Antimicrobial Resistance

A guide to the prevention of AMR for Commissioners

March 2015
Welcome and Introduction

- David Webb
- Regional Pharmacist, NHS England (London)

Commissioners guide to the prevention of Antimicrobial Resistance

4th March - St Giles Hotel London - WC1B 3GH
6th March - The Leeds Club – LS1 6JL
20th March - Novotel Birmingham Centre - B1 2HT
Introduction to Antimicrobial Resistance

• Philip Howard
• Consultant Antimicrobial Pharmacist, Leeds Teaching Hospital NHS Trust,
• HCAI and AMR Project Lead, NHS England
Introduction to antimicrobial resistance

Philip Howard
Consultant Antimicrobial Pharmacist
HCAI and AMR Project Lead

4th March 2015
What is antimicrobial resistance?

- Antibacterials either kill or stop bacteria replicating.
- Bacteria try to avoid being killed in 4 ways (see fig).
- Can mutate (<1 day) or inherit resistance.
- Can spread their resistance mechanisms to other species (on plasmids), and then onto other people.
- Resistant bacteria multiply more slowly than susceptible.
- Gram –ve resistance is usually irreversible, unlike Gram +ve.
Why we need new antibiotics

- Bacteria will always become resistant to antibiotics sooner or later
Antibacterials are used for short courses = poor return on investment. Registration requires trials in infections where unlikely to use. We reserve or don’t use new ones. Eg ceftaroline: “it’s a cephalosporin!”
New antibiotics coming in 2015-7

- **Oritavancin** IV weekly (Q2 ‘15) - cSSTI
- **Telavancin** IV daily G+ve HAP (Q3 ‘14) = teicoplanin / vancomycin
- **Dalbavancin** IV weekly – cSSTI (Q1 ’15), CAP 2017
- **Tedizolid** –po/IV daily - Q2’15: like linezolid but without the interactions or haematological side-effects
- **Ceftolozane-tazobactam** IV – Q4’15: cUTI, cIAI (abdo), (VAP later) – covers ESBL E.coli and MDR PsA, but not Kleb pneum
- **Ceftibiprole** – licensed but launch 2015 for CAP/HAP (= linezolid + ceftazidime)
- **Ceftazidime – avibactam** IV Q1/2’16 – where no other options for cUTI/cIAI – broad activity vs ESBL E.coli & Kleb, PsA and carbapenemases. Some Acin baum activity.
- **Eravacycline** IV/po 2017 – cIAI by ESBLs = ertapenem
Global AMR picture is poor

Bacteria commonly causing infections in hospitals and in the community

<table>
<thead>
<tr>
<th>Name of bacterium/resistance</th>
<th>Examples of typical diseases</th>
<th>No. out of 194 Member States providing data</th>
<th>No. of WHO regions with national reports of 50% resistance or more</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Escherichia coli</em>/</td>
<td>Urinary tract infections, blood stream infections</td>
<td>86</td>
<td>5/6</td>
</tr>
<tr>
<td>- vs 3rd gen. cephalosporins</td>
<td></td>
<td>92</td>
<td></td>
</tr>
<tr>
<td>- vs fluoroquinolones</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Klebsiella pneumoniae</em>/</td>
<td>Pneumonia, blood stream infections, urinary tract infections</td>
<td>87</td>
<td>6/6</td>
</tr>
<tr>
<td>- vs 3rd gen. cephalosporins</td>
<td></td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>- vs 3rd carbapenems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Staphylococcus aureus</em>/</td>
<td>Wound infections, blood stream infections</td>
<td>85</td>
<td>5/6</td>
</tr>
<tr>
<td>- vs methicillin &quot;MRSA&quot;</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Poor sanitation, OTC antibiotics and worldwide travel spreads AMR

www.england.nhs.uk
Antimicrobial resistance in Europe, 2012: percentage of invasive isolates showing resistance

**Staphylococcus aureus, meticillin resistance (MRSA)**

**Klebsiella pneumoniae, combined resistance***

*Combined resistance: resistance to third-generation cephalosporins, fluoroquinolones and aminoglycosides*

Source: EARS-Net, 2013

The symbols ↑ and ↓ indicate a significant increasing or decreasing trend for the period 2009-2012, respectively. These trends were calculated on laboratories that consistently reported during 2009-2012.
No (clean-contaminated/dirty) surgery, no chemotherapy (neutropenic sepsis)
Cost will be $100 trillion per year ($100,000,000,000,000,000)

www.england.nhs.uk
Superbugs to kill 'more than cancer' by 2050

Deaths attributable to antimicrobial resistance every year compared to other major causes of death

- Tetanus: 60,000
- Cholera: 100,000 - 120,000
- Measles: 130,000
- AMR in 2050: 10,000,000
- Road traffic accidents: 1,200,000
- Diarrhoeal disease: 1,400,000
- Diabetes: 1,500,000
- Cancer: 8,200,000

Source: Review on Antimicrobial Resistance 2014

www.england.nhs.uk
UK 5yr AMRS: 7 key areas for action

DH – High Level Steering Group

PHE
Human health

Defra
Animal health

• Improving the evidence base through research
• Developing new drugs, vaccines and other diagnostics and treatments
• Strengthening UK and international collaboration

DH

• Optimising prescribing practice
• Improving infection prevention and control
• Improving professional education, training and public engagement
• Better access to and use of surveillance data

www.england.nhs.uk
Key element of the 5 year AMR strategy was to introduce surveillance systems for antimicrobial resistance and usage

1st English data for antimicrobial usage data for hospitals AND community in 2014 report

- Data from 2010 to 2013
- Data down to Area Team level
- Update on AMS activity in hospitals since 2011/2
Antimicrobial resistance

- European data has shown that infection with a resistant organism will double mortality rate
- 12% increase in the number of *E. coli* bloodstream infections between 2010-3
  - Resistance has remained stable across all antibiotic groups
  - Wide regional variation in resistance rates with London 2-3x higher resistance rates
- 10% increase in number of *Klebsiella pneumonia* infection
  - Resistance generally stable with widespread variation
- 9%↓ in *Pseudomonas* and 25%↓ in *Strep pneumoniae* BSI (13-valent vaccine introduced in 2010)
### Table ES.1. Summary of key antibiotic resistance in bacteraemia in England

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Rate per 100,000, 2013 (compared to 2010)</th>
<th>Antibiotic or antibiotic class</th>
<th>% resistant 2013 (compared to 2010)</th>
<th>Change in number of resistant bacteria 2010 to 2013</th>
<th>% resistant Europe 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Escherichia coli</strong></td>
<td></td>
<td>Ciprofloxacin</td>
<td>18.2 (↕)</td>
<td>↑</td>
<td>22.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third-generation cephalosporins</td>
<td>10.9 (↕)</td>
<td>↑</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gentamicin</td>
<td>9.7 (↕)</td>
<td>↑</td>
<td>10.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imipenem/meropenem</td>
<td>0.1 (↕)</td>
<td>↑</td>
<td>&lt;0.1</td>
</tr>
<tr>
<td><strong>Klebsiella pneumoniae</strong></td>
<td>52.6 (↑)</td>
<td>Ciprofloxacin</td>
<td>11.1 (↕)</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Third-generation cephalosporins</td>
<td>11.4 (↕)</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8.8 (↑)</td>
<td>Gentamicin</td>
<td>8.5 (↑)</td>
<td>↑</td>
<td>22.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imipenem/meropenem</td>
<td>1.0 (↑)</td>
<td>↑</td>
<td>6.2</td>
</tr>
<tr>
<td><strong>Pseudomonas spp.</strong></td>
<td>6.3 (↓)</td>
<td>Ciprofloxacin</td>
<td>10.4 (↕)</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ceftazidime</td>
<td>6.7 (↕)</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gentamicin</td>
<td>3.6 (↓)</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imipenem/meropenem</td>
<td>9.5 (↕)</td>
<td>↓</td>
<td></td>
</tr>
<tr>
<td><strong>Streptococcus pneumoniae</strong></td>
<td>6.1 (↓)</td>
<td>Penicillin</td>
<td>3.1 (↕)</td>
<td>↓</td>
<td>4.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Macrolides</td>
<td>8.1 (↑)</td>
<td>↑</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tetracycline</td>
<td>6.1 (↑)</td>
<td>↑</td>
<td></td>
</tr>
</tbody>
</table>

Check for true penicillin allergy

England still has less AMR than Europe
Table 1. Antibiotic susceptibilities of carbapenemase-producing Enterobacteriaceae isolates from the UK, submitted to the AMR/HAI Reference Unit in 2014

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Proportion of susceptibility, % [a]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metallo-enzyme producers (NDM, VIM, IMP) (n=c. 400)</td>
</tr>
<tr>
<td></td>
<td>E. coli</td>
</tr>
<tr>
<td>Imipenem (IPM)</td>
<td>3</td>
</tr>
<tr>
<td>IPM-EDTA [b]</td>
<td>100</td>
</tr>
<tr>
<td>Meropenem</td>
<td>6</td>
</tr>
<tr>
<td>Ertapenem</td>
<td>3</td>
</tr>
<tr>
<td>Ampicillin</td>
<td>0</td>
</tr>
<tr>
<td>Co-amoxiclav</td>
<td>1</td>
</tr>
<tr>
<td>Piperacillin (PIP)</td>
<td>0</td>
</tr>
<tr>
<td>PIP-tazobactam</td>
<td>2</td>
</tr>
<tr>
<td>Cefotaxime</td>
<td>1</td>
</tr>
<tr>
<td>Ceftazidime</td>
<td>1</td>
</tr>
<tr>
<td>Aztreonam</td>
<td>13</td>
</tr>
<tr>
<td>Ciprofloxacin</td>
<td>17</td>
</tr>
<tr>
<td>Gentamicin</td>
<td>31</td>
</tr>
<tr>
<td>Tobramycin</td>
<td>22</td>
</tr>
<tr>
<td>Amikacin</td>
<td>49</td>
</tr>
<tr>
<td>Colistin</td>
<td>100</td>
</tr>
<tr>
<td>Tigecycline</td>
<td>99</td>
</tr>
</tbody>
</table>

a. Susceptibility defined using BSAC v. 13 (June 2014) breakpoints
b. Diagnostic test to distinguish metallo- from non-metallo- enzymes; not for therapeutic use
Travellers carry CPE resistant bugs for up to 3 months
Has 31% ↑ in carbapenems driven AMR?

Figure 2.16 Carbapenemase-producing Enterobacteriaceae referred from UK hospital microbiology laboratories and confirmed by PHE's Antimicrobial Resistance and Healthcare Associated Infections (AMRHAI) Reference Unit.*

*This reports all confirmed isolates of CPE sent to AMRHAI Reference Unit voluntarily by clinical laboratories in the UK, and includes screening and clinical isolates. An individual patient may be counted more than once if multiple samples were sent. This is not structured surveillance data.

Manchester ↓ by 7% over 4 years
6%↑ in consumption between 2010-13

**Figure 3.2 Consumption of total antibiotics, expressed as DDD per 1000 inhabitants per day, England, 2010-2013**

- **GPs:** 78% of total with 4.1% growth in 2010-3 but 3.5%↓ in last year
- **Hospitals:** 9.1% IP and 6.2% OP, but 11.9%↑ over 3 years for IP
Table ES.2. Summary of total antibiotic use in England and comparisons with Europe

<table>
<thead>
<tr>
<th>Antibiotic group</th>
<th>England 2013 (DDD per 1000 inhabitants per day)</th>
<th>England 2013 compared to England 2010</th>
<th>Europe 2011 (Median DDD per 1000 inhabitants per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillins</td>
<td>13.7</td>
<td>↑</td>
<td>10.4</td>
</tr>
<tr>
<td>Other β-lactam antibacterials</td>
<td>0.6</td>
<td>↓</td>
<td>2</td>
</tr>
<tr>
<td>Tetracyclines</td>
<td>4.9</td>
<td>↑</td>
<td>2.2</td>
</tr>
<tr>
<td>Sulfonamides and trimethoprim</td>
<td>1.9</td>
<td>↑</td>
<td>0.5</td>
</tr>
<tr>
<td>Macrolides &amp; similar</td>
<td>4.1</td>
<td>↑</td>
<td>3</td>
</tr>
<tr>
<td>Quinolones</td>
<td>0.6</td>
<td>↓</td>
<td>1.5</td>
</tr>
<tr>
<td>Other</td>
<td>1.7</td>
<td>↑</td>
<td>1.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>27.4</strong></td>
<td>↑</td>
<td><strong>21.3</strong></td>
</tr>
</tbody>
</table>

Greece: 39.4
Belgium: 28.44
Italy: 27.34
Ireland: 20.32
Spain: 20.31
United Kingdom: 18.7
Denmark: 16.51
Sweden: 14.5
Netherlands: 11.21
How will AMR affect GPs?

Short term

- UTIs resistant to usual treatment (ESBLs)
- Options: unlicensed oral options (fosfomycin sachets) or IV ertapenem or others

Longer term

- More carbapenem resistant organisms
  - India 10% E.coli, 30% Kleb pneumonia
  - Travellers carry resistant bugs for up to 3 months
  - Limited treatment options
Undergraduate AMS teaching

Graph showing the percentage of different topics taught in Vet Med, Dentistry, Pharmacy, Nursing, and Medicine. The topics include:

- Reduce unnecessary prescribing
- Timing administration
- Infection Prevention & Control measures
- Microscopy, Culture and Sensitivity
- Therapeutic Drug Monitoring
- IV use only if severe infection
- Review broad spectrum appropriateness
- Intravenous-to-Oral switch
- Single-dose surgical prophylaxis

The graph indicates a trend where some topics are more emphasized in certain fields.}

(n=88)

Imperial HPRU 2015
AMS & AMR E&T for registrants

1. Infection prevention and control
2. Antimicrobial resistance & antimicrobials
3. Prescribing antimicrobials
4. Antimicrobial stewardship
5. Monitoring and learning

Antimicrobial prescribing and stewardship competencies

HEE AMR competencies groups looking at post-graduate AMR E&T framework for prescribers and non-prescribers

www.england.nhs.uk
Code of Practice update consultation

• In April 2015 these Regulations will be replaced by The Health and Social Care Act 2008 (Regulated Activities) Regulations 2014 which will introduce new registration requirements.

• The main registration requirement for infection prevention and control (IPC) will be:
  • Regulation 12 on Safe Treatment and Care, but
  • Regulation 15 on Premises and Equipment is also relevant under which there are a number of criteria to follow.

• Support implementation of the UK AMR Strategy by giving greater prominence to antimicrobial resistance

• Reflect the NHS Structures introduced in 2013.

