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Doctors on the move: international study on national recertification systems

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-019963
Article Type:	Research
Date Submitted by the Author:	05-Oct-2017
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Primary Subject Heading:	Medical education and training
Secondary Subject Heading:	Medical education and training
Keywords:	Recertification, Continuing Professional Development, Performance assessment, Patient safety, Quality assurance, Professional mobility

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3 **1 Doctors on the move: international study on national recertification systems**

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5 **2 A collective case study**

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53 Word count: 2.932 words

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3 34 **Doctors on the move: international study on national recertification systems**
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5 35 **A collective case study**
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8 36 **ABSTRACT**
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10 37 **Objectives:** With increased cross-border movement, ensuring safe and high-quality healthcare
11
12 38 has gained primacy. The purpose of recertification is to ensure quality of care through period-
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14 39 ically attesting doctors' professional proficiency in their field. Professional migration and
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16 40 facilitated cross-border recognition of qualifications, however, make us question the fitness of
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18 41 national policies for safeguarding patient care and the international accountability of doctors.
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20
21 42 **Design and setting:** We performed document analyses and conducted semi-structured inter-
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23 43 views to identify and describe key characteristics and effective components of 10 different
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25 44 European recertification systems, each representing one case (collective case study). We sub-
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27 45 sequently compared these systems to explore similarities and differences in terms of assess-
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29 46 ment criteria used to determine process quality.
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33 47 **Results:** Great variety existed between countries in terms and assessment formats used, tar-
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35 48 geting cognition, competence and performance (Miller's assessment pyramid). Recertification
36
37 49 procedures and requirements also varied significantly, ranging from voluntary participation in
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39 50 professional development modules to the mandatory collection of multiple performance data
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41 51 in a competency-based portfolio. Knowledge assessment was fundamental to recertification in
42
43 52 most countries. Another difference concerned the stakeholders involved in the recertification
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45 53 process: while some systems exclusively relied on doctors' self-assessment, others involved
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47 54 multiple stakeholders but rarely included patients in assessment of doctors' professional com-
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49 55 petence. Differences between systems partly reflected different goals and primary purposes of
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51 52 recertification.
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55 57 **Conclusion:** Recertification systems differ substantially internationally with regard to the
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57 58 criteria they apply to assess doctors' competence, their aims, requirements, assessment for-
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3 59 mats, and patient involvement. In the light of professional mobility and associated demands
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5 60 for accountability, we recommend that competence assessment include patients' perspectives,
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7 61 and recertification practices be shared internationally to enhance transparency. This can help
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9 62 facilitate cross-border movement, while guaranteeing high-quality patient care.
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14 64 Word count: 276
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19 66 **Key words:** Recertification; Continuing Professional Development; Performance assessment;
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21 67 Patient safety; Quality assurance; Professional mobility
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25 69 **Strengths and limitations of this study**
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- 28 70 • Our research provides a comprehensive comparison of ten European recertification sys-
29
30 71 tems and their assessment criteria used to ensure quality of care delivered. It highlights
31
32 72 how physicians' knowledge and competence are assessed, which stakeholders are in-
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34 73 volved and how the processes are regulated.
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36 74 • Our research focuses on European countries only as free cross-border movement of pro-
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38 75 fessionals is unique to the European context.
39
40 76 • We cannot exclude that interregional variations were missed because recertification sys-
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42 77 tems were decentralized in some countries and we explored the national level only.
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44 78 • The diversity and ambiguity in terminology (recertification, revalidation, continuing pro-
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46 79 fessional development) underline the challenge of comparing various recertification sys-
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48 80 tems.
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3 81 **Doctors on the move: international study on national recertification systems**
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6 82 **INTRODUCTION**
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8 83 Increased mobility of health professionals can pose potential threats to the quality of care.
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10 84 Suppose, for instance, a high performing, Romanian doctor moves to the Netherlands. There,
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12 85 this person will face a new work environment in a distinct healthcare system with specific
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14 86 quality guidelines and different clinical presentations and patient demands. As this new work
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16 87 setting requires specific knowledge, skills, and values that differ from the Romanian context,
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18 88 you may wonder: Will this doctor still be competent to deliver high-quality care?
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22 89 While the problem of safeguarding quality of care across borders is omnipresent, it is
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24 90 particularly pertinent in Europe where the free movement of professionals has long historical
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26 91 and legal roots. Although a European Commission directive has facilitated mobility by
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28 92 providing for international recognition of professional qualifications, it fails to guarantee that
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30 93 doctors actually meet the minimum and context-specific quality standards. To safeguard qual-
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32 94 ity of patient care, regulatory bodies around the world have implemented different systems,^{1 2}
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34 95 such as recertification systems. Recertification entails lifelong learning and periodic assess-
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36 96 ment of doctors' competence and performance through various methods.³ More specifically, it
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38 97 requires a formal procedure of assessing and attesting quality of service provided "in accord-
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40 98 ance with established requirements or standards."⁴ By renewing initial certification, *recertifi-*
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42 99 *cation* aims to address any decline in performance as well as ensure trained doctors' adapta-
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44 100 tion to advances in knowledge and technology.^{5 6} This is particularly important in times of
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46 101 increased publicity over individual failures of medical performance, demands for doctors'
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48 102 accountability, and concerns about patient safety.⁷
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53 103 Despite its well-intended aim, recertification harbours two inherent problems. First,
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55 104 current national recertification practices fail to ensure quality of care internationally, as they
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57 105 assess doctors' competence and performance in accordance with *national* quality standards.
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3 106 Differences in standards across countries and the absence of international recertification sys-
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5 107 tems may complicate international quality assurance and quality improvement.⁶ This begs the
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7 108 question of whether such discrete practices can respond to repeated calls for international ac-
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9 109 countability and transparency.⁸ Second, although research on assessment of professional
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11 110 competence provided a set of guidelines for assessment criteria to ensure high quality assess-
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13 111 ment,⁹ the question on how to assess doctors' competence has often turned into a political
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15 112 rather than an educational one,¹⁰ potentially impacting on effectiveness of recertification sys-
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17 113 tems.

