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Published in:
Human Resources for Health

DOI:
10.1186/s12960-024-00918-9

Publication date:
2024

Document version:
Peer reviewed version

Link:
Link to publication in PEARL

Citation for published version (APA):
Bryce, M., Hanks, S., Burns, L., Zahra, D., & Gale, T. (2024). Mutual recognition of qualifications, health workforce migration, and graduate outcomes: a comparative mapping study of undergraduate dental education in Europe. *Human Resources for Health*, *22*(1), 37. Article 37. https://doi.org/10.1186/s12960-024-00918-9

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Download date: 12. Feb. 2025

Mutual recognition of qualifications, health workforce migration, and graduate outcomes: a comparative mapping study of undergraduate dental education in Europe

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ABSTRACT

Background

The resource needs of health services are served by the recognition of qualifications across borders which allows professionals to migrate between countries. The movement of dentists across the European Union (EU), especially into the United Kingdom (UK), has provided a valuable boost to workforce supply. Recent changes to policy recognising overseas qualifications have brought attention to the equivalence of qualifications awarded in EU countries. Professional regulators need to be confident that dentists who qualified elsewhere have the appropriate knowledge, skills and experience in order to practise safely and effectively. The aim of this study was to compare UK and EU dental curricula, identify any differences, and compare the extent of pre-qualification clinical experience.

Methods

This was a mixed methods study comprising a questionnaire and website searches in order identify information about curricula, competences, and quality assurance arrangements in each country. The questionnaire was sent to organisations responsible for regulating dental education or dental practice in EU member states. This was supplemented with information obtained from website searches of stakeholder organisations for each country including regulators, professional associations, ministries, and providers of dental education. A map of dental training across the EU was created.

Results

National learning outcomes for dental education were identified for seven countries. No national outcomes were identified 13 countries, therefore learning outcomes were mapped at institution level only. No information about learning outcomes was available for six countries. In one country, there is no basic dental training. Clinical skills and communication were generally well represented.

Management and leadership were less represented. Only eight countries referenced a need for graduates to be aware of their own limitations. In most countries, quality assurance of dental education is not undertaken by dental organisations, but by national quality assurance agencies for higher education. In many cases, it was not possible to ascertain the extent of graduates' direct clinical experience with patients.

Conclusions

The findings demonstrate considerable variation in learning outcomes for dental education between countries and institutions in Europe. This presents a challenge to decision-makers responsible for national recognition and accreditation of diverse qualifications across Europe in order to maintain a safe, capable, international workforce; but one that this comparison of programmes helps to address.

KEYWORDS

Dental education; Curricula; Learning outcomes; European Union; Dental workforce migration.

BACKGROUND

The United Kingdom's (UK) departure from the European Union (known as *Brexit*) carries potentially significant implications for the migration of healthcare workers between EU member states and the UK, not least for professional regulation processes and the accreditation of health workers' qualifications. Since 2005, as a result of Directive 2005/36/EC,[1] healthcare workers in several professional groups, including doctors, dentists, nurses, midwives and pharmacists, who are EU nationals and achieved their professional qualification in the EU, have been free to move across boundaries to work in any EU member state. The Directive sets out that professional qualifications for these healthcare workers must be reciprocally recognised by member states.[2] As a result of Brexit, the terms of the Directive no longer apply to the United Kingdom, and replacement arrangements for the recognition of health professionals' qualifications are now in place, with a Professional Qualifications Act enacted by the UK parliament in 2022.[3] This Act gives professional regulators powers to determine whether practitioners seeking to migrate into the UK have 'substantially the same knowledge and skills, to substantially the same standard' as those with UK qualifications. This applies at either individual level or through bilateral regulator recognition agreements allowing for mutual recognition of professional qualifications between countries.[3]

