



**PGEU GPUE**

# **Pharmaceutical Group of European Union**

## **The Community Pharmacy Contribution to Tackling Antimicrobial Resistance (AMR)**

*The Pharmaceutical Group of the European Union (PGEU) is the association representing community pharmacists in 32 European countries. In Europe over 400.000 community pharmacists provide services throughout a network of more than 160.000 pharmacies, to an estimated 46 million European citizens daily.*

*PGEU's objective is to promote the role of pharmacists as key players in healthcare systems throughout Europe and to ensure that the views of the pharmacy profession are taken into account in the EU decision-making process.*

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## Executive Summary

Society is facing the dawn of the post-antibiotic era. Within Member States and at EU-level, AMR Action Plans are being developed to set out road maps to tackle the burden of AMR. This paper outlines the contribution that community pharmacists can make in addressing AMR and encouraging the prudent use of antimicrobials.

Community pharmacists play pivotal roles in counselling patients and promoting antimicrobial stewardship. They provide preventative action, referral, disposal, treatment in the pharmacy and constantly strive for quality improvements and innovation in pharmacy practice.

The PGEU makes several recommendations to EU Institutions, Member States and the wider public in order to maximise the potential contribution community pharmacists can make to tackling AMR and encouraging the prudent use of antimicrobials. They are as follows:

1. Governments are encouraged to involve community pharmacists in AMR Action Plans developed at a national level,
2. Coordinators of the Joint Action on AMR & HCAI are encouraged to actively involve community pharmacists in the process,
3. Increased collaboration and communication between community pharmacists, other healthcare professionals, health service providers, regulators, industry, patients and the public is encouraged. Specifically, to achieve the following:
  - a. Greater use of pharmacists to raise awareness for vaccination and where appropriate, greater use of pharmacists to administer vaccinations,
  - b. Indications should be provided on prescriptions for antimicrobial medicines,
  - c. Greater use of shared medication records,
  - d. Pharmacist access to electronic health records,
  - e. Exact quantity dispensing.
4. Combatting extra-EU online sales of antimicrobials by encouraging the use of “bricks and mortar” pharmacies and better promotion of the EU common logo for online pharmacies.

## Glossary

ABDA – Federal Union of German Pharmacists Associations
APB – Belgian Pharmaceutical Association
ABR – Antibiotic resistance
AMR - Antimicrobial resistance
BAPCOC – Belgian Antibiotic Policy Coordination Committee
CE – Continuing Education
CPD – Continuous Professional Development
CPME – Standing Committee of European Doctors
Consejo – General Pharmaceutical Council of Spain
EAAD – European Antibiotic Awareness Day
EC – European Commission
ECDC – European Centre for Disease Prevention & Control
EFSA – European Food Safety Authority
EMA – European Medicines Agency
EPHA – European Public Health Alliance
EPRUMA – European Platform for the Responsible Use of Medicines in Animals
EU – European Union
FMD – Falsified Medicines Directive
GP – General Practitioner
GPP – Good Pharmacy Practice
HCAI – Healthcare Associated Infection
HSE – Health Services Executive (of Ireland)
IPU – Irish Pharmacy Union
JA – Joint Action (EU funded, Member State-led project)
NICPLD - Northern Ireland Centre for Pharmacy Learning and Development
OTC – Over the counter
PGD – Patient Group Direction
PGEU – Pharmaceutical Group of the European Union
PTAM – Pharmacotherapy Audit Meeting
SOP – Standard Operating Procedure
TAC – Technical Advisory Committee (of the ECDC)
WAAW – World Antibiotics Awareness Week
WHO – World Health Organisation

# 1. AMR & Policy Responses

## **On the cusp of the post-antibiotic era**

Less than 75 years after the introduction of the first antibiotic, we now face the challenge of widespread resistance to antibiotics (ABR) as well in general to antimicrobial medicines (AMR). Decades of overuse, irrational use, misuse and a void of new development and discovery of antimicrobials has led to AMR representing one of the most critical risks to global public health<sup>1,2</sup>. In response, Europe has taken the lead in the world in tackling AMR by initiating a number of policies outlined below.

## **The Council of the European Union Conclusions, 2016**

Under the Dutch Presidency in June 2016, The Council of the European Union published Conclusions calling upon Member States and the European Commission to develop national and EU Action Plans to address AMR. The Conclusions suggested that such Action Plans should involve cooperation with all relevant stakeholders and that Member States should strengthen coordination and cooperation between governments and relevant sectors<sup>3</sup>.

## **New European Commission Road Map**

As a response to the June 2016 Council Conclusions, the European Commission began work on its second Action Plan on AMR<sup>4</sup> as a follow up of the 2011-2016 Plan<sup>5</sup>. An evaluation of the 2011-2016 Action Plan<sup>6</sup> highlighted that there is a clear need to support and assist Member States in developing and implementing national action plans, to foster collaboration across sectors, to improve knowledge of citizens and to strengthen monitoring and surveillance systems<sup>7</sup>.

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<sup>1</sup> ECDC/EMA 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](http://ecdc.europa.eu/en/publications/Publications/0909_TER_The_Bacterial_Challenge_Time_to_React.pdf)

<sup>2</sup> 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](https://amr-review.org/sites/default/files/160518_Final%20paper_with%20cover.pdf)

<sup>3</sup> Council conclusions on the next steps under One Health approach to combat antimicrobial resistance

<sup>4</sup> Commission's Communication on a One-Health Action Plan to support Member States in the fight against Antimicrobial Resistance

<sup>5</sup> COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL - Action plan against the rising threats from Antimicrobial Resistance

<sup>6</sup> Evaluation of the Action Plan against the rising threats from antimicrobial resistance

<sup>7</sup> Factsheet on the Evaluation of 2011-2016 Action Plan on AMR

### **EFSA-ECDC-EMA Outcome Indicator Mandate**

This has led to coordinated inter-agency action between the European Centre for Disease Prevention & Control (ECDC), the European Medicines Agency (EMA) and the European Food Safety Authority (EFSA) to provide a scientific opinion on a list of outcome indicators regarding surveillance of antimicrobial resistance and antimicrobial consumption in humans and food producing animals<sup>8</sup>.

### **Joint Action on AMR & HCAIs**

Additionally, the European Commission's health research funding agency recently announced a call for a Joint Action on AMR and healthcare associated infections (JA AMR & HCAI) worth €4 million<sup>9</sup>. PGEU (and other EU level health stakeholders) have expressed an interest in being involved in the new JA, however EU level stakeholder involvement has not yet been formalised.

### **Objectives of this Best Practice Paper**

This paper has been drawn-up as a direct response to the above issues in order to address the following objectives:

1. Raise awareness of and exchange community pharmacy best practices in tackling AMR and encouraging the prudent use of antimicrobials,
2. Inform relevant policy and country reports of the crucial role community pharmacists can play in tackling AMR and promoting the prudent use of antimicrobials,
3. Advocate for policies, action, interventions, activities and services that can help reduce AMR and increase the prudent use of antimicrobials,
4. Empower patients and the public to practice effective self-care in relation to minor ailments and their management.

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<sup>8</sup> <https://www.efsa.europa.eu/sites/default/files/amrindicators.pdf>

<sup>9</sup> <http://ec.europa.eu/chafea/health/actions.html>

## 2. PGEU's Action on AMR

### European Antibiotics Awareness Day

Since its inception in 2008, PGEU has systematically supported and engaged in the ECDC's European Antibiotic Awareness Day (EAAD) to promote the prudent use of antibiotics<sup>10</sup>. In recent years this has been further enhanced by the use of social media to raise awareness of the issue of AMR and to encourage the prudent use of antibiotics.

PGEU is privileged to be a member of the ECDC's Technical Advisory Committee (TAC) which meets regularly to provide input into the strategy and materials for EAAD. Recent campaigns have focused on self-medication with antibiotics and from 2013 onwards this has been the focus of campaigns in primary care and community pharmacy.

In 2013-2014 the PGEU actively contributed to the ECDC's consultation on the development of a toolkit for self-medication of antibiotics in collaboration with the Standing Committee of European Doctors (CPME). This resulted in a suite of materials available in all EU languages which can be adapted as necessary to raise awareness of the dangers of self-medication with antibiotics and their ineffectiveness against colds and seasonal influenza ('flu')<sup>11</sup>.



