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The pharmacy contribution to antimicrobial stewardship

Pharmacist expertise and clinical knowledge must be fully utilised to ensure appropriate use of antibiotics and improve stewardship, in order to reduce antimicrobial resistance.

SEPTEMBER 2017

INTRODUCTION

This policy focuses on the pharmacist's role as part of a multidisciplinary approach in tackling the challenges of inappropriate use of antibiotics. The recommendations in this policy have been produced in order to contribute to wider efforts in meeting the challenge set by the UK Government in 2016 of reducing inappropriate antibiotic prescribing by 50% by 2020.[1] The policy, along with the RPS quick reference guide, (www.rpharms.com/AMS) aims to complement recommendations made by the Pharmaceutical Group of the European Union[2] (PGEU) and the International Pharmaceutical Federation[3] (FIP) in the global fight against Antimicrobial Resistance (AMR).

KEY RECOMMENDATIONS

Antimicrobial Stewardship (AMS) should be strengthened by:

1. Pharmacist leadership in the development of all national and local action plans for AMS/AMR to ensure a robust evidence based approach to the use of antibiotics.

2. Effective collaboration across the multidisciplinary team (MDT) in the implementation of AMS. Plans should maximise the expertise of pharmacists in medicines leadership to provide greater communication and coordination in the delivery of consistent approaches to AMS.

3. Pharmacist access to the patient health record, including diagnostic results as well as up to date local formulary information. This will enable more informed clinical decisions, in partnership with patients and the multidisciplinary team regarding antibiotics, ensuring safe prescribing alongside the patients' other medicines and health conditions.

4. Increased public awareness of the support, advice and treatment available through pharmacy to ensure better use of NHS resources and investment in medicines.

5. Commissioning of research into simple diagnostic testing, use of clinical scores and pathways in a community pharmacy setting, and its effects on appropriate antibiotic prescribing rates.

6. Ongoing high quality education and training for pharmacists to keep up to date with the latest evidence base for antibiotics. This will ensure pharmacists are empowered to confidently contribute to prescribing decisions, patient counselling and advice regarding antibiotic use.

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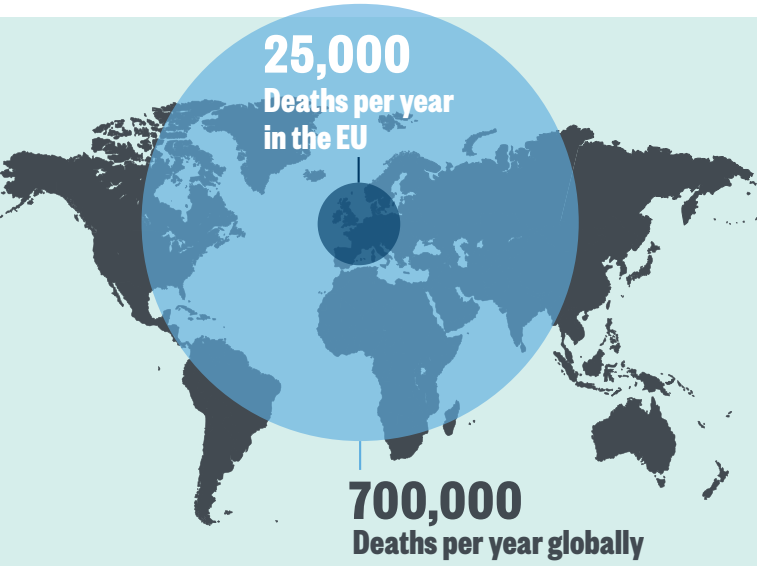
CONTEXT FOR CHANGE

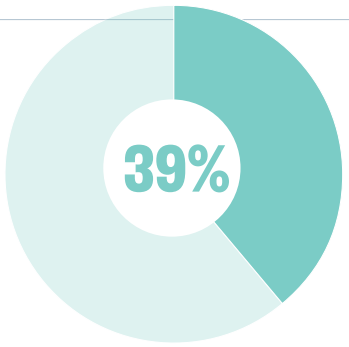
Decades of inappropriate use of antibiotics, combined with a void of new development and discovery of antimicrobials, has led to AMR emerging as one of the most critical risks to global public health requiring action by governments around the world.[4,5]

The World Health Organisation recognises that "Without harmonised and immediate action on a global scale, the world is heading towards a post-antibiotic era in which common infections could once again kill."[6]

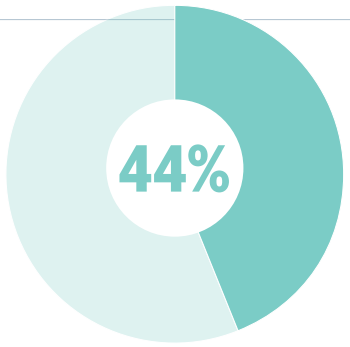


AMR is estimated to be contributing to 25,000 deaths per year in the EU alone and 700,000 deaths per year globally, it also has a significant socioeconomic impact and in the EU alone it is estimated that AMR costs €1.5 billion annually[7].

