



Antimicrobial stewardship and public awareness – CPME survey results

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Scope of the survey

- Survey conducted in January–February 2023
- Responses received from the following countries:

Austria		Netherlands	
Bulgaria		Poland	
Czechia		Slovenia	
Denmark		Sweden	
Finland		Ukraine	
France			
Germany			
Greece			

Scope of the survey

- ✓ National and local AMR stewardship programmes
- ✓ Availability of AMR prescribing guidelines
- ✓ Quality standards in national medical curricula for HCPs
- ✓ AMR public awareness campaigns

AMR stewardship programmes

- The majority of surveyed countries have implemented either national, local, or both types of AMR stewardship programmes.



In **Germany**, there is a revised **national [guideline](#)** on antimicrobial stewardship in hospitals. It is accompanied by an active **[training program](#)** for hospital doctors and pharmacists. Some regions have intersectoral **[programs](#)** for **local/regional** practice guidelines to contain bacterial resistance.

******About half of the hospitals have antimicrobial prescribing task forces, but they are often restricted in scope due to personnel shortages or lack of funds for salaries.



The **Slovenian** government adopted a **national** strategy and action plan in 2019 to address AMR. Since 2011, programs aimed at containing AMR have been made mandatory in every hospital. The Ministry of Health oversees antimicrobial stewardship activities in hospitals through the Intersectoral Coordinating Mechanism for the prudent use of antibiotics. Additionally, some hospitals have their own **local** guidelines in place.

AMR stewardship programmes

•**Austria:** The Austrian Society for Antimicrobial Chemotherapy (ÖGACH) provides a training course called "Antibiotic Stewardship Programme," and the Ministry of Health's National Reference Centre for Antibiotic Resistance and Nosocomial Infection publishes the yearly [report](#) AUREUS.

•**Finland:** National Action [Plan](#) on Antimicrobial Resistance was in action from 2017–2021, with ongoing monitoring by an expert group (lapsed, a new one not approved yet)

•**France:** A national strategy [plan](#) for prevention of infectious diseases and AMR has been put in place.

•**Greece:** The National Action Plan against antimicrobial resistance has been in place for years 2019–2023.



National

•**Netherlands:** There is an extended stewardship program in primary and secondary care, with AMR being monitored and a yearly report published as [NethMap | SWAB](#). There are practice guides and guidelines for antimicrobial stewardship provided by the Dutch Working Party on Antibiotic Policy (SWAB) in [2016](#) and Stichting Werkgroep Antibiotica Beleid in [2018](#).

•**Poland:** The National Drug Institute coordinates antimicrobial resistance [programmes](#). AMR actions have been incorporated into National Health Plan.

•**Ukraine:** National action plan for combating resistance to antimicrobial drugs was approved by Ministry of Health of Ukraine in 2019 and 2021..

AMR Stewardship Programmes

•**Sweden:** In Sweden there is a **national** strategic program called Strama to combat antibiotic resistance. It involves **regional** Strama groups collaborating with The Public Health Agency of Sweden. Additionally, the Agency participated in an open antibiotic stewardship platform between 2018 and 2022.

•**Denmark:** Several hospitals in the capital region have successfully implemented AMR stewardship [programmes](#). There is also a focus on AMR stewardship in the four other regions of Denmark

•**Bulgaria:** Attempted to implement a national programme for the prudent use of antibiotics and supervision of AMR for 2017–2021, but it was not adopted.



Local/Regional

Antimicrobial prescribing guidelines

- A clear majority of the countries have antimicrobial prescribing guidelines for human medicine including specific and general ones.

Germany	The AWMF – the medical guideline network – provides national guidelines for several indications including pneumonia, urinary tract infections, ENT infections, and sepsis.
The Netherlands	The Netherlands provides a comprehensive set of guidelines across different platforms including: • Infectious diseases from the Dutch College of General Practitioners • SWAB (Dutch Working Party on Antibiotic Policy) National Brochure on Antibiotics • Recommendations for empirical therapy specified by diagnosis • Several platforms provide guidelines, including swab.nl, NHG-Richtlijnen, Amsterdam UMC, and Frobaz

The digital brochure provides information on antimicrobial treatment for infectious diseases, categorized by 'organ-system,' and includes details about various antimicrobial medicines. It also offers evidence-based guidelines for adult treatment and a new section for children's antimicrobial treatment, authored by the Working Party on Antibiotic Policy in Children.