• Update the bibliography
# Code of Practice: 10 criteria for CQC

<table>
<thead>
<tr>
<th>Compliance criterion</th>
<th>Registered providers will need to demonstrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Systems to manage and monitoring IPC</td>
</tr>
<tr>
<td>2.</td>
<td>Provide &amp; maintain a clean and appropriate environment</td>
</tr>
<tr>
<td>3.</td>
<td>Ensure appropriate AB use to improve outcomes &amp; ↓AMR</td>
</tr>
<tr>
<td>4.</td>
<td>Provide suitable accurate information on infections</td>
</tr>
<tr>
<td>6.</td>
<td>IPC followed by all care workers (incl volunteers &amp; contractors)</td>
</tr>
<tr>
<td>7.</td>
<td>Adequate isolation facilities</td>
</tr>
<tr>
<td>8.</td>
<td>Adequate access to lab support</td>
</tr>
<tr>
<td>9.</td>
<td>Policies for IPC</td>
</tr>
<tr>
<td>10.</td>
<td>Occupational health needs for staff (in relation to infection)</td>
</tr>
</tbody>
</table>
## Key questions – by 13th March

<table>
<thead>
<tr>
<th>Q1</th>
<th>Does the revised Code explain the changes in the new registration requirements? Yes/No Any comments?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q2</td>
<td>Does the revised Code explain the need to ensure infection prevention and control systems take a holistic approach by including antimicrobial stewardship and cleanliness? Yes/No Any comments?</td>
</tr>
<tr>
<td>Q3</td>
<td>Which phrase is most suitable for use in the Code? a) infection prevention or b) infection prevention and cleanliness? Why?</td>
</tr>
<tr>
<td>Q4</td>
<td>Are the definitions of AMR and stewardship clear on page 7 Yes or No and If not please suggest alternative wording and the basis for your suggestion.</td>
</tr>
<tr>
<td>Q5</td>
<td>New version of compliance criterion. Please explain the reasons for any concerns that you have in relation to this revised criterion.</td>
</tr>
<tr>
<td>Q5a</td>
<td>Do you have any comments on the guidance for compliance for the new criterion 3? Yes/No</td>
</tr>
<tr>
<td>Q5b</td>
<td>Do you have any comments on the guidance for compliance for the new criterion 4? Yes/No</td>
</tr>
<tr>
<td>Q5c</td>
<td>Do you have any specific comments on the interpretation of criteria 3 and 4 is specific settings outlined in appendices Yes/No</td>
</tr>
<tr>
<td>Q6</td>
<td>Do you have any comments on the re-wording of criterion 10 on occupational health? Yes/No If yes, please explain the reasons for your concern</td>
</tr>
<tr>
<td>Q7</td>
<td>Do you have any comments on the inclusion of reference to a water safety lead on page 12 Yes/No If yes, please explain the reasons for your concern</td>
</tr>
<tr>
<td>Q8</td>
<td>Do you have any specific comments on the appendices Yes/No If yes, please explain the reasons for your concern</td>
</tr>
<tr>
<td>Q9</td>
<td>Any other comments? Yes/No We would be interested to hear of any general concerns about the revised Code, including topics not covered by the guidance, areas where clarification is required and amendments to the bibliography</td>
</tr>
</tbody>
</table>

**RESPONSE FORM FOR THE CONSULTATION ON THE REVISED VERSION HEALTH AND SOCIAL CARE ACT 2008 CODE OF PRACTICE ON PREVENT CONTROL OF INFECTIONS AND RELATED GUIDANCE (THE CODE)**

Please send this completed form to AMR@dh.gsi.gov.uk by 13 March 2015

<table>
<thead>
<tr>
<th>Name</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Job role</td>
<td></td>
</tr>
<tr>
<td>Organisation</td>
<td></td>
</tr>
<tr>
<td>Telephone number</td>
<td>e-mail</td>
</tr>
</tbody>
</table>
Aims to provide good practice recommendations on systems and processes for the effective use of antimicrobials

- All age groups
- Hospitals and all community areas

**Recommendations:**

- AMS programmes, teams & interventions
- Communication, guidelines & lab testing
- Prescribing antimicrobials
- New antimicrobial review & introductions

The guideline does NOT cover:

- Specific clinical conditions
- Named medicines
- Public health awareness of AMR
- Research into new antimicrobials
- Immunisation and vaccination
- Antimicrobial household cleaning products
- Antimicrobial use in animals
- Hand hygiene, decolonisation and IPC measures
- Medicines adherence
- Access to medicines
- Medicines shortages
- Prescription charges or waste

Become an Antibiotic Guardian Champion

- **European Antibiotic Awareness Day** (EAAD) takes place annually on **18 November**
- **As an Antibiotic Guardian**, choose a simple action-based pledge and encourage others to join you in protecting antibiotics against the growing threat of antibiotic resistance at: [www.antibioticguardian.com](http://www.antibioticguardian.com)
- The Antibiotic Guardian campaign was established by PHE to improve public and professional knowledge and stimulate engagement on tackling antibiotic resistance
- Public Health England is leading the co-ordination of EAAD activities in England in collaboration with VMD, Department of Health, devolved administrations, and other professional organisations

Become an Antibiotic Guardian at: [www.antibioticguardian.com](http://www.antibioticguardian.com)
Become an Antibiotic Guardian Champion –

Pledge system: http://antibioticguardian.com/

Behaviour change – ‘if-then’ approach

CURRENT PLEDGES: 12693

Antibiotic resistance is one of the biggest threats facing us today.

Why it is relevant to you: Without effective antibiotics many routine treatments will become increasingly dangerous. Setting broken bones, basic operations, even chemotherapy all rely on access to antibiotics that work.

What we want you to do: To slow resistance we need to cut the use of unnecessary antibiotics. November 18th is European Antibiotic Awareness Day. As part of that we're asking everyone in the UK, the public and the medical community to become Antibiotic Guardians.

Call to action: Choose one simple pledge about how you'll make better use of antibiotics and help save this vital medicine from becoming obsolete.
BECOME AN ANTIBIOTIC GUARDIAN
CHOOSE YOUR PLEDGE NOW!

I AM A

Human & animal health professionals

HEALTHCARE PROFESSIONAL OR LEADER

Select from the list below

- Antimicrobial/Infection Prevention
- Primary Care Prescribers
- Secondary Care Prescribers
- Antimicrobial/Infection Prevention and Control Specialists
- Nurses
- Pharmacy Teams
- Dentists
- Non-Medical Prescribers
- Other Healthcare Workers (eg Podiatrists, chiropodists, radiographers, therapists, social workers)
- Veterinary Practitioners
- Executives/Management/Government/Commissioners/Public Health

MEMBER OF THE PUBLIC

Select from the list below
For illness that our bodies are good at fighting off on their own, like coughs, colds, sore throats and flu, I pledge to talk to my pharmacist about how to treat my child’s symptoms first rather than going to the GP.

Washing your hands properly is the single best way to prevent the spread of infections. My family pledges to help cut the need for antibiotics by always washing our hands with soap and water for about 30 seconds (about the same time it takes to sing A, B, C, D song).

I will visit the ebug website (www.e-bug.eu) with my child(ren) and take one of the antibiotic awareness quizzes together.
Antibiotic Guardian distribution

As of 30th November 2014, the week after to European Antibiotic Awareness Day; 11,833 pledges had been made. The above is the distribution of pledges by target audiences.

Drs Anna Cichowska & Diane Ashiru-Oredope (PHE)

Let’s keep the campaign going and growing
Introduction to antimicrobial resistance

Philip Howard
Consultant Antimicrobial Pharmacist
HCAI and AMR Project Lead

4th March 2015
Quality Premium

Proposed Antimicrobial Prescribing Quality Premium

- Elizabeth Beech
- Prescribing Advisor, NHS Bath and North East Somerset CCG,
- HCAI and AMR Project Lead, NHS England
Introduction to the antibiotic Quality Premium & an overview:

promoting appropriate antibiotic prescribing in primary care

Elizabeth Beech
Healthcare Acquired Infection and Antimicrobial Resistance Project Lead
NHS England
March 2015
NHSE Antibiotic Quality Premium 2015-16 and what it means for CCGs

The Quality Premium is intended to

- Improve the quality of services commissioned, improving health outcomes and reducing inequalities in health outcomes

- Reward CCGs for quality improvement, paid in the following financial year, and must be reinvested in quality or health outcome improvement

And has a maximum value of £5 per head of population; weighted allocation to a variety of measures. The CCG has to meet certain performance criteria for part/full Quality Premium payment
Quality Premium – improving antibiotic prescribing in primary and secondary care

Aim
To reduce over use and inappropriate use of antibiotics in order to reduce the spread of antimicrobial resistance

Value
This is a composite QP measure consisting of 3 parts a), b), and c); each part funded independently. The measure is worth 10% of the QP part a) = 50%, part b) = 30%, part c) = 20%

Primary care component (50% + 30%)
a) Reduction in the number of antibiotic prescriptions by 1%
b) Reduction in the proportion of broad spectrum antibiotics cephalosporins, quinolones & co-amoxiclav by 10%
or to below England median value = 11.3%
Quality Premium – improving antibiotic prescribing in primary and secondary care

Secondary care component (20%)
Secondary care providers with 10% or more of their activity being commissioned by the relevant CCG have validated their total antibiotic prescribing data as certified by PHE

- CCGs will need to decide how to communicate with providers, and each other, on this activity.
- PHE will be leading the validation activity with a rolling programme over 8 months, and will be certifying provider activity.
- Providers are likely to be expected to reduce antibiotic prescribing in 2016-17.
NHSE Antibiotic Quality Premium 2015-16 and what it means for CCGs

Primary care component (50% + 30%)

CCG target values for both indicators have been calculated from the financial year 2013-14 NHS BSA prescription services data set, and apply to the financial year 2015-16. Payment is made on full 2015-16 financial year data set published by the NHS BSA in June 2016. A QP annex will publish full data details for all CCGs – excel format

a) Reduction in the number antibacterial items/STAR-PU by 1% (or greater) from 2013-14 baseline value

b) Reduction in the proportion of cephalosporins, quinolones & co-amoxiclav by 10% from 2013-14 baseline value OR to stay below England median value = 11.3%
Antibiotic prescribing variability – CCG level

Plot of number of antibacterial items per STAR-PU versus the proportion of cephalosporin, co-amoxiclav and quinolone items by England CCGs 12 month period October 2013 - September 2014

QP target to reduce by 10% or to below England median value = 11.3%
Antibiotic prescribing variability – in the South West
Plot of the number of antibacterial items per STAR PU SOUTH WEST CCGs 12 month period
October 2013 - September 2014

with Quality Premium target to reduce by 1% or lower for FY 2015-16

- NORTH SOMERSET
- WILTSHIRE
- KERNOW
- DORSET
- SWINDON
- SOUTH DEVON AND TORBAY
- NORTH, EAST, WEST DEVON
- SOUTH GLOUCESTERSHIRE
- GLOUCESTERSHIRE
- BRISTOL
- SOMERSET
- BATH AND NORTH EAST SOMERSET

Number of antibacterial items per STAR PU 12 months data

- Antibacterial items/STAR PU13
  Latest 4 Quarters (Oct 13-SEP 14)

- Antibacterial items/STAR PU13
  QP Target Value for FY 2015/16 to be equal to or less than:
Plot of the proportion of cephalosporin, co-amoxiclav and quinolone items by SOUTH WEST CCGs
12 month period October 2013 - September 2014
with Quality Premium target to reduce by 10% or to below England median value = 11.3%

Number of cephalosporin, co-amoxiclav and quinolone items as a percentage of all antibacterial items

www.england.nhs.uk
Antibiotic prescribing variability – practice level

Proportion of Cephalosporin & Co-amoxiclav & Quinolone Items by GP practice last 12 months (Dec13-Nov14) with Quality Premium Target

Number of Cephalosporin & Co-amoxiclav & Quinolone Items as a proportion of all antibacterial items
Primary Care
Promoting appropriate antimicrobial prescribing in primary care

- Elizabeth Beech
- Prescribing Advisor, NHS Bath and North East Somerset CCG,
- HCAI and AMR Project Lead, NHS England
Promoting appropriate antibiotic prescribing in primary care

- National policy, guidance, and evidence base
- Commissioning for quality
- Antimicrobial stewardship across and within organisations
- Collaboration with AHSNs, CLAHRCs, Royal colleges, PHE
- Guidelines, education and audit
- Improving antimicrobial use within care pathways
- Drug data, Bug data and benchmarking
- Champions and clinical networks
- Sharing success and innovation
- Collaboration
National policy, guidance, and evidence base

- **UK 5 Year Antimicrobial Resistance Strategy 2013 to 2018**
- NICE Antimicrobial Stewardship: guideline consultation
- NICE Key therapeutic Topics KTT9: Antibiotic prescribing
- The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance
- Antimicrobial stewardship: Start smart - then focus
- Antimicrobial prescribing and stewardship competencies
- European Antibiotic Awareness Day: resources toolkit for healthcare professionals in England
- English surveillance programme antimicrobial utilisation and resistance (ESPAUR) report
- PHE Second Generation Surveillance System – resistance pattern data
Commissioning for quality

Quality Premium
• National and local
• Use this year's Quality Premium funding to deliver quality improvements

CQUINs
• National and local – 2015/16 Sepsis CQUIN; include sepsis pathway in primary care antimicrobial prescribing guidelines?
• Use to improve antibiotic use in other providers i.e. OOH services

Provider contracts
• NICE QS61 Infection prevention and control: support for commissioning report
• Antimicrobial stewardship: Start smart - then focus
• Last years CQUINs become routine

Prescribing incentive schemes
• Delayed (Back Up) antibiotic prescribing strategies
• Incentivise to educate, audit move to prescribing targets
Promoting appropriate antibiotic prescribing in primary care

- National policy, guidance, and evidence base
- Commissioning for quality
- Antimicrobial stewardship across and within organisations
- Collaboration with AHSNs, CLAHRCs, Royal Colleges, PHE
- Guidelines, education and audit
- Improving antimicrobial use within care pathways
- Drug data, Bug data and benchmarking
- Champions and clinical networks
- Sharing success and innovation
- Collaboration
Guidelines, education and audit Improving antimicrobial use within care pathways

- Managing common infections: guidance for primary care PHE November 2014
- Local guidelines – maximise use across health communities
- Local expertise – primary care facing microbiologist expertise

- Education, education and education – about AMR and AMS, IPC, clinical guidelines, evidence based strategies, for commissioners, health care professionals, carers, families, patients and public
- TARGET, CPPE,
- Prescribing competencies (ARHAI)

- Black holes – OOH and Urgent Care, PGD driven services, Dental
- Audit antibacterial prescribing and use across pathways, both clinical (in growing toenails to cellulitis) and organisational (OPAT services) as well as in GP practices
Drug data, Bug data and benchmarking

• English surveillance programme antimicrobial utilisation and resistance (ESPAUR) report
• PHE Second Generation Surveillance System – resistance pattern data
• PHE portal bringing Drug and Bug data together for primary, community and secondary care

• NHS BSA Information Services Portal now has a new comparator to support the QP.
• PrescQIPP Antimicrobial Stewardship Hub – free access
• How do CCGS want to monitor QP performance?