AMR has a number of negative consequences including; prolonged illness, greater risk of spread of infections, increased morbidity and higher mortality rates as well as broader socioeconomic implications. Additionally, antimicrobial medicines are amongst the most commonly reported substandard falsified medicines.[8]



Antibiotics use is 39% higher among those with lower levels of education



Antibiotics use is 44% higher among those with lower incomes

European research[9] has shown that a significant proportion of the population are unaware that antibiotics are ineffective against viruses (57%) and against colds and flu (44%). This research also demonstrated that the use of antibiotics is higher among those with lower levels of education (39%) and in worse economic circumstances (44%). The survey results point to the importance of increasing public awareness and understanding of antibiotics in order to help reduce demand for antibiotics for conditions where they would be ineffective.

The term AMS is defined as 'an organisational or healthcare system-wide approach to promoting and monitoring judicious use of antimicrobials to preserve their future effectiveness'.[10] AMS is recognised globally as a key strategy to help manage inappropriate use of antibiotics.

HARNESSING THE EXPERTISE OF PHARMACISTS IN AMS

Pharmacists are already making a significant contribution to the AMS agenda, helping to minimise development of AMR. Pharmacists working in all sectors have an important role in AMS. Pharmacists have the unique skills and expertise to contribute tailored advice on appropriate antimicrobial use to different specialities and departments across the NHS.

Increasingly, leadership opportunities are being recognised across GB through an expanding network of consultant level and specialist pharmacist roles.

Patients can benefit from regular interactions and dialogue with pharmacists. Millions of people across GB visit a community pharmacy every week, offering key opportunities to make every contact count through discussion about how best to prevent infections and providing services such as flu vaccination to help reduce the risks of ill health.

Community pharmacists provide self-care advice to patients with self-limiting or viral infections and recommend appropriate symptom relief, common or minor ailment treatments or referral where necessary. There is potential to further utilise the accessibility and expertise of pharmacists in the community to provide simple diagnostic testing for patients with suspected infections to ensure early intervention and advice.

Increasing the opportunities for patients to access support and treatment through community pharmacy will further decrease the burden on GP appointments and other services of the NHS.

Patients also benefit from pharmacist expertise to optimise their therapy when their conditions are more serious and require acute care. As part of MDT approaches, pharmacists will contribute to decisions on the antibiotic treatment of choice, the duration and dosage of the antibiotic given the patient's diagnostic results and general health condition, taking account of national and local guidance.

More specific examples of pharmacy contributions in various settings are highlighted in the table starting on page 6. These examples of AMS were identified from a survey conducted with RPS members which sought details about their current contribution to antimicrobial stewardship.

NEXT STEPS

Action is needed at national and local levels to recognise the expertise that pharmacists can provide around AMS in all care settings. The recommendations made in this policy will contribute to global efforts in reducing antimicrobial resistance.

RPS commits to:

1. Producing professional guidance for our members to support pharmacists in practice. This will signpost to educational training available in this area to improve knowledge and skills.

2. Working with other royal colleges and key stakeholders to encourage MDT working between health and social care to enhance AMS.

3. Continuing with a pharmacy focused national campaign to emphasise the importance of AMS and increase public awareness of AMR.

4. Working with government to translate recommendations into national commitments for action.

The Royal Pharmaceutical Society is committed to continue working with the NHS and other partners to drive this important agenda forward.

We would welcome working with other stakeholders who are supportive and would like to progress the implementation of our recommendations.

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THE PHARMACIST CONTRIBUTION TO AMS

SETTING	CONTRIBUTION	BENEFIT
Community	Accessibility of the community pharmacy network as the first port of call for patients on the high street, supermarkets and rural communities.	Providing a gateway to health and medicines advice from a healthcare professional without the need for an appointment, and often out of normal GP surgery working hours.
	Providing opportunistic education, advice and support for people at every stage of life.	Making every contact count with regard to information and advice about health and medicines including antibiotics.
	Responding to symptoms of ill health, as well as advising on self-care and products that can be purchased for symptom relief.	Ensuring early identification of ill health and triaging those that need referral.
	Delivering NHS services such as the common / minor ailment service for patients with symptoms of ill health who don't require referral.	Increasing access for patients to a health professional, reducing the burden on GP surgeries or accident and emergency departments, making more appropriate use of NHS resources.
	Providing advice and support on self-care and over the counter products for patients with ill health, exhibiting no complications or sign of bacterial infection requiring antibiotics.	Offering patients symptom relief and signposting where necessary to additional advice and support. Reducing demands on GP appointments and other unscheduled services.
	Identifying 'alarm' symptoms which require further investigation.	Referring individuals for further care and intervention when symptoms requiring antibiotics or further investigation are identified.