### European Commission

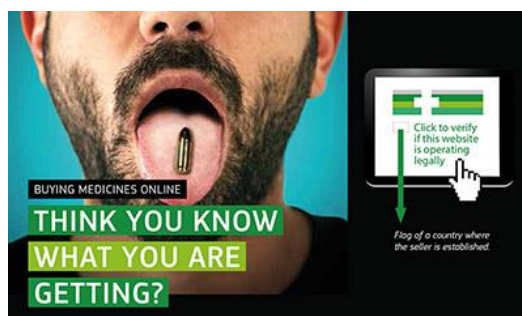
As a key stakeholder, PGEU was actively engaged with the development and implementation of several aspects of Directive 2011/62/EU (the Falsified Medicines Directive or 'FMD'), notably the EU logo for the online sale of medicines ('EU common logo')<sup>12</sup>. From the 1<sup>st</sup> of July 2015 all online pharmacies in the EU need to display this logo which acts as a direct link to check the authenticity

<sup>10</sup> <http://ecdc.europa.eu/en/EAAD/Pages/Home.aspx>

<sup>11</sup> <http://ecdc.europa.eu/en/eaad/antibiotics-plan-campaign/toolkit-self-medication/Pages/toolkit-general-public-self-medication.aspx>

<sup>12</sup> [http://ec.europa.eu/health/human-use/eu-logo\\_en](http://ec.europa.eu/health/human-use/eu-logo_en)

of the pharmacy via the Member State's official regulator for pharmacies. Thus providing the public reassurance that the pharmacy they're being served by is trading legally and thus not able to supply antibiotics without a prescription (i.e. avoiding purchasing antibiotics from an illegally operating online pharmacy from outside of the EU).



PGEU regularly responds to Commission consultations related to medicines and health topics in order to provide the community pharmacist perspective. PGEU recently responded to the Commission's consultation on their next EU Action Plan on AMR<sup>13</sup>. PGEU's response called-upon the Commission to actively engage with EU-level health stakeholders in developing AMR policy, as well as raising awareness of the crucial role community pharmacists can play in tackling AMR and encouraging prudent use of antimicrobials.

## WHO Europe

In 2014, PGEU collaborated with WHO Europe to survey community pharmacists, other healthcare professionals, government institutions and health service providers to outline the role community pharmacists can play in tackling AMR and encouraging the prudent use of antimicrobials. This collaboration resulted in a report which identifies community pharmacists as important allies in the fight against AMR and that pharmacists already have experience in treating their patients with antibiotics, both responsibly and within the appropriate legal framework. Additionally, the report concludes that pharmacists are among the best positioned healthcare professionals to facilitate the appropriate use of antibiotics and, therefore, have a critical role to play in tackling AMR alongside policy-makers and general practitioners<sup>14</sup>. PGEU also engages in WHO's World Antibiotics Awareness Week (WAAW) campaign which complements the ECDC's EAAD.

<sup>13</sup> <http://pgeu.eu/en/policy/6:antibiotic-resistance.html>

<sup>14</sup> <http://www.euro.who.int/en/health-topics/Health-systems/health-technologies-and-medicines/publications/2014/the-role-of-pharmacist-in-encouraging-prudent-use-of-antibiotic-medicines-and-averting-antimicrobial-resistance-a-review-of-current-policies-and-experiences-in-europe-2014>

## Multi-stakeholder Collaboration

PGEU is one of the founding partners of the pan-European interdisciplinary stakeholder collaboration “medsdisposal”<sup>15</sup>. #medsdisposal is a campaign to raise awareness on the appropriate disposal of expired or unused medicines in Europe and includes associations representing European healthcare, industry and student organisations. Crucial to this project’s relevance is an interactive map of Europe with direct links to the official websites providing information on the appropriate way of disposing medicines in each country in the national language(s). In order to increase awareness of this website, social media is used extensively to guide members of the public to the resources on the campaign’s website<sup>16,17,18</sup>.



In the context of the “One Health” approach, PGEU is a member of the European Platform for the Responsible Use of Medicines in Animals (EPRUMA) core group. EPRUMA is the European association representing veterinarians, farmers and agri-cooperatives, manufacturers of animal medicines and diagnostics, feed manufacturers, professionals working in animal health and sanitary security and professionals working in sustainable agriculture.

Furthermore, PGEU is a member of the European Public Health Alliance (EPHA) who also work within the “One Health” approach to tackling AMR.

<sup>15</sup> <http://medsdisposal.eu/>

<sup>16</sup> <https://www.youtube.com/channel/UCAX8cA8Ifwk7iH4DtB5FZg/videos>

<sup>17</sup> <https://www.facebook.com/medsdisposaleu-890282831045021/>

<sup>18</sup> <https://twitter.com/hashtag/medsdisposal>



### 3. Community Pharmacists' Action on AMR

Community pharmacists have provided a number of services and interventions in daily practice since the beginnings of modern day pharmacy. The repertoire of services and interventions continues to expand as the profession evolves and this chapter outlines how pharmacists contribute to tackling AMR and encourage the prudent use of antimicrobials.

#### Counselling & Stewardship

As part of the standard dispensing process, pharmacists provide counselling (advice, information and help) on the safe, effective and rational use of medicines. This applies to both chronic and acute medications, including regimens for antimicrobials and can include advice on how to take the medication for the most benefit, how to prevent or manage side effects and interactions and the rationale for treatment.

As the pharmacist is often the last healthcare professional a patient speaks to before taking a medication, they are ideally placed to improve adherence to antimicrobial therapies and reinforce the need to complete the course (even if feeling well already), not to share antimicrobials and ensuring only the required amount of antimicrobials is supplied.



According to the European Commission's Eurobarometer Survey on antibiotic consumption, large numbers of Europeans are unaware that antibiotics are ineffective against viruses (57%) and

against colds and 'flu (44%). Additionally, use of antibiotics is higher among those with lower levels of education (39%) and in worse economic circumstances (44%). It was shown that consumption decreases as knowledge increases, as well as that knowledge increases among those who have received information on antibiotics<sup>19</sup>. As such, there is an impetus to raise health literacy levels of patients and the public as part of wider patient empowerment initiatives. Community pharmacists are helping to provide relevant information and support for such activities as part of their daily practice and by participating in local or national public health campaigns such as the ECDC's EAAD.

## **Preventative Action**

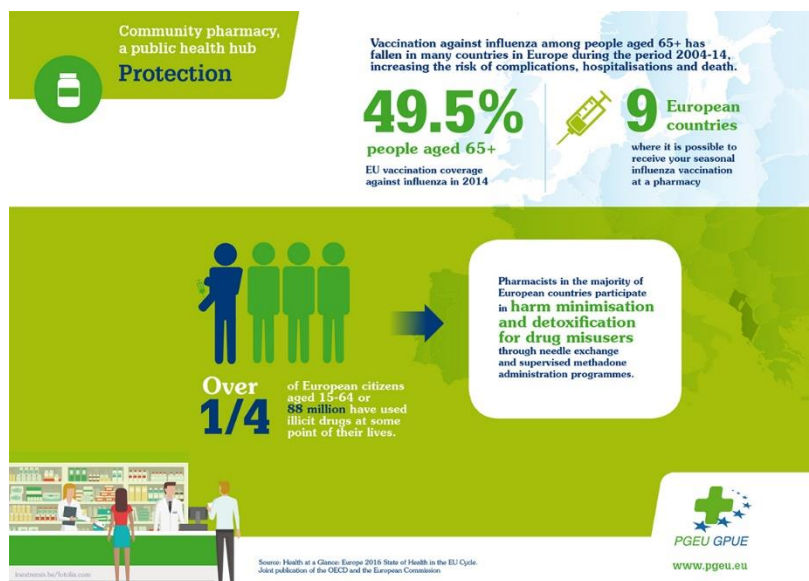
In addition to their counselling and stewardship roles, pharmacists also support good hygiene practices and preventative measures as part of their role in promoting the public's health. A vaccination against the 'flu each year can be administered in community pharmacies in nine European countries<sup>20</sup>. This aids Member States in meeting the WHO target of 75% coverage of the population and widening vaccination coverage to parts of the population who would not have accessed such a service in the past.