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21 114 "Competence" is defined as the ability to integrate knowledge, skills, and attitudes into
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23 115 a certain context to ensure safe patient care.^{11 12} This definition suggests to pay balanced at-
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25 116 tention to multiple competency domains relevant to a doctor, when assessing professional
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27 117 competence.¹³ Indeed, many scholars and institutions advocate the assessment of not only
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29 118 medical knowledge and skills, but also competencies, such as communication, collaboration,
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31 119 and clinical judgment.^{14 15} Assessment measures must also be robust and focus on the
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33 120 healthcare system's needs and outcomes, implying involvement of key stakeholders, particu-
34
35 121 larly patients when evaluating quality of care.¹⁶⁻¹⁹ It is furthermore acknowledged that, for
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37 122 each of the competencies, outcomes of different assessment methods must be combined to
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39 123 ensure robust decision making about professional competence^{20 21}

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43 124 To conclude, cross-border quality of care will be promoted if countries not only share their
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45 125 recertification practices, but also are willing to critically reflect on quality of assessment pro-
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47 126 cesses embedded in recertification procedures.^{7 22} In the present study, we attempt taking a
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49 127 first step in this direction by identifying different national recertification approaches. The
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51 128 question of the present study, therefore, was what are the key characteristics of recertification
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53 129 systems for doctors of different countries? More specifically, we aimed at exploring use of
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55 130 assessment criteria in design of recertification procedures. We used a collective case study

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3 131 design to describe and compare different national systems. We were particularly interested in
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5 132 the assessment criteria used, if any, and how they were applied. Although recertification is
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7 133 sometimes also coined “revalidation,” “re-accreditation,” and “maintenance of certification”
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10 134 or used interchangeably with “continuing professional development” in other contexts, this
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12 135 article keeps to the former term. The article builds on previous work on certification but pri-
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14 136 marily focuses on recertification.
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20 138 **METHODS**

21 139 **Study Design and Case Selection**

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24 140 We described and analysed the recertification systems of ten individual European countries.
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26 141 Each country’s national recertification system represented a single case. We selected our cas-
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28 142 es using purposeful sampling to reach maximum heterogeneity in terms of geographical
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30 143 spread across Europe, demographics, health professionals’ migration profile, presence of la-
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32 144 bour market restrictions, and type of healthcare system (Table 1).²³
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35 145