SETTING	CONTRIBUTION	BENEFIT
Community	Delivering public health campaigns and opportunistic patient advice and counselling such as hygiene, appropriate use of antimicrobials and self-care.	Raising awareness of good hygiene practices and preventative health measures to reduce the risk of bacterial infection in individuals and the general population.
	Providing immunisation programmes, including flu vaccination.	Preventing the spread of flu, contributing to national public health targets and increasing accessibility of the vaccinations to the public.
	Providing simple diagnostic tests to identify bacterial infection.	Reducing GP appointments and increasing accessibility to advice for patients on the safe and effective use of antimicrobials and ensuring patients receive appropriate self-care and advice.
	Providing preventative advice, particularly for individuals who suffer from recurring infections, e.g. urinary tract infections and upper respiratory infections.	Reducing the occurrence of infections and reducing pressure on GP appointments and other parts of the NHS.
Primary care	Independent prescribing pharmacists provide consultations for patients and ensure the right antibiotic choice.	Shifting capacity in primary care settings, increasing speed of access for patients to a prescriber, and ensuring appropriate use of antibiotics.
	Advising the GP practice team on the current antibiotic evidence base and appropriateness of prescribing for different conditions and undertaking audits in this area.	MDT approach, all professionals contributing to AMS at a local level.

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SETTING	CONTRIBUTION	BENEFIT
Primary care	Contributing to the development of local formularies.	Ensuring the current evidence base is translated into local decision making tools.
	Ensuring up to date and accurate patient records regarding drug allergy history information, including the type of reaction and significance.	Minimising the use of second line agents when not necessary.
	Consulting with patients regarding their ill health and advising on self-care options.	Educating patients and reinforcing messages about AMR to help reduce inappropriate demand for antibiotics.
Hospital	Pharmacists are leading on AMS programmes in the majority of acute care settings.	Leadership on AMS and the ability to tailor advice to different specialities and departments.
	AMS pharmacists as part of ward rounds.	Providing advice on whether an antibiotic is required, the most appropriate antibiotic to use and length of treatment.
	Advising other health professionals on medication regimen and length of treatment with antibiotics.	MDT approach, all professionals contributing to stewardship in hospital settings.
	Contributing to the development of drug formularies.	Ensuring the current evidence base is translated into local decision making tools.
	Providing patient counselling and advice on antibiotic medication.	Ensuring patients are fully informed about their treatment regimen, including duration of treatment and possible side effects.

SETTING	CONTRIBUTION	BENEFIT
Hospital	Contributing to surveillance measures.	Identifying and recording trends in the usage of antimicrobials.
	Contributing to the effective governance of AMS.	Critically appraising antimicrobials for formulary inclusion.
Pharmacist working in other care settings e.g domiciliary / care home / prison	Providing judicious use of simple diagnostic tests to identify bacterial infection.	Increasing accessibility for patients who are unable to get to a GP practice.
	Advising other health professionals on medication regimen and length of treatment with antibiotics.	Ensuring an MDT approach with all professionals contributing to stewardship.
	Providing early detection of infection and provision of treatment or referral to appropriate services.	Ensuring quicker access to treatment for infections that would progress without intervention and would have potentially led to hospital admission.
Academia and Industry	Securing and strengthening the UK's position as a major player in the global pharmaceutical industry through research and development.	Taking a drug molecule from concept through formulation, clinical trials, manufacture and the regulatory process to its ultimate use as a medicine by the patient.
	Contributing to the development of guidance and tools regarding antibiotic use.	Ensuring clinical guidance and tools are based on the most current research and evidence.
	Drug discovery.	Findings from research into the use, safety and efficacy of medicines in patient feed back into the medicines development process and thereby informing and influencing the creation of new medicinal products.

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EXAMPLES IN PRACTICE

Integrated AMS across primary care locally

CASE STUDY
Abertawe Bro Morgannwg University Health Board

The AMR Pacesetter project is a Primary Care Cluster (locality within Local Health Board) based approach specifically addressing high rates of antibiotic prescribing in primary care which aims to improve public knowledge of AMR and support GPs in adopting good antimicrobial stewardship.

