

LITERATURE REVIEW

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Presentation:

This document contains the results of a literature review focused on understanding knowledge and practices on dental treatment protocols that researchers at University of Brescia and Palermo plan to standardise, including those published by professional organisations, government agencies, and academic institutions in Italy. The reviewed literature covers documents from the last 15 years. While it provides a general overview of European Union or nation-wide best practice studies conducted across Europe or United States to reflect the European perspective, the literature review mostly focuses on documents produced in Italy. The literature includes studies published in English and Italian.

According to the structure proposed in the application form, this review is made up of three sections:

- 1) An overview of the dental treatment protocols in Europe and Italy;
- 2) Review of the best practices and evidence-based recommendations in Europe and Italy to help ensure that the dental treatment protocols are based on the latest research and knowledge in the field;
- 3) Review of the improvement areas evident from the literature.

A similar strategy was used in each of the sub-topics of the literature review addressed in sections 1, 2 and 3 as follows.

Those include the title structure as follows:

First title: Endodontics

Title of the document Undergraduate Curriculum Guidelines for Endodontology

Journal: International Endodontic Journal, 46, 1105–1114, 2013

Year of publication: 2013

Authors: R. De Moor, M. Hulsman, L.-L. Kirkevang, J. Tanalp & J. Whitworth

Link: doi:10.1111/iej.12186

Extended summary: Elements of didactic teaching, pre-clinical operative techniques classes and clinical treatment of patients will contribute to this curriculum.

- Clinical endodontics should ideally be supervised by specialists or by staff with special knowledge and interest in endodontics.
- Specific assessment procedures should be an integral part of the curriculum in Endodontology, with both formative and summative assessment protocols.
- The philosophy developed in acquiring the competencies outlined in these guidelines for undergraduate Endodontology should form an integral part of comprehensive patient care.
- A philosophy of lifelong learning should be instilled in all dental undergraduates.

First title: Comprehensive care

Title of the document The Graduating European Dentist Curriculum Framework: A 7-Year Review

Journal: European Journal of Dental Education, 2025; 29:155–161

Year of publication: 2025

Authors: J. Field, S. Vital, J. Dixon, D. Murphy & J. Davies

Link: <https://doi.org/10.1111/eje.13058>

Extended summary:

The article outlines the evolution of dental education harmonization efforts led by the Association for Dental Education in Europe (ADEE), culminating in the publication of the GED framework in 2017.

The GED framework succeeded the successful European Union-funded DentEd projects, which had previously established benchmarks for profiles and competences, curriculum structure, content, and quality assurance over a nine-year period. Due to the varied interpretation of 'competences,' ADEE established a new taskforce in 2015 to revise the content based on a modern 'Learning Outcomes' approach.

The 2017 GED suite consists of five papers: an introductory paper providing context and rationale (which is the third most-cited paper in the *European Journal of Dental Education*); four papers mirroring the new curriculum domains; and a paper focusing on methods of Teaching, Learning and Assessment (the sixth most-accessed paper in the journal).

The GED is structured around five core Domains, each defined by areas of 'Major Competence':

1. Professionalism.
2. Safe and effective clinical practice.
3. Patient-centred Care.
4. Dentistry in Society.
5. Research (a recent update).

Significant Impact and Adoption

The GED framework has had a positive and widespread impact, demonstrating its popularity among educators through over 400 citations of the documents. It has emerged as a key reference for discussing the expectations of graduate dentists across Europe and facilitates better pedagogical alignment with local curricula.

Key adoption markers include:

- Local Implementation: Almost 60% of responding dental schools surveyed in Europe through the O-Health-Edu project utilise the GED locally.
- Regulatory Use: The Irish Dental Council adopted the GED as the basis for its regulatory framework in 2020.
- Pan-European Endorsement: In November 2023, the Federation of European Dental Competent Authorities and Regulators (FEDCAR) endorsed the national use of the GED curriculum for its members.
- Influence on Other Professions: The GED documents were used by the European Dental Hygienists Federation to develop its own Common Education Curriculum (CEC) in 2020.

Dissemination and Resources

ADEE has maintained a high level of visibility and accessibility for the GED:

- Digital Accessibility: A dedicated, modernised website, relaunched in 2023, provides easy access to the curriculum learning outcomes. Between May 2023 and May 2024, the site was visited over 7,000 times by more than 2,300 unique users from over 50 different countries, indicating increasing global awareness.

- Curriculum Library: A curriculum library on the website acts as a repository for relevant published papers covering curriculum content, practice, and teaching methods, including topics such as Environmental Sustainability, Anatomy, and Artificial Intelligence.
- Taskforce Expertise: Increased visibility of the GED has led European organisations and institutions (e.g., the British Prosthodontic Society, the European Federation of Periodontology) to seek assistance from the taskforce for their own curriculum reviews.
- Developments: The curriculum is kept current with changes in the profession, including recent updates to incorporate learning outcomes related to Environmental Sustainability and the new Domain V: Research.

Future Work

The GED taskforce, supported by the ADEE executive board, plans to conduct a process of pan-European consultation. This future work will undertake a deeper investigation into the uptake and use of the GED curriculum framework to better understand the nuances of how it is implemented at a local level.