36 146 **Table 1.** *Sampling criteria*

37 Sampling criterion	38 Specification of criterion
39 40 41 Geographical spread	42 Include countries of different sizes, demographic make-up, 43 with different cultures, and from a range of geographical lo- 44 cations (Northern, Eastern, Southern, Western, and Central 45 Europe).
46 47 Migration profile 48 and position	49 Include countries that have different levels of health profes- 50 sional migration (inflow and outflow) and rely more or less 51 on foreign doctors; include both “junior” (EU12) and “sen- 52 ior” EU member states (EU15) as indicated by the length of 53 EU membership. 54 55

Labour market re- strictions	Include countries with (Germany, Ireland, the Netherlands, United Kingdom, and Switzerland) and without initial labour market restrictions (Denmark, Portugal, and Spain)
Different healthcare systems	Include countries with different structures of healthcare services in terms of how they are financed and covered by the insurance system (publicly, privately, or both).

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148 EU2 = countries which joined the EU in 2007: Bulgaria and Romania.

149 EU10 = countries which joined the EU in 2004: Cyprus, Czech Republic, Estonia, Hungary,
150 Latvia, Lithuania, Poland, Slovakia, and Slovenia.151 EU12 = EU2 and EU10 countries: Cyprus, Czech Republic, Bulgaria, Estonia, Hungary, Lat-
152 via, Lithuania, Poland, Romania, Slovakia, and Slovenia.153 EU15 = countries which were already EU member states in 2003: Austria, Belgium, Den-
154 mark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portu-
155 gal, Spain, Sweden, and the UK.

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158 Based on these criteria, the final study sample included Denmark, Germany, Hungary,

159 Ireland, Poland, Portugal, Spain, Switzerland, the Netherlands, and the United Kingdom (Ta-

160 ble 2).

161 **Table 2.** *Overview of selected countries and their health insurance systems, their coverage, and the existence of a gatekeeper system*²⁴⁻³²

Country	Geographic location	Net migration rate (migrants/1,000 inhabitants) ³³	Reliance on foreign doctors (% of all practicing doctors) ²³	Type of health insurance system	Financing of healthcare
Denmark	North	2.25	6.4% are foreign-trained	Decentralized, offers universal and nearly free access	Taxation
Germany	Central	1.06	5.7% are foreign born	Mix of compulsory public and voluntary private health insurance; highly decentralized	Statutory insurance, taxation, out-of-pocket payments, and private health insurance
Hungary	East	1.34	3.6% are foreign born	National Health Insurance Fund is state-owned and offers complete coverage, partly free of charge	Taxation and social health insurance contributions
Ireland	West	3.31	20.1% are foreign-trained	National Healthcare System, Mix of public and voluntary private health insurance	Taxation and supported by co-payments for specialist's treatment from insurance providers.
Poland	East	-0.47	2.1% are foreign-trained	Decentralized, mandatory health insurance system	National Health Funds
Portugal	South	2.74	11.1% are foreign	Private and public insurance	Taxation, public and private

			born	schemes plus voluntary private	insurance schemes, and direct
				insurances	payment
Spain	South	7.24	12.5% are foreign-trained	National Health Service Private and public insurance schemes	Taxation and payroll contributions
Switzerland	Central	5.43	22.5% are foreign-trained	Obligatory, statutory, decentralized insurance system Federal Office for Social Insurance monitors providers	Compulsory health insurance premiums and out-of-pocket payments
The Netherlands	Central	1.97	6.2% are foreign-trained	Mixed model of compulsory social and voluntary private insurance	Health Insurance, taxation and direct payments
United Kingdom	West	2.56	36.8% are foreign-trained	Mix of public and voluntary private health insurance	National Health Service, taxation, and national insurance contributions

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3 163 **Data collection**
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5 164 We collected data on the respective recertification procedures by performing a document
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7 165 analysis for each case in addition to conducting semi-structured interviews with two or three
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9 166 representatives from each country.