A primary care antimicrobial pharmacist led on the following activities:

- An audit of antimicrobial prescribing and the development of an action plan in collaboration with GPs.
- Delivering patient education sessions across the local area to address the 'patient pressure' felt by GPs to prescribe antibiotics.
- Delivery of the e-Bug public health educational tool in 12 local primary schools (3x1 hour lessons in each school).
- Development and production of two short films used on social media to raise awareness of AMR (https://youtu.be/P8ikgCwsjNE).

As a result of the audit, prescribing trends were identified, gaps in knowledge highlighted and addressed, IT solutions implemented and benchmarking with peers established. This contributed to a 6.68% reduction within the Cluster in antibiotic items prescribed per 1000 patients between January and March 2016, compared to the same period from the previous year. The health board average was a 2.54% reduction in antibiotic items prescribed per 1000 patients and the Welsh national average reduction was 3.84%.

A 16.09% reduction in prescribed antimicrobials has been achieved for the Cluster since the start of the project in November 2015 until the end of the 2016–2017 financial year. This reduction in prescribing is a positive step in slowing the progression of AMR.

In addition public knowledge in relation to antimicrobial resistance has improved and GP engagement with the AMR agenda has progressed.

This project was a Welsh Government funded Pacesetter Project with data analysis support from 1000 Lives Improvement, the quality improvement arm of Public Health Wales.

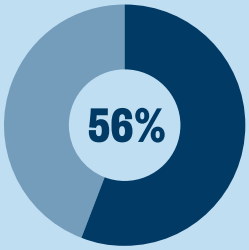
Contribution from Avril Tucker, ABMU Antimicrobial Pharmacist

An educational video to improve knowledge of AMR in the Health Board area achieved over 25,779 unique views on YouTube between April and July 2017
▸ https://www.youtube.com/watch?v=P8ikgCwsjNE&feature=youtu.be

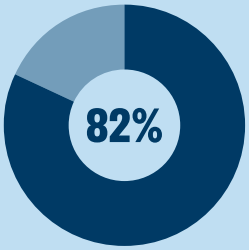
CASE STUDY
NHS Bath and North East Somerset CCG

#ToDipOrNotToDip is improving the management of urinary tract infection (UTI) in care home residents. It has reduced inappropriate use of antibiotics in 50% of nursing home residents, improved appropriate use of antibiotics to manage UTI and reduce unplanned admissions. It originated in B&NES CCG but has been adopted and adapted across the four nations.

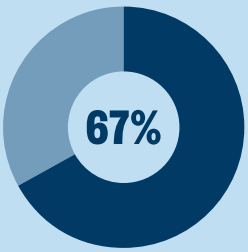
Results have demonstrated:



56% reduction in the number of residents prescribed antibiotics.



82% reduction in the number of residents prescribed antibiotics prophylactically.



67% reduction in the number of antibiotic prescriptions.

- Improved appropriate management of UTI.
- Reduction in unplanned admissions for UTI, urosepsis and AKI.
- Reduced calls to GP practices for inappropriately diagnosed UTI.
- Inclusion of hydration messages within the educational content.

A community of interested people (all disciplines and organisations) is hosted via a Slack account (https://todipornottodip.slack.com).

In B&NES CCG the initiative was initially funded by the CCG, but is now a routine care home pharmacy service (which is part of a CCG funded service). In Nottingham the County Council funded the initiative as part of an NHS vanguard. In Hertfordshire the CCG is funding the service.

Contribution from Elizabeth Beech, National Project Lead - Healthcare Acquired Infection and Antimicrobial Resistance

EXAMPLES IN PRACTICE

Care homes national initiative

CASE STUDY
Scottish Antimicrobial Prescribing Group (SAPG), part of Healthcare Improvement Scotland

SAPG is a multi-professional group that leads the national stewardship programme and includes several pharmacist members. SAPG have implemented a variety of national initiatives in Scotland in hospital, primary care and care homes in collaboration with NHS Education for Scotland (NES), the Association of Scottish Antimicrobial Pharmacists (ASAP) and the Scottish Prescribing Advisers Association (SPAA).

In hospital practice ASAP have led local surveillance programmes, point prevalence surveys and quality improvement initiatives to optimise prescribing as well as providing education for healthcare staff and leading local activities for European Antibiotic Awareness Day (EAAD).

In primary care SPAA have led on engagement and education for GP Practices and Care Homes. Various initiatives using benchmarking against peers alongside education have increased awareness of good prescribing practice to reduce unnecessary use of antibiotics for self-limiting infections and limit use of broad spectrum antibiotics.