Migration of dentists from Europe into the UK has been an important contributor to the UK dental workforce in the recent years. At the end of 2021 there were a total of 43,292 dentists registered to practise in the UK, of whom 16% (7,091) had qualified in the European Economic Area (EEA), which includes the European Union member states plus Iceland, Liechtenstein and Norway.[4] These numbers have remained largely stable since 2019, when there were a total of 42,470 UK registered dentists among which 16.2% (6,881) were EEA qualified.[5] The proportion of EEA new registrants also stayed stable during this time. In 2021 1,500 new dentists joined the UK register, of which 29.5% (446) had qualified in EEA countries,[4] compared to 22.9% (398 of 1,737) in 2019.[5] This suggests limited impact to date from Brexit or the Covid-19 pandemic. However, prior to this Brexit

period, the number of EEA qualified dentists registered in the UK had seen rapid growth, increasing by 214% between 2000 and 2019, compared to an 18% increase in the number of UK graduates on the register.[6]

While migrating workers make a significant contribution to UK healthcare provision, migration also presents policy challenges for health professions regulation, especially in relation to the recognition and accreditation of qualifications. Namely, national bodies responsible for recognition and accreditation need to have confidence that migrating professionals' qualifications are of an equivalent standard to those offered within the country where the migrant health worker will practise. In the UK, dental professionals, including dentists and other dental care professionals such as dental nurses, hygienists, and dental therapists, are subject to statutory regulation by the General Dental Council (GDC). An independent organisation with statutory responsibilities set out in the *Dentists Act 1984* (as amended), the GDC has a number of core functions which it pursues in order to fulfil its overarching objective of protecting the health, wellbeing and safety of the public.[7] Among its responsibilities are the registration of dental professionals meeting its standards, and setting standards for UK providers of education and training. In *Preparing for practice: Dental team learning outcomes for registration,* [8] the GDC sets out learning outcomes for all the dental professional groups it regulates. For graduating dentists, the document includes six overarching outcomes, plus a further 151 detailed outcomes, divided into four main domains: clinical, communication, professionalism, and management and leadership. Outcomes in each of these four domains are organised around a number of criteria. These learning outcomes constitute the expectations for dental education in the UK, and the GDC operates quality assurance processes of all UK dental training programmes to ensure dental education providers, and therefore the graduates they produce, meet these expectations.

While this quality assurance process assures the standard of UK graduates, a major question for professional regulators such as the GDC, is how to assess the merits of immigrating healthcare

110 workers' qualifications, and how to establish the extent to which their studies will have equipped
111 them with the training and experience comparable to that of locally-qualified graduates. This issue
112 touches on several core functions of professional regulation, including the development of
113 educational standards and accreditation of qualifications; ensuring registration and the right to
114 practise are granted only to those eligible; and ensuring that those registered are safe to practise.
115 For UK regulators, Brexit and the resultant uncertainty over whether current health worker mobility
116 arrangements would be retained, modified or abruptly rescinded, brought questions about the
117 accreditation of qualifications awarded in EU countries to the fore. Developing accreditation
118 processes for this new era will require policymakers to balance regulatory objectives of assuring
119 patient safety, with individuals' aspirations for mobility, and health service human resource needs.
120 Although Brexit made this a pressing issue for the UK and EU, the question of recognition of
121 qualifications across borders is a perennial concern for health policymakers worldwide.

122 Set against this policy context, we undertook research to compare UK and EU member states' dental
123 curricula, to identify where any differences may exist, and to identify the extent of graduate
124 dentists' pre-qualification clinical experience with patients. Our research also sought to identify what
125 quality assurance processes are in place for dental education in Europe. This paper reports findings
126 from this curricula mapping exercise, and sets out the implications for mutual recognition of health
127 professional qualifications.

128

129 **METHODS**

130 This study, part of a wider project,[9] used a mixed methods approach to mapping basic dental
131 training across the UK and the 27 EU member states, using website searching and a questionnaire to
132 identify key information about curricula, competences, and quality assurance arrangements in each
133 country.