• PHE Tailored Antimicrobial Programme (TAP) for OOH/UC services are recruiting interested CCGs/CSUs now
Promoting appropriate antibiotic prescribing in primary care

- National policy, guidance, and evidence base
- Commissioning for quality
- Antimicrobial stewardship across and within organisations
- Collaboration with AHSNs, CLAHRCs, Royal colleges, PHE
- Guidelines, education and audit
- Improving antimicrobial use within care pathways
- Drug data, Bug data and benchmarking
- **Champions and clinical networks**
- **Sharing success and innovation**
- Collaboration
Collaboration

Within CCGs and CSUs
- Build antimicrobial stewardship into commissioning programmes and contracting

Within health economies
- Infection Prevention & Control collaborative
- Provider antimicrobial stewardship expertise moving out into the community
- Guideline development groups – include Antimicrobial Stewardship
- Public Health in local authorities

Across health economies and beyond
- Sub regional groups
- Patient Safety Collaborative in AHSNs
- Clinical networks, research networks, professional networks

National
- DH, Defra, NHS and PHE
- Professional bodies and organisations, Royal Colleges, industry, voluntary sector, and patient groups
Antibacterial prescribing by all GP practices in NHS Bath and North East Somerset CCG, NHS Gloucestershire CCG, NHS Swindon CCG and NHS Wiltshire CCG Q3 2014-2015

Number of antibacterial prescription items per STAR-PU (x 1000)

Percentage of all antibacterial prescription items prescribed as cephalosporins, quinolones & co-amoxiclav
What is NHS Bath and North East Somerset CCG going to do?

Low volume – delivered a 14% reduction in items in 2014-15, but inappropriate choice of antibiotics, so….

- Include Quality Premium activities within BANES IPCC, NHSE BGSW CDI collaborative and the new BGSW AMS network set up to support Quality Premium activity across 4 CCGs, and multiple organisations and professional groups
- Establish an NHS/Public Health AMS group under the Health and Wellbeing Board, led by the CCG Clinical Chair, to align local activity with National AMR strategy
- Bid for existing Quality Premium funds to resource CCG AMS activity
- CQUIN the OOH/UC provider to review antibacterial prescribing and issues
- Contracts - include SSTF in provider contracts, and incorporate this years CQUIN quality gains into the contract as routine quality reporting
- Guidelines – updating and will distribute (print and on web site) more widely to include community pharmacies and care homes, and include more pathway detail
- Educate through all clinical networks and in GP practices - TARGET and audit programme
- Use CDI events as a learning opportunity delivered within practices
- Audit E.coli bacteraemia patients pre admission care to identify avoidable harm
What is NHS Bath and North East Somerset CCG going to do?

- **Pathways**
  - Mapping cellulitis through collaborating with an AHSN GP clinical fellow, as this is driving co-amoxiclav prescribing.
  - Promote the podiatry service for ingrowing toenails – self referral, avoid GP antibiotics, reduce potential harm

- **Care Homes** – ongoing quality improvement programme to improve diagnosis and management of UTI using care home pharmacists, and SIGN guidelines, to train staff how to diagnose UTIs appropriately, avoid HCAI

- **Primary Care** rolling monthly audit programme, by antibiotic and by infection, wrapped within incentive scheme, with rapid educational feedback
- **Champions in GP practices** – started small, need to grow
- **Implement a whole community wide Back Up antibiotic prescription approach**, including OOH and Urgent Care, and promoting better self-care

- **Include community pharmacy** – PHE adaption of TARGET PIL
- **Plan EAAD 2016** earlier, decide who to target, and use Public Health to lead
Quality Premium Aim: To reduce over use and inappropriate use of antibiotics in order to reduce the spread of antimicrobial resistance and keep people safer

Scatter Plot to show % Cephalosporins and Quinolones Items vs. Antibacterial Items/STAR-PU for GP practices, England Q4 2013-14 and highlighting practices in BATH AND NORTH EAST SOMERSET CCG
Session 2
The TARGET Antibiotics Toolkit

Resources to improve antibiotic prescribing in primary care

- Dr Cliodna McNulty,
- Head Public Health England Primary Care Unit
Antimicrobial stewardship in primary care: developing a local action plan

Cliodna McNulty and Rebecca Owens
Public Health England Primary Care Unit
The workshop:

Short presentation covering

- Surveys around the publics attitudes to and use of antibiotics
- Evidence for approaches to reducing antibiotic use
- Thinking about how to improve responsible antibiotic use by: influencing personal attitudes, social norms and perceived barriers

Discussions around

- Barriers to implementation and overcoming them
Please tell me to what extent you agree or disagree? 1,625 respondents Jan 2014

**Perceptions are correct**

Most coughs, colds & sore throats get better on their own without antibiotics

- **86%** agree
- **9%** disagree
- **5%** do not know

You don’t need to finish a course of antibiotics if you are feeling better

- **13%** agree
- **8%** disagree
- **79%** do not know

**Lack of knowledge**

Taking antibiotics weakens your immune system

- **50%** agree
- **28%** disagree
- **22%** do not know

Bacteria that are resistant to antibiotics spread easily from person to person

- **54%** agree
- **35%** disagree
- **11%** do not know

Healthy people carry antibiotic resistant bacteria

- **45%** agree
- **40%** disagree
- **15%** do not know
COLD? FLU?

Antibiotics don't work on colds, sneezes or sore throats. The best way to treat them is plenty of fluids and rest. Taking antibiotics helps your particular virus and can lead to antibiotic resistance. For more information talk to your pharmacist or go to www.digumo.co.uk/antibiotics.

WEATHER, ANTIBIOTICS AREN'T GOING TO HELP.
Prescribing: Consultations, and amoxicillin prescribing for acute cough and cold is increasing

537 UK GP practices
1995-2011

Hawker et al J AC 2014;
The Patient Perspective: What did they do?

1,767 ≥15y in England
58% had RTI in last 6 months

60% took OTC(50%) or alternative medicine(21%) for symptoms
37% took extra rest
**20%** Contacted or visited GP surgery
6% asked pharmacy for advice
1.4% used NHS direct
0.4% took left-over antibiotics
0% visited NHS walk in centre

McNulty, Nichols, French, Joshi & Butler. British Journal of General Practice, 2013 e429)
The Patient Perspective: They visited their GP if they were worried

- 51% Symptoms severe
- 47% Symptoms not improved after several days
- 14% Family or friends suggestion
- 11% Other health problem
- 9% I usually visit GP with these symptoms
- 5% Worried will infect others who may get very ill

What did they expect?

- 53% Expected antibiotics
- 24% Advice about self-care
- 7% Information about illness duration
- 3% For referral to hospital/specialist
- 22% Other treatment for symptoms
- 12% Rule out more serious illness
- 6% A sick/fit note for work
- 3% For Tamiflu

93% who asked, got an antibiotic

McNulty, Nichols, French, Joshi & Butler. British Journal of General Practice, 2013 e429)
Evidence for GP based interventions

Booklet to share with patients
Antibiotic prescription 20% v 40%
Intention to reconsult 55% v 76%

CRP and communication skills
Antibiotics in usual care 68%
communication 33%
CRP 39%
Both 23%

Francis et al BMJ 2010, Cals et al BMJ 2009;338:1374,
The patient: Back-up / delayed prescribing can reduce antibiotic use & patient expectations

English RCT comparing three treatment strategies for sore throat (n=582)

Better by day 3  
Satisfied patients  
Think antibiotics are effective  
Would visit GP again for similar symptoms

- Given 10 days antibiotic treatment
- Given NO antibiotics
- Given DELAYED antibiotics

How can we fit together this evidence and change behaviour during consultation with patients to improve antibiotic prescribing?
This toolkit is here to help clinicians and commissioners to use antibiotics responsibility and meet CQC requirements.

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<th>Background information</th>
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<td>Leaflets to share with patients</td>
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<td>Audit Toolkits</td>
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<tr>
<td>National Antibiotic Management Guidance</td>
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<tr>
<td>Training resources</td>
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<tr>
<td>Resources for clinical and waiting areas</td>
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<tr>
<td>Self assessment checklist</td>
</tr>
<tr>
<td>Useful links</td>
</tr>
</tbody>
</table>

www.rcgp.org.uk/TARGETantibiotics
Theory of Planned Behaviour

- **Personal Attitude**
- **Subjective Norms** (peers' values)
- **Perceived Behavioural Controls** (Barriers)

Intention

Behaviour

“I want to use antibiotics responsibly”
“My responsible use of antibiotics will make a difference to patients”

It’s important!

Outcome beliefs
- Rewards of outcome
- Normative beliefs
- Motivation to comply
- Self efficacy
- External factors

Attitude

Subjective norms

Intention

Behaviour

“My responsible use of antibiotics will make a difference to patients”

It’s important!
"If I prescribe responsibly – I will be rewarded for it"

Clinicians: lower consultations, reputation

- Outcome beliefs
- Rewards of behaviour
  - Normative beliefs
  - Motivation to comply
  - Self efficacy
  - External factors

- Attitude
- Subjective norms
- Perceived Behavioural Control
- Intention
- Behaviour
“My peers also believe in responsible prescribing”
Importance of the team approach

Whole practice team invited to TARGET workshops

Out of hours
Dentists
Vets
Nationally
EU and Worldwide
Outcomes beliefs

Rewards of outcome

Normative beliefs

Motivation to comply

Self efficacy

External factors

Attitude

Subjective norms

Intention

Behaviour

“I want to prescribe responsibly because my peers would want me to”

Clinicians, CCGs, hospitals, countries: respect, audits, cost, patient outcomes
TARGET: Audit materials – information for action

TARGET website templates for:

● Sore Throat Audit

● UTI Audit

A self assessment checklist

What most practices should aim to do soon

Is there a GP within your practice who takes a lead for antibiotic stewardship in the practice?  ○ Yes  ○ No  

Do you analyse and discuss antibiotic prescribing at your surgery in comparison to local targets at least once a year?  ○ Yes  ○ No  

Do you keep a written record and surgery action plan resulting from antibiotic audits?  ○ Yes  ○ No  

Royal College of General Practitioners

Public Health England
"I have the confidence to prescribe antibiotics responsibly"

Clinicians: knowledge, guidance

www.rcgp.org.uk/TARGETantibiotics
TARGET: Antibiotic Management Guidance

Make available to ALL in practice and out of hours,

So patients do not go to another GP
Or out of hours
TARGET: Training Resources

Managing Acute Respiratory Tract Infections

www.rcgp.org.uk/TARGETantibiotics
Outcome beliefs
Rewards of outcome
Normative beliefs
Motivation to comply
Self efficacy
External factors

Attitude
Subjective norms
Perceived Behavioural Control
Intention
Behaviour

Patients: “I have the confidence to use antibiotics responsibly” knowledge of signs of severity, fear, self-care of symptoms

www.rcgp.org.uk/TARGETantibiotics
TARGET: Patient Information Leaflets

Antibiotic Information Leaflet

All sections can be personalised and added to by the GP

“Usually lasts” section educates patients about when to consult

Safety netting

Back-up prescription

Information about antibiotics & resistance

Read codes: Delayed:8CAk, Leaflet: 8CE

www.rcgp.org.uk/TARGETantibiotics
TARGET: Resources for clinical and waiting areas

Posters for Display

Unfortunately, no amount of antibiotics will get rid of your cold.

If a cold is making you feel under the weather, antibiotics aren’t going to help.

Remember, antibiotics won’t help your defences against a cold.

Videos for patient waiting areas

Then you’re barking up the wrong tree.

Take a cat nap, drink plenty of fluids and try over the counter remedies instead.

If you have a cold or flu virus, don’t visit your doctor for antibiotics.

www.rcgp.org.uk/TARGETantibiotics
“I can overcome other barriers preventing me using antibiotics responsibly”

**Clinicians:** time, forgetfulness, computers, prescriptions, regulations

**Patients:** cost, work
Tactics to improve prescribing must therefore be multifactorial

- Outcome beliefs
- Rewards of outcome
- Normative beliefs
- Motivation to comply
- Self efficacy
- External factors

**Intention**

- Attitude
- Subjective norms
- Perceived Behavioural Control

**Behaviour**

www.rcgp.org.uk/TARGETantibiotics
Planning the delivery of the TARGET antibiotics toolkit
The TARGET guide to resources

The TARGET Antibiotics Toolkit (Treat Antibiotics Responsibly Guidance, Education and Tools)

- INTERACTIVE WORKSHOP PRESENTATION
- LEAFLETS TO SHARE WITH PATIENTS
- AUDIT TOOLKITS
- NATIONAL ANTIBIOTIC MANAGEMENT GUIDANCE
- TRAINING RESOURCES
- RESOURCES FOR CLINICAL AND WAITING AREAS
- SELF ASSESSMENT CHECKLIST

www.rcgp.org.uk/TARGETantibiotics
Planning delivery of TARGET Toolkit

**Step 1:** Analyse current antibiotic prescribing practice at CCG and practice level alongside key indicators and targets.

**Step 2:** Develop implementation plan at CCG level & select components of Toolkit.

**Step 3:** Support practices in developing individual action plans.

**Step 4:** Visit practices and discuss practice use of Toolkit resources.

**Step 5:** Practice and CCG monitoring of antibiotic use and effectiveness review of Toolkit implementation.

www.rcgp.org.uk/TARGETantibiotics
Planning delivery of TARGET toolkit

**Step 1:** Analyse current antibiotic prescribing practice at CCG and practice level alongside key indicators and targets

**Step 2:** Develop implementation plan at CCG level & select components of Toolkit.
Step 2: Developing CCG plan & selecting components of Toolkit

Discuss in groups advantages and disadvantages of each mode of delivery of materials

1. Workshops with groups of practices
2. Individual practice workshops
3. Workshop with voice-over presentation
4. On-line RCGP module followed by action planning

Delivery by either:
- expert in antibiotic use,
- GP champion
- medicine manager
- other
Feedback: advantages & disadvantages of each mode of delivery of materials

1. Workshops with groups of practices
2. Individual practice workshops
3. Workshop with voice-over presentation
4. On-line RCGP module followed by action planning

Delivery by
1. expert in antibiotic use,
2. GP champion or
3. medicine manager
Planning delivery of TARGET toolkit

Step 3: Support practices in developing individual action plans

Step 4: Visit practices and discuss practice use of Toolkit resources
Which TARGET materials?

1. TARGET interactive presentation or eModule
2. Leaflets to share with patients
3. Audit toolkits
4. Antibiotic guidance
5. Self-assessment checklist
6. Posters
7. Targets set at meeting
8. Computer prompts
9. Delayed prescribing
10. E Modules on RTI, UTI, skin
11. Laboratory susceptibility reporting

---

**Personal Attitude**
The belief that resistance is important.
The belief that changes in prescribing will make a difference to resistance.
Any personal rewards for responsible prescribing.

**Subjective norms**
Peers’ opinions about antibiotic prescribing.
Pressure to prescribe responsibly from society or CCG.

**Perceived behavioural controls**
Confidence to use antibiotics responsibly.
Other barriers such as time, computers and cost influencing prescribing behaviour.

