1) BACKGROUND:
- The biggest threat to effective antibiotic therapy is the rising level of antibiotic resistance.¹
- By 2050, antimicrobial resistance will result in 10 million annual global deaths, with a global economic cost of $10 trillion from now to 2050.¹
- Although generally antibiotics are started out diligently, we find that STOP or review dates, which prevent antibiotics being indefinitely prescribed, are not always documented. This is not only costly, but can have complicating and dangerous consequences.²
- Adverse drug reactions (ADRs) result in long term morbidity, drug resistance and fatal infections such as clostridium difficile.³

OBJECTIVES:
1) To improve antibiotic prescribing on JAC (electronic prescribing programme used in Hampshire Hospitals) including:
   - Length of antibiotic courses (particularly intravenous usage)
   - Documenting the review or stop date on all prescriptions of antibiotics
2) To improve overall antibiotic stewardship at Hampshire Hospital as per NICE guidelines (see Figure 1 below).⁴

2) METHOD:
Cycle 1:
At Basingstoke Hospital, all patients on the wards on C to F floors were audited (279 patients - Cycle 1). All patients had their drug chart reviewed to see if they were prescribed antibiotics, and if so:
- were they oral or IV?
- what was the length of the course?
- was a stop/ review date documented?
The reminder banner (see Figure 2 below) was added in March, to all desktop computers, and stickers (Figure 3) were placed on all computers in junior doctors’ offices and on the wards on floors C to F.

RESULTS:

<table>
<thead>
<tr>
<th></th>
<th>BEFORE intervention (cycle 1)</th>
<th>AFTER intervention (cycle 2)</th>
<th>Difference between two cycles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of prescriptions audited</td>
<td>112</td>
<td>131</td>
<td>21%</td>
</tr>
<tr>
<td>Percentage of prescriptions with a stop/ review date on ALL antibiotics</td>
<td>35%</td>
<td>56%</td>
<td>21%</td>
</tr>
<tr>
<td>Percentage of prescriptions with a stop/ review date on ORAL antibiotics</td>
<td>62%</td>
<td>65%</td>
<td>3%</td>
</tr>
<tr>
<td>Percentage of prescriptions with a stop/ review date on IV antibiotics</td>
<td>16%</td>
<td>47%</td>
<td>51%</td>
</tr>
</tbody>
</table>

Cycle 2:
After 3 weeks, all patients on C to F floors were re-audited (279 patients - Cycle 2) using the same parameters as above. The results were then compared before and after the intervention (see Figures 4 & 5).

3) ACTION PLAN:
1) Generally, antibiotic prescribing improved with a reminder to prescribers by 21%. The results showed improvement on all medical wards after intervention. However, there was a decline in orthopaedics (D floor) for review or stop dates on antibiotic prescriptions in Cycle 2. Subsequently, a discussion with orthopaedics seniors led to an action plan to nominate an FY1 advocate for antibiotic stewardship on D floor. This resulted in an improvement in Cycle 3 from 13% to 70% in stop dates (see Figure 6).

2) We have planned to implement a trust-wide audit to ensure antimicrobial stewardship is continued across the trust
3) Involvement of the microbiology department to come up with a more permanent reminder for prescribers

4) CONCLUSION:
From the results of this audit project, in order to ensure the continuation of appropriate antibiotic prescribing and prevent rising resistance, this audit will continue on an annual basis, to ensure Hampshire Hospitals continues to comply with NICE guidelines on antibiotic stewardship.

REFERENCES:
3. English Surveillance Programme for Antimicrobial Utilisation and Resistance (ESPRU). 2018
4. NICE guidelines. Antimicrobial stewardship; systems and processes for effective antimicrobial medicine use. August 2015