As antibiotic-seeking behaviour can often arise from individuals with the common cold or seasonal influenza, supporting the reduced incidence of these viral infections (thus not curable by antibiotics) is a key element in encouraging the prudent use of antibiotics and tackling AMR.

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<sup>19</sup> Special Eurobarometer 445, Antimicrobial Resistance, April 2016.

<sup>20</sup> <http://pgeu.eu/en/library/561:annual-report-2016.html>



## Referral

Community pharmacists are the most accessible healthcare professional in Europe, with 98% of the population able to reach a pharmacy within 30 minutes and 58% able to reach one in less than five minutes<sup>21</sup>. As such, pharmacists are often the first healthcare professional the public speaks to. Pharmacists are trained to respond to symptoms, situations and “red flags” which require referral to another health or social care professional for further treatment, investigation or support. Therefore, as part of the primary healthcare team, community pharmacists are ideally placed to reduce the burden on other healthcare professionals for patients seeking treatment for minor ailments and self-care and refer patients presenting with signs and symptoms of an infection requiring further investigation as appropriate.

## Disposal

In addition to several State or government-led disposal and collection schemes for medicines, the majority of the European population can return expired or unused medicines to their community pharmacy<sup>22</sup>, including antimicrobials. Encouraging the return of expired or unused antimicrobials for appropriate disposal is crucial in preventing the inappropriate use or reuse of these medicines by persons who were not originally prescribed them, thus helping to encourage their prudent use and tackling AMR.

<sup>21</sup> <http://pgeu.eu/en/policy/19-the-european-community-pharmacy-blueprint.html>

<sup>22</sup> <http://medsdisposal.eu/>

## Treatment in the Pharmacy

Community pharmacies have been an accessible, professional and regulated setting to obtain advice and over-the-counter (OTC) treatment for numerous health issues and minor ailments for hundreds of years. Pharmacists are able to provide treatment and management of symptoms for colds and 'flu and support for self-care, thus reducing the burden on other areas of the health service and reducing antibiotic-seeking behaviour.



In addition to this, community pharmacists are increasingly able to offer minor ailment services where advice and treatment are provided<sup>23,24,25</sup> via the pharmacy for common and minor ailments, including colds and 'flu. Another promising intervention which could help encourage the prudent use of antimicrobials and tackle AMR is the use of rapid diagnostic testing for bacteria within the pharmacy<sup>26</sup>. This ensures that patients with a bacterial infection are appropriately referred for further investigation and treatment and those without receive support for symptoms and minor ailment management.

<sup>23</sup> [http://www.communitypharmacy.scot.nhs.uk/core\\_services/mas.html](http://www.communitypharmacy.scot.nhs.uk/core_services/mas.html)

<sup>24</sup> Mantzourani, E., Richards, T. G. and Hughes, M. L. (2016), New roles in pharmacy – learning from the All Wales Common Ailments Scheme. *International Journal of Pharmacy Practice*, 24: 298–301. doi:10.1111/ijpp.12231

<sup>25</sup> <http://www.nhs.uk/Livewell/Pharmacy/Pages/Commonconditions.aspx>

<sup>26</sup> A Heyerly, R Jones, G Bokhart, M Shoaff, and D Fisher (2016) Implementation of a Pharmacist-Directed Antimicrobial Stewardship Protocol Utilizing Rapid Diagnostic Testing. *Hospital Pharmacy*: November 2016, Vol. 51, No. 10, pp. 815-822. doi: <http://dx.doi.org/10.1310/hpj5110-815>

As part of the range of OTC medicines and devices available from a pharmacy, a number of long-standing, safe and effective antimicrobials are available following a consultation with the pharmacist. It is important to recognise that these comprise antiseptics (e.g. mouthwashes or body scrubs), antivirals (ointments or creams), antifungals (ointments, creams, shampoos and tablets/capsules), anthelmintics (antiparasitic lotions, creams etc) and in some cases antibiotics (e.g. chloramphenicol eye drops or ointment for conjunctivitis).

Amongst numerous other minor ailments, treatment for the humble cold sore (*herpes labialis*) has been available as an OTC antiviral cream since the 1980's, along with treatment for ringworm (*tinea corporis*) with an antifungal cream. These medicines are licensed and approved for the safe and effective supply via a pharmacist operating in not only a regulatory framework, but also according to their ethical code and principles of clinical governance. Thus, this vital source of safe and convenient treatment should not be confused with any illegal supply of antibiotics which require a prescription.

## Quality Improvement & Innovation in the Pharmacy Profession

Community pharmacists in Europe are recognised as one of the key healthcare professionals operating in the primary healthcare system. As such, and in accordance with their regulatory, clinical governance and ethical obligations, pharmacists continuously aim to improve their practice and service to the European population. This may include audit, continuous professional development and new service implementation.

Notwithstanding the actions described above, there are multiple improvements and innovations which could be deployed to help community pharmacists improve the prudent use of antimicrobials and tackle AMR more effectively.

In Europe, despite the rapid recent increase in electronic prescribing<sup>27</sup>, most prescriptions do not contain information on the indication (i.e. what it was prescribed for) for the medication. Although pharmacists are recognised as the experts in medicines and would immediately recognise what most medications have been prescribed for, many medications have multiple indications, even with the same dose. Including the indication on prescriptions for antimicrobials (and in particular antibiotics), would complement the pharmacist's stewardship role. For example, ensuring that the medication, dose, duration and formulation are appropriate according to the product literature and/or locally agreed formularies.

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<sup>27</sup> PGEU 2016 eHealth Statement <http://pgeu.eu/en/policy/9:e-health.html>

Similarly, the use of shared medication records<sup>28,29</sup> and access for pharmacists to electronic health records<sup>30</sup> in Europe is not widespread. Advantages of such systems include ensuring the indication matches the medication according to product literature and/or locally agreed formularies, avoiding duplication of therapy and avoiding repeated therapy (i.e. where a different antimicrobial or class of antimicrobial should be used following treatment failure or recent use). Other advantages include allowing effective communication between pharmacist and other healthcare professionals and reducing the number of side effects, adverse drug reactions or interactions (antimicrobials, which are often potent inhibitors or inducers of liver enzymes, are a prime cause of interactions and dermatological side effects).

In some European countries, pharmacists are not able to open the original pack of a medicine. As such, ensuring that the manufacturers produce pack sizes appropriate for the correct duration of treatment, and advocating for legislative change from a regulatory level would allow community pharmacists to dispense the exact quantity of medicines required for the duration of treatment.

Finally, despite the existence of the EU common logo to help patients identify genuine and legally operating online pharmacies based in the EU, there are numerous international online pharmacies operating illegally outside of the EU which can supply European patients by post or courier. These online vendors are neither authorised to operate in the EU nor do they adhere to national practices and guidelines, such as by offering for sale antimicrobials without a prescription. A recent study<sup>31</sup> highlighted how the system in place at European level needs to be better promoted to ensure that Europeans only access services from either a “bricks and mortar” pharmacy or a genuine, legally operating EU online pharmacy.