**Measurable outcome**
Which TARGET materials?

1. Interactive presentations
2. Practice targets
3. Delayed prescribing
4. Computer prompts
5. Leaflets to share with patients
6. Audit toolkits
7. Self-assessment checklist
8. eModules on RTI, UTI, skin
9. Posters
10. Antibiotic guidance
11. Laboratory antibiotic reporting

Prioritise and discuss how you will implement the chosen resources
**TARGET Patient Information Leaflet how to implement**

**Antibiotic Information Leaflet**

**Treating your infection**

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Back-up antibiotic prescription issued</th>
</tr>
</thead>
</table>

**Your infection**

- **Middle ear infection**: 4 days
- **Sore throat**: 7 days
- **Common cold**: 10 days
- **Sinusitis**: 18 days
- **Cough or bronchitis**: 21 days
- **Other infection**: ______ days

**Usually lasts**

- Have plenty of rest.
- Drink enough fluids to avoid feeling thirsty.
- Ask your local pharmacist to recommend medicines to help your symptoms or pain (or both).
- Never is a sign the body is fighting the infection and usually gets better by itself in most cases. You can use paracetamol (or ibuprofen) if you or your child are uncomfortable as a result of a fever.
- Other things you can do suggested by GP or nurse:

**Contact your GP practice or contact NHS 111 (England), NHS 24 (Scotland) or NHS Direct (Wales) on 0845 4647**

1. to 8. are possible signs of serious illness and should be assessed urgently.
2. Phone for advice if you are unsure how urgent the symptoms are.
3. If you develop a severe headache and are sick.
4. If your skin is very cold or has a strange colour, or you develop an unusual rash.
5. If you feel confused or have slurred speech or are very drowsy.
6. If you have difficulty breathing. Signs can include:
   - Breathing quickly
   - Turning blue around the lips and the skin below the mouth
   - Skin between or above the ribs getting sucked in with every breath
7. If you develop chest pain.
8. If you have difficulty swallowing or are drooling.
9. If you cough up blood.
10. If you are feeling a lot worse.

**Back-up antibiotic prescription ONLY to be collected in ______ days if you do not feel better or feel worse.**

**Collect from:**

- GP reception
- GP or nurse
- Pharmacy

- Cold, most coughs, sputum, ear infections, sore throats, and other infections often get better without antibiotics, as your body can usually fight these infections on its own.
- The more we use antibiotics, the greater the chance that bacteria will become resistant to them so they no longer work on our infections.
- Antibiotics can cause side effects such as nausea, thrush, stomach pain, diarrhoea, reactions to sunlight, other symptoms, or being sick if you drink alcohol with metronidazole.

**Safety netting**

- All sections can be personalised and added to by the GP
- “Usually lasts” section educates patients about when to consult

**Back-up prescription**

**Information about antibiotics & resistance**

**Read codes:** Delayed:8CAk, Leaflet: 8CE

www.rcgp.org.uk/TARGETantibiotics
**Actions:**
Developing priorities for you & this CCG

Reduce *Clostridium difficile* in the community

**Reduce use of**
- Ciprofloxacin
- Cephalosporins
- Co-amoxiclav

**Increase use of**
- Nitrofurantoin
- Trimethoprim
- Pivmecillinam

**Co-amoxiclav ONLY recommended for:**
- Pyelonephritis in pregnancy
- Facial cellulitis or prophylaxis post dog or human bites
- Diverticulitis

**NHS Organisation Targets for C. difficile infections:**
Actions:
Developing priorities for you & this CCG

Aim to roll back to prescribing in 2010 (12%)
Reducing total antibiotics by about 1% annually

HOW

1. Use the leaflets to reduce patient expectations
2. Develop computer prompt or use patient.co.uk to increase use of leaflet
3. Use back-up/delayed prescribing (the leaflet will help)
4. Refer to the posters to introduce antibiotics
5. Make sure everyone has access to antibiotic guidance
6. Do an antibiotic audit
7. Give an individual responsibility of taking these forward
Many thanks to:

The TARGET team at the PHE PCU:
  Rebecca Owens, Donna Lecky,
  Leah Jones, Katherine Butler
All those involved in TARGET materials especially:
  the RCGP, BSAC, RPS, DH, behavioural team at PHE,
  Ruth Dale, RCN, ARHAI, Nick Francis, Phil Howard
The GPs and patients involved in evaluation and interviews
The IPSOS Mori team
The e-Bug team at the PCU
Community Pharmacy

Antimicrobial stewardship - what do commissioners need to know?

- Philip Howard, Consultant Antimicrobial Pharmacist, Leeds Teaching Hospital NHS Trust,
- HCAI and AMR Project Lead, NHS England

www.england.nhs.uk
Antimicrobial stewardship in community pharmacy – what do commissioners need to know?

Philip Howard
Consultant Antimicrobial Pharmacist
HCAI and AMR Project Lead
NHS England

philip.howard2@nhs.net
Themes

- Flu vaccination at community pharmacy
- Minor ailment schemes
- Patient education on AMR
What is the problem?

• ‘Flu vaccination can prevent death and ill-health from ‘flu and reduce hospital admissions.

• Primary care is not achieving high enough vaccination rates for clinical at-risk groups.

• During the 2013/14 ‘flu vaccination campaign in England only around 52% of at risk patients were vaccinated\(^1\).

• Currently 50.3% to end Jan-15 and only 44.1% of pregnant females

\(^1\) Influenza Vaccine Uptake amongst GP Patient Groups in England. Winter Season 2013/14 (Public Health England)
### Why vaccinate these risk groups?

Influenza-related population mortality rates and relative risk of death among those aged six months to under 65 years by clinical risk group in England, September 2010 – May 2011

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Number of fatal flu cases (%)</th>
<th>Mortality rate per 100,000 population</th>
<th>Age-adjusted relative risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a risk group</td>
<td>213 (59.8)</td>
<td>4.0</td>
<td>11.3 (9.1-14.0)</td>
</tr>
<tr>
<td>Not in any risk group</td>
<td>143 (40.2)</td>
<td>0.4</td>
<td>Baseline</td>
</tr>
<tr>
<td>Chronic renal disease</td>
<td>19 (5.3)</td>
<td>4.8</td>
<td>18.5</td>
</tr>
<tr>
<td>Chronic heart disease</td>
<td>32 (9.0)</td>
<td>3.7</td>
<td>10.7 (7.3-15.7)</td>
</tr>
<tr>
<td>Chronic respiratory disease</td>
<td>59 (16.6)</td>
<td>2.4</td>
<td>7.4 (5.5-10.0)</td>
</tr>
<tr>
<td>Chronic liver disease</td>
<td>32 (9.0)</td>
<td>15.8</td>
<td>48.2 (32.8-70.6)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>26 (7.3)</td>
<td>2.2</td>
<td>5.8 (3.8-8.9)</td>
</tr>
<tr>
<td>Immunosuppression</td>
<td>71 (19.9)</td>
<td>20.0</td>
<td>47.3 (35.5-63.1)</td>
</tr>
<tr>
<td>Chronic neurological disease (excluding stroke/transient ischaemic attack)</td>
<td>42 (11.8)</td>
<td>14.7</td>
<td>40.4 (28.7-56.8)</td>
</tr>
<tr>
<td>Total</td>
<td>378</td>
<td>0.8</td>
<td></td>
</tr>
</tbody>
</table>
How can community pharmacy help?

• Providing vaccination through additional providers increases the overall vaccination rates especially in harder to reach groups\(^2\).

• Providing vaccinations in community pharmacies increases vaccination rates in the following groups\(^3\)
  a) first-time vaccinations where they had been eligible previously;
  b) over 65 years of age;
  c) under 65 years of age and at-risk;
  d) carers and frontline healthcare workers.

2. Centres for Disease Control and Prevention. Adult immunization programs in non-traditional settings: quality standards and guidance for program evaluation

www.england.nhs.uk
How can community pharmacy help?

- The typical prescribing cycle for medicines to treat long term conditions means that patients in the at-risk group will **attend a pharmacy up to five times within the ‘flu season** for a prescription presenting opportunities for vaccination.
- Over a quarter of a million private ‘flu vaccinations have been successfully provided by community pharmacies in England and Wales in one scheme alone\(^4\).
- In Tower Hamlets CCG they exceeded the national target for 2013/14 in the over 65 years old by achieving 76% vaccination. **11% of all vaccinations** in this age group were undertaken by community pharmacies in a Pan London scheme\(^5\).
- PharmOutcomes® data for one PCT indicated that **over 13%** of their at-risk cohort vaccinated by pharmacies were **pregnant women**\(^6\).


\(^5\) Impact of Influenza Vaccination upon uptake as a Pan London service from community pharmacy (Internal report: NHS England London June 2014)

\(^6\) PharmOutcomes data – available on request (info@phpartnership.com)

www.england.nhs.uk
What do patients think?

• Evaluation of existing ‘flu vaccination services provided by community pharmacists shows that patients strongly welcome the additional choice available to them⁷,⁸,⁹

• In a study of almost 3,500 patients, 99% of patients rated the service as above average or excellent. 20% said they wouldn’t otherwise have been vaccinated and all respondents who expressed a view said they would use the service again¹⁰.

• The literature shows factors that encouraged the use of pharmacies included accessibility and convenient times that avoided the need to take time off work.

¹⁰. Seasonal Influenza Vaccination 2011/12 Isle of Wight Community Pharmacy Report: Pinnacle Health Partnership
What are the financial implications?

• ‘Flu vaccination is essentially a contained market because:
  • clearly defined groups that qualify for free ‘flu vaccination
  • patients will only be vaccinated once in a season
  • same cost to NHS regardless of provider.
• NHS England and PSNC agree that community pharmacies should receive the same vaccination fee as GP practices for administration to at risk groups with reimbursement of vaccine costs + VAT.
• Additional costs limited to AT set-up and management of the service. Kept to a minimum by using existing systems for local enhanced services and by using the Area Teams and Local Pharmaceutical Committee’s communications networks.
How can this be done?

• To increase the number of patients vaccinated next winter a ‘flu vaccination service can be commissioned from community pharmacies as a pharmaceutical enhanced service.

• A vaccination service can be commissioned using an NHS England approved Patient Group Direction (PGD) and associated paperwork.

• The patient’s GP practice would be informed within 48 hours of a patient being vaccinated.
How can we record data and pay contractors?

- **OPTION 1**: Use a web-based system e.g. PharmOutcomes®, Webstar, North 51, Sonar. This may involve a cost to the area team. Many area teams already use web-based systems.

- Web-based systems generally include an NHS ‘flu vaccination service module which allows a data capture and invoicing system to be set up quickly. The commissioner controls which pharmacies are given access to the service module.

- These systems will create invoices/service claims for each provider and will support notification of GP practices of vaccinations undertaken.
How can we record data and pay contractors?

- **OPTION 2.** A paper based solution can be used - the resources for managing a paper-based service will vary and depend upon the capacity of the area team to send, receive and process engagement documents, assurance documents and payment claims. Data on service delivery would be available retrospectively, aligned to the claim cycle, most likely monthly.

- Consider whether pharmacist advises GP who updates Immform® or pharmacists directly update Immform®, also consider recording on Immform® for unregistered patients and those at risk patients opting to be vaccinated through pharmacy privately.
Who is already commissioning this service?

Many area teams have commissioned community pharmacies to provide a ‘flu vaccination service. For the 2014/15 season only four Area Teams didn’t commission a service from community pharmacy.

<table>
<thead>
<tr>
<th>Group</th>
<th>England (mean &amp; range)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 65y</td>
<td>72.8% (69.2% to 76.5%)</td>
<td>73.7%</td>
<td>70.6%</td>
<td>70.9%</td>
<td>72.9%</td>
</tr>
<tr>
<td>At risk &lt;65</td>
<td>50.3% (46.8% to 54.6%)</td>
<td>48.3%</td>
<td>46.8%</td>
<td>48.2%</td>
<td>49.3%</td>
</tr>
</tbody>
</table>

All four ATs who didn’t commission FVS had a lower under 65 years at-risk vaccination uptake.
How can I implement this quickly?

• For commissioners who wish to commission ‘flu vaccination from community pharmacy for ‘at risk’ groups, a toolkit containing an implementation plan, sample service specifications and standard proformas can be found at http://psnc.org.uk/services-commissioning/locally-commissioned-services/winter/

• The implementation plan outlines steps to follow once a decision to commission a ‘flu vaccination service from community pharmacies is made.

• Area teams are advised to plan the implementation of the service with the Local Pharmaceutical Committee (LPC) so that LPC resources can be used to support the rapid implementation of the service by pharmacy contractors.
Feedback from LPCs

- 54% to 59% signed up to provide the service
- 84% of those are active vaccinators

How to get better sign up by community pharmacy
- Earlier planning
- Agreement of local GPs

PSNC Briefing 007/15: Analysis of Seasonal Influenza Vaccination Services 2014/15 in England (February 2015)
Which patient groups are included?

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients aged 18-64 years in a clinical risk group (including pregnancy)</td>
<td>17</td>
</tr>
<tr>
<td>Pregnant women</td>
<td>15</td>
</tr>
<tr>
<td>Carers</td>
<td>12</td>
</tr>
<tr>
<td>Patients aged 65 years and over</td>
<td>10</td>
</tr>
<tr>
<td>People in long-stay residential or homes</td>
<td>4</td>
</tr>
<tr>
<td>Healthcare workers with direct patient contact</td>
<td>2</td>
</tr>
<tr>
<td>Household contacts of immunocompromised individuals</td>
<td>2</td>
</tr>
<tr>
<td>Patients aged 18-64 years in a clinical risk group (not including pregnancy)</td>
<td>2</td>
</tr>
<tr>
<td>Patients aged 2-64 years in a clinical risk group (including pregnancy)</td>
<td>1</td>
</tr>
<tr>
<td>Patients aged 12-64 years in a clinical risk group (including pregnancy)</td>
<td>1</td>
</tr>
<tr>
<td>NHS England staff (with NHS England voucher) - as flu champions &amp; clinical leadership</td>
<td>1</td>
</tr>
<tr>
<td>Public Health England Staff (with NHS England voucher) - as flu champions &amp; clinical leadership</td>
<td>1</td>
</tr>
<tr>
<td>Prison staff (with NHS England voucher)</td>
<td>1</td>
</tr>
<tr>
<td>Specials school staff (with NHS England voucher)</td>
<td>1</td>
</tr>
</tbody>
</table>
Supporting information

The following supporting information can be found at http://psnc.org.uk/services-commissioning/locally-commissioned-services/winter/

• An implementation checklist
• A template service agreement and service specification
• A pharmacy contractor sign up and assurance sheet
• A ‘flu vaccination record and consent form
• A GP practice notification form
• A template patient leaflet
• An example Patient Group Direction (PGD)
What other support tools are available?

Immunisation against infectious disease: the **Green Book** (Public Health England)


The flu vaccination for the winter of 2014/15 - Who should have it, and why (patient leaflet)

A NHS COMMUNITY PHARMACY SERVICE TO SUPPORT LOW INCOME FAMILIES OR PATIENTS IN AREAS OF SOCIAL DEPRIVATION TO SELF CARE
What is the problem?

