Antimicrobial Use and Stewardship in the context of COVID-19

SPS Webinar
08 July 2020
What key information would you want answered during this webinar?

www.menti.com use code 83 82 06
Overview

Importance of continuing to focus on tackling AMR and prudent use of antimicrobials during COVID-19 pandemic

Antimicrobial use surveillance in the context of COVID-19 (interim results)

National AMS interventions in response to COVID-19

Impact of COVID-19 on AMS practice (UKCPAPIN – interim results)
Several Stewardship actions throughout the national action plan, including in IPC sections.
Antimicrobial stewardship in national guidance/strategy

The term 'antimicrobial stewardship' is defined as 'an organisational or healthcare-system-wide approach to promoting and monitoring judicious use of antimicrobials to preserve their future effectiveness'.

Criterion 3: Ensure appropriate antimicrobial use to optimise patient outcomes and to reduce the risk of adverse events and antimicrobial resistance

A key component of a multifaceted approach to improve the safety and quality of patient care whilst preventing the emergence of AMR. Good antimicrobial stewardship involves selecting an appropriate drug and optimising its dose and duration to cure an infection while minimising toxicity and conditions for selection of resistant microbes. Good AMS includes a review of the continuing need for antibiotics following clinical diagnosis and documented actions to stop, continue or change antimicrobial treatment.
Antimicrobial Use in Primary Care
– Interim trends
Trending antibacterial prescription items in primary care (all CCG data)

Seasonal infection influences antibiotic prescribing by month and quarter, with variation reported between years. Unusually high antibiotic prescribing occurred in 2019-20 Q3 (probably early influenza as attributed to children and young adults) and Q4 (COVID-19 attributed to adults age 50+ years) and can be seen in the growth trend plot below as spikes in +ve item growth. Data reported as latest 12 months dispensed prescription items.

Number of all antibacterial prescription items latest 12 months (latest 12 months to March highlighted each year) and monthly rolling % growth in primary care England (CCG)

2 episodes of unusual % growth highlighted.

Data source: NHS Business Services Authority (NHSBSA) ePACT2
The increase in number of dispensed antibiotic prescription items reported in March 2020 is unexpected within the context of the sustained reduction in antibiotic prescribing reported since 2014/15, and the usual monthly prescribing trends, and is likely to be related to COVID-19 activity. There were 100,000 more antibiotic prescription items in March 2020 compared to March 2019, which had 244,000 fewer items than March 2018. Most of this excess occurred in adults aged 50+ years.

Drill down by age bands identifies that the item increase in March 2020 is greatest for adults aged 50+ years – see trending plot.

Antibiotic prescriptions for adults aged 30-49 years report a smaller but still unusual increase in number of items in March 2020.

Antibiotic prescriptions for children and young people aged 0-19 years report a usual decrease in number of items from December 2019 and can be seen in slides 7 to 12.

Data source: NHS Business Services Authority (NHSBSA) ePACT2.

Slide courtesy Elizabeth Beech - Elizabeth.beech@nhs.net
Antimicrobial Use in Acute Trusts – Interim trends
Antibiotic use in Acute Trusts

Data Sources

- RX-Info
  - further checks needed to ensure that all relevant cost codes are being captured

- Hospital Episode Statistics (HES) - NHS Digital
  - data for 2019/20 is provisional
  - data for 2020/21 is provisional and further updates may result in substantial changes. Updates to admissions data are available on a monthly basis.

*It is not clear if the reduction seen in admissions reflects a genuine trend or whether this is an artefact of a lag in data availability.*
Antibiotic use in Acute Trusts - Total

Total antibiotic use in NHS Acute Trusts in England by month 2015-2020

Total antibiotic prescribing rate in NHS Acute Trusts in England 2015-2020

Defined Daily Doses (DDDs)

DDD/1000 admissions

AMS in the Context of COVID19

SPS Webinar

Dr Diane Ashiru-Oredope
C. difficile infection data

Jan to March 2020 vs Jan to March 2019 – 16.7% increase in count of all reported cases

Incidence rate increase of 16.7%

Hospital-onset CDI cases – increase of 19.8%

Community-onset CDI cases – increase of 14.9%

To note: reduced number of cases reported to the surveillance of BSI and CDI

Co-infections in patients with COVID-19

World-wide, the prevalence of acute co-infections or secondary infections coinciding with COVID-19 has been not adequately described but appears to be low.

Incidence will be based on local factors and endemic or other emerging infections.