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[https://www.medetel.eu/download/2016/parallel\\_sessions/presentation/day2/A\\_shared\\_pharmaceutical\\_record\\_in\\_a\\_Belgian.pdf](https://www.medetel.eu/download/2016/parallel_sessions/presentation/day2/A_shared_pharmaceutical_record_in_a_Belgian.pdf)

<sup>29</sup> [https://www.medetel.eu/download/2016/parallel\\_sessions/presentation/day2/Olivier\\_Por\\_Overview.pdf](https://www.medetel.eu/download/2016/parallel_sessions/presentation/day2/Olivier_Por_Overview.pdf)

<sup>30</sup> [http://systems.hscic.gov.uk/scr/library/poc\\_report.pdf](http://systems.hscic.gov.uk/scr/library/poc_report.pdf)

<sup>31</sup> SE Boyd, LSProckter Moore, M Gilchrist, C Costelloe, E Castro-Sánchez, BD Franklin, AH Holmes; Obtaining antibiotics online from within the UK: a cross-sectional study. J Antimicrob Chemother 2017 dkk003. doi: 10.1093/jac/dkx003

## 4. Recommendations

The PGEU makes several recommendations to EU Institutions, Member States and the wider public in order to maximise the potential contribution community pharmacists can make to tackling AMR and encouraging the prudent use of antimicrobials. They are as follows:

1. Governments are encouraged to involve community pharmacists in AMR Action Plans developed at a national level,
2. Coordinators of the Joint Action on AMR & HCAI are encouraged to actively involve community pharmacists in the process,
3. Increased collaboration and communication between community pharmacists, other healthcare professionals, health service providers, regulators, industry, patients and the public is encouraged. Specifically, to achieve the following:
  - a. Greater use of pharmacists to raise awareness for vaccination and where appropriate, greater use of pharmacists to administer vaccinations,
  - b. Indications should be provided on prescriptions for antimicrobial medicines,
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  - e. Exact quantity dispensing.
4. Combatting extra-EU online sales of antimicrobials by encouraging the use of “bricks and mortar” pharmacies and better promotion of the EU common logo for online pharmacies.



## Annex 1: Best Practices from Pharmacists

### Practice-based Learning and Interprofessional Collaboration

#### Netherlands: Pharmacotherapy Audit Meetings (PTAMs)

Dutch pharmacists and general practitioners have been meeting on a local level to discuss adherence to prescribing guidelines since 1990. These so called PTAMs are an opportunity to make agreements on pharmacotherapy in line with national guidelines to improve the prescribing and dispensing of medicines in practice, including with antimicrobial medicines.

#### UK: Online Continuous Professional Development (CPD)

All pharmacists in the UK have access to the Northern Ireland Centre for Pharmacy Learning and Development's (NICPLD) online course on antimicrobials and infection management. This is an assessed, ten hour training course which can be used towards pharmacists' CPD recording requirements.

The screenshot shows a web browser window displaying the 'Antimicrobials and Infection Management' course page. The page has a blue header with a white cross icon and the title. Below the header, there is a 'Introduction' section with text about antimicrobials and infection management. To the right, there is an 'Aim' section and a 'Learning outcomes' section. At the bottom right, there is a 'MODULE MENU' button. A warning icon is present in the bottom left corner of the content area.

**+ Antimicrobials and Infection Management**

Introduction

Antimicrobials are agents which kill or inhibit the growth of micro-organisms (also known as microbes) such as bacteria, fungi, viruses and protozoa. Due to the growing emergence of resistant micro-organisms and healthcare associated infections (HCAs), the correct and appropriate prescribing of antimicrobials has become increasingly important in recent years. It is thought that antimicrobial prescribing has a direct link to resistance, as choice and duration of therapy can cause new breeding strains to develop.

All hospital trusts in Northern Ireland now have a designated Infection Prevention and Control Lead, and employ at least one specialist antimicrobial pharmacist, to promote prudent antimicrobial prescribing and minimise the occurrence of HCAs. However, the problems of resistance are not confined to the hospital setting, and high levels of resistant micro-organisms have been shown to be present in nursing homes in Northern Ireland<sup>1</sup>. It must be emphasised, therefore, that infection prevention and control is everyone's responsibility<sup>2</sup>.

Throughout this course there are downloads and links to other websites. These are not a core part of the course, but provide the opportunity for wider reading.

[Acknowledgements](#)

[Disclaimer](#)

**Aim**

To provide pharmacists with the knowledge and skills required to promote prudent antimicrobial prescribing and minimise the occurrence of healthcare associated infections (HCAs).

**Learning outcomes**

On completion of this course you should be able to:

- describe the action and uses of commonly used antimicrobial agents
- select an appropriate antimicrobial agent according to patient need
- recommend appropriate antimicrobial prophylaxis
- monitor patients on antimicrobials and make appropriate recommendations
- manage, prevent and control commonly-encountered healthcare associated infections (HCAs).

The estimated hours of learning for the following module is **10 hrs**

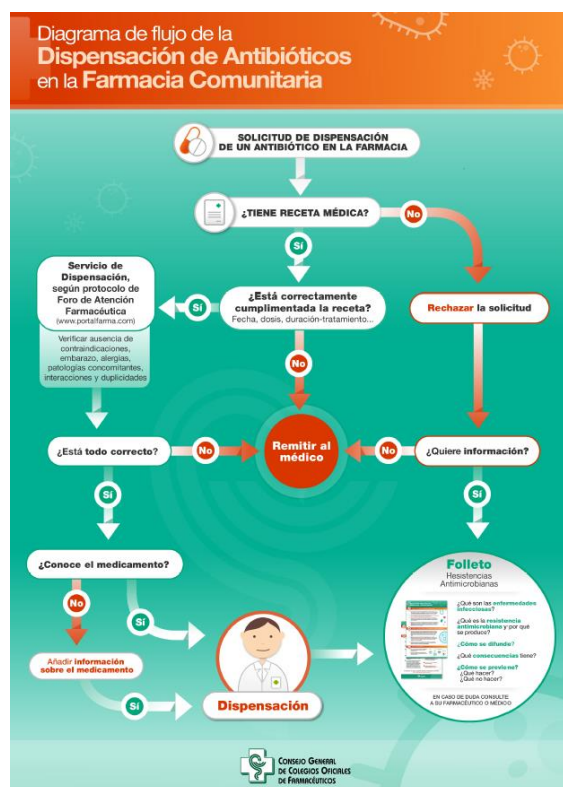
**MODULE MENU**





## Spain: Standard Operating Procedures for Dispensing Antibiotics

The General Pharmaceutical Council of Spain (Consejo) is championing the development and use of Good Pharmacy Practices, one of which is a Standard Operating Procedure (SOP) for dispensing antibiotics at community pharmacies<sup>32</sup>. Pharmacists are equipped with a flow-chart SOP flyer containing key points of information and questions to provide to the patient for the safe and prudent use of antibiotics and information on referral to a medical doctor as necessary.



Pharmacies are also provided with flyers addressed to the public to be handed out at the dispensing of antibiotics or upon refusal to dispense. Additionally, the General Pharmaceutical Council of Spain created recommendations on the use of antibiotics, addressed to pharmacists.

<sup>32</sup> <http://www.portalfarma.com/ciudadanos/saludpublica/antibioticos/Paginas/Indicespaciosoantibioticos.aspx>

## Point of Dispensing Tools

### Belgium

The Association of Belgian Pharmacists (APB) has been actively tackling the issue of AMR. For a number of years they have spread a consistent message: “Take your antibiotic as prescribed by your doctor – do not self-medicate – bring whatever is left after your prescribed therapy back to your pharmacist.”

To deliver the messages, pharmacists attach small stickers to every box of antibiotics that is dispensed as part of their contribution to the European Antibiotics Awareness Day (EAAD) Campaigns.

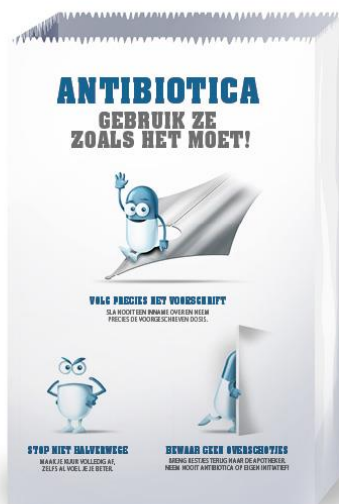


In order to engage with pharmacists themselves, articles were published in professional press publications and a pop-up alert was installed within pharmacy dispensing software which activates each time an antibiotic is dispensed to remind pharmacists to apply the sticker to the medication.

Pharmacists in Belgium are also involved in the Belgian Antibiotic Policy Coordination Committee (BAPCOC-platform) created by the Belgian authorities. This committee developed “Antibiotics guidelines for primary care” in Dutch and French. As part of these guidelines, BAPCOC has developed checklists for pharmacists to check the appropriate treatment and indication when dispensing prescription antibiotics.