- Too many people with common ailments are visiting urgent and emergency care services, Out of Hours services, walk-in centres or their GPs, taking up appointments which are needed for patients with more serious illness.
- Patients unable to afford OTC medicines may seek a “free” prescription from their GP or out of hours provider, or via a walk-in centre or emergency department.
- Self-care advice and appropriate OTC treatments at NHS expense by community pharmacies in order to avoid use of other healthcare services.
Community pharmacists and their teams already respond to the symptoms of minor illnesses presented by patients as part of the NHS community pharmacy contractual framework’s Support for Self-Care service.

Minor ailments are ‘common or self-limiting or uncomplicated conditions which can be diagnosed and managed without medical intervention’; many of these ailments, such as coughs, colds, sore throats and earache frequently occur during the winter months.

Pharmacy based services to treat minor ailments, were introduced locally across the UK > 10 years ago to reduce the burden of minor ailments on higher cost settings such as general practice and the A&E departments of hospitals.

How can community pharmacy help?

- If no pharmacy MAS not in place: **58%** in North of England would have made an appointment with their GP\(^\text{19}\), **~80%** in Cheshire\(^\text{20}\) and **94%** in Bradford \(^\text{21}\).
- Consultations for MAS are **less expensive** when provided through community pharmacy. Evidence suggests that it is a suitable alternative to GP consultations\(^\text{22}\).
- **MINA study** found 31 evaluations of pharmacy minor ailment services, it was found that the proportion of patients reporting resolution of minor ailments following their pharmacy consultation ranged between **68%** and **94.4%** and that re-consultation rates with GPs were **low**\(^\text{23}\).

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21. Community Pharmacy West Yorkshire 3 month Evaluation of Bradford City Pharmacy First Scheme, September 2014  
22. Community Pharmacy management of minor illnesses, Pharmacy Research UK, January 2014,  
Many patient surveys have been undertaken as part of evaluation of minor ailment services and these show that such schemes are well received by patients. Some comments from NHS Mid-Essex patients are shown below.

- “Very satisfied”
- “I think this is brilliant and will hopefully put less pressure on doctors.”
- “Should make more people aware of this NHS service.”
- “Service made a positive impact.”
- “This is a fantastic service.”
- “A great service, I hope it continues.”
Who is already commissioning this service?

- The benefits of a minor ailments services commissioned through community pharmacy are well established and have resulted in the national commissioning of the service in Scotland and Wales.
- A significant number of Primary Care Trusts (PCTs) previously commissioned the service and some of these services have continued to be commissioned by Area Teams or Clinical Commissioning Groups.
- MAS are being run across 42% of CCGs (89/211)
  - 52 by CCGs, 15 by AT, and 31 CCGs covered in the Area Team schemes
Who can deliver the service?

- 31 of the services require the **pharmacist** to offer the service
  - 15 services have PGDs associated with the service.
  - 16 services require pharmacists to sell OTC/P meds through the service.
- 25 of the services require that either the pharmacist or an **appropriately trained** member of staff can offer the service
- 3 services (mixed) allow the pharmacist or an **appropriately trained member** of staff or pharmacists to offer **level 1** of the service (GSL and P meds) but a **pharmacist** must offer **level 2** of the service (PGDs)
- 8 – unknown (waiting for confirmation from LPCs)
<table>
<thead>
<tr>
<th>Indication</th>
<th>No</th>
<th>Indication</th>
<th>No</th>
<th>Indication</th>
<th>No</th>
<th>Indication</th>
<th>No</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaginal thrush</td>
<td>44</td>
<td>Insect bite/sting</td>
<td>32</td>
<td>Oral thrush</td>
<td>21</td>
<td>Acne</td>
<td>5</td>
<td>Crab lice</td>
</tr>
<tr>
<td>Diarrhoea</td>
<td>43</td>
<td>Mouth ulcers</td>
<td>31</td>
<td>Allergic rhinitis</td>
<td>20</td>
<td>Chickenpox</td>
<td>5</td>
<td>Cracked sore nipples</td>
</tr>
<tr>
<td>Hay fever</td>
<td>43</td>
<td>Headache</td>
<td>30</td>
<td>Cold/flu</td>
<td>20</td>
<td>Dry skin</td>
<td>5</td>
<td>Gout</td>
</tr>
<tr>
<td>Constipation</td>
<td>41</td>
<td>Dermatitis/eczema</td>
<td>29</td>
<td>Ear wax</td>
<td>14</td>
<td>Ringworm</td>
<td>4</td>
<td>Migraine</td>
</tr>
<tr>
<td>Sore throat</td>
<td>41</td>
<td>Heartburn</td>
<td>28</td>
<td>Scabies</td>
<td>14</td>
<td>Vomiting</td>
<td>4</td>
<td>Minor injuries</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>39</td>
<td>Nasal congestion</td>
<td>28</td>
<td>Sprain, strain &amp; muscle pain</td>
<td>14</td>
<td>Burns, scalds or cuts</td>
<td>3</td>
<td>Scalp disorders</td>
</tr>
<tr>
<td>Threadworms</td>
<td>39</td>
<td>Warts/verrucae</td>
<td>28</td>
<td>Colic</td>
<td>10</td>
<td>Dandruff</td>
<td>3</td>
<td>Thrush in BF</td>
</tr>
<tr>
<td>Head lice</td>
<td>37</td>
<td>Teething</td>
<td>26</td>
<td>UTI</td>
<td>10</td>
<td>Fever after immunisation</td>
<td>3</td>
<td>Travel sickness</td>
</tr>
<tr>
<td>Indigestion</td>
<td>37</td>
<td>Cystitis</td>
<td>25</td>
<td>Impetigo</td>
<td>9</td>
<td>Pruritis</td>
<td>3</td>
<td>Wind</td>
</tr>
<tr>
<td>Fever / temp</td>
<td>37</td>
<td>Ear ache</td>
<td>25</td>
<td>Dry eyes</td>
<td>6</td>
<td>Sunburn</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Athlete's foot</td>
<td>35</td>
<td>Cough</td>
<td>23</td>
<td>Fungal infection</td>
<td>6</td>
<td>URTI viral</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Cold sores</td>
<td>33</td>
<td>Pain</td>
<td>23</td>
<td>Period pain</td>
<td>6</td>
<td>Mouth care</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Nappy rash</td>
<td>33</td>
<td>Haemorrhoids</td>
<td>22</td>
<td>Toothache</td>
<td>6</td>
<td>Soft tissue injury</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

PSNC Briefing 006/15: Analysis of Minor Ailments Services in England
# Range of medicines on PGD

<table>
<thead>
<tr>
<th>Medicine</th>
<th>PGDs</th>
<th>Medicine</th>
<th>PGDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trimethoprim 200mg tablets</td>
<td>12</td>
<td>Canesten HC cream</td>
<td>1</td>
</tr>
<tr>
<td>Chloramphenicol 0.5% eye drops</td>
<td>8</td>
<td>Clarithromycin 125mg/5ml</td>
<td>1</td>
</tr>
<tr>
<td>Fusidic acid 2% cream</td>
<td>6</td>
<td>Clarithromycin 250mg tab</td>
<td>1</td>
</tr>
<tr>
<td>Fusidic acid 1% eye drops</td>
<td>5</td>
<td>Colchicine 500mcg tablets</td>
<td>1</td>
</tr>
<tr>
<td>Nystatin 100,000u oral susp</td>
<td>5</td>
<td>Lansoprazole 15mg caps</td>
<td>1</td>
</tr>
<tr>
<td>Beclometasone 50mcg nasal spr</td>
<td>4</td>
<td>Lansoprazole 30mg caps</td>
<td>1</td>
</tr>
<tr>
<td>Timodine cream</td>
<td>4</td>
<td>Miconazole 2% cream</td>
<td>1</td>
</tr>
<tr>
<td>Chloramphenicol 1% eye oint</td>
<td>3</td>
<td>Nitrofurantoin 50mg</td>
<td>1</td>
</tr>
<tr>
<td>Flucloxacillin 250mg capsules</td>
<td>2</td>
<td>Naproxen 250mg tablets</td>
<td>1</td>
</tr>
<tr>
<td>Flucloxacillin 125mg/5ml</td>
<td>2</td>
<td>Omeprazole 10mg cap</td>
<td>1</td>
</tr>
<tr>
<td>Flucloxacillin 250mg/5ml</td>
<td>2</td>
<td>Omeprazole 20mg caps</td>
<td>1</td>
</tr>
<tr>
<td>Fusidic acid 2% ointment</td>
<td>2</td>
<td>Retapamulin 1% ointment</td>
<td>1</td>
</tr>
<tr>
<td>Adapalene acne 0.1% cream</td>
<td>1</td>
<td>Sod cromoglicate 2% eye</td>
<td>1</td>
</tr>
<tr>
<td>Adapalene acne 0.1% gel</td>
<td>1</td>
<td>Sumatriptan 50mg tablets</td>
<td>1</td>
</tr>
<tr>
<td>Adapalene 0.1% benzoyl peroxide 2.5% gel</td>
<td>1</td>
<td>Flucloxacillin 500mg caps</td>
<td>1</td>
</tr>
<tr>
<td>Azelaic acid 20% cream</td>
<td>1</td>
<td>Fusidic acid 1% MR eye</td>
<td>1</td>
</tr>
<tr>
<td>Azelaic acid 15% gel</td>
<td>1</td>
<td>PSNC Briefing No 6 - 2015</td>
<td></td>
</tr>
</tbody>
</table>
What are the financial implications?

- NHS England and PSNC have agreed that a fee of £4.00 + VAT to cover the administration of the service plus reimbursement of the cost of the medicine + VAT is a reasonable fee.

- Monitor in their publication ‘Closing the NHS funding gap: how to get best value health care for patients’ conservatively estimate nationwide productivity gains from rolling out minor ailments services through community pharmacy as £64 million.

What are the financial implications?

- Research from the Royal Pharmaceutical Society found that the cost of treating common ailments:
  - community pharmacies was £29.30 per patient.
  - Emergency Departments (ED) was £147.09 per patient (nearly five times higher)
  - GP practices at £82.34 per patient (nearly three times higher)
- Overall, the study estimates that 3% of all ED consultations and 5.5% of GP consultations for common ailments could be managed in community pharmacies.
- Equates to over 650,000 visits to ED and over 18 million GP consultations every year that could be diverted with a total annual cost saving of over £1 billion.25

How can this be done?

- Community pharmacy common/minor ailments services can be commissioned flexibly depending on local need to provide advice and supply over the counter medicines at NHS expense (where appropriate) to a defined group of patients.
- Groups of patients eligible to receive medicines to treat common/minor ailments at NHS expense can be varied according to local needs.
- It is recommended that this service is targeted at deprived and low income populations.
What else can be done?

As well as providing a common/minor ailments service, community pharmacies can help by:

- **promoting self-care** through the pharmacy, including provision of advice and where appropriate medicines without the need to visit the GP practice.
- operating as a **first point of referral for NHS 111** and other healthcare services for patients with common ailments.

Area Team and CCG communications specialists could support this approach by supporting the Feeling Under the Weather campaign\(^{26}\) Treat Yourself Better campaign\(^{27}\) and publicising the patient fact sheets produced by the Self Care Forum\(^{28}\).

26. [www.nhs.uk/asap](http://www.nhs.uk/asap)
27. [www.treatyourselfbetter.co.uk](http://www.treatyourselfbetter.co.uk)
How can we record data and pay contractors?

- Same as flu vaccinator approach
- **OPTION 1** By using a web-based system such as PharmOutcomes®, Webstar, North 51 Sonar. Web-based systems may include a ready-made MAS module.
- **OPTION 2** By using a paper based solution - the resources for managing a paper-based service will vary and depend upon the capacity of the Area Team to send, receive and process engagement documents, assurance documents and payment claims. Data on service delivery would be available **retrospectively**, aligned to the claim cycle, most likely monthly.
How can I implement this quickly?

• For commissioners who wish to commission an NHS community pharmacy common ailments service, an implementation toolkit containing an implementation plan, sample service specifications and standard proformas can be found at [http://psnc.org.uk/services-commissioning/locally-commissioned-services/winter/](http://psnc.org.uk/services-commissioning/locally-commissioned-services/winter/)

• The implementation plan outlines steps to follow once a decision to commission a service from community pharmacy to support deprived populations to self-care is made.

• Area teams are advised to plan the implementation of the service with the Local Pharmaceutical Committee (LPC) so that LPC resources can be used to support the rapid implementation of the service by pharmacy contractors.
Supporting information

The following supporting information can be found at http://psnc.org.uk/services-commissioning/locally-commissioned-services/winter/

- An implementation checklist
- A template service agreement and service specification
- A pharmacy contractor sign up and assurance sheet
- A service record form
What other support tools are available

- Implementing a community pharmacy minor ailment scheme. A practical toolkit\(^29\) for primary care organisations and health professionals (National Pharmacy Association)

29. [www.npa.co.uk/Documents/Docstore/PCO_LPCs/implementing_a_community_pharmacy_minor_ailment_scheme.pdf](http://www.npa.co.uk/Documents/Docstore/PCO_LPCs/implementing_a_community_pharmacy_minor_ailment_scheme.pdf)
1. AB not effective vs coughs & colds
2. I should contact my GP for coughs & colds
3. Taking AB “just in case” can ↑ AMR
4. GP has given me too short a course (options)
5. AMR is serious because

- 46% of patients scored 3 or less out of 5
- EAAD quiz demonstrated educational opportunity whilst patients wait for a prescription
- Pharmacy teams made the most antibiotic guardian pledges
EAAD & AG TOOLKIT: Leaflets, quizzes, crosswords, video & more
Make the community pharmacy public health campaign AMR!

- There are six public health campaigns each year
- The campaign that covers November needs to focus on Antimicrobial Resistance
- Use the Antibiotic Guardian campaign for this

Development of a self-assessment tool for pharmacy to assess its activity on AMR/AMS

Adapt the PHE / RCGP TARGET patient information leaflet on infections for community pharmacy
Self-care guide to help you treat your infection

Patient/Customer Name

Self-care advice provided

Product(s) suggested/supplied

Customer/Patient advised to contact GP

<table>
<thead>
<tr>
<th>Your infection</th>
<th>Usually lasts</th>
<th>How to treat yourself better for these infections, now and next time</th>
<th>When should you get help:</th>
</tr>
</thead>
</table>
| Middle-ear infection | 4 days | - Have plenty of rest.  
- Drink enough fluids to avoid feeling thirsty.  
- Ask your local pharmacist to recommend medicines to help your symptoms or pain (or both).  
- Fever is a sign the body is fighting the infection and usually gets better by itself in most cases. You can use paracetamol (or ibuprofen) if you or your child are uncomfortable as a result of a fever.  
- Other things you can do suggested by GP or nurse: | Contact your GP practice or contact NHS 111 (England), NHS 24 (Scotland dial 111), or NHS Direct (Wales dial 0845 4647) |
| Sore throat | 7 days | 1. to 8. are possible signs of serious illness and should be assessed urgently.  
Phone for advice if you are not sure how urgent the symptoms are. |
| Common cold | 10 days | 1. If you develop a severe headache and are sick. |
2. If your skin is very cold or has a strange colour, or you develop an unusual rash. |
3. If you feel confused or have slurred speech or are very drowsy. |
4. If you have difficulty breathing. Signs can include:  
  - Breathing quickly  
  - Turning blue around the lips and the skin below the mouth  
  - Skin between or above the ribs getting sucked in with every breath.  
5. If you develop chest pain. |
6. If you have difficulty swallowing or are drooling. |
7. If you cough up blood. |
8. If you are feeling a lot worse. |

Less serious signs that can usually wait until the next available GP appointment:  
9. If you are not improving by the time given in the ‘Usually lasts’ column. |
10. In children with middle-ear infection: if fluid is coming out of their ears or if they have new deafness. |
11. Other |

- Colds, most coughs, sinusitis, ear infections, sore throats, and other infections often get better without antibiotics, as your body can usually fight these infections on its own.  
The more we use antibiotics, the greater the chance that bacteria will become resistant to them so that they no longer work on our infections.  
Antibiotics can cause side effects such as rashes, thrush, stomach pains, diarrhoea, reactions to sunlight, other symptoms, or being sick if you drink alcohol with metronidazole. |

Find out more about how you can make better use of antibiotics and help keep this vital treatment effective by visiting and pledging at www.antibioticguardian.com

Never share antibiotics and always return any unused antibiotics to a pharmacy for safe disposal.