UK data Chelsea & Westminster hospital:

- Bacterial pathogens identified in 6.1% of patients (836 patients with confirmed SARS-CoV-2)
- 2/836 patients developed bacteraemia secondary to RTI
- 24 of 112 respiratory cultures were positive with *Staph. aureus*

**Bacterial and fungal co-infection in individuals with coronavirus: A rapid review to support COVID-19 antimicrobial prescribing**


Clinical Infectious Diseases, ciaa530, https://doi.org/10.1093/cid/ciaa530

Published: 02 May 2020  Article history
Antimicrobial Stewardship
Start Smart then Focus Principles still apply; guidance from NICE (NG173) on when to stop antibiotics

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

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

4.2 Use the following signs, symptoms and test results to help inform the overall clinical assessment and decision about when to safely stop antibiotics:

- No evidence of bacterial infection in blood, urine or sputum samples
- A positive SARS-CoV2 polymerase chain reaction (PCR) assay
- Fever resolved or resolving
- Symptoms and blood test results (particularly lymphopenia) consistent with COVID-19 pneumonia
- Chest imaging (plain X-ray, CT scan or lung ultrasound) consistent with COVID-19 pneumonia (see recommendation 4.3).

4.3 Be aware that the 3 patterns on CT-chest imaging consistent with COVID-19 pneumonia according to stage of illness (from symptom onset) are:

- Early (0 to 2 days): normal or rounded ground-glass opacities
- Intermediate (5 to 10 days): crazy-paving opacities
- Late (more than 10 days): consolidation.

Chest imaging changes are bilateral in most patients. Lower than 80% with the lung


*According to weight based in children refer to local formulary or ENFH
National AMS Interventions during COVID-19 surge

- Rapid COVID 19 guidance on pneumonia commissioned by NHS EI and developed by NICE. Community [NG165] and hospital [NG173].

- NHSEI and PHE drafted guidance to guide antimicrobial stewardship activity

- Training for local infection and antimicrobial stewardship teams is being led by the UK Clinical Pharmacists Association and Royal Pharmaceutical Society.

- PHE is developing e-learning training for GPs on COVID-19, which will include management of other infections.

- DHSC medicines unit, NHSEI and devolved administrations worked to minimise shortages of essential antibiotics during the global pandemic, including through working with suppliers / manufacturer of antibiotics to manage supply issues.

- APRHAI established a subgroup to provide advice to the government on the implications of the COVID-19 pandemic on antibiotics use, and the need to better understand the supply vs demand relationship in the present situation.
Antimicrobial stewardship during the COVID-19 pandemic: clinical guidance for health and social care organisations

Common infections will continue to occur in both community and hospital care.

Antimicrobial prescribing guidance in patients with suspected or confirmed COVID-19 infection:

• Update local guidelines following publication of NICE COVID-19 rapid guidelines most recently NG165: managing suspected or confirmed pneumonia in adults in the community and NG173: antibiotics for pneumonia in adults in hospital.

• Continue to follow principles of Start Smart Then Focus, as shown in Figure 1. Routine antibiotics are not indicated for uncomplicated COVID-19 in adults in critical care, and immediate review of antibiotic use should occur when a diagnosis of COVID19 is confirmed.

• Continue to manage usual infections in line with local and NICE Antimicrobial Prescribing Guidelines including the provision of safety netting and self-care guidance for patients.

• Continue to monitor antimicrobial use within existing stewardship programs. RxInfo, PrescQIPP AMS Hub, OpenPrescribing, NHSBSA ePACT2, and PHE Fingertips all support reporting for antimicrobial stewardship activity.

Maximise use of the multi-disciplinary infection management teams including antimicrobial pharmacists and infection specialist nurses to support infection clinics and antimicrobial stewardship ward rounds to support medical staff in dealing with increased demand due to COVID-19.

Do not stockpile antimicrobials in anticipation of need in any care settings.

Optimise safe ambulatory management of infection.

Maintain use of antifungals. Good antifungal stewardship, including effective prophylactic use of antifungals and early management of suspected fungal infections, should continue with prudent use of systemic antifungals in intensive care and/or ventilated patients using fungal antigen monitoring.

Consensus guide led by: Elizabeth Beech and Diane Ashiru-Oredope
Go to www.menti.com and use the code 83 82 06

What AMS interventions are you aware of that were implemented locally. Please include organisation name and contact details if possible

www.menti.com use code 83 82 06
INTERIM RESULTS OF SURVEY ON IMPACT OF COVID-19 AMS PRACTICE

DR DIANE ASHIRU-OREDOPE, TING YAU AND JONATHAN URCH ON BEHALF OF UKCPAPIN COMMITTEE

IN COLLABORATION WITH
• ASSOCIATION OF SCOTTISH ANTIMICROBIAL PHARMACISTS
• ALL WALES ANTIMICROBIAL PHARMACISTS GROUP
• NORTHERN IRELAND REGIONAL ANTIMICROBIAL PHARMACISTS NETWORK
INTRODUCTION & METHOD

The UKCPA PIN committee in collaboration with Association of Scottish Antimicrobial Pharmacists, All Wales Antimicrobial Pharmacists Group and the Northern Ireland Regional Antimicrobial Pharmacists Network invited infection/antimicrobial pharmacists in UK trusts to complete a short survey which was open between 2nd June and 24th June 2020.