As part of the national antibiotics awareness campaigns, pharmacists are provided with branded paper bags for dispensed products, helping to raise awareness of the prudent use of antibiotics to the patient at the point of dispensing and beyond. The main focus of the messages are the length of therapy, the number of doses to be taken each day and the fact that patients should return any leftovers to the pharmacy. In addition, pharmacies were equipped with leaflets and posters to further support the message and initiate dialogue with patients and the public.

Paper bags to wrap dispensed products:



Leaflets and posters:



Finally, the campaign is supported by national “radio-spots” and other media activity (see Annex 2 below).



## Germany

**Was sind Antibiotika?**

Antibiotika sind Medikamente, die zur Behandlung bakterieller Infektionen angewendet werden. Sie bekämpfen Bakterien, indem sie sie abtöten oder ihr Wachstum hemmen. Mehr als 50 verschiedene Wirkstoffe werden als Antibiotika eingesetzt. Sie unterscheiden sich in ihrer Wirkungswirkung gegen die Bakterien. Das erklärt, warum ein Antibiotikum bei der einen Art der Infektion wirkt, bei einer anderen jedoch wirkungslos bleibt. Antibiotika wirken nicht bei Infektionen, die durch Viren verursacht werden, zum Beispiel bei grippeähnlichen Infekten oder Grippe.

**Was sind Antibiotika-Resistenzen?**

Bakterien können sich sehr gut an Veränderungen in ihrer Umgebung anpassen und gegen Antibiotika widerstandsfähig, das heißt resistent, werden. Folge ist, dass das Antibiotikum nicht mehr wirksam ist. Die Gefahr für uns Resistenzen ist besonders groß, wenn das Antibiotikum nicht richtig angewendet wird.

Antibiotika-Resistenzen sind schon heute ein Problem. Für einige Infektionen stellen sie heute ein Problem dar. Für einige Infektionen stellen sie heute ein Problem dar. Für einige Infektionen stellen sie heute ein Problem dar.



**JEDER KANN DAZU BEITRAGEN, DASS ANTIBIOTIKA AUCH IN ZUKUNFT WIRKSAM BLEIBEN.**

**Wie können Sie Antibiotika-Resistenzen vermeiden?**

Durch den verantwortungsvollen Umgang mit Antibiotika kann jeder Patient dazu beitragen, dass diese lebenswichtigen Medikamente auch in Zukunft wirksam bleiben.

**7 Tipps für den richtigen Umgang mit Antibiotika:**

1. Wenden Sie Antibiotika ausschließlich nach ärztlicher Verordnung an.
2. Nehmen Sie Antibiotika immer so lange und in der Dosierung an, wie vom Arzt vorgegeben. Besonders Sie die Einnahme nicht vorzeitig, auch wenn es Ihnen schon besser geht.
3. Fragen Sie Ihren Apotheker, was Sie bei der Einnahme der Antibiotika beachten müssen, z. B. Wechselwirkungen mit Lebensmitteln.
4. Haben Sie keine Reste von Antibiotika auf, um sie bei der nächsten Infektion einzunehmen.
5. Geben Sie Antibiotika, die der Arzt Ihnen verschrieben hat, nicht an andere Patienten weiter.
6. Entsorgen Sie Antibiotika nicht über die Toilette oder das Waschbecken, sondern über den Hausmüll. So werden sie rückstandslos verbrennt. Die Entsorgung von Antibiotika über das Abwasser verbreitet die Bakterien in die Umwelt und fördert so die Entstehung von Resistenzen. Einige Apotheken bieten als freiwilligen Service an, Arzneimittelreste zu entsorgen.
7. Vermeiden Sie Infektionen soweit wie möglich. Oft reichen schon einfache Hygienemaßnahmen. (siehe Rückseite)

Around the time of European Antibiotic Awareness Day in November each year, German pharmacists provide information to patients and the public on the prudent use of antibiotics. ABDA (the Federal Union of German Associations of Pharmacists) produced an information leaflet “7 tips for proper use of antibiotics”<sup>33</sup> which are distributed to pharmacies across the country to support dialogue and awareness with patients and the public.

## Mass Media Campaigns

### Ireland: Under the weather

In order to tackle AMR and encourage prudent use of antibiotics in Ireland, the Irish Pharmacy Union (IPU) has partnered with HSE (Ireland’s Health Service Executive) and other stakeholders for action on antibiotics.

<sup>33</sup> <http://www.abda.de/antibiotika.html>



[Home](#) [Upper Resp.](#) [Lower Resp.](#) [Flu](#) [Meningitis](#) [Urinary](#) [Gastro](#) [Genital](#) [Skin/Soft Tissue](#) [Useful Info](#)

## Principles of Antimicrobial Treatment

- 1 This guidance is based on the **best available evidence** but its application must be modified by professional judgement.
- 2 A dose and duration of treatment is suggested. In severe or recurrent cases consider a larger dose or longer course.
- 3 Prescribe an antibiotic **only** when there is likely to be a clear **clinical benefit**.
- 4 Consider a **no**, or **delayed**, antibiotic strategy for acute sore throat, common cold, acute cough and acute sinusitis.
- 5 Limit prescribing over the telephone to exceptional cases.
- 6 **Try to avoid over-use of broad spectrum antibiotics** (eg coamoxiclav, quinolones and cephalosporins) as this can increase risk of **penicillin non-susceptible pneumococci**, **Clostridium difficile**, **MRSA** and **resistant urinary tract infection (UTIs)** and also limit the future usefulness of these important agents. Consider use of **narrow spectrum agents** (e.g. penicillin, amoxicillin, flucloxacillin, trimethoprim) as outlined in these guidelines for specific indications where clinically appropriate.

In particular, try to reserve use of cephalosporins and quinolones unless there is clear

**Aims**

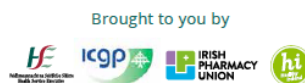
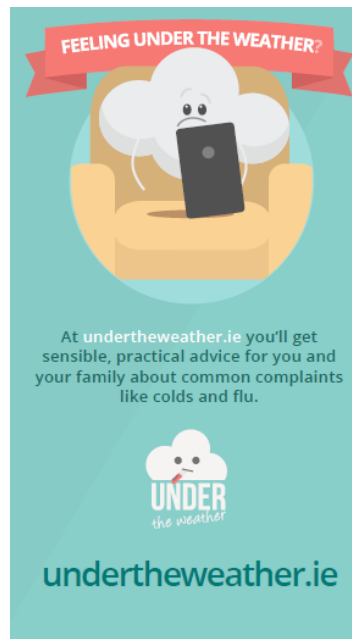
- 1 To provide a simple, best guess approach to the treatment of common infections
- 2 To promote the safe and effective use of antibiotics
- 3 To minimise the emergence of bacterial resistance in the community

To support the prudent use of antibiotics in primary care, a multimedia campaign entitled “Under the weather” targets patients in primary care and the public. This campaign has a particular focus on parents aged between 20 and 40 due to their high demand for antibiotics and their receptiveness to health messages in “first-time parenting” as well as towards antibiotic prescribers, such as GPs and dentists.

As part of the action, evidence based guidelines<sup>34</sup> for antimicrobial prescribing have been developed and are available as an online resource which provide a simple approach to the management of minor winter ailments. Stakeholders have acknowledged that the campaign on prudent use of antibiotics needs to be run over multiple consecutive years in order to have an impact. However, there have already been some improvements in the quality of antibiotic prescribing detected.

“Under the weather” is designed to educate patients as to when antibiotics are useful to treat infections and how to safely self-treat common illnesses and non-bacterial infections at home. This campaign uses an initial message with a positive approach to spread advice on how to manage common illnesses, rather than an initial message not to take antibiotics for common illnesses.

<sup>34</sup> <http://www.hse.ie/eng/services/list/2/gp/Antibiotic-Prescribing/About-us/Management-of-Infection-Guidance-for-Primary-Care-In-Ireland.html>



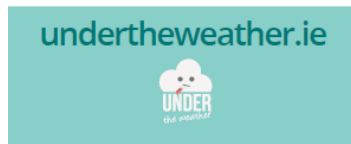
At [undertheweather.ie](http://undertheweather.ie) you'll get sensible practical advice for you and your family about common complaints like:

- Colds
- Flu
- Sore Throats
- Rashes
- High Temperature
- Ear Aches
- Tummy Aches, Vomiting and Diarrhoea

Find out what is making you ill, when you are likely to get better, how to take care of yourself and if and when you might need medical help.