Leaflet developed in collaboration with these professional societies.
Antimicrobial stewardship in community pharmacy – what do commissioners need to know?

Philip Howard,
Consultant Antimicrobial Pharmacist,
Leeds Teaching Hospital NHS Trust,
HCAI and AMR Project Lead, NHS England
Discussion and questions
Session 3
Sharing success

- Dr Pete Smith
- Senior Partner, Churchill Medical Centre, GP Board
  Kingston CCG
COMING TO A PRACTICE NEAR YOU!

THE WORLD HEALTH ORGANISATION

PRESENTS

Apocalypse Now
Reducing antibiotic prescribing by 15%

Through implementation of NICE Guideline 069

Dr Pete Smith OBE

Senior Partner, Churchill Medical Centre, Kingston

Kingston CCG Board Member

Founder member Self Care Forum
The Problem

<table>
<thead>
<tr>
<th>October 2012</th>
<th>Antibiotics Given</th>
<th>Antibiotics Not Given</th>
<th>Total</th>
<th>Percentage given antibiotic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>78</td>
<td>65</td>
<td>143</td>
<td>54.5</td>
</tr>
<tr>
<td>URTI</td>
<td>60</td>
<td>124</td>
<td>184</td>
<td>32.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>148</td>
<td>207</td>
<td>355</td>
<td>41.7</td>
</tr>
</tbody>
</table>
Bite sized challenge for winter

- Multidisciplinary team – everyone involved
- Champions required
- Start with respiratory illnesses
- Consistent messages
- Evidence based literature
- Positive, short messages
- Delayed/no prescribing strategy
NICE to the rescue in 2008

Duration of symptoms

- Acute otitis media: 4 days
- Acute sore throat/acute pharyngitis: 1 week
- Common cold: 1½ weeks
- Acute rhinosinusitis: 2½ weeks
- Acute cough/acute bronchitis: 3 weeks

Evidence based harm - Most infections will not respond to antibiotics but 15% or more will have adverse effects from them

Use Delayed Prescriptions if necessary – 70% will not be dispensed
Evidence from 1965

Elmes, PC et al

*Value of ampicillin in the hospital treatment of exacerbations of chronic bronchitis.*

BMJ 11/1965;2(5467):904-8
• Cardiff 2013

• Llor et al. Efficacy of anti-inflammatory or antibiotic treatment in patients with non-complicated acute bronchitis and discoloured sputum: randomised placebo controlled trial BMJ 2013;347:f5762
Cough – simply the evidence

1. 90% of coughs last up to three weeks (whether or not treated with antibiotics or chest signs present) (Cochrane)

2. The same number reattend even if given antibiotics (Cochrane)

3. Delayed or no prescribing strategy if not at an increased risk of developing complications (NICE)

4. Antibiotic may sometimes be given if
   • suggestion of complications or
   • at risk of complications elderly, very ill, have comorbidities and or significant history (NICE)
Early messages

• Patients attend for a reason

• There is evidence to support all of the NICE guidance

• It does not take long to give these messages
National Institute for Health and Clinical Excellence care pathway for respiratory tract infections

At the first face-to-face contact in primary care, including walk-in centres and emergency departments, offer a clinical assessment, including:
- history (presenting symptoms, use of over-the-counter or self medication, previous medical history, relevant risk factors, relevant comorbidities)
- examination as needed to establish diagnosis.

Address patients' or parents'/carers' concerns and expectations when agreeing the use of the three antibiotic strategies (no prescribing, delayed prescribing and immediate prescribing).

Agree a no antibiotic or delayed antibiotic prescribing strategy for patients with acute otitis media, acute sore throat/pharyngitis/acute tonsillitis, common cold, acute rhinosinusitis or acute cough/acute bronchitis.

However, also consider an immediate prescribing strategy for the following subgroups, depending on the severity of the RTI:

The patient is at risk of developing complications.

No antibiotic prescribing
Offer patients:
- reassurance that antibiotics are not needed immediately because they will make little difference to symptoms and may have side effects, for example, diarrhoea, vomiting and rash.
- advice about using the delayed prescription if symptoms do not settle or get significantly worse despite using the delayed prescription.
- advice about re-consulting if symptoms get significantly worse despite using the delayed prescription.

The delayed prescription with instructions can either be given to the patient or collected at a later date.

Delayed antibiotic prescribing
Offer patients:
- reassurance that antibiotics are not needed immediately because they will make little difference to symptoms and may have side effects, for example, diarrhoea, vomiting and rash.
- advice about using the delayed prescription if symptoms do not settle or get significantly worse despite using the delayed prescription.
- advice about re-consulting if symptoms get significantly worse despite using the delayed prescription.

No antibiotic, delayed antibiotic or immediate antibiotic prescribing
Depending on clinical assessment of severity, also consider an immediate prescribing strategy for:
- children younger than 2 years with bilateral acute otitis media
- children with otitis media when three or more Centor criteria are present.

Centor criteria are: presence of tonsillar exudate, tender anterior cervical lymphadenopathy or lymphadenitis, history of fever and an absence of cough.

Immediate antibiotic prescribing or further investigation and/or management
Offer immediate antibiotics or further investigation/management for patients who:
- are systemically very unwell.
- have symptoms and signs suggestive of serious illness and/or complications (particularly pneumonia, mastoiditis, peritonsillar abscess, peritonsillar cellulitis, intraorbital or intracranial complications).
- are at high risk of serious complications because of pre-existing comorbidity. This includes patients with significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis, and young children who were born prematurely.
- are older than 55 years with acute cough and two or more of the following, or older than 80 years with acute cough and one or more of the following:
  - hospitalisation in previous year
  - type 1 or type 2 diabetes
  - history of congestive heart failure
  - current use of oral glucocorticoids.

Offer all patients:
- advice about the usual natural history of the illness and average total illness length:
  - acute otitis media: 4 days
  - acute sore throat/acute pharyngitis/acute tonsillitis: 1 week
  - common cold: 1½ weeks
  - acute rhinosinusitis: 2½ weeks
  - acute cough/acute bronchitis: 3 weeks
- advice about managing symptoms including fever (particularly analgesics and antipyretics). For information about fever in children younger than 5 years, refer to ‘Febrile illness in children’ (NICE clinical guideline 47).

NICE clinical guideline 68 – respiratory tract infections – antibiotic prescribing
Evidence based advice on RTIs

NORMAL DURATION OF RTIs

- Otitis media: 4 days
- Sore throat/pharyngitis/tonsillitis: 1 week
- Common cold: 1 1/2 weeks
- Acute rhinosinusitis: 2 1/2 weeks
- Cough: 3 weeks

NB: CHILDREN UNDER 5 WITH FEVER

- 5 days or more of fever need to be seen: AMBER risk
- 0-3 months: temp over 38 or 3-6 months over 39 need to be seen within 2 hours: RED risk

ACUTE OTITIS MEDIA

Ear infections are very common in young children; last 4 days; painkillers main treatment unless with a discharge or under 2 years, both ears.
- 3/4 of all children have had an ear infection by age 2
- Commonest between 3-18 months
- Not unusual to have up to 3 attacks a year
- Will usually last 4 days

Nice recommends ONLY consider antibiotics if:
There is a discharge, or under 2 with infection in both ears

When to seek advice
- High temp not coming down
- New discharge
- Vomiting
- Dizziness
- Floppy
- Lethargy
- Severe unwell
- Irritable
- Unwell and still not clearing after 2-3 days

COUGH

- 90% cough last up to 3 weeks, whether or not treated with antibiotics even if chest signs present.

When to seek advice
- Getting worse
- Coughing up blood
- Cough lasts for more than three to four weeks.
- Develop chest and/or shoulder pain.
- Difficult breathing
- Losing weight over a period of six weeks or more
- Voice becomes hoarse.
- Ends of fingers take on a 'club-like' shape.
- New swellings in the neck or above the collar bones.

SORE THROAT

- 90% clear within 1 week, antibiotics or not
- Do not give antibiotics unless 3 or more Centor criteria present:
  - Tonsillar exudates
  - Cervical lymphadenopathy
  - History of fever
  - Absence of a cough

When to seek advice
- Persistent high temperature for more than three days that does not come down with ibuprofen and/or paracetamol.
- Not getting better or that gets worse — after 4 to 5 days
- Hard to breathe in or your throat feels like it's closing up
- Drooling and difficult to swallow.
- Pain is severe and does not respond to over the counter pain killers.
- Voice becomes muffled.
- Difficult to drink enough fluids and become dehydrated
- Symptoms so bad that they prevent you from functioning normally.
- Immunocompromised (including steroids)

DELAYED PRESCRIBING OR NO PRESCRIBING STRATEGY

if not at risk of complications:
- Elderly
- Very ill
- Co-morbidities e.g. COPD
- Significant history
XXXX: 'Home treatment is the best treatment' campaign

At XXX we are starting a campaign to make sure people are aware that they can treat themselves and their children effectively and safely for most of the coughs, colds, sore throats and earaches they get and that they do not need antibiotics.

Why are we doing this?
Most of you will be aware that antibiotics don't work for most coughs, colds, sore throats and earaches and there has been a big story about this in the news recently. Despite this, people still come in regularly expecting treatment when there is nothing we can do. What is worse, giving unnecessary antibiotics increases the risk of bacteria developing that are resistant to them so they won't work when they are really needed. This campaign is intended to empower patients to treat themselves for conditions that get better anyway and that we can't treat any better than they can.

One surgery had around 300 appointments for these conditions in October 2012. Of these, 100 received antibiotics. The other 200 did not need to attend and it is unlikely that many of the 100 had any great benefit from the antibiotics and were at risk of side effects from them.

What will we be doing?
We will be encouraging all patients who attend with what we call 'respiratory tract infections' to treat themselves and their children rather than coming to see us, although we will not be turning patients away, and we won't be calling these 'minor' illnesses as they don't feel minor!

We have prepared a laminated sheet for doctors and nurses giving a brief summary of the evidence and short messages to give. We have also used the information given in the national Self Care Forum's leaflets to prepare single advice sheets on Coughs and Sore Throats and prepared one on Ear infections which we will be giving to patients.

Delayed prescriptions
Some of our patients have come to believe they need an antibiotic. Most are quite happy not to have them, but for the small number who become distressed when told an antibiotic is not required, we will be giving a 'delayed' antibiotic. A prescription will be given and the patient told they do not need it but that if the patient's condition becomes more severe, they can be taken. We know that only a third will then be taken. Once patients are aware that there is nothing we can do, they are less likely to come back next time for another fruitless visit.

Dr Pete Smith prepared a talk for the Self Care Forum on this subject. You can see the Powerpoint presentation and copies of the advice sheets and laminated sheets on XXXX.

Our patients are usually very sensible and we have had very few who have complained, but views about antibiotics can be surprisingly strongly held, particularly when their previous doctor gave a prescription rather than explaining that they are not necessary. Please speak to XXX if you want to know more.
Home care is best

Most common illnesses don’t need antibiotics

This is how long they may last

<table>
<thead>
<tr>
<th>Condition</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear infection</td>
<td>4 days</td>
</tr>
<tr>
<td>Sore throat</td>
<td>1 week</td>
</tr>
<tr>
<td>Common cold</td>
<td>1 1/2 weeks</td>
</tr>
<tr>
<td>Sinusitis</td>
<td>2 1/2 weeks</td>
</tr>
<tr>
<td>Cough or bronchitis</td>
<td>3 weeks</td>
</tr>
</tbody>
</table>

Your local pharmacist can recommend medication to help ease symptoms.
RESULTS
## Results

<table>
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<th>October 2012</th>
<th></th>
<th></th>
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<td></td>
<td>Antibiotics</td>
<td>Antibiotics</td>
<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td></td>
<td>Given</td>
<td>Not Given</td>
<td></td>
<td>given antibiotic</td>
</tr>
<tr>
<td><strong>Pre</strong></td>
<td></td>
<td></td>
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<tr>
<td>Cough</td>
<td>78</td>
<td>65</td>
<td>143</td>
<td>54.5</td>
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<tr>
<td>URTI</td>
<td>60</td>
<td>124</td>
<td>184</td>
<td>32.6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>148</td>
<td>207</td>
<td>355</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Post</strong></td>
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<tr>
<td>January 2013</td>
<td></td>
<td></td>
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<tr>
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<td>Antibiotics</td>
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<td>Total</td>
<td>Percentage</td>
</tr>
<tr>
<td></td>
<td>Given</td>
<td>Not Given</td>
<td></td>
<td>given antibiotic</td>
</tr>
<tr>
<td>Cough</td>
<td>55</td>
<td>91</td>
<td>146</td>
<td>37.7</td>
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<tr>
<td>URTI</td>
<td>40</td>
<td>163</td>
<td>203</td>
<td>19.7</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>116</td>
<td>322</td>
<td>438</td>
<td>26.5</td>
</tr>
</tbody>
</table>
Everyone’s a winner!

Results – per month

15.2% reduction in use of antibiotics
67 people per month avoided antibiotics
804 per year avoid unnecessary antibiotics

C50/1,000 pts on practice list will benefit

Save the country from a microbial apocalypse!
Issues

- Patient expectations
- Sore throat evidence – SIGN/NICE
- Secondary care
- Did not involve pharmacists
- ?Effect on appointments – wait and see
- Pneumonia guidelines?
Everyone’s a winner!

• Engaging the whole team to promote the message
• Using consistent messages
• Reducing antibiotic prescribing
• Increasing self reliance
• Reducing attendances
• Authoritative, Evidence based, Comprehensive
• Freely available, Simple to implement

Sharing success

• Kathryn Wisner
• Pharmaceutical Advisor, Medicines Optimisation Team, NHS Kernow CCG.
Sharing success – Antimicrobial Resistance work in Cornwall

Kathryn Wisner – Pharmaceutical Advisor
Three Main Areas

- Formation of Cornwall Antimicrobial Resistance Group
- Inclusion of TARGET toolkit in GP Prescribing Incentive Scheme
- Community pharmacy involvement
Formation of Cornwall Antimicrobial Resistance Group (CARG)

“Success will require a wide range of public and private sector bodies to take co-ordinated action to deliver an integrated programme, which will safeguard human and animal health.”