Antimicrobial prescribing guidelines

- A clear majority of the countries have antimicrobial prescribing guidelines for human medicine including specific and general ones.
 - ✓ In **Austria**, antimicrobial prescribing guidelines are based on recommendations by the Association of the Scientific Medical Societies e. V. (AWMF).
 - ✓ **Bulgaria** has over 40 pharmacotherapeutic guidelines for infectious diseases.
 - ✓ **Czechia** provides clear and accessible antimicrobial guidelines.
 - ✓ In **Denmark** The Danish College of General Practitioners have published online guidelines on antibiotics use.
 - ✓ **Finland's** guidelines are disease-specific, focusing on antimicrobial resistance.
 - ✓ **France** has guidelines by the French National Authority for Health.
 - ✓ **Greece** has guidelines by the Greek Infection Society and the Center of Diseases Control and Prevention.
 - ✓ **Poland's** national program for protection of antibiotics includes guidelines for in-patient and outpatient infection treatment.
 - ✓ In **Slovenia** there are no national guidelines, but professional associations regularly publish recommendations on a broad antibiotic use and a specific smartphone application – Quibaguide – is available for guiding antimicrobial prescribing.
 - ✓ **Sweden's** Strama provides guidelines for different care levels and diseases.
 - ✓ **Ukraine** offers a practical guide and standards of care for rational use of antimicrobial drugs.

AMR in Medical Education

1. Specific Programs or Courses on AMR:

- Austria, Slovenia, and Czechia offer dedicated programs or courses. Austria's Antimicrobial Chemotherapy Society offers an "Antibiotic Stewardship Programme". In Slovenia, professional association organises an annual antibiotic prescribing course. The Czech Medical Chamber provides lifelong learning programs with thematic events on antibiotic resistance. The Netherlands uses guidelines from the Dutch Working Party on Antibiotic Policy in their local/regional guidelines, with additional e-learning programs from the Dutch Institute of Responsible Medication Use.

2. AMR in National Medical Curricula:

- Finland, Greece and Czechia emphasize the inclusion of AMR-related issues in their health professionals education. Czechia incorporates AMR into primary and post-graduate training. Greece integrates these standards into the national curriculum of pharmacists education and other medical courses.
- Poland has implemented AMR quality standards at different levels of education, including microbiology courses in medical colleges/universities, national programmes for antibiotic protection, and MD specialisation programs.

AMR in Medical Education

3. AMR in Specialty Training:

- Sweden emphasizes AMR during the introduction program for specialty training, expecting specialists to understand the principles for the rational use of antibiotics and to critically evaluate information on medicine.

4. Lack of Awareness or Information:

- Germany reports a lack of quality standards on AMR in their medical curriculum.

Antimicrobials Public Awareness Campaign

- Most countries conduct public awareness campaigns regarding the responsible use of antimicrobials, with varying degrees of frequency and format.
- Some countries are highly proactive with regular events, campaigns, and readily accessible online resources.
- However, other countries focus primarily on professional-level discussions or depend on general media reminders without any organised, comprehensive campaign.
- And in some cases, due to reasons like the Covid-19 pandemic, annual campaigns haven't been held in recent years.



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Regular or Occasional Public Awareness Campaigns:

- **Austria:** The Federal Ministry of Social Affairs, Health, Care and Consumer Protection organizes an Annual World Antibiotic Day.
- **France:** Public authorities and the Caisse nationale d'assurance maladie (CNAM) have conducted information campaigns aimed at reducing the consumption of antibiotics in France.
- **Netherlands:** Various sources provide information on the consumption of antimicrobials, such as the patient-information database maintained by several organizations and the local pharmacy.
- **Slovenia:** Campaigns are organized by the National Institute of Public Health, usually on the European Antibiotic Awareness Day .
- **Sweden:** The Public Health Agency of Sweden and the regional Strama groups publish patient information and arrange campaigns to raise awareness.
- **Ukraine:** "Antibiotic resistance STOP" congresses are held annually, and the issue of antibiotic resistance is raised at all scientific and practical conferences on infectious diseases.

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General Media Awareness Without Specific Campaigns:

- **Czechia:** Warnings against the risks related to the overuse and unnecessary use of antibiotics are repeatedly present in various media, although there is no recent comprehensive campaign.

No Public Awareness Campaigns :

- **Bulgaria:** Most discussions on AMR remain at a professional level without large public campaigns.
- **Denmark:** Due to Covid-19, there has not been an annual campaign in recent years.
- **Germany:** No specific awareness campaigns.
- **Poland:** There were no regular public awareness campaigns on this subject.

Conclusions

- ✓ Actions to manage antimicrobial resistance at national level remain highly inconsistent and uncoordinated. There is enormous potential in the Member States, which can be better exploited through effective cooperation.
- ✓ Prescribing guidelines remain the best source of information for doctors. National and EU level should dedicate more resources to their further development.
- ✓ Quality standards in medical education regarding AMR and antimicrobial stewardship positively contribute to prudent use of antimicrobials. All responsible parties should consider ways to include adequate education in various programmes.
- ✓ Effective antimicrobial stewardship require actions targeting healthcare professionals, as well as the “general public”.

Thank you for your attention

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