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11 For the document analyses, we retrieved documents describing national recertification
12
13 procedures for doctors from the websites of national certification organizations. We focused
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15 on documents that clarified rationale, form and procedure, as well as requirements and re-
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17 wards of each recertification program. Data collection took place from April to September,
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19 2016.
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23 To validate and corroborate our interpretation of data from document analysis, we
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25 conducted semi-structured interviews with representatives of national regulatory bodies re-
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27 sponsible for postgraduate medical education and recertification or the recognition of profes-
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29 sional qualifications (e.g., international affairs offices). These interviewees were deans for
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31 professional practice, heads of recertification departments, experts on continuing professional
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33 development, and official secretaries or legal advisors to national medical education offices,
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35 medical or scientific societies, accreditation bodies, medical royal colleges, councils, or
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37 chambers.
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41 The first author (CS) conducted all interviews via video or phone, based on an inter-
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43 view protocol adapted from a study on continuing professional development and lifelong
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45 learning for health professionals.³⁴ Questions addressed competency frameworks as well as
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47 rules and regulations of recertification, asking about regulatory authorities involved, main
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49 objective(s), structure, requirements, and consequences of compliance or non-compliance.
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51 Before the interview, we explained the research purposes to participants and asked them to
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53 give informed consent.
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3 187 **Patient involvement**
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5 188 No patients were involved in this research, given our specific aim.
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8 189 **Data analysis**
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10 190 Data analysis spanned a two-step process. First, we analysed the data from the document
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12 191 analyses and interviews to identify and describe key characteristics of each case. We asked at
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14 192 least one interviewee per country to comment on the accuracy and completeness of the de-
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16 193 scribed recertification system. We subsequently re-analysed the data, specifically focusing on
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18 194 the application of criteria for high quality assessment: validity, reliability, educational and
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20 195 catalytic effect.^{9 14 35} For that purpose we identified specific strategies used to ensure assess-
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22 196 ment quality in terms of validity, reliability and educational consequences, for each of the re-
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24 197 certification system (Box 1).
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30 199 **Box 1. Strategies embedded in recertification, affecting assessment quality**
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Criterion		Features
What is as- sessed?	Program of assessment	<ul style="list-style-type: none"> • Inclusion of competency domain(s) or domain(s) of professional practice (including lifelong learning) • Use of overarching framework (based on needs healthcare system; key domains professional practice) • Assessment and learning aligned with individual needs • Focus on process of care • Focus on patient outcome (including patient satisfaction)
When is it assessed?	Frequency of recertifica- tion cycle	<ul style="list-style-type: none"> • Yearly • Every 2-3 years • Every 4-5 years • Every > 5 years • No time frame
Who assess- es?	Stakeholders involved in	<ul style="list-style-type: none"> • Individual (self-assessment) • Peers

	the assess-	<ul style="list-style-type: none"> • Employer
	ment	<ul style="list-style-type: none"> • Patients • Others
How is it assessed?	Assessment methods	<ul style="list-style-type: none"> • Competence level according to Miller's assessment pyramid (cognition versus performance) • Self-assessment • Portfolios • Credit collection through course participation • Examinations (standardised) • Simulations • Clinical audits • Multi-source feedback
	Regulations	<ul style="list-style-type: none"> • Voluntary vs. mandatory • Legal vs. professional obligation
What are the objectives?	Assessment goal	<ul style="list-style-type: none"> • Quality of care and patient safety • Professional development • Maintenance of doctors' knowledge and skills
	Consequences of non-compliance	<ul style="list-style-type: none"> • Loss of license • Financial sanctions • Follow-up • Work under supervision • Feedback

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201 These strategies included program of assessment, assessment goals and methods (i.e.,

202 authentic and suitable methods), as well as frequency of assessment (i.e., consistent outcomes

203 across measurements and decisions). We also addressed the involvement of different stake-

204 holders including patients, and consequences for learning and development. Self-assessment

205 as tool for lifelong learning and assessment of practice performance were the two major com-

206 ponents of recertification considered.³⁶ Finally, we compared recertification systems across

207 cases to identify similarities and differences with respect to use of the aforementioned as-

