

CED Statement

eSkills for Dentists

MAY 2022

Introduction

The Council of European Dentists (CED) aims to promote high standards of oral healthcare and dentistry with effective patient-safety centred professional practice.

Dentistry is continuously being shaped by many new drivers and challenges which will continue to influence the skills and competences that will be required of the future dentist. In this regard, digital technology has the potential to fundamentally change a dentist's clinical practice and patient care with new technology from augmented reality to artificial intelligence (AI) to CRISPR (clustered regularly interspaced short palindromic repeats) revolutionising the field.

To rise to the challenges of digital transition in dentistry, dentists need to broaden their understanding of how dental applications, telemedicine, digital workflow models, digital health information and AI equipment are evolving and affecting traditional dental practice. Dentists must learn how to use these emerging digital health tools and fine-tune their eSkills.

Currently, there is a reported lack of digital education and practical training at undergraduate level for health professionals¹. At the same time, in the EU, the demand for digital skills (both at a basic and an advanced level) within the health sector is expected to increase significantly by 2030² and is crucial for ensuring better quality of care and more efficient healthcare systems³. The need to strengthen health professionals' digital skills and ensure they are up to date and included in continuous professional development (CPD) is also among the funding priorities of the European Commission within its current EU4Health Programme⁴.

In light of the status quo, it is important to tackle this issue at university level, by strengthening the educational curricula of dental students to provide them with useful eSkills training. Additionally, following graduation, the CPD of dentists should also be expanded to include the knowledge, use and application of the latest and most relevant digital health technologies in dental practices.

eSkills for Dentists

The CED has taken the first steps in identifying a list of eSkills in 4 categories needed for dental students in order to act as dentists in their professional practice. It is important to note that these skills are also highly dependent on country-specific factors, for example, the level of progress in digital policy and the available digital infrastructure. Furthermore, it is crucial to

¹ For example, in a European Medical Students' Association (EMSA) 2018 survey, 53% of the participating medical students state that their eHealth skills are poor or very poor, while also highlighting the need for such skills https://www.euro.who.int/_data/assets/pdf_file/0016/412252/European-Medical-Students-Association-3.pdf

² European Commission, *European Skills Agenda for sustainable competitiveness, social fairness and resilience*, p. 4, <https://ec.europa.eu/social/main.jsp?catId=1223&langId=en>

³ Ibid.

⁴ European Commission, *EU4Health Programme, Annex 1 to the Commission implementing decision of 14 January 2022, on the financing of the Programme for the Union's action in the field of health ('EU4Health Programme') and the adoption of the work programme for 2022, section Health systems and healthcare workforce*, p. 26, https://ec.europa.eu/health/publications/2022-eu4health-work-programme_en#files

ensure that there are realistic and achievable guidelines from industry so that all relevant stakeholders (dentists included), are able to advance in the digital field.

I. General eSkills;

- Familiarity with the available digital health solutions (e.g. for telemedicine⁵, eHealth⁶, mHealth⁷, augmented reality⁸ and AI⁹), and knowledge of how to use them efficiently, safely and ethically, with the interests of the patient at the core.
- Computer literacy, understanding of medical devices performance and compatibility, mobile apps, cloud storage, internet browsing including finding reliable sources of information on the internet, and the ability to read, comprehend and share information using a smart device and to have critical knowledge about formats of X-ray and scan files, their processing and permissible compression, as well as interfaces.
- Practical knowledge of the use of information technology (IT) to communicate with technical experts and developers in order to be able to use digital health technology.
- Understanding dentists' scope of responsibility and their rights as healthcare providers in a digital setting.
- Data security, data protection and information technology (IT) security as well as knowledge of data privacy and data processing and the necessary updates of the systems involved for the use of IT.
- Familiarity with certification systems (e.g. CE mark, EU directives relevant to medical devices) so that they can select and use certified products for patient safety.

II. eSkills relevant to the patient-dentist relationship:

- Ability to communicate effectively with patients via electronic and social media, as well as on online platforms used for their practices; this is also relevant considering ongoing EU legislative developments such as the Digital Services Act¹⁰, focused on ensuring safer and more transparent online interactions for citizens, service providers and businesses alike.
- Ability to inform patients about consent and use of their data; this is especially valid in relation to the ongoing progress towards a European Health Data

⁵ [Telemedicine](#) is defined as: “the delivery of health care services, where distance is a critical factor, by all health care professionals using information and communication technologies for the exchange of valid information for diagnosis, treatment and prevention of disease and injuries, research and evaluation, and for the continuing education of health care providers, all in the interests of advancing the health of individuals and their communities”.

⁶ [eHealth](#) is defined as “the application of information and communications technologies across the whole range of functions that affect the health sector”.

⁷ [mHealth](#) is defined as “medical and public health practice supported by mobile devices, such as mobile phones, patient monitoring devices, personal digital assistants (PDAs), and other wireless devices”.

⁸ [Augmented reality \(AR\)](#) is a technology that integrates digital information into the user's real-world environment. It offers a new approach for treatments and education in medicine. AR aids in surgery planning and patient treatment and helps explain complex medical situations to patients and their relatives.

⁹ [Artificial intelligence \(AI\)](#), machine learning or deep learning are terms that are interchangeably used to describe the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings.

¹⁰ European Commission, The Digital Services Act Package, <https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package>

Space, both for primary (supporting healthcare delivery) and secondary (relevant for research and health policy) uses of such data¹¹

- Ability to inform patients about the limitations of digital health solutions (for example, in relation to new telemedicine, eHealth, mHealth and AI devices)
- Ability to instruct patients in the use of digital health technologies for self-management and prevention of oral diseases and conditions

III. Particular eSkills for use of AI:

- Understanding the maturity of digital health solutions, especially AI solutions and how they may integrate within sectors of relevance to dentistry, for example as diagnostic supporting tools
- General basic knowledge about limitations and risks, and critical thinking skills related to AI solutions analysis/outcomes, especially in relation to ongoing legislative developments at EU level such as the Regulation on Artificial Intelligence¹².

IV. Additional considerations:

- IT and AI applications need continuous use in order to gain and retain familiarity; as such, relevant IT and AI applications need to be introduced and applied in dental schools in the day-to-day routine, integrated in the current patient management systems (patient database, etc.). Staff of dental schools need to be trained as well.
- Manufacturers of health software solutions should provide timely and affordable updates to their products

Adopted at the CED General Meeting on 20 May 2022

¹¹ European Commission, European Health Data Space, https://ec.europa.eu/health/ehealth-digital-health-and-care/european-health-data-space_en

¹² EUR-Lex, COM (2021) 206: Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL LAYING DOWN HARMONISED RULES ON ARTIFICIAL INTELLIGENCE (ARTIFICIAL INTELLIGENCE ACT) AND AMENDING CERTAIN UNION LEGISLATIVE ACTS, <https://eur-lex.europa.eu/legal-content/EN/HIS/?uri=CELEX:52021PC0206>