134 **Website searches**

135 Key stakeholder organisations in basic dental training were identified in each country including
136 independent regulatory authorities, professional associations, Ministries of health or education, and
137 providers of basic dental training. The organisations were identified through a number of online
138 sources such as the EU Manual of Dental Practice,[10] the Federation of European Dental Competent
139 Authorities and Regulators (FEDCAR) list of members,[11] and the EEA list of competent
140 authorities.[12] Websites for identified organisations were then searched by five researchers (LB,
141 MB, TG, SH, GL) for information relevant to our research questions. A data extraction form was used
142 to ensure consistent approach to searches, and to collate and organise the information retrieved. A
143 hierarchical approach to the searches was followed, so that regulator and competent authority
144 websites were reviewed first, followed by health ministry websites, and finally individual dental
145 education provider websites until information to address all questions was identified.

146 For each country, the following information on curricula and learning outcomes was sought:

147 • National professional competences
148 • Domains of curricula
149 • Published standards of dental education
150 • Quality assurance processes

151

152 Where information was provided in the language of the host country, online translation or within
153 team language proficiencies enabled the extraction of relevant information. All URLs were recorded
154 and useful documents were saved.

155 **Questionnaire**

156 We developed a short questionnaire to collect factual information, and elicit additional relevant
157 curriculum documents, about basic dental training and its quality assurance in EU member states. In

158 particular, we sought information about national level curricula or learning outcomes not publicly
159 available online. Between December 2019 and January 2020, the questionnaire was distributed by
160 email to organisations responsible for regulating dental education or dental practice in EU member
161 states, identified from our website searches and the FEDCAR website,[11] and also distributed by
162 email via FEDCAR and the Association for Dental Education in Europe (ADEE), to organisations
163 including regulators and dental schools. We received 12 responses to the questionnaire, from
164 organisations in 10 EU member states. Responses were received from national regulating
165 organisations in Belgium, Denmark, Finland, France, Ireland, Spain and Sweden. Responses were also
166 received from dental schools in Luxembourg, Finland, Portugal, Slovenia, and Spain. The responses
167 were used for triangulating the information found via the website searches.[9]

168 **Synthesis and mapping**

169 Information that related to professional competences, domains of curricula, or standards of dental
170 education were mapped against the GDC *Preparing for Practice* framework.[13] Where national level
171 graduate outcomes or a national curriculum for dental education was identified, these were mapped
172 against the domains and criteria of *Preparing for Practice.*[13] Where no national outcomes were
173 available, we mapped the curriculum or outcomes of a single dental school as an illustrative example
174 of provision in a country, though with the caveat that this may not be representative of the country's
175 provision as a whole.

176 The six overarching outcomes in *Preparing for Practice* plus its four domains (clinical,
177 professionalism, management and leadership, and communication) and their criteria were extracted
178 into a spreadsheet. Given its UK-specific meaning, an additional domain focused on graduates'
179 recognition of their role as GDC registrants was not included in the mapping exercise. Two senior
180 clinical educators (SH&TG) with expert knowledge of dentistry and learning outcomes reviewed
181 available information on curricula or learning outcomes from each EU member state and cross-
182 referenced it against the *Preparing for Practice* domains and sections.

183

184 **RESULTS**

185 National learning outcomes for dental education were identified in seven EU member states:
186 Belgium, Finland, France, Germany, Ireland, Spain, Sweden. Finland and Ireland have adopted the
187 competences set out in the Association for Dental Education in Europe (ADEE) document *Profile and*
188 *Competences for Graduating European Dentist* [14] as their nationally agreed set of professional
189 competences. For a further 13 countries we were able to identify learning outcomes from a single
190 dental school to use as an exemplar. No information about learning outcomes was available for
191 Cyprus, Estonia, Netherlands, Hungary, Latvia, and Romania, although the single Cypriot dental
192 school at the European University of Cyprus stated that its programme uses the ADEE *Profile and*
193 *Competences for Graduating European Dentist*.[14] Luxembourg has no dental schools. Figure 1
194 shows EU member states categorised by the level of learning outcomes identified.

