CED Resolution
2025 Update

Antimicrobial Resistance, One Health & Oral Health: An Integrated Cross-Sectorial Approach

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I – INTRODUCTION

The Council of European Dentists (CED) is a European not-for-profit association which represents over 340,000 dental practitioners across Europe through 33 national dental associations and chambers in 31 European countries. Established in 1961 to advise the European Commission on matters relating to the dental profession, the CED promotes high standards of oral healthcare and dentistry, and effective patient-safety centred professional practice across Europe.

Antimicrobial resistance (AMR) is a continuing growing threat to global health and even development, by the reduced impact of treatment of a wide range of infections in humans and animals, including infections of the oral cavity. For many years, there has also been inappropriate and excessive use of antibiotics and other antimicrobials in humans, animals and agriculture. This is added to poor infection prevention and control (IPC) practices in healthcare settings.

Antibiotics play an important role to control clinical infections, with 800 000 antibiotic-resistant infections recorded every year in the European Union, Iceland and Norway, and 70% of these infections occurring in healthcare settings. Strong disparities in AMR rates exist across the European Union[1].

AMR remains a serious threat to human health, estimated to be associated to close to five million deaths globally[2] as well as being a direct cause to approximately 35 000 deaths a year in the EU, Iceland and Norway[3], and more than 1 million disability-adjusted life years (DALYs) lost. This is comparable to that of influenza, tuberculosis and HIV/AIDS combined. Furthermore, AMR leads to an increasing social and economic burden amounting to 6.6 billion euros in healthcare expenditure and treatment following AMR-related infections for the EU and the European Economic Area (EEA) in 2023[4].

Important political steps have been taken at an international and European level since 2019 to acknowledge AMR as one of the most serious public health threats worldwide, as well as integrating it high on the EU health agenda.

[1] OECD/European Commission. 2024. Health at a Glance: Europe 2024: State of Health in the EU Cycle, OECD Publishing, Paris, https://doi.org/10.1787/b3704e14-en
[2] Antimicrobial Resistance Collaborators. (2022). Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. The Lancet; 399(10325): P629-655. DOI: https://doi.org/10.1016/S0140-6736(21)02724-0
[3] Ibid 1
[4] European Centre for Disease Prevention and Control (ECDC). 2023. Antimicrobial resistance targets: how can we reach them by 2030? Available at: amr-brief-eaad-2023-update.pdf

II - ONE HEALTH AND AMR IN RELATION TO ORAL HEALTH: DEFINITIONS AND GUIDELINES

Antibiotic resistome is defined as the reservoir of all antibiotic resistance genes (ARG) resulting in AMR. Oral Resistome also remains a favourable setting for the development of AMR, with antibiotic resistance genes frequently found in bacteria located in the gums, throat, tongue, as well as the mucus, root canal and saliva located in the mouth[5].

The equilibrium among humans, animals and the environment is well recognized, but the misuse of antimicrobials in humans and animals, the remaining lack of stewardship, and subsequent release of residues into the environment leads to a continued growing spread of AMR. The fight against AMR must address human, animal and environmental concerns in a comprehensive manner, involving a wide range of actors.

The One Health approach is based on acknowledging the principle that human, animal and environmental health are intrinsically interlinked, with ongoing urgent joint efforts needed in integrating these three areas into policy action. Limiting AMR bacterial exposure with an integrated One Health approach has never been more necessary and will contribute to achieving the Sustainable Development Goals (SDGs).

The CED acknowledges the steps taken by the EU since its last position on AMR. The EU 2017 One Health Action Plan against AMR was extended to all three pillars of the One Health approach[6] and focused on the future development of EU guidelines on infection prevention and control (IPC). The 2023 updated Recommendation on stepping up EU actions and its AMR reduction targets were adopted based on a One Health approach. This includes a 20% target reduction in total human consumption of antibiotics, the revision of the pharmaceutical legislation, and the integration into the Farm to Fork Strategy of a target to reduce by 50% the EU sales of antimicrobials for farmed animals and aquaculture by 2030.

However, further urgent interventions integrating the One-Health approach need to be accelerated to address infection prevention and control as well as antimicrobial resistance (AMR) in human, animal and environmental health. The environment, acting as a reservoir of antibiotic-resistant bacteria, plays a role in the dissemination of antibiotic-resistant genes (ARG), for example in wastewater. In light of this, evolving practices in dental treatments, including innovative materials

[5] Sukumar S, Rahmanyar Z, et al. Mapping the oral resistome: a systematic review. 2024. *Journal of Medical Microbiology*. 73(8). Mapping the oral resistome: a systematic review | Microbiology Society

[6] See the 2023 Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach - European Commission

used in dental fillings, can impact on the management of dental wastewaters, and in turn, the overall water sources and environmental health[7].

III - ANTIBIOTICS AND DENTISTRY

Relatively little attention continues to be paid to the use of antibiotics in dentistry and the widespread use of antibiotics in primary care, including dentistry, is considered as one of the driving factors of AMR in healthcare. Rational use of antibiotics in dentistry in the context of bacterial infections should be implemented both in antibiotic prophylaxis and treatment. More than 80% of antibiotics for preventing infection before dental visits were deemed unnecessary[8].

Many dental conditions relate to the oral microbiota in the dental plaque. Poor oral health, coupled with lack of available, accessible, adapted and high quality conservative dental treatments, favour growth of pathogens and increase risks of infections and antibiotic mis-prescribing. However, most dental infections and dental pain can be treated without antibiotic treatment by removing the cause and drainage of the infection using a dental procedure.

