- Excessive IV duration can lead to the patient being exposed to
  - Increased risk of administration route related side effects such as phlebitis
  - Line infections
  - Bacteraemia's
Standard 6 – Appropriate Total duration

- Total duration includes the IV and oral prescription
- Appropriate included acute infections as well as prescriptions where duration > 7 days is appropriate for the indication
- Non-appropriate included durations > 7 days where antimicrobials are no longer required
Discussion

- There is good compliance in certain areas but there still remains room for improvement.
- There has been a significant reduction in the number of hospital associated cases of C. difficile this year.
- Factors such as compliance with antimicrobial policies, prescribing standards and a clean environment have contributed to the reduction.
Retrospective analysis of Clostridium difficile levels against high risk antimicrobial usage

- Defined daily dose (DDD) is the assumed average maintenance dose/day for a drug used for its main indication in adults (WHO)

<table>
<thead>
<tr>
<th>Month</th>
<th>Total DDD's</th>
<th>C-difficle cases</th>
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</thead>
<tbody>
<tr>
<td>Jan-10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Feb-10</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Mar-10</td>
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<td>1</td>
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<tr>
<td>Apr-10</td>
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<td>1</td>
</tr>
<tr>
<td>May-10</td>
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<td>2</td>
</tr>
<tr>
<td>Jun-10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Jul-10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Aug-10</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Sep-10</td>
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<tr>
<td>Oct-10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Nov-10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Dec-10</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Legend:
- Cephalosporins
- Ciprofloxacin
- Co-amoxiclav
- Clindamycin
- C-difficle cases
Conclusions & Recommendations

- Good compliance in some areas
- Areas of improvement to ensure targets are met:
  - Strict adherence to the antimicrobial guidelines
  - Adherence to the stop/review date
  - Minimising IV durations
  - Ensure total durations are appropriate
- Future audits are to be broken down into medical and surgical directorates
- Improvement to previous ICE 1 audits
  - Continual re-audit, presentations, education and re-enforcement of the Trust guidelines
Any Questions?