First title: Comprehensive care

Title of the document Raccomandazioni Cliniche In Odontostomatologia

Year of publication: 2017

Authors: Gruppo tecnico sull'odontoiatria

https://www.salute.gov.it/portale/temi/p2_6.jsp?lingua=italiano&id=4593&area=Sorriso%20salute&menu=vuoto

Link:

Chrome-

extension://efaidnbmnnnibpcajpcgiclfindmkaj/https://www.salute.gov.it/imgs/C_17_pubblicazioni_2637_allegato.pdf

Extended summary: The purpose of the document is to establish national-level technical guidelines both of a clinical nature and of the appropriate use, in dentistry, of equipment and materials. In addition, the document provides guidance on how to avoid the provision of services of unacceptable quality so as to prevent consequent health risks.

The 2017 update was prepared using the same procedure as the first edition, but with a clearer scientific evidence search methodology and a new graphic-editorial structure.

The revision involved the same stakeholders as the first edition; it was drafted, with the coordination of this Administration, by a large group of experts from the individual dental branches and after external review by the most important and representative professional associations, as well as the National Dental Register Commission (CAO) of the FNOMCeO.

The document produced, once validated by the GTO, was submitted for review by the Higher Health Council, which gave a favorable opinion regarding its technical content and the methodological quality used in drafting it

Appropriate adaptations were made based on the results obtained for each topic: The extended summary focuses on the dental treatment protocols in general in Section 1, best practices in Section 2, and improvement areas in Section 3. The conclusion provides the main results of the reviews in parts 1 and 2 concerning best practices in (name your country) and improvement areas.

Publication List Based on the Search for Dental Treatment Protocols in general.

Most recent key papers included in the current curriculum library—which can be found within the ADEE Graduating European Dentist pages at: <https://adee.org/graduating-european-dentist/graduating-european-dentist-curriculum>

- Anatomy 10.1111/joa.13133 The Anatomical Society's Core Anatomy
- Syllabus for Dental Undergraduates
- Artificial Intelligence 10.1016/j.jdent.2022.104363 Artificial Intelligence for Oral and Dental
- Healthcare: Core Education Curriculum
 - Biological and Biomedical Sciences 10.1111/eje.12518 A Core Curriculum in the Biological and
- Biomedical Sciences for Dentistry
 - Cariology 10.1159/000330006 European Core Curriculum in Cariology for Undergraduate Dental Students
 - Dental Trauma 10.1111/edt.12906 International Teaching Practices in Dental Trauma Education
 - Endodontics 10.1111/iej.14064 European Society of Endodontology—Undergraduate
- Curriculum Guidelines for Endodontology
 - Environmental Sustainability 10.1016/j.jdent.2024.105021 Curriculum Content for Environmental - Sustainability in Dentistry 10.1111/eje.12852 Embedding Environmental Sustainability Within Oral Health Professional Curricula—

Recommendations for Teaching and Assessment of Learning Outcomes
10.1111/eje.12631 Embedding Environmental Sustainability Within the Modern
Dental Curriculum— Exploring Current Practice and Developing a Shared
Understanding 10.1111/eje.13033 Environmental Sustainability in Oral Health
Professional Education: Approaches, Challenges, and Drivers— ADEE Special-
Interest Group Report

- Food Science and Nutrition 10.1111/eje.12822 Implementation of a Food Science and Nutrition Module in a Dental Undergraduate Curriculum
- General Curricula 10.1111/eje.12989 10.1111/eje.12987 O-Health-Edu: A Viewpoint Into the Current State of Oral Health Professional Education in Europe: Part 1 and Part II
- Gerodontology 10.1111/j.1741-2358.2009.00296.x European College of Gerodontology: Undergraduate Curriculum Guidelines in Gerodontology
- Implant Dentistry 10.1111/j.1600-0579.2008.00556.x Teaching and Assessment of Implant Dentistry in Undergraduate and Postgraduate Education: A European Consensus
- Operative Skills 10.1111/eje.12595 Defining Dental Operative Skills Curricula:
- An ADEE Consensus Paper 10.1111/eje.12276 Curriculum Content and Assessment of Pre-Clinical Dental Skills: A Survey of Undergraduate Dental Education in Europe
 - Oral Pathology and Oral Medicine 10.1111/j.1600-0579.2012.00758.x Scandinavian Fellowship for Oral Pathology and Oral Medicine: Guidelines for Oral Pathology and Oral Medicine in the Dental Curriculum 10.1111/eje.12366 Oral Medicine for Undergraduate Dental Students in the
- United Kingdom and Ireland—A Curriculum
 - Orthodontics 10.1093/ejo/cjt059 The Erasmus Programme for Postgraduate Education in
- Orthodontics in Europe: an Update of the Guidelines
 - Periodontology 10.1111/jcpe.13991 Domains, Competences and Learning Outcomes for
- Undergraduate Education in Periodontology
 - Prosthodontics 10.1016/j.jdent.2022.104207 Undergraduate Teaching and Assessment Methods in Prosthodontics Curriculum: An International Delphi Survey
 - Special Care 10.1111/eje.12054 Guidance for the Core Content of a Curriculum in Special

- Care Dentistry at the Undergraduate Level

1. General Dental Treatment Protocols and Evidence-Based Practice:

Title: "Developing clinical practice guidelines: methodology and perspectives"

Journal: Journal of Evidence-Based Dental Practice

Year: 2016

Authors: Rada G, LoGiudice JA, Pesun IJ.

Link: <https://pubmed.ncbi.nlm.nih.gov/27634141/>

Extended Summary: This article examines the methodology and various perspectives involved in developing clinical practice guidelines. It provides a comprehensive overview of how clinical guidelines, which form the foundation of evidence-based dentistry, are created, what factors are considered, and different approaches utilized. By offering a detailed framework, it helps dental professionals understand and implement treatment protocols effectively. The in-depth insights into guideline development processes are crucial for grasping the scientific basis behind current treatment protocols.