The prescription of antibiotics in dental practices for the treatment of oral infections or prophylaxis surgical procedures amounts between 5% and 10% of total antibiotic prescribing in primary healthcare. Notable differences remain in prescribing practices across Europe, with an increase during the Covid-19 pandemic[9].

The CED adheres to the current political efforts for reducing preventative healthcare associated infections and supporting IPC objectives, as well as actions to increase antimicrobial stewardship. However, enforcement of policies and initiatives specifically addressing and increasing awareness around prescribing practices by healthcare professionals are yet urgently needed. Currently, there are no guidelines on antibiotic prescribing for standard procedures like dental implants and extractive surgery. Widespread antibiotic prescriptive heterogeneity is observed[10]. Focus also needs to be directed towards effective prevention and infection control strategies targeting the oral cavity, and reduction in oral antibiotic treatment.

[7] H. Binner, et al., Characteristics of wastewater originating from dental practices using predominantly mercury-free dental materials. 2022. Science of The Total Environment. 814
[8] Suda, K.J. et al. Assessment of the Appropriateness of Antibiotic Prescriptions for Infection Prophylaxis Before Dental Procedures, 2011 to 2015. JAMA Netw. Open 2019, 2, e193909.
[9] Dar-Odeh NS, Abu-Hammad OA, Al-Omiri MK, Khraisat AS, Shehabi AA. Antibiotic prescribing practices by dentists: a review. Ther Clin Risk Manag. 2010 Jul 21;6:301-6. doi: 10.2147/tcrm.s9736. PMID: 20668712; PMCID: PMC2909496.
[10] Antibiotic-Prescribing Habits in Dentistry: A Questionnaire-Based Study. Sbricoli L. et al. Antibiotics (Basel). 2024 Feb 16;13(2):189.

IV – ANTIMICROBIAL STEWARDSHIP (AMS)

AMS is an organisational or healthcare-system-wide approach to promoting and monitoring judicious use of antimicrobial drugs to preserve their future effectiveness[11].

The CED believes that it remains essential to engage on the topic of antimicrobial stewardship at the global, European and national level and remains very active on the AMR OH issue, including on promoting antimicrobial stewardship on the policy agenda. The CED is a representative and a member of the European Commission expert group One Health Network, as well as participating stakeholder to the second edition of the Joint Action Antimicrobial Resistance and Healthcare-Associated Infections (EU-JAMRAI 2).

V - CED STATEMENTS

1. **The inclusion of dentistry and oral healthcare must be promoted in national action plans** (NAP) on AMR as addressed by the 2023 Council recommendation, addressing antibiotic resistance.
2. **The One Health approach should be systematically integrated and strengthened across** all policies areas tackling antibiotic resistance.
3. **A strong focus on prevention regarding oral health is urgently needed**, by increasing availability and accessibility of oral healthcare services to all. The CED notes that good oral health should systematically be improved through promoting accessible and affordable services to ensure good oral hygiene and regular visits to the dentist, as well as integrating oral health messaging into broader public health campaigns and education systems.
4. **Despite national guidelines, antibiotic stewardship in dentistry must be improved**. This improvement is necessary in order to standardise the dental curriculum and address the knowledge gap concerning the evolution of antibiotic therapy recommendations and challenges associated with changing habits. Assessing standardised protocols throughout Europe for antibiotic prescribing in dental school clinics and continuing education courses will better address knowledge gaps in the use of antibiotics for treatment of oral diseases.
5. **Responsible and effective prescribing practices should be carried out in collaboration with other healthcare professionals** including medical general practitioners, through an integrated approach to oral and general healthcare.
6. **A specific target should be set by 2030** for achieving optimum prescribing rates of antimicrobials in medicines prescribed by dental practitioners.

[11] For further information on antimicrobial stewardship and EU guidelines, please refer to the previous 2018 CED Resolution on Antimicrobial Resistance, available here: https://www.cedentists.eu/wp-content/uploads/2023/09/AMR-EN.pdf

7. **Policymakers should ensure implementation and adherence to guidelines on appropriate antimicrobial prescribing practices** and ensure compliance to know best practices in the area of oral healthcare. Implementation strategies around best practices must be developed.
8. **Dental practitioners should contribute to discussions on cross-border health related to AMR**, by preventing cross-transmission of resistant bacteria between countries with varied prescribing practices and improving infection prevention and control (IPC) in dental practices.
9. **The development of a European IPC toolbox for dental professionals** for strengthening the share of knowledge and best practices in oral care.
10. **The patient-dentist relationship** is essential for the improvement of communication and health literacy around antimicrobial consumption and AMR, with the aid of patient information leaflets, and posters. These may be made available in the dental practice and also shared on dental practices websites.
11. **Knowledge of the EU pharmaceutical legislation and the environmental risk of AMR, as well as the impact of dental professionals on environmental health** should be disseminated.
12. **Mandatory training on prudent antimicrobial use**, the One Health principle and stewardship must be integrated into the subject list of the Professional Qualifications Directive for dental studies, as well as within continuing professional education programs.
13. **The collaboration and communication** on AMR between the dental profession, European and international actors need to be strengthened.
14. Dental practitioners and their representatives should be **active on European Antibiotic Awareness Day**.

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Adopted at the CED General Meeting of 23-24 May 2025