195

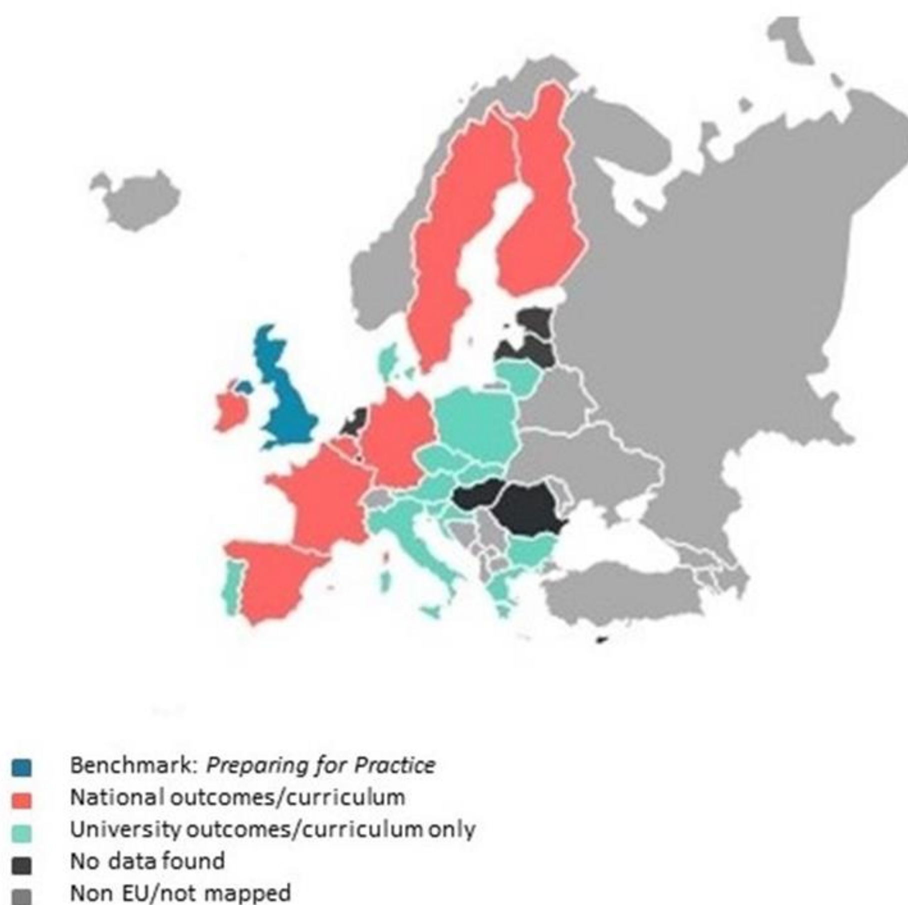

Figure 1: EU member states mapped to Preparing for Practice outcomes

Learning outcomes for Germany, Spain and Sweden were mapped at both national and institution level, as country level data was identified through the survey in addition to institution level data for those countries. We retained the institutional level data as it serves to illustrate variation between national and institutional learning outcomes. As shown in tables 1-3, the outcomes for dental education set at national level for these countries were not consistently replicated in the curricula of the individual institutions mapped as part of this research.

Mapping the learning outcomes identified from across Europe to the GDC's six overarching outcomes, shown in Table 1, revealed that there was evidence from most countries that their standards also covered the 'demonstrate effective clinical decision-making' and 'apply an evidence-based approach to learning, practice, clinical judgement and decision-making and utilise critical

208 thinking and problem solving' standards set out in *Preparing for practice*. However, evidence that
209 mapped to outcomes requiring graduating dentists to make 'high quality long term care of patient
210 the first concern', 'describe the principles of good research' and 'recognise the importance of life-
211 long learning' was found for less than half of EU member states. Only five countries had any
212 information that covered graduates' ability to 'accurately assess their own capabilities and
213 limitations': Austria, Denmark, Finland, France and Sweden.