## GET ADVICE & GET BETTER

[Undertheweather.ie](http://undertheweather.ie) - your guide to treating common complaints with common sense.



All campaign information can be found on the website [www.undertheweather.ie](http://www.undertheweather.ie). The main message of the website is simple – Get Advice and Get Better. The website aims to empower people to look after themselves or a loved one through a range of messages covering illness, supporting basic health literacy and how to prevent people from making unnecessary and expensive visits to GP surgeries and emergency departments. The campaign also aims to reduce the demand for unnecessary antibiotic prescriptions and to ensure the public (and young families in particular), are supported to look after themselves at home and to reinforce the message that you do not need an antibiotic to recover from colds, flu and a range of day to day illnesses.

Several GPs and pharmacists from around the country appear in short video clips giving simple self-care tips and when they should seek medical advice. The campaign includes radio advertising, online advertising, promotion on social media, internal communication between healthcare professional organisations, posters, leaflets and door stickers for GP surgeries and pharmacies.

### **Spain: National Campaigns & European Antibiotic Awareness Day**

The General Council of Pharmaceutical Associations of Spain has signed up to all the healthcare campaigns organised by the Ministry of Health, Social Services and Equality for the fight against antimicrobial resistance. Spanish pharmacists also collaborate in international campaigns, such as the European Antibiotic Awareness Day.

Additionally, Spanish pharmacists and pharmacy organisations have participated in over 35 campaigns, initiatives, projects, studies, training courses and programmes focusing on AMR in the past two decades in Spain.

For years, Spanish pharmacists have been making great efforts to fight against antimicrobial resistance. In order to achieve this objective, the General Pharmaceutical Council of Spain has been collaborating with the Ministry of Health, Social Services and Equality, the Spanish Agency of Medicines and Medical Devices (AEMPS) and Health Departments. This includes informative programmes for the population and participation in technical programmes and expert committees. In addition, campaigns focused on the prudent use of antibiotics have been successfully carried out (for example, the campaign "Don't play with antibiotics"). These actions include technical reports to pharmacists and leaflets for the population with indications on how to use antibiotics.

In addition, the General Pharmaceutical Council of Spain has created a monographic space<sup>35</sup> called "Prudent use of antibiotics".

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<sup>35</sup> [www.portalfarma.com](http://www.portalfarma.com)



## Adherence, Counselling and Awareness Raising

### Spain

Studies from Spain indicate the crucial role pharmacists play in ensuring adherence to prescribed antimicrobial regimens, in that for example, up to 60% of antimicrobial therapies are not taken according to the physicians instructions. This is particularly relevant in the case where patients stop the course of antibiotics before the course is complete (as they start to feel better), thereby encouraging the colonisation of resistant bacteria (and its spread).

Further studies from Spain provide evidence for the key role pharmacists play in providing information and advice to patients requesting antibiotics without a prescription or self-treating with left-over antibiotics in the reduction of consumption of antibiotics.

Spanish pharmacies also participate in the “SIGRE” programme (Management System for the Collection of Drug Product Containers) which guarantees the collection of any leftover antimicrobials and their subsequent safe destruction.



### Lo que debe saber sobre las Resistencias Antimicrobianas

**¿Qué son las enfermedades infecciosas?**

- Son enfermedades provocadas por microorganismos, que pueden cursar con muy diversos signos y síntomas, y cuya importancia varía en función de numerosos factores. Solo el médico y el dentista (o el veterinario, en el ámbito de la salud animal) están cualificados para diagnosticar y prescribir el tratamiento de las enfermedades.
- Los microorganismos causantes de enfermedades (patógenos) pueden ser de muy diversa naturaleza: bacterias, hongos, protozoos, virus, parásitos, etc.
- Solo las infecciones provocadas por bacterias pueden ser tratadas con antibióticos, y cada especie de bacteria patógena responde de forma diferente a los diversos antibióticos disponibles; por ello, cualquier antibiótico no vale para cualquier infección bacteriana.
- Muchas infecciones comunes son provocadas por virus (como la gripe o el resfriado), por parásitos (como el paludismo), o por hongos (como la candidiasis). La utilización de antibióticos para tratar estas infecciones de origen no bacteriano, no solo no cura la enfermedad sino que, además, es capaz de provocar efectos adversos y facilita la aparición de resistencia antimicrobiana.

**¿Qué es y por qué aparece la resistencia antimicrobiana?**

- La resistencia antimicrobiana es un fenómeno biológico muy complejo por el que algunos microorganismos se vuelven resistentes a la acción de uno o más tipos de medicamentos antimicrobianos. En las infecciones provocadas por bacterias, algunas especies (o subpoblaciones de estas, denominadas “cepas”) se vuelven resistentes a los antibióticos, impidiendo con ello el efecto antinfecioso de estos.
- Cada vez son menos las opciones para tratar las infecciones, por lo que es preciso recurrir a antibióticos “de reserva”, generalmente tóxicos y que requieren cuidados especiales para su administración; incluso, algunas bacterias se vuelven “multiresistentes”, son la causa de la muerte de muchos pacientes: más de 25.000 al año en la Unión Europea.
- El origen de la resistencia antimicrobiana es muy complejo, ya que participan numerosos factores de muy diversa índole; sin embargo, el principal factor que puede ser evitado es el mal uso de los antimicrobianos.

**¿Cómo se difunden?**

- Las “cepas” de bacterias resistentes se difunden a través de diferentes vías, pudiendo infectar a cualquier persona.
- Las bacterias resistentes son transportadas por personas o animales que contagian a otras a través de medios diversos.

**Vías de difusión:** Aire, Agua, Contacto físico, Alimentos.



### Lo que debe saber sobre las Resistencias Antimicrobianas

**¿Qué consecuencias tiene?**

La aparición de resistencias antimicrobianas es responsable de más de 25.000 muertes al año en la Unión Europea y cerca de 700.000 en todo el mundo.

Además de este desastre humanitario, el coste económico de la resistencia antimicrobiana ha sido cuantificado en cientos de miles de millones de euros: bajas laborales, incremento del gasto sanitario, etc.

**¿Cómo se previene?**

¿Qué hacer?	¿Qué no hacer?
✓ Ante cualquier síntoma que sugiera una infección, debe acudir al médico para su adecuado diagnóstico y, en su caso, prescripción del tratamiento.	✗ No se autodiagnostique ni diagnostique a sus familiares, amigos o vecinos, incluso aunque los síntomas sean (o parezcan ser) similares a los experimentados en otras ocasiones anteriores.
✓ Atienda todas las indicaciones que le haga su médico, en especial sobre la duración del tratamiento prescrito.	✗ No reutilice restos de antibióticos de otros tratamientos anteriores.
✓ Acuda a su farmacia con la receta y atienda las recomendaciones que le haga su farmacéutico. Recuerde que es muy importante finalizar completamente el tratamiento antibiótico, incluso aunque hayan desaparecido completamente los síntomas de la infección.	✗ No guarde ningún antibiótico en el botiquín casero, y lleve los restos del tratamiento sobrante a la farmacia que se encargará de ellos para su destrucción adecuada.
✓ Informe siempre a su médico y farmacéutico si es usted alérgico. Siga las indicaciones recibidas; si tiene dudas, pregunte en cualquier momento a su médico o farmacéutico.	✗ Nunca suspenda el tratamiento antes del periodo establecido por el médico ni modifique por su cuenta la dosis prescrita. Cumpla siempre con el tratamiento en su totalidad.
✓ Aunque los antibióticos son generalmente seguros, en ocasiones pueden producir algunos efectos adversos. Indique a su médico o farmacéutico la aparición de cualquier signo o síntoma de alergia (picores generalizados, erupciones cutáneas, etc.), así como de diarrea persistente (más de dos días). Si las manifestaciones son muy intensas o nota ahogos, o hinchazón en la cara, en la garganta o en las piernas, acuda a un servicio de urgencias médicas.	✗ No presione a su médico para que le prescriba antibióticos.
	✗ No pida a su farmacéutico que le dispense un antibiótico si no dispone de la correspondiente receta médica.