SAPG has utilised the national Community Pharmacy Public Health campaign to promote EAAD through posters and leaflets aimed at the public and has also provided a supply of self-care leaflets for community pharmacists to give personalised advice to patients presenting with symptoms of infection. The engagement of community pharmacists has been more challenging than with other sectors but 'champions' in each region have been identified as key facilitators as well as RPS Scotland and Community Pharmacy Scotland support. SAPG has also supported national work to enable community pharmacists to supply antibiotics for lower urinary tract infection in women under 65 years via a Patient Group Direction.

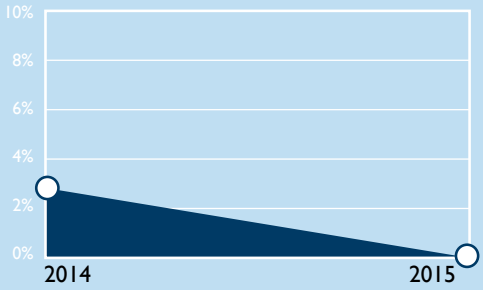
Education for all pharmacists on AMR is essential and ASAP, in collaboration with NES, have implemented a study day for all pre-registration trainees in Scotland along with two national courses delivered in every region primarily aimed at community pharmacists. ASAP also contribute to undergraduate pharmacy training on antimicrobials in both schools of pharmacy in Scotland.

Please visit the AMS campaign page at **www.rpharms.com/AMS** for more information and resources.

Recurrent funding for antimicrobial stewardship from the Scottish Government has been instrumental to support both SAPG and antimicrobial pharmacists in all health boards.

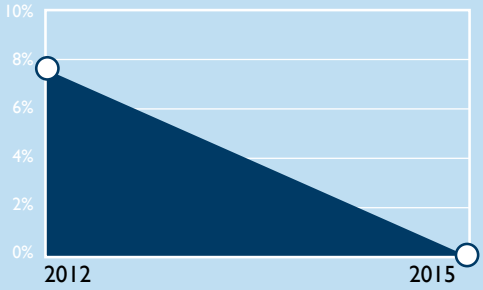
The initiative has demonstrated a reduction in prescribing of antimicrobials in primary care as well as an improvement in the quality of prescribing in hospital and primary care.

Contribution from Jacqueline Sneddon, Project Lead for Scottish Antimicrobial Prescribing Group, Chair - Pharmacy Infection Network - United Kingdom Clinical Pharmacy Association



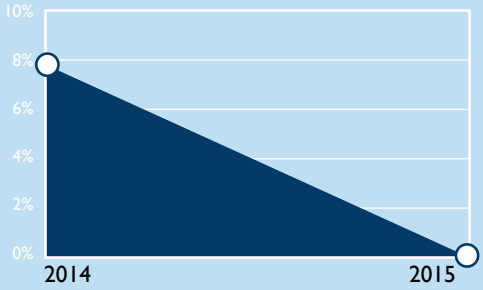
↓2.4% across primary care

An overall reduction in antibiotic use of 2.4% has been achieved across primary care overall.



↓7.8% in care homes

7.8% reduction in use of antibiotics in care homes from 2012 to 2015.



↓7.9% Piperacillin-tazobactum

Use decreased by 7.9% in 2015, the first reduction since 2009 (when data became available).[11]

REFERENCES

1 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/553471/Gov_response_AMR_Review.pdf

2 http://www.pgeu.eu/en/component/attachments/attachments.html?id=4441&task=download

3 http://apps.who.int/medicinedocs/documents/s19755en/s19755en.pdf

4 ECDC/EMEA Joint Technical Report on the Bacterial challenge: time to react http://ecdc.europa.eu/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf

5 Tackling drug-resistant infections globally: Final Report and Recommendations, the review on antimicrobial resistance by Jim O'Neill https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf

6 World Health Organisation (2015) Global Action Plan on Antimicrobial resistance, available at: http://apps.who.int/iris/bitstream/10665/193736/1/9789241509763_eng.pdf?ua=1

7 http://ecdc.europa.eu/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf

8 WHO factsheet on Substandard, spurious, falsely labelled, falsified and counterfeit (SSFFC) medical products. Available from: http://www.who.int/mediacentre/factsheets/fs275/en/

9 Available from: https://ec.europa.eu/health/amr/sites/amr/files/eb445_amr_generalreport_en.pdf

10 Antimicrobial prescribing and stewardship competencies https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/253094/ARHAlprescrcompetencies__2_.pdf

11 http://www.isdscotland.org/Health-Topics/Prescribing-and-Medicines/Publications/2016-08-30/2016-08-30-SAPG-2015-Report.pdf

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