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11 210 **RESULTS**

12 211 In the following paragraphs, we highlight differences and/or similarities across countries in
13 212 terms of the purpose, focus, frequency, and methods of recertification, and the stakeholders
14 213 involved in the process. Exact details are provided in Table 3, while Table 4 outlines the bod-
15 214 ies (Medical specialties, Ministries of Health or Medical Authorities) responsible for recertifi-
16 215 cation. The final paragraph provides a synopsis of the most striking results.
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23 217 **1. Purpose of recertification**

24 218 As shown in Table 3, the purpose of recertification constituted a major source of variance.
25 219 While several countries aimed to improve quality of care and patient safety, a minority (N=2),
26 220 essentially those countries where recertification was not mandatory, upheld personal devel-
27 221 opment and career advancement as their primary objective (Table 3).
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222 **Table 3.** *Competence assessment in recertification systems of investigated cases*

Case	Pur- pose ¹	Focus ²			Based on competen- cy frame- work	Frequency		Assess- ment methods ³	Who decides on activities to be followed?			Stakeholders involved in the assessment			How is in- ternal quali- ty of assess- ment as- sured?
		LLL	PP	Mandato- ry (yes/no)		After ... cred- its	Every ... year(s)		Individu- al doctor	Employ- ers	Doctor him/hersel f	Col- leagues	Pa- tients	Employ- ers	
Case 1	1, 3	yes	yes	yes	yes	200	5	1.4, 1.5, 1.6, 1.7, 2, 3, 4, 5	yes	no	yes	yes	yes	yes	quality visita- tions, assess- ment of group func- tioning
Case 2	1, 2	yes	yes	yes	N/A	150	3	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 2, 3	yes	no	yes	yes	no	no	N/A
Case 3	1, 3	yes	no	yes	N/A	250	5	1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 1.8	yes	no	yes	no	no	no	accreditation of CME providers independent assessors, information triangulation, audits
Case 4	1, 2, 3	yes	yes	yes	yes	250	5	1.1, 1.2, 1.3, 1.4, 1.6, 1.7, 2, 3, 4, 7	yes	no	yes	yes	yes	yes	information triangulation, audits
Case 5	3	yes	yes	yes	yes	50	1	1.2, 1.3, 1.4, 1.5, 1.6, 2	yes	no	yes	no	no	no	N/A
Case 6	1, 2	no	yes	no, volun- tary	no	N/A	1	1, 3, 4	yes	yes	yes	no	no	yes	local man- agement more credits for CPD activities with exams
Case 7	2	yes	no	yes	N/A	250	5	1, 1.1, 1.2, 1.6, 1.7, 1.8, 4, 5, 6	yes	no	yes	no	no	no	accreditation of CME providers
Case 8	3	yes	no	yes	N/A	200	4	1.1, 1.2, 1.4, 1.5, 1.6, 1.7	yes	no	yes	no	no	no	accreditation of CME providers

Case 9	4	yes	yes	no, voluntary	N/A	N/A	5	4	yes	no	no	yes	no	(yes)	N/A
Case 10	4	yes	yes	no, voluntary	yes	N/A	3	1.2, 4	yes	no	yes	yes	no	yes	organization's quality control

223 ¹. Recertification purpose: 1. Quality of care; 2. Patient safety; 3. Maintenance of doctors' knowledge and skills; 4. Career.

224 ². Focus of recertification: LLL = lifelong learning; PP = Practice performance.

225 ³. Assessment methods: 1. CPD; 1.1 specialty-specific CPD course; 1.2 General CPD course (communication skills); 1.3 Individual
 226 learning (reading); 1.4 Conference attendance; 1.5 Teaching; 1.6 Research & scientific publications; 1.7 E-learning; 1.8 Time spent as
 227 visiting professional; 2. Clinical audit; 3. Appraisal/peer reviews; 4. Portfolio; 5. Minimum hours of patient contact; 6. Mandatory in-
 228 tensive course; 7. Significant events.

229 Country names are not individually reported due to the perceived sensitivity of the information provided by the interview partner.