214

215 **Insert Table 1 here**

216

217 Below these overarching outcomes, the first subsection of *Preparing for practice* focuses on clinical
218 skills relating to individual patient care and contains 13 broad criteria. As shown in Table 2, we
219 identified seven countries where all these criteria were present as graduating outcomes: Croatia,
220 Czech Republic, Germany, Greece, Ireland, Slovakia and Spain. Of these, data at national level was
221 available for Germany, Ireland and Spain. Three other countries, Denmark, Malta and Slovenia, had
222 only one missed outcome, as mapped at individual institution level. Outcomes relating to 'Patient
223 and public safety', 'Treatment of acute oral conditions', 'Management and treatment of periodontal
224 disease', and 'Management of the developing and developed dentition' were less likely to be
225 included in outcome standards.

226 Table 3 shows our findings mapped against the outcomes expected in the communication,
227 professionalism, and management and leadership domains of *Preparing for practice.* For some
228 countries, mapped at institutional level only, very few outcomes were covered across these domains
229 – this was the case for Bulgaria, Lithuania, and Poland. Conversely, there were some countries where
230 all the outcomes across these three domains were found, namely Belgium, Finland, Germany, and
231 Spain. All these countries had national level outcomes. Overall, of these three domains,
232 communication and professionalism were well represented, but with less evidence for the outcomes

233 focused on ‘teamwork’ and ‘development of self and others.’ The management and leadership
234 domain was the least well evidenced, and only eight countries mapped to the ‘managing self’
235 outcome, or referenced a need for graduating dentists to be aware of their own limitations.

236

237 **Insert Table 2 here**

238 **Insert Table 3 here**

239

240 Finally, we found limited publicly available information on quality assurance processes for dental
241 education, although some information was provided by respondents to our questionnaire. In Ireland,
242 dental education is accredited by the Dental Council. In most other responding countries (Belgium,
243 Denmark, France, Portugal, Slovenia, Spain and Sweden) accreditation or quality assurance of dental
244 education is not undertaken by a dental organisation, but by a national quality assurance agency for
245 higher education.

246

247 **DISCUSSION**

248 By mapping curricula and learning outcomes for undergraduate dental training from EU member
249 states against the learning outcomes set out for UK undergraduate dental education by the GDC in
250 its *Preparing for Practice* document, our research demonstrates the challenges in comparing
251 educational standards and expectations across national borders. We found that there was
252 considerable variation between countries, where evidence of curricula or learning outcomes could
253 be identified. This reflects the focus of the EU’s Directives on mutual recognition of professional
254 qualifications on the duration of training rather than its content.[15] Determining the content of
255 health professions education programmes remains the responsibility of national or institutional
256 bodies.

257 Generally, we found there was better coverage across domains relating to clinical and
258 communication skills. In some instances, data could be mapped to all or nearly all the domains and
259 criteria of *Preparing for Practice.* However, we often could not establish if graduates had undertaken
260 independent clinical work themselves or had been observing others work with patients. This is
261 important as less exposure to direct treatment of patients before graduation may mean dentists
262 entering the UK workforce without the levels of clinical experience expected by employers. Indeed,
263 Davda et al. [16] found that some Internationally Qualified Dentists (IQDs), including from the EEA,
264 practising in the UK recognised their different levels of experience in some clinical skills resulting
265 from the content of their undergraduate training, negatively affected their ability to integrate into
266 practice in the UK. Our systematic review of the literature also showed that the nature and extent of
267 direct patient contact during training differed greatly across countries.[17]

268 In other cases, we were unable to identify any publicly available information about dental curricula
269 or learning outcomes, either at national or institutional levels. Where data were included at both
270 institutional and national levels, we saw some differences in what could be mapped at each of these
271 levels. Further research to more comprehensively examine the extent of these differences and the
272 reasons for them would be useful. Variation between national and institutional levels illustrates the
273 challenge facing decision-makers responsible for accrediting or recognising qualifications when that
274 recognition is set at a national level, decreeing that all graduates from a given country are eligible to
275 enter and practice in another national jurisdiction. National level recognition procedures may
276 obscure differences in the educational provision offered by individual institutions. In most countries,
277 dental education is not quality assured by a dental organisation.