“…providing clinical leadership and improved collaborative working …”
Starting Membership of CARG

• **NHS England** — Medical Director DCIOS (Chair)

• **Royal Cornwall Hospital (acute NHS trust)** —
  Chief Pharmacist (Deputy Chair), Antimicrobial Pharmacist, Microbiologists, DIPC Nurse Consultant

• **NHS Kernow CCG** — GP Clinical Lead, Pharmaceutical Advisor, DIPC Nurse Consultant

• **Peninsula Community Health (includes Community Hospitals & Nurses)** — Medical Lead

• **Public Health England** — Consultant

• **Academic** - European Centre for Environment and Human Health

• **Community Pharmacist** — LPC Chief Officer

• **Veterinary sector** - small animal veterinary surgeon
Purpose of CARG

- Responsible for ensuring implementation of UK 5yr AMR strategy
- Specifically supporting delivery of 3 main strategic aims
- Reports to Health and Wellbeing Board via Health Protection Committee
- Also reports into various committees within each stakeholder organisation, e.g. Medicines Optimisation Programme Board
First year of CARG

- Bi-monthly meetings since January 2014
- First meeting - gap analysis session
- Formed a workplan for the group with 3 proposed workstreams
CARG workstreams

• Education and Engagement with the Public
• Education and Engagement with Healthcare Workers & Vets
• Comprehensive Stewardship Programme for All Sectors
What have we looked at?

• Review of primary & secondary care antibiotic prescribing every 6 months
• Data on veterinary antibiotic usage in UK
• Environmental drivers for AMR
• Coordinated activities for EAAD 2014
Environmental issues

- Studies done on water downstream from waste water treatment plants
- On-going study currently being done on surfers to look at effect on E coli colonisation
### What has been achieved?

<table>
<thead>
<tr>
<th>Tangible:</th>
<th>Intangible:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Countywide forum for implementation of AMR strategy</td>
<td>• Building collaborative relationships</td>
</tr>
<tr>
<td>• Workplan</td>
<td>• Increased awareness of challenges faced by each sector</td>
</tr>
<tr>
<td>• TARGET toolkit</td>
<td>• Organisational assurance that AMR strategy is being implemented</td>
</tr>
<tr>
<td>• Coordinated EAAD activities with secured funding</td>
<td></td>
</tr>
</tbody>
</table>
CARG moving forward

• New Chair – Acting Director of Public Health (Cornwall Council)
• Monitoring of published outcome measures
• Interpretation & action on local resistance data
GP Prescribing Incentive Scheme

- ‘Implementing the TARGET toolkit’ included as one of four audits/reviews for 2014/5

- 2 parts – completion of adapted TARGET ‘Primary care self-assessment checklist’

- Checklist initially completed by Oct 14 then repeated again before Mar 15 to enable reflection on strategies implemented, e.g. delayed prescribing, patient leaflets

- Monitoring of practice quarterly antibiotic data including data for individual prescribers (total ABs, ceph, quins, co-amox)

- Overall evaluation forms to be returned by end of Mar 15
Community pharmacy

- Meds Opt team recently ran two evening events for pharmacists in Cornwall
- AMR was 1 of 4 table top discussions
- ‘Antibiotics Key messages & links’
- Draft PHE TARGET patient leaflet for community pharmacists
- Very positive & want to be involved!
Summary

• CARG successful in bringing key stakeholders together & raising the profile of AMR within local organisations

• Inclusion of TARGET toolkit in GP prescribing incentive scheme has kept AMR in focus throughout the year

• Community pharmacists are not aware of the UK AMR strategy but are keen to become involved with patient education
Results ...
Discussion and questions
Secondary Care
Promoting appropriate antimicrobial prescribing in Secondary

- Stuart Brown
- Antibiotic Pharmacist, County Durham and Darlington NHS Foundation Trust,
- HCAI and AMR Project Lead, NHS England
Promoting Appropriate Antimicrobial Prescribing in Secondary Care

Stuart Brown
Healthcare Acquired Infection and Antimicrobial Resistance Project Lead
NHS England
March 2015
Introduction

- Background
- ESPAUR 2014
- Antimicrobial Stewardship
- Antimicrobial Management Team (AMT)
  - Audit
  - Consumption
  - Education and Training
- Summary
The burden of infectious disease in England

- In 2010 infectious disease in England accounted for:
  - 8% hospital admissions
  - 7% of all deaths
- Economic impact estimated at £30 billion per year

*Annual report from the Chief Medical Officer (CMO), 2013*
Antibiotic use in hospital

“Patients who are hospitalised have a high probability of receiving an antibiotic and 50% of all antibiotic use in hospitals can be inappropriate

Misuse of antibiotics in hospitals is one of the main factors that drive development of antibiotic resistance”

Key messages for hospital prescribers. European Centre for Disease Prevention and Control (ECDC) 2005-2013 www.ecdc.europa.eu
Inappropriate Antimicrobial Use

• Risks to patients
  • Resistant infections
  • Healthcare-associated infections (HCAIs)
    • *Clostridium difficile*
    • MRSA
    • Others
• Financial cost
  • Cost of inappropriate antibiotics
  • Cost of treating resistant infections/HCAIs
ESPAUR 2014

- Antimicrobial
- Resistance
- Consumption
- Stewardship
Antimicrobial Consumption
Antimicrobial Consumption

• Antibiotic prescribing has increased in England year on year
  • Total antibiotic use increased by 6%

• Inpatient antibiotic use increased by 12% which includes:
  • 12% increase in Co-amoxiclav
  • 49% increase in Piperacillin/Tazobactam
  • 36% increase in Meropenem
Table 3.3 Ranks and relative consumption of the top 15 consumed agents in general practice and hospitals in England, 2013.

<table>
<thead>
<tr>
<th>Community consumption in 2013</th>
<th>Hospital Consumption in 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>Proportion of all antibiotics</td>
</tr>
<tr>
<td>Amoxicillin</td>
<td>1</td>
</tr>
<tr>
<td>Clarithromycin</td>
<td>2</td>
</tr>
<tr>
<td>Doxycycline</td>
<td>3</td>
</tr>
<tr>
<td>Lymecycline</td>
<td>4</td>
</tr>
<tr>
<td>Flucloxacillin</td>
<td>5</td>
</tr>
<tr>
<td>Trimethoprim</td>
<td>6</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>7</td>
</tr>
<tr>
<td>Co-amoxiclav</td>
<td>8</td>
</tr>
<tr>
<td>Phenoxyacetylpenicillin</td>
<td>9</td>
</tr>
<tr>
<td>Oxytetracycline</td>
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</tr>
<tr>
<td>Nitrofurantoin</td>
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<tr>
<td>Azithromycin</td>
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<tr>
<td>Ciprofloxacin</td>
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<tr>
<td>Cephalaxin</td>
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</tr>
<tr>
<td>Metronidazole</td>
<td>15</td>
</tr>
</tbody>
</table>
Antimicrobial Stewardship
Antimicrobial Stewardship Programme (ASP)

- An ASP describes a bundle of measures that can be adopted to promote the appropriate use of antibiotics, including:
  - optimising outcomes for patients who receive antibiotics
  - evidence-based optimal standards for routine antibiotic use, e.g. correct selection of agent, dose, route of administration and duration of therapy
  - ensuring competency and educational programmes for all staff that use antibiotics
  - communicating antibiotic issues to all stakeholders
  - auditing the impact and uptake of these processes
Antimicrobial Stewardship – Secondary Care Resource

Start Smart – Then Focus
Antimicrobial Stewardship Toolkit for English Hospitals

Revised February 2015

ANTIMICROBIAL STEWARDSHIP
Treatment algorithm

Start Smart

Then Focus

DO NOT START ANTIMICROBIALS IN THE ABSENCE OF CLINICAL EVIDENCE OF BACTERIAL INFECTION

CLINICAL REVIEW & DECISION AT 48-72 HOURS
Start Smart Then Focus

ANTIMICROBIAL STEWARDSHIP
Treatment algorithm

Start Smart  Then Focus

DO NOT START ANTIBIOTICS IN THE ABSENCE OF CLINICAL EVIDENCE OF BACTERIAL INFECTION

1. Take thorough drug allergy history
2. Initiate prompt effective antibiotic treatment within one hour of diagnosis (or as soon as possible) in patients with severe sepsis or life-threatening infections
3. Comply with local antimicrobial prescribing guidance
4. Document clinical indication (and disease severity if appropriate), dose and route on drug chart and in clinical notes
5. Include review/stop date or duration
6. Obtain cultures prior to commencing therapy where possible (but do not delay therapy)

CLINICAL REVIEW & DECISION AT 48-72 HOURS

Clinical review, check microbiology and make a clear plan. Document this decision

1. STOP
2. IV to oral switch
3. Change antibiotic
4. Continue
5. OPAT

DOCUMENT ALL DECISIONS

b According to weight/age in children refer to local formulary or BNFc
Use appropriate route in line with severity/patient factors
d Outpatient Parenteral Antibiotic Therapy

www.england.nhs.uk
Implementation of an ASP

What should I expect from a provider?

Establish an Antimicrobial Management Team / Committee (AMT)
AMT or Equivalent

- Multidisciplinary Group including:
  - Microbiologists/Infectious disease specialist
  - Antimicrobial pharmacist
  - Acute care physician
  - Surgeon
  - Anaesthetist
  - Paediatrician
  - Senior nurse
  - Primary care representative

- Report to the Trust Board
Key Roles of AMT

- Evidence based local antimicrobial guidelines
- Audit
- Antibiotic Consumption Data
- Control of High Risk Antibiotics
- Ward based activities
- Education and Training
Antibiotic Guidelines

- Guided by evidence
- Based on local susceptibility data
- Empirical recommendations
- Duration of therapy
- Prophylaxis
- Advice on monitoring
- Should be reviewed regularly
- Access
Antibiotic Guidelines

• Improved access in recent years, move from paper to
  • Web based versions
  • Apps

• Smartphone Apps
  • Microguide
  • Rx-Guidelines – PharmaMix
  • Imperial AMS App
  • Ignaz
### LRTI / Infective Exacerbation of COPD or Asthma

<table>
<thead>
<tr>
<th>INFECTION</th>
<th>PROBABLE ORGANISMS</th>
<th>ANTIBIOTICS</th>
<th>Dose</th>
<th>Freq.</th>
<th>Route</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Respiratory Tract Infection NOT pneumonia OR Infective Exacerbation COPD 2 out of 3 of: Increased spu...</td>
<td>Streptococcus pneumoniae Haemophilus influenzae Moraxella catarrhalis</td>
<td>Amoxicillin or Doxycycline</td>
<td>500mg then 100mg</td>
<td>8 hourly then daily</td>
<td>Oral Oral</td>
<td>Ciprofloxacin is NOT appropriate for empirical treatment of a chest infection. Doxycycline is effective against resistant M. catarrhalis. May increase Doxycycline dose to 100mg 12 hourly short term COPD: send sputum cultures. Co-amoxiclav is NOT recommended for the empirical treatment of a lower respiratory tract infection or an infective exacerbation of COPD. Amoxicillin or Doxycycline Doses: Severe: 1g 8 hourly IV Consult with Consultant Microbiologist</td>
</tr>
</tbody>
</table>

*LRTI: NICE guidance on Respiratory Tract infections is antibiotics should generally only be used in patients who are systemically unwell or with symptoms or signs of serious complications or those at high risk of serious complications due to pre-existing comorbidity such as significant heart, lung, renal, liver or neuromuscular disease, immunosuppression, cystic fibrosis and young children who were born prematurely. In addition antibiotics may be indicated in patients over 85 years of age with two or more of, or older than 60 years one or more of hospitalisation in the previous year, type 1 or 2 diabetes, history of congestive heart failure, current use of glucocorticoids.*
Audits

- Point prevalence
  - Indication
  - Choice in line with guidelines
  - Stop / Review Date

- IV Route appropriate
- Course length
- Antibiotic Course Review
  - Indication, Choice, Route, Cultures, Course length
Audits – patient outcomes

- Surgical prophylaxis
  - Indication for prophylaxis
  - Choice of agent
  - Timing

- Sepsis
  - Time to first dose

- Clinical audits
  - Treatment of Community Acquired Pneumonia
  - Sepsis six
Audits - Feedback

• Feedback to prescribers
  • Promote learning
  • Improve practice
CDDFT Audit Experience

- Audit program commenced Dec 2008
- Most acute wards audited monthly
- Initially struggled with feedback
- Improved feedback
  - Consultants
- Better reporting
Antibiotic Prescribing Oct 11-Aug 14

- Average of % Compliant Choice
- Average of % Rx with Stop or Review date

www.england.nhs.uk
Antimicrobial Medication

IV Antibiotics

<table>
<thead>
<tr>
<th>Drug (approved name)</th>
<th>Dose</th>
<th>Time to be given (please tick)</th>
<th>Switch to PO</th>
<th>Continue IV</th>
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<tbody>
<tr>
<td>Route</td>
<td>Clinical Indication</td>
<td>Morning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Start date</td>
<td>Signature</td>
<td>Morning</td>
<td></td>
<td></td>
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<tr>
<td>Stop date</td>
<td>Signature</td>
<td>Morning</td>
<td></td>
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<tr>
<td>Micro Results and Additional Information</td>
<td>Micro approved</td>
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<table>
<thead>
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<th>Dose</th>
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<th>Switch to PO</th>
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Oral Antibiotic Prescription < 7 days

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Review by day 7 and rewrite if continuation of antimicrobial.

If less than 7 days is required please annotate prescription with an appropriate stop date.

Prolonged Antibiotics (> 10 days) i.e. Endocarditis, Osteomyelitis, Bone and Joint Infections, Meningitis, Bronchiectasis or if 3rd antibiotic is required

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<tr>
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<th>Dose</th>
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Review by day 7 and rewrite if continuation of antimicrobial.