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231 Participation in a recertification program was voluntary in three countries only, though
 232 all countries imposed a professional or legal obligation to engage in lifelong learning. Con-
 233 sequences of non-compliance were non-existent in voluntary systems; in the mandatory sys-
 234 tems (N=7), however, they varied from financial sanctions (N=2) or work under supervision
 235 to suspension of the license to practice (N=3), with two countries allowing for license recov-
 236 ery. Finally, one country conferred a lifelong registration upon doctors, obviating the need to
 237 impose any sanctions in practice (Table 4).

238

239 **Table 4.** Regulation of recertification process in the countries under scrutiny

Case number	Who sets rules for recertification?				Potential ²⁴⁰
	Medical Specialties	Ministry of Health	Medical Authority ¹	Type of obligation ²	consequences of non-compliance ³
Case 1	yes	yes	yes	1	(1), 2
Case 2	yes	no	no	1,2	3, 4
Case 3	no	yes	yes	1,2	1, 3
Case 4	no	no	yes	1,2	1, 2
Case 5	yes	no	yes	1	4, 5
Case 6	/	/	yes	2	4
Case 7	/	yes	yes	1	1
Case 8	/	yes	yes	1	4
Case 9	/	/	/	/	4
Case 10	yes	/	yes	1	4

241 ¹ Medical Authority such as the General Medical Council242 ² Type of obligation: 1. Legal; 2. Professional243 ³ Potential consequences of non-compliance are: 1. Work supervised or suspen-
 244 sion of license; 2. Suspension of license with possibility to restore license; 3. Fi-
 245 nancial sanctions; 4. No formal consequences / license for lifetime; 5. Follow-up.

246 **2. Focus of the assessment**

247 As regards focus, almost all recertification systems emphasized the lifelong learning of doc-
248 tors. Likewise, most systems relied on the collection of a minimum number of credits per
249 year, mostly 50 (N=5), where one credit typically represented one hour of learning activity.
250 Although the three voluntary systems did not require credits to be earned for recertification,
251 one did recommend it (case 6). Such practice was often embedded in a continuing profession-
252 al development framework as part of a voluntary recertification process. In another country,
253 doctors must take a specific course followed by an exam. Generally, they received more cred-
254 its for courses if these were concluded with an examination (case 7). Of the countries that
255 assessed practice performance, only five did so through audits and appraisals or multi-source
256 feedback. Four countries evaluated doctors' individual and team functioning focusing on
257 communication and collaboration skills.

259 **3. Frequency of recertification**

260 The frequency of recertification and timeframe within which requirements must be fulfilled
261 varied widely: some countries had annual appraisals (N=2), others three-year procedures
262 (N=2), but most of the countries undertook quinquennial assessments (N=5).

264 **4. Assessment methods**

265 To demonstrate their knowledge and engagement in lifelong learning, doctors in most coun-
266 tries must earn credits, for instance by participating in workshops and national or international
267 conferences, doing individual reading, teaching, writing scientific articles, spending time as
268 visiting doctor, and/or e-learning. One country assessed performance on the basis of a dialog
269 between employer and employee who jointly discussed learning needs. Another country
270 counted reflection on significant events, that is, unintended critical events which potentially

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3 271 harmed the patient, to measure patient outcomes. Yet other countries (N=4) used clinical au-
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5 272 dits, number of complaints, reviews or appraisals, and peer reviews to measure processes of
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7 273 healthcare delivery. Finally, some countries deployed portfolios (N=6), clinical audits (N=4),
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9 274 and multi-source feedback (N=4) to reflect on individual and team functioning.
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14 276 **5. Stakeholder involvement**

16 277 In most cases (N=9), doctors decided which learning activities to take based on their self-
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18 278 assessed learning needs. Several countries, however, also based the assessment of perfor-
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20 279 mance outcomes and the process of care on feedback from peers (N=5) or patients (N=2), yet
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22 280 only one country demanded involving patients in the assessment regularly.
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27 282 **6. Synopsis**