278 While for some years there has been an educational agenda to harmonise dental education across
279 Europe, it has been shown that there is little evidence of the extent to which harmonised curricula
280 have actually been implemented. The dental education literature on this topic is dominated by
281 proposals for curricula, unmatched by evaluative evidence of effective implementation.[17] ADEE's

282 *Profile and Competences for Graduating European Dentist,* originally published in 2005,[14] with
283 updates in 2010 and 2017, [18, 19] is a key text in efforts towards cross-national educational
284 harmonisation and we did find this document in use as the basis for national outcomes in Ireland
285 and Finland, and references to its use at institutional level in Cyprus and Greece. Overall though, our
286 findings show that there remains considerable variation between countries and institutions in the
287 outcomes set for dental education in Europe.

288 Our findings illustrate the limitations of available data, and the need for further comparative work to
289 achieve greater insights. An on-going project to improve the comparative data available about oral
290 health professions education across Europe is seeking to collate information at programme level by
291 collecting data directly from individual education providers.[20] That this work is necessary reflects
292 the paucity of data currently available, as identified by our own research.

293 Getting recognition processes for out of country qualifications right is important for a number of
294 reasons. Firstly, to maintain patient safety by ensuring that only health professionals who are safe to
295 practice effectively in a jurisdiction are able to do so. Variations in source country education have
296 been identified as a factor IQDs reported confidence in their ability to undertake dental procedures
297 when commencing work in the UK.[16] Furthermore, recognition processes need to ensure that
298 countries can recruit the international workforce they need, and that health workers seeking to
299 migrate are neither deterred nor penalised by overly prescriptive processes, as registration
300 processes have been found to be a barrier to integration for healthcare workers migrating to the
301 UK.[21] However, shifting recognition processes to the level of the institution also poses problems,
302 in the form of increased bureaucratic burden and costs for bodies responsible for these processes,
303 with those costs often passed on to individual practitioners through registration fees.

304 The impact of *Brexit* on the migration patterns of dentists, and other health professionals, to the UK
305 is yet to be fully understood, and effects so far have been confounded by the concurrent impacts of
306 the Covid-19 pandemic. However, the potential for post-Brexit accreditation and registration

307 arrangements to impact on the dental workforce is clear. A 2019 survey of European-qualified dental
308 professionals working in the UK found that Brexit was a significant factor for those who were
309 considering leaving the UK, and identified concerns over the continuation of their rights to live and
310 work there.[22] Continuation of the mutual recognition system for professional qualifications was
311 reported as being the action most likely to dissuade dentists from leaving the UK.[22]
312
313 While its longer term impacts on the healthcare workforce migration to the UK remain to be seen, it
314 is certainly the case that exiting the EU has raised the issue of how to best manage the recognition of
315 international qualifications. Beyond the national context of legislative changes brought about by
316 Brexit, our analysis shows this issue is pertinent across Europe [15] and it is also relevant
317 internationally. Developing processes that will allow reliable comparisons of curricula and learning
318 outcomes, necessary to inform decisions about accreditation and potential additional training needs
319 for IQDs, requires data about current education provision. However, our findings illustrate the
320 limitations of available data for comparing curricula and learning outcomes across European
321 countries, shortcomings also identified elsewhere.[23]

322 **Limitations**

323 This paper reports an attempt to map national level curricula and learning outcomes for dental
324 education across Europe, using primarily publicly available information and also drawing on
325 information provided by stakeholders. However, it is not an exhaustive mapping of all dental schools
326 in each country, and where institution-level data is given this is intended as an example only. Our
327 findings do not, therefore, necessarily reflect all aspects of how dental education is delivered in the
328 countries included. In addition, there were some countries for whom data could not be identified,
329 but this does not mean that those countries do not have national curricula or learning outcomes for
330 dentistry. We were unable to ascertain quality assurance processes in every country but this does
331 not mean they do not exist. Our mapping has used the *Preparing for Practice* framework [13],
332 which reflects the UK context. It has its roots in the same harmonisation agenda as the ADEE *Profile*