**No actúe por su cuenta...  
Pregunte siempre al farmacéutico y al médico  
Son la mejor garantía para su salud**

Consejo General de Colegios Oficiales de Farmacéuticos



## **Vaccination**

### **Ireland**

New legislation was introduced in Ireland to enable pharmacists to administer the seasonal influenza vaccination (and adrenaline for severe adverse reactions if required) without a prescription since the 2011/2012 'flu season. There are over 700 pharmacies providing this service and in the 2016/17 season, over 78,000 patients were vaccinated by community pharmacists<sup>36</sup>. This activity will allow community pharmacists to contribute to a significant advancement towards the EU target of vaccinating 75% of the older age groups of the population. This service benefits from the convenience and access of the community pharmacy interface, but crucially, depends on the development of network arrangements with other health professionals for its success.

### **Portugal**

In 2007 a new law was adopted in Portugal allowing pharmacists to expand their activities into new areas, one of which was immunization. Only trained and certified pharmacists can administer the seasonal influenza vaccination (the specific training is endorsed by the Portuguese Pharmaceutical Society). Specific guidelines are in place to establish minimum requirements for accreditation of initial training in addition to mandatory recertification training. Today, more than 2,000 Portuguese pharmacies are providing vaccination services and more than 3,600 pharmacists are certified by the Portuguese Pharmaceutical Society to provide them. To improve vaccination rates and coverage, pharmacists were asked to target the service to adults presenting a prescription for a 'flu vaccine, who were over 65. As such campaigns and materials were developed to promote vaccination.

### **Switzerland**

In Switzerland, community pharmacists can administer the seasonal 'flu vaccination as a result of individual Cantonal laws. For pharmacists to be able to administer the vaccine, they first undergo training in addition to being certified in resuscitation by the Swiss Resuscitation Council. The Swiss Pharmaceutical Society (pharmaSuisse) created a postgraduate certificate in "Vaccination and blood sampling" in 2011 for pharmacists who wish to provide vaccinations. In Switzerland an important tool to increase vaccination rates is the Vaccination Card. This programme allows the creation of an online card to record nationally recommended immunisations.

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<sup>36</sup> Irish Pharmacy Union. <https://ipu.ie/home/>

Approximately 250 pharmacists use this program to actively propose to their patients to check their vaccination status. This easy to use online vaccination card has the advantage of being either printable or accessed online across Switzerland where required by the patient.

## **UK**

In United Kingdom, pharmacists receive training and revalidation to deliver vaccination the seasonal influenza vaccination service (a nationally commissioned pharmacy service), with revalidation every two years. The supply and administration of a vaccination (a prescription-only medication) was made legally possible through a “Patient Group Direction” (PGD) which suitably trained pharmacists can use. Patient group directions (PGDs) are written instructions to help supply or administer medicines to patients, usually in planned circumstances. PGDs are developed by a multi-disciplinary group including a doctor, a pharmacist and a representative of the organisation who intends to supply the PGD. In England alone, more than 300.000 patients received a seasonal influenza vaccination from their community pharmacist during the first 30 days of the 2015 ‘flu season<sup>37</sup>.

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<sup>37</sup> PGEU Annual Report 2015

## Annex 2: Best Practices from Institutions & Regulators

### Mass Media Campaigns

#### ECDC: European Antibiotics Awareness Day

Each year the European Centre for Disease Prevention and Control (ECDC) partners with the support of EU healthcare professional organisations and health networks for the annual European Antibiotics Awareness Day (EAAD) Campaign. This campaign aims to spread the awareness of and AMR across Europe. Pharmacists, through PGEU acting as a member of the ECDC Technical Advisory Committee, have been closely involved in spreading the messages and supporting national campaigns.

The campaign was first launched in 2008 with the support of European Commission, European Parliament, EU Member States and non-governmental health stakeholders across the EU. EAAD has been marked across Europe on 18th November each year since. The campaign builds on the successful national campaigns to raise awareness about the threat to human health of antibiotic resistance and communicate about prudent use of antibiotics.



PGEU President for ECDC EAAD November 2015

PGEU Pharmaceutical Group of the European Union

**PGEU** @PGEU

Never save **#antibiotics** for later use, never share antibiotics with other people. **#AntibioticDay** **#EAAD** @PGEU see <https://goo.gl/caV6KL>

PGEU supports its members in conducting campaigns on national and local levels by providing information and a toolkit designed by ECDC (in collaboration with EU health stakeholders, including the PGEU) as well as actively spreading campaign messages on social media. In 2015, PGEU produced video clips of pharmacists from different countries explaining how they are tackling AMR and encouraging the prudent use of antimicrobials. Videos can be found on PGEU YouTube channel<sup>38</sup>.

Each year in the Czech Republic, the Czech Chamber of Pharmacists organises an antibiotics awareness week around the EAAD campaign. The information campaign is targeted not only to adults but also specifically to parents with children. Pharmacists explain appropriate antibiotic use and focus on the prevention of viral infections as well as common bacterial infections. The Czech Chamber developed a mobile app<sup>39</sup> which informs patients of their nearest pharmacy and shows which pharmacies are taking part in various public health campaigns (such as the antibiotic awareness campaign).

### **Pan-European: #medsdisposal**

Preventing environmental contamination with medicines is of great importance in tackling AMR, in particular in preventing antimicrobials from entering the food chain from inappropriate disposal.



The PGEU is a part of the #medsdisposal initiative, a joint campaign between European health, medicines and environmental stakeholders designed to reduce the inappropriate disposal of medicines. The campaign's main aim is to raise awareness on how to appropriately dispose unused or expired medicines in each country in Europe. The campaign's website provides information on current disposal schemes together with an interactive map with a direct link to the official national website for information on the topic<sup>40</sup>.

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<sup>38</sup> <https://www.youtube.com/channel/UCxaHmiAs2-iwkXyKCjpusmw>

<sup>39</sup> <http://www.lekarnici.cz/Pro-verejnost/Informace-pro-verejnost/Lekarny-v-mobilu.aspx> & PGEU 2016 eHealth Statement (Annex, p7) <http://pgeu.eu/en/policy/9:e-health.html>

<sup>40</sup> [www.medsdisposal.eu](http://www.medsdisposal.eu)

## WHO

### World Antibiotic Awareness Week

World Antibiotic Awareness Week (WAAW) is a collaborative campaign between the ECDC and WHO. It aims to increase awareness of global antibiotic resistance and to encourage best practices among the general public, health workers and policy makers to avoid further emergence and spread of AMR.

The theme of the campaign, “Antibiotics: Handle with care”, reflects the overarching message that antibiotics are a precious resource and should be preserved. They should be used to treat bacterial infections, only when prescribed by a certified healthcare professional. Antibiotics should never be shared and the full course of treatment should be completed – not saved for the future.



Following active participation in the ECDC’s EAAD and greater collaboration between the ECDC and WHO, PGEU plans to increase its engagement in World Antibiotic Awareness Week to support the campaign during the November part of this twice per year campaign (northern and southern hemisphere) in addition to the traditional EAAD campaign.

## Belgium: Correct use of antibiotics

The Belgian Antibiotic Policy Coordination Committee (BAPCOC), created a website that for the general public to raise awareness of AMR in Dutch, French and English.

As well as the website, information is provided through the Belgian media channels, for example, “sound bites” were played on Belgian radio stations and TV commercials appeared with the message “only use when needed” .

Other official information and services: [www.belgium.be](http://www.belgium.be) 

<b>BAPCOC</b>	<a href="#">HOME</a>	<a href="#">WHAT ARE ANTIBIOTICS ?</a>	<a href="#">USE THEM CORRECTLY</a>	<a href="#">ONLY WHEN NECESSARY</a>	<a href="#">RISKS</a>	<a href="#">ASK FOR ADVICE</a>	<a href="#">USEFUL LINKS</a>	<a href="#">FOR KIDS</a>	<a href="#">FOR PROFESSIONALS</a>
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## ANTIBIOTICS

**USE THEM CORRECTLY  
AND ONLY WHEN NECESSARY!**



Misuse of antibiotics makes bacteria resistant.  
This leads to serious diseases that can no longer be treated properly.  
Help us ensure that our antibiotics continue to work when we really need them!