29 283 All things considered, what stood out was that most recertification systems relied heavily on
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31 284 doctors' self-assessments, attached little weight to patient outcomes, patient involvement, and
32
33 285 the assessment of practice performance, as well as lacked an overarching competency frame-
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35 286 work. Only four countries seem to match the content of assessment programs with evaluation
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37 287 of professional practice. These findings clearly contrast with the aim to ensure quality of care
38
39 288 and patient safety most systems pursued. Evaluation of practice performance seems to be a
40
41 289 *sine qua non*, an indispensable condition, for assessment of competence, i.e. what doctors
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43 290 actually do in day-to-day practice. Two countries (case 1 and 4), however, did use a more
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45 291 comprehensive system, covering both self-assessment and practice performance through mul-
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47 292 ti-source feedback, including patients' feedback.
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52 293 Three other countries deserve mention for their apparent distinctness from the rest.
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54 294 One country, though not formally requiring continuing professional development, assessed
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56 295 practice performance based on an annual dialog between doctor and employer. This left little
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3 296 room for individual doctors to self-assess their performance and independently decide on ac-
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5 297 tivities to be taken, which was the case in all other countries where the individual doctor was
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7 298 responsible for high-quality patient care. The remaining two recertification systems stood out
8
9 299 as being career-focused: they did not require doctors to engage in lifelong learning and pro-
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11 300 fessional development for purposes of patient safety and quality patient care, but rather en-
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13 301 couraged the use of a portfolio to enhance chances of promotion.
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17 302 **DISCUSSION**

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19 303 The purpose of this study was to investigate how recertification is organized across different
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21 304 countries. We found substantial differences in recertification requirements and procedures.
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23 305 Moreover, these requirements in many respects seemed to conflict with aims to ensure quality
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25 306 of care and patient safety.
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29 307 First, we observed that only a few systems included feedback from patients in the as-
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31 308 sessment. Involving patients to prefigure patient outcomes and quality seems inevitable for
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33 309 accountability and transparency purposes.³⁷ Although many patients are needed to obtain reli-
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35 310 able evaluations, their involvement in recertification procedures can help respond to public
36
37 311 calls for doctors' accountability.⁹ Wright et al recommend including data from 34 patient
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39 312 questionnaires and 15 colleague questionnaires to obtain reliable performance evaluation for
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41 313 appraisal purposes.³⁸ Despite the fact that the literature reports peers to give accurate, credi-
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43 314 ble, and valid assessments of performance, peer feedback was absent in most systems.^{9 14 39}
44
45 315 Use of multi-source feedback to assess practice performance, requires high quality and credi-
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47 316 ble feedback to induce reflection on practice.⁴⁰ Multi-source feedback, including patients'
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49 317 feedback, can be especially effective when the feedback received contrasts with individual
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51 318 perceptions and is facilitated by a mentor or coach.⁴¹ A mentor can help to deal with the emo-
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53 319 tional aspects of the multi-source feedback and to structure individual reflection and follow-
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55 320 up.⁴² Use of multisource feedback and mentoring systems could thus help countries transition-
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3 321 ing from a system based on self-assessments to “directed” self-assessments as suggested by
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5 322 Sargeant et al.⁴³
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7 323 Second, most systems relied on self-assessments and lifelong learning activities doc-
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9 324 tors selected themselves without attending to external assessment of practice performance.
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11 325 More specifically, by relying on credit accumulation systems that allowed doctors to choose
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13 326 their learning activities,⁴⁴ it was entirely at the doctors’ discretion to judge their performance
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15 327 and learning needs. There’s strong evidence however, that several individual and social fac-
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17 328 tors obscure the validity of self-assessments such as age and experience.^{44 45} Additionally,
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19 329 self-assessments tend to mirror self-confidence and self-efficacy which are not necessarily
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21 330 good measures of doctors’ competence.⁴⁴ This evidence provides ample ground to question
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23 331 both the effectiveness of recertification systems that rely on doctors’ self-assessments and the
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25 332 autonomy granted to clinicians.^{16 46} Hence, assessments of competence will become more
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27 333 meaningful when they involve multiple assessors, including patients.
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32 334 Another deviation from the purpose of recertification constituted the assessment meth-
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34 335 ods used. Whereas activities such as reading written materials, and attending conferences or
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36 336 presentations have been shown to deepen specific knowledge, there is no evidence that such
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38 337 didactic and passive learning interventions alone improve performance and patient
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40 338 outcomes.⁴⁷⁻⁴⁹ A causal link between educational activities and improved patient health status
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42 339 yet remains to be established.⁵⁰ This casts doubt on the impact of the recertification systems in
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44 340 our study on doctors’ performance. Consequently, our findings reinforce concerns about the
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46 341 validity of recertification procedures and emphasize the need to combine various assessment
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48 342 methods, likely resulting in greater accountability as previously been proven.⁵¹ As stated by
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50 343 Forsetlund and colleagues (2009), a combination of multiple media, multiple instructional
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52 344 techniques and multiple exposures can help to induce change in performance towards im-
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54 345 proved patient outcomes.⁵²
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3 346 Since medical specialists invest substantial time and money in their professional de-
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5 347 velopment, the feasibility, applicability, and acceptability of recertification are topics worth
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7 348 exploring in the context of quality assurance. We therefore invite future studies into stake-
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9 349 holders' perceptions of recertification and their effectiveness and impact,⁵³ and also to bring
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11 350 into focus the content and formal aspects of learning activities which, by facilitating its design
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13 351 and implementation, may improve recertification. To shed light on the full picture, we would
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15 352 furthermore welcome studies investigating the feasibility and acceptability of involving pa-
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17 353 tients in evaluating physicians' competency.