333 *and Competences for Graduating European Dentist* [14] and provides a structure upon which to base
334 the comparison between countries.
335

336 **CONCLUSION**

337 Against a backdrop of considerable change in the European cross-national policy landscape, and the
338 residual uncertainty about how processes for the recognition of qualifications will operate in future,
339 this paper provides a timely analysis of the extent to which basic dental training across Europe and
340 the United Kingdom is demonstrably comparable. Offering insights into how effectively dental
341 education can be compared at national level, as assumed in the model underpinning existing mutual
342 recognition processes, our analysis aims to inform discussions about cross-national recognition of
343 healthcare professionals' qualifications, the regulation of health professions, and healthcare worker
344 migration.
345

346 **DECLARATIONS**

347 **Ethics approval and consent to participate**

348 This study was deemed not to require ethical review by the University of Plymouth Faculty of Health
349 Research Ethics and Integrity Committee.

350 **Consent for publication**

351 Not applicable.

352 **Availability of data and materials**

353 The datasets used and/or analysed during the current study are available from the corresponding
354 author on reasonable request.

355 **Competing interests**

MB declares grants from the General Dental Council, during the conduct of the study; and grants from the General Dental Council, outside the submitted work. SH declares grants from the General Dental Council, during the conduct of the study. LB declares grants from the General Dental Council, during the conduct of the study. DZ declares they have no competing interests. TG declares grants from the General Dental Council, during the conduct of the study.

Funding

The research reported in this paper was funded by the General Dental Council.

Authors' contributions

MB conceived and designed the study, collected data, analysed data, prepared and edited the manuscript. SH conceived and designed the study, collected data, analysed data, edited the manuscript. LB collected data, analysed data, edited the manuscript. DZ analysed data, prepared and edited the manuscript. TG conceived and designed the study, collected data, analysed data, edited the manuscript.

Acknowledgements

We are grateful to Cédric Grolleau, Acting Executive Director, FEDCAR, and to Denis Murphy, Chief Administrative Officer, ADEE, for their assistance in distributing questionnaires and collecting responses from European competent authorities and regulators associated with FEDCAR, and Deans of Dental Schools associated with ADEE. We would also like to thank all those who responded to the questionnaire and Dr Guy Lambourn, Clinical Associate Professor in Dentistry, University of Plymouth, for his contribution to the website searches. Finally, we thank the General Dental Council for the support in undertaking this research.

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443

444 ***Table 1: Mapping against overarching outcomes in Preparing for Practice***

Country	High quality long term care of patients the first	Demonstrate effective clinical decision making	Describe the principles of good research	Apply an evidence-based approach	Accurately assess their own capabilities and	Recognise the importance of lifelong

Austria*		1	1	1	1	1
Belgium+	1	1		1		1
Bulgaria*						
Croatia*		1	1			1
Cyprus^						
Czech Rep*		1				
Denmark*	1	1	1	1	1	1
Estonia^						
Finland+	1	1		1	1	
France+		1			1	
Germany*		1				
Germany+		1	1	1		1
Greece*	1		1	1		
Hungary^						
Ireland+	1	1				
Italy*		1		1		
Latvia^						
Lithuania*			1			
Luxembourg%						
Malta*		1	1	1		
Netherlands^						
Poland*			1			
Portugal*		1	1	1		1
Romania^						
Slovakia*		1	1			
Slovenia*			1	1		1
Spain*						
Spain+	1	1		1		
Sweden*	1	1	1	1	1	1
Sweden+	1	1		1		

+ Mapped to outcomes or curriculum from a national authority
*Mapped to outcomes or curriculum from a single dental school/university
% No dental school
^ No information identified