If less than 7 days is required please annotate prescription with an appropriate stop date.
## Medicine - DMH 2013/14

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**Grand Total**

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**Grand Total**

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</table>
Antibiotic Consumption

• Review consumption data
• Highlighting broad-spectrum prescribing e.g. piperacillin/tazobactam, co-amoxiclav
• Presented at AMT and results discussed
• Identify areas for review
Antibiotic Consumption Data
Antibiotic Consumption Data

**Drugs:** ATC: J01 - ANTIBACTERIALS FOR SYSTEMIC USE. **Specialties:** 226 of 229. **Prescription Types:** All

![Graph showing antibiotic consumption data over time.](image-url)

**Options**
- **Value:** DDDs
- **Value Denominator:** 1000 Trust Beds
Control of High Risk Antibiotics

• Use of consumption data
• Comparison with other organisations
• Restriction of broad spectrum / high risk antibiotics
  • Meropenem
  • Co-amoxiclav
  • Quinolones
  • Cephalosporins
Ward Based Interventions

- Establishment of ‘Microbiology / Infection ward rounds’
- Improve patient care and antimicrobial use
  - Blood culture round
  - Referrals from Healthcare professionals
  - Visit to admissions unit

- Individual face to face education
Education and Training

• Extensive teaching programme
  • Doctors
  • Nurses
  • Pharmacists
  • Other Health Care Professionals
• European Antibiotic Awareness Day (EAAD)
• Antibiotic Guardian
• E-learning
Antimicrobial Stewardship - ESPAUR

- Survey sent to 146 Acute NHS Trusts with 99 responses

<table>
<thead>
<tr>
<th>Antimicrobial Policy: key elements reported by Trusts</th>
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<th>2014</th>
<th>Change</th>
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<tr>
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<tr>
<td>Reserved antibiotic list</td>
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<td>-6%</td>
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<tr>
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<tr>
<td>Restricted antibiotics list</td>
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</table>
What assurance should commissioners seek?

- Audit Work – evidence of audits and compliance
- Consumption – consumption reports, broad spectrum usage
- Education and Training – evidence of ongoing education, possibly agree % educated
- Be involved in providers Antimicrobial Management Team
Summary

• Lots of good work has already taken place in secondary care
• 94% of Trusts have established an AMT
• More than 90% of Trusts have an Antibiotic Formulary
• Regular audit work undertaken with feedback
• Infection ward rounds in operation
• Extensive Education and Training
Promoting Appropriate Antimicrobial Prescribing in Secondary Care

Stuart Brown
Healthcare Acquired Infection and Antimicrobial Resistance Project Lead
NHS England
March 2015
Secondary Care data validation

What do commissioners need to know?

- Stuart Brown
- Antibiotic Pharmacist, County Durham and Darlington NHS Foundation Trust,
- HCAI and AMR Project Lead, NHS England
Secondary Care Data Validation: What do commissioners need to know?

Stuart Brown
Healthcare Acquired Infection and Antimicrobial Resistance Project Lead
NHS England
March 2014
Introduction

• Antimicrobial Usage
• ESPAUR 2014
• Previous data validation
• Quality Premiums
• Draft tool
• CDDFT Experience
Antimicrobial Usage

• Measuring antibiotic usage in hospitals is essential to an effective local antimicrobial stewardship

• Can be used for national surveillance data/comparison

• Links to resistance data

Key area 5: better access to and use of surveillance data

4.17 Surveillance data that focus on bacterial resistance, the epidemiology of bacterial infections, drug utilisation and clinical outcome are essential to monitor resistance trends. These data will help assess the impact of rational prescribing programmes for both current and new antibacterial agents in humans and animals.
ESPAUR 2014

- First national survey on Antimicrobial Consumption for primary and secondary care
- Information on the use of antibiotics
  - Primary Care – NHSBSA database
  - Secondary Care – obtained from data held by IMS Health®

Report 2014
consumption and reducing hospital consumption. Further work will need to be undertaken with ECDC and ESAC-net to understand these differences.

ARHAI in consultation with NHS England and PHE have published antimicrobial prescribing quality measures for primary and secondary care.\textsuperscript{1} The quality measures for primary care are reduction in total antibiotic consumption and the proportion of cephalosporin, quinolone and co-amoxiclav antibiotics used. The quality measures for secondary care are reductions in total antibiotic consumption and carbapenem consumption. The data in this report will act as a baseline for area teams to review the prescribing within their populations and develop action plans to meet these quality measures.

It is essential, as part of the next stage, that further validation and exploration of the data occurs. In comparing the maps of antibiotic consumption and resistance at a regional and sub-regional level it was noted that commonly areas with high prescribing have in general higher resistance. As these are just single snapshots of the data, this will require further investigation. It is also essential that English healthcare organisations, across primary and secondary care, have access to and review their own consumption data and determine the reasons for prescribing, through local audits, especially where their consumption is different to national trends ensuring that they have an appropriate stewardship strategy in place. Current hospital stewardship and infection guidelines are discussed in Chapter 4.
Recommendation 2: Propose the following aspirations for quality improvement by 2018/19

I. Primary care – reduction in total annual antibiotic consumption to 2009/10 levels by CCG by 2018/19

II. Primary care – reduction in proportion of antibiotic items from the cephalosporin, fluoroquinolone and co-amoxiclav classes to <10% of total antibiotic items by CCG by 2018/19

III. Primary care – surveillance of incidence of consultations for uRTI to monitor for unintended consequences of aspirations i and ii.

IV. Secondary care – reduction of total antibiotic consumption by 3% by 2016/17 and 5% by 2018/19

V. Secondary care – reduction of carbapenem antibiotic consumption to levels of 2009/10 by 2018/19
Data Validation

• IMS Health® is a commercial organisation specialising in the provision of information
  • Data from 99% of NHS Trusts
  • In-house quality assurance
  • No external validation of the data

• Early data validation from the UK Clinical Pharmacy Association Pharmacy Infection Network
  • Showed wide variations between local data and IMS Health® data
Quality Premium

• Part a) reduction in the number of antibiotics prescribed in primary care

• Part b) reduction in the proportion of broad spectrum antibiotics prescribed in primary care

• Part c) secondary care providers validating their total antibiotic prescription data
Quality Premium

• Part c) secondary care providers with 10% or more of their activity being commissioned by the relevant CCG have validated their total antibiotic prescribing data as certified by PHE
Protocol for Validation (Draft)
Draft Protocol - Method

- **Total Breakdown** – Consumption data for all inpatient and outpatient issues excluding internal transfers, supply to manufacturing units
- **Inpatient Breakdown** – dispensed items for hospital inpatients only
- **Raw Data** – unedited data direct from own pharmacy system
- **Trust DDD Calculator** – translation tables currently in use by the relevant Trust
- **Summary** – First national survey on Antimicrobial Consumption for primary and secondary care
## Draft Protocol – 28 Antibiotics

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<td>Trimethoprim</td>
<td>Vancomycin</td>
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Data Validation – PHE England

• Data supplied to Trusts is from IMS Health®
• Trust then enters ‘local’ consumption data
• PHE validate data against both IMS Health as well as Rx-info (where data available)

• Rx-info – providers of Define software
# CDDFT Data

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## CDDFT Data

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[www.england.nhs.uk](http://www.england.nhs.uk)
CDDFT Experience

• Time
• Highlighted discrepancies in all areas
• Within this there are significant differences on specific high use antibiotics
• Includes internal transfer data but missing some over labelled packs
Next Steps

• Promote the Quality Premium
• Encourage providers to complete data validation
• Will improve knowledge on overall antibiotic usage
• Aid future work on reducing Antibiotic usage
Secondary Care Data Validation: What do commissioners need to know?

Stuart Brown
Healthcare Acquired Infection and Antimicrobial Resistance Project Lead
NHS England
March 2014
Reducing HCAI

What do commissioners need to know?

- Sarah Mantle
- Lead Infection Prevention and Control Nurse, Hertfordshire Community NHS Trust,
- HCAI and AMR Project Lead, NHS England
Reducing HCAI- What the Commissioner needs to know.

Sarah Mantle
HCAI/AMR project lead
NHS England
Introduction

• Healthcare Associated Infections (HCAI) can develop as a result of direct contact with a healthcare setting or as a result of a healthcare intervention such as medical or surgical treatment.

• HCAI poses a serious risk to patients as it can result in significant harm to those infected.

• Reducing health care-associated infections (HCAIs) remains high on the Government’s safety and quality agenda and in the general public’s expectations for quality of care.
Commissioning for Healthcare

• Commissioning organisations hold providers to account for their performance, and assess their contribution to sustained improvement in infection prevention and control practices that reduce HCAIs and antimicrobial resistance.

• Key position to make a difference in the quality and safety of care provided.
Guidance for Commissioners

• Collaborative guidance from IPS and RCN supports commissioners to influence patient safety and quality of care delivered.

• The toolkit is for both providers and commissioners of care to help establish a health care associated infection (HCAI) reduction plan, which reflects local and national priorities such as AMR.
Actions that can support change

- Whole Economy focus – local collaborative networks
  - Is catheter care and CAUTI on agenda and work plans?
- Share learning across the system
- Include social care in the planning and sharing
- Patient Held passports are a potential tool to improving patient care and safety across the system. Have been implemented in a number of regions.
Implementation of the AMR Strategy

NHS England working jointly with the NHS, to support work to improve antimicrobial resistance surveillance and infection prevention and control in the NHS, through 7 key focused areas which can be group into:

- Prevention
- Preservation
- Promotion
AMR – Infection Prevention & Control

• As part of the work to reduce AMR the role of the project lead has been to review resources for improving IPC with a focus on urinary catheters
• As a provider I am keen to ensure that staff follow best practice guidance to reduce the risk to patients
• Urinary catheters are common in both community and acute settings
• Improvement plans need to be collaborative to ensure that the risks are reduced for patients who will be cared for in all settings
HCAI Data

- Approximately, 300,000 patients a year in England are affected by a healthcare-associated infection as a result of care within the NHS
  - 2007, MRSA bloodstream infections and Clostridium difficile infections were recorded as the underlying cause of, or a contributory factor in, approximately 9000 deaths in hospital and primary care in England (NICE, 2012)
- Healthcare-associated infections are estimated to cost the NHS approximately £1 billion a year
  - £56 million of this is estimated to be incurred after patients are discharged from hospital.
Incidence of CAUTI - nationally

- Urinary tract infection (UTI) is the most common HCAI, accounting for 17.2% of all HCAIs, with between 43% and 56% of UTIs associated with an indwelling urethral catheter (EPIC 3, 2014).
- Patients with invasive devices such as urinary catheters are at a greater risk of developing an infection (NICE, 2012).
- In addition to increased costs, each one of these infections means additional use of NHS resources, greater patient discomfort and a decrease in patient safety.
Safety Thermometer data

- Data produced through the NHS Safety Thermometer has indicated that there has been a decrease in % of catheterised patients with a UTI (2012-2014). The reduction is by 49.4%
Local Data – E Coli Bacteraemia

- PHE data for South Midlands and Herts (Apr 13- 6th Jan 2015)
  - Data not complete as not mandatory to indicate if patient has a catheter
  - Over 270 cases a catheter is in place and a potential risk
  - Future work plan to review the community cases E. Coli

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<th>No</th>
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www.england.nhs.uk
Post Infection Reviews/RCA

- Community PIR high incidence of patients with indwelling urinary catheters
- Some of the learning identified from PIR include:
  - Education of carers and patients
  - Indication for catheter not always understood
  - Lack of staff knowledge on risks of infection
  - Recurrent treatment for suspected UTI without sensitivities
Indwelling Urinary Catheters

• Long-term indwelling catheters are common in both hospital and community care settings.
• High prevalence of devices may lead to complacency in adhering to best practice.
• Long-term catheterisation carries a significant risk of symptomatic UTI, which can lead to serious complications such as blood stream infections (NICE 2012).
• The diagnosis of a CAUTI increases the use of antibiotics which will increase the burden and development of antimicrobial resistance (DH, 2007).
Impact of CAUTI on antimicrobial resistance

• It is essential that patients suspected to have a CAUTI are diagnosed appropriately and staff are competent to take samples safely.
• It must be clear to staff that using near patient testing such as “dip stick” analysis is not the process to confirming a patient has a CAUTI.
• Inappropriate diagnosis leads to;
  • Unnecessary use of antibiotics
  • Increased risk of CDI and
  • Development of multi-resistant organisms and limited treatment choices
  • Treatment failure when antibiotics are prescribed without sensitivities following a urinalysis
What we need to do & what commissioners need to know

• Improved management of patients with urinary catheters through the implementation of high standards in infection prevention and control remains central to minimising the risk of infection.

• Involves communication, policy/guidance, competency frameworks and training, patient carer education, surveillance and focused analysis to identify areas of learning

• Improvements will also reduce the need for antibiotics, limit the emergence and spread of multi-drug resistant organisms (CMO, 2013).
The Evidence to reducing the Risk

- Improved Assessment of indication for catheter
  - Alternatives considered
  - Ongoing assessment and plan
- Improved communication
  - Between health and social care team on patient transfer
  - Patient/carers information/education on risks
- Staff competencies
  - Evidence based
  - Clear about the information they gather which might influence care (dip stick urine)
- Staff training
  - Urinary catheterisation not mandatory to have updates
The Evidence to Reducing the Risk

• Local policies and guidance
• Clarity on when an IUC should be used
• Develop clear policies and procedures for the management of continence and the minimization of catheter use. Include alternatives to catheterization.
• Do they reflect national guidance on best practice to reducing the risk (NICE, 2012; EPIC 3, 2014)
The Evidence to reducing the Risk

- Safety Thermometer
  - The NHS Safety Thermometer is a local improvement tool for measuring, monitoring and analysing patient harms and 'harm free' care.

- Focused audits for areas with high CAUTI

- Care planning

- Developing a culture of continuous improvement
  - Is learning from PIR/RCA being identified and actioned
  - How is learning being shared locally and nationally
Resources to support good practice

- Subject to necessary ratification processes a Stage Two Alert

- Stage Two: Resource’ patient safety alert to signpost providers to resources developed to prevent Catheter Associated Urinary tract infection through implementation of best practice.

- Signposts providers to a toolkit developed by NHS England to support the NHS in sharing good practice and implementing key principles to prevent CAUTI.
The Urinary Catheter Care toolkit

- Key guidance is available however frequently see that best practice has not been implemented
- Toolkit to include;
  - The catheter care passport
  - Competency framework
  - How to guides for carers – leg drainage/urine sampling
  - Key management of a CA UTI
- If you have implemented local initiatives it would be great to hear from you s.mantle@nhs.net
Looking to the future

- If providers improve the management of patients with Urinary catheters we should see changes in the following:
  - Reduction in CAUTI
  - Reduction in prescribing and consumption of antimicrobials
  - Reduction in resistant organisms
  - Better patient outcomes
  - Potentially reduction in MRSA bacteraemia and *Clostridium difficile* infections (CDI)
Finally….

**Nurstoons**

**How did your first Foley catheter insertion go?**

**Terrible!! I got so nervous that I put it in the wrong "opening"**

**Don't be so hard on yourself. It's difficult to find the meatus on an old lady**

**I know... but it wasn't an old lady, it was a man!!**

**Oh...**
References/guidance

- Department of Health (2013) The UK 5 year antimicrobial resistance strategy 2013-2018
Discussion and questions
Key take home messages

- David Webb
- Regional Pharmacist, NHS England (London)
Key take home messages

• The Drugs don’t work - Tough action needed to avoid antibiotic resistance
• Think Infection Prevention and Control
• The proposed Quality Premium is an opportunity to really drive change and improvements in patient safety
• Useful resources and tools are available to support this important work:
  • http://www.england.nhs.uk/ourwork/patientsafety/amr
• There is good practice out there and we can make a difference
• Become an Antibiotic Guardian
Thank you