21 354 **Limitations**

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24 355 Since recertification systems were decentralized in some countries and we explored the na-
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26 356 tional level only, we cannot exclude that interregional variations were missed. Moreover, alt-
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28 357 hough the interviewees ideally represented at least two different national organizations, inter-
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30 358 views were mostly limited to two or three respondents per country. A final and possibly the
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32 359 most complex and intervening limitation constituted the diversity in terminology and lan-
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34 360 guage. This may have affected the translation of national concepts into English during the
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36 361 interviews and of written descriptions, potentially causing loss of detail during the analyses.
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38 362 These language differences and ambiguity in terms underline the challenge of comparing var-
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40 363 ious recertification systems.

44 364 **Practical implications for professional mobility**

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46 365 Defining universal criteria for assessing professional competence will be no easy feat, espe-
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48 366 cially not when considering the differences between national recertification approaches, rising
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50 367 cross-border mobility. Since each system is customized to a specific context, culture, and
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52 368 healthcare system, a universal recertification system may neither be desirable nor achievable,
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54 369 as doctors are required to adapt to the unique features of their work setting and health care
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56 370 system. For transparency purposes, however, medical societies could share their competency

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3 371 assessment procedures and quality standards, turning a political matter into an educational
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5 372 (and quality assurance) matter.⁷ Moreover, national bodies can incorporate performance eval-
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7 373 uation, involve multiple stakeholders including patients, and use other assessments besides
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9 374 clinicians' self-assessments in their re-certification procedures to enhance liability.⁵⁴

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12 375 Achieving an overarching quality assurance system being an unrealistic goal, we need
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14 376 to have a shared understanding of what are minimum standards for a doctor⁴⁶ thereby creating
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16 377 a base for international comparison while allowing for local adaptations. Such standards of
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18 378 training content and certification directives could meet the challenges posed by the free,
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20 379 cross-border movement of professionals, improving patient safety, and enhancing accounta-
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22 380 bility and transparency.

23 24 25 26 381 **Conclusion**

27
28 382 Recertification can help assess and improve knowledge, skills, professional performance, and,
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30 383 ultimately, patient outcomes. Yet, systems vary widely across countries in terms of being
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32 384 compulsory or not, requirements, patient involvement, and consequences of compliance or
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34 385 non-compliance. A shift toward a broader program of assessment focused on competence as-
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36 386 sessment and lifelong learning might create a more valid, credible, and reliable basis for
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38 387 recertification, meeting growing demands for accountability and transparency.

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3 388 Acknowledgements: We would like to thank Professor Dame Lesley Southgate, FRCGP,
4
5 389 FRCP, MClin, Sci, for contributing to this manuscript with discussing the study design and
6
7 390 suggesting possible interview partners. Angelique van den Heuvel provided help in form of
8
9 391 language editing, which we highly appreciated. Furthermore