The purpose of this survey is to understand:
* the impact of the COVID-19 pandemic on antimicrobial stewardship,
* what support you believe would be helpful from UKCPAPIN or other relevant bodies.

The survey was estimated to take 12 minutes to complete based on pilot.

Only one response per trust is considered for the final analysis.

In the interest of timely sharing, interim results are presented. Some of the result slides presented live have been redacted (findings will be submitted for peer review).
IMPACT OF COVID ON AMS PRACTICE

- Significant negative impact on routine AMS activities such as audits, ward rounds, meetings
- Positive impact on use of PCT and use of technology/virtual meetings
- Ongoing problems with pharmacy/microbiology resources
- Education has been self-driven
- Interest in joint research project
- Important role for networks and organisations such as UKCPAPIN/RPS in education (i.e. webinars) and communication (i.e. cascading info as this seems to vary between trusts)

In your opinion, how much impact would you say COVID-19 has had on your routine AMS activities
102 responses

- No impact
- Very negative impact
- Some negative impact
- Neither negative or positive
- Positive impact
- Very positive impact
- A mix of positive and negative impact
- Unsure/unable to assess
How were/are PODs of COVID-19 positive patients handled.

- Used on the wards (where suitable/applicable)
- Discarded at ward level
- Returned to pharmacy for discarding
- Quarantined for a period before use
- Packages disinfected and used where suitable
- Other
HANDLING DRUG CHART AND MEDICINES: IPC RECOMMENDATIONS

95 responses

- 17.9% Yes aware and already started implementing
- 31.6% Yes aware but we were already aligned
- 26.3% Yes aware but not yet started implementing
- 24.2% Not aware of it

COVID-19 has led all to understand the real impact of having no effective treatment for an infection. We need to keep working hard to ensure we do not have similar situation with bacterial and fungal infections through a rise in antimicrobial resistance.

COVID-19 has led to a significant negative impact on routine AMS activities such as audits, ward rounds, meetings.

Positive impact on use of PCT and use of technology/virtual meetings.

Ongoing problems with pharmacy/microbiology resources.

Education has been self-driven.

UKCPA/RPS and networks have played an important role in education (i.e. webinars) and communication (i.e. cascading info as this seems to vary between trusts).

A number of national AMS interventions have been developed, important they are implemented.

Stewardship principles are even more important at this time.

Important caveat to interim data presented: In response to the pandemic, many elective procedures in hospitals were cancelled. Hospital patient populations changed dramatically in their composition; in order for us to understand the true incidence rate of infections, we will need to consider closely these changes.

Learning to inform AMS planning in primary care: If you do not have an email via PrescQIPP champion pls email Elizabeth.beech@nhs.net

Really important that we use learning from first wave to strengthen plans for winter preparation.
Student conference 2020 will be virtual

World Antibiotic Awareness Week & European Antibiotic Awareness Day in November will provide important opportunity for additional local awareness raising

National tools and resources for local action are available via https://antibioticguardian.com/healthcare-professionals/
Useful resources:

NHS England and NHS Improvement Coronavirus guidance for clinicians and NHS managers
NICE COVID-19 Rapid guidelines and evidence summaries
COVID-19: guidance for health professionals
Healthcare Improvement Scotland and the Scottish Antimicrobial Prescribing Group (SAPG) response to COVID-19 advice for clinical teams
Health Education England COVID-19 training resources
UKCPA Pharmacy Infection Network and RPS webinars:

Infection 1: Antibiotic use in secondary care during COVID-19
Infection 2: Experimental therapies and clinical trials
Infection 3: Procalcitonin, fungal infections, bacterial infections
Infection 4: Approaches to COVID-19 management – International panel

Also collated and available through CPA with option to answer questions and receive a certificate - https://commonwealthpharmacy.org/rps-clinical-covid19-webinars
Antibiotic Guardian Shared Learning & Awards 2020

Entries Reopened Until 13th July 2020

www.antibioticguardian.com

Categories:

Animal health, Agriculture & Food Supply
Children & Family
Community Communications
Diagnostic stewardship
Infection prevention & control
Innovation & Technology
Prescribing & Stewardship
Public engagement
Research
Student of the Year
The Das Pillay Memorial Award
Multi-Country Collaborations & activities to tackle AMR (New 2020)
What was your key learning point and/or action you will take from today's session?

www.menti.com ; use code 81 14 54