**PRENEZ-VOUS  
LES ANTIBIOTIQUES  
COMME IL FAUT ?**

TESTEZ VOS CONNAISSANCES,  
GAGNEZ EN SANTE  
ET RECEVEZ UNE BD

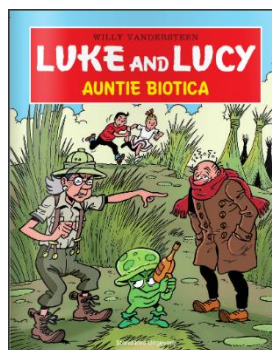


 [DEMARREZ LE TEST ICI](#)

 [CHALLENGE A FRIEND!](#)

Belgium also produces a comic book made in the style of the “Luke and Lucy” series. This is well-known in Belgium as “Suske en Wiske” or “Bob et Bobette”.



## Portugal: Campaign on Responsible Use of Medicines

In Portugal, a campaign is organised on the “Responsible Use of Medicines” which also targets antibiotics. This campaign aims to engage healthcare professionals, patients and policy makers to improve outcomes by focusing on adherence, timely use of medicines, optimal use of antibiotics, minimising medication errors, the use of generics and managing polypharmacy.

The website, [Usoresponsaveldomedicamento](http://www.usoresponsaveldomedicamento.com/)<sup>41</sup> contains all the materials and the campaign results. There are several videos from health professionals, printable posters and voluntary contributions with photos. The campaign video was also aired on public television during prime time.



One result of the campaign was a book presented to the Ministry of Health, other Government members and members of parliament with 30 measures that to encourage the responsible use of medicines, called "Responsible Use of Medicines - Recommendations of the Portuguese Pharmaceutical Society".

<sup>41</sup> <http://www.usoresponsaveldomedicamento.com/>





**USO DO MEDICAMENTO**  
**SOMOS TODOS RESPONSÁVEIS**

**USO RESPONSÁVEL DO MEDICAMENTO** **6572** PESSOAS JÁ SE ASSOCIARAM A ESTA CAUSA. CLIQUE [AQUI](#) E APOIE O USO RESPONSÁVEL DO MEDICAMENTO.

## ENQUADRAMENTO

1) Importância do medicamento:

- Nas últimas décadas, os medicamentos têm contribuído para a eficiência dos sistemas de saúde por se revelarem um meio custo-efetivo para a redução da carga da doença e mortalidade, promovendo a melhoria da qualidade de vida individual. Os medicamentos acrescentam não só anos à vida, mas também vida aos anos.

2) As oportunidades de melhoria no investimento em medicamentos:

- Contudo, ampla evidência internacional sugere que existe um potencial não aproveitado no investimento que se faz anualmente em medicamentos. Por exemplo, a

Uso Responsável do Medicamento

QUEM É **RESPONSÁVEL** PELO USO DO MEDICAMENTO?

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Additionally in Portugal, collaborative interventions involving pharmacists, physicians and the general public proved effective in reducing antibiotic consumption. A study covering all National Health System primary care physicians and all community pharmacists in a region in the north of Portugal investigated the effectiveness of a joint educational intervention on population antibiotic use. The intervention was associated with a significant reduction in overall antibiotic use in the year following the intervention. The overall systemic use of antibiotics dropped by 4% after 1 year, with decreases in specific therapeutic subgroups of up to 15%<sup>42</sup>.

<sup>42</sup> Roque F. et al., Decreasing antibiotic use through a joint intervention targeting physicians and pharmacists, Future Microbiology, July 2016 ,Vol. 11, No. 7, Pages 877-886 , DOI 10.2217/fmb-2016-0010



## UK: Antibiotic Guardian

“Antibiotic Guardian” was developed in 2014 and is led by Public Health England (PHE) in collaboration with administrations of the UK (Scotland, Wales and Northern Ireland); the Department for Environment Food and Rural Affairs (DEFRA) and healthcare professional organisations with a “One Health” approach<sup>43</sup>.



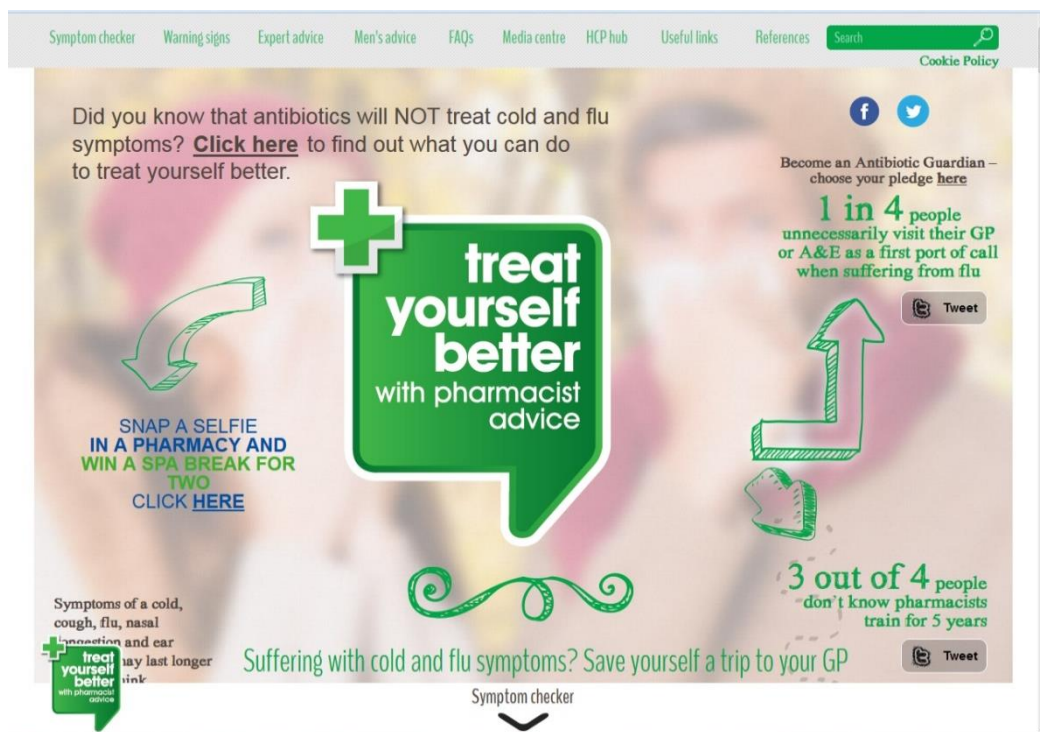
The campaign invites the public, students, educators, farmers, the veterinary and medical communities and professional organisations to become Antibiotic Guardians. Using behaviour change strategies the campaign was developed to move from awareness to engagement and commitment from healthcare professionals and the public by choosing a simple pledge. To date, over 32.000 people and organisations have made a pledge, the largest profession being pharmacists. The campaign was designed with the help of behaviour change and marketing specialists and tested before its launch. The website includes patient stories explaining how AMR has infected their lives. Evaluation of the campaign highlighted that it is effective in increasing knowledge and changing behaviour, particularly among members of public.

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<sup>43</sup> <http://antibioticguardian.com/>

The campaign's webpage also includes resources and toolkits for healthcare professionals and the public. Some initiatives featured on the website are:

- Treat Yourself Better<sup>44</sup> - a day to day guide for managing cold and flu symptoms and self-care with the help of your pharmacist.



- The e-Bug Virtual Science Show<sup>45</sup> - a virtual funfair of games to teach us about microbes, how they spread, how we can stop them spreading.
- Listen to your gut<sup>46</sup>, run by Devon County Council was designed by mothers for mothers as an informative video to help parents care for their children when they have minor ailments without using antibiotics.

END

<sup>44</sup> <http://www.treatyourselfbetter.co.uk/>

<sup>45</sup> <http://bsac.org.uk/science-fair/>

<sup>46</sup> <http://www.listentoyourgut.org.uk/>