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468 ***Table 2: Mapping against clinical outcomes in Preparing for Practice***

Country	Foundations of practice	Comprehensive patient assessment	Diagnosis	Treatment planning	Patient management	Patient and public safety	Treatment of acute oral conditions	Health promotion and disease prevention	Management and treatment of periodontal disease	Hard and soft tissue disease	Management of the developing and developed dentition	Restoration and replacement of teeth	Population based health and care
Austria*	1	1	1	1	1	1		1					
Belgium+	1	1	1	1	1		1	1		1	1	1	1
Bulgaria*	1							1	1	1		1	
Croatia*	1	1	1	1	1	1	1	1	1	1	1	1	1
Cyprus^													
Czech Rep*	1	1	1	1	1	1	1	1	1	1	1	1	1
Denmark*	1	1	1	1	1		1	1	1	1	1	1	1
Estonia^													
Finland+	1	1	1	1	1	1	1	1					1
France+		1	1	1	1		1	1	1	1		1	1
Germany*	1		1	1		1	1		1	1	1	1	1
Germany+	1	1	1	1	1	1	1	1	1	1	1	1	1
Greece*	1	1	1	1	1	1	1	1	1	1	1	1	1
Hungary^													
Ireland+	1	1	1	1	1	1	1	1	1	1	1	1	1
Italy*	1	1	1	1	1		1		1	1	1	1	
Latvia^													
Lithuania*	1	1	1	1									1
Luxembourg%													
Malta*	1	1	1	1	1	1		1	1	1	1	1	1
Netherlands^													
Poland*	1											1	1
Portugal*		1	1	1				1					1
Romania^													
Slovakia*	1	1	1	1	1	1	1	1	1	1	1	1	1
Slovenia*	1	1	1	1	1	1	1		1	1	1	1	1
Spain*	1							1					1
Spain+	1	1	1	1	1	1	1	1	1	1	1	1	1
Sweden*	1	1	1	1	1	1		1					1
Sweden+			1	1	1	1		1		1			1

469 + Mapped to outcomes or curriculum from a national authority
470 *Mapped to outcomes or curriculum from a single dental school/university
471 % No dental school
472 ^ No information identified

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Table 3: Mapping against communication, professionalism and management and leadership outcomes in Preparing for Practice

	Communication			Professionalism				Management and Leadership		
Country	Patient, their representatives and the public	Team and the wider healthcare environment	Generic communication skills	Patients and the public	Ethical and legal	Teamwork	Development of self and others	Managing self	Managing and working with others	Managing the clinical and working environment
Austria*	1	1	1	1	1	1	1	1	1	
Belgium+	1	1	1	1	1	1	1	1	1	1
Bulgaria*										
Croatia*	1	1	1	1	1	1	1			1
Cyprus^										
Czech Rep*	1	1	1	1	1				1	1
Denmark*	1	1				1	1	1	1	
Estonia^										
Finland+	1	1	1	1	1	1	1	1	1	1
France+	1	1	1	1	1	1			1	
Germany*	1	1	1		1			1		
Germany+	1	1	1	1	1	1	1	1	1	1
Greece*	1	1	1	1	1	1				
Hungary^										
Ireland+	1	1	1	1	1					1
Italy*	1	1	1		1	1				
Latvia^										
Lithuania*			1		1					
Luxembourg%										
Malta*	1	1	1	1	1	1			1	1
Netherlands^										
Poland*					1					
Portugal*	1	1	1	1	1	1	1	1		
Romania^										
Slovakia*			1		1				1	1
Slovenia*	1	1			1	1				
Spain*					1					
Spain+	1	1	1	1	1	1	1	1	1	1
Sweden*	1	1	1	1	1	1		1	1	1

Sweden+	1	1	1	1	1	1	1	

502 + Mapped to outcomes or curriculum from a national authority
503 *Mapped to outcomes or curriculum from a single dental school/university
504 % No dental school
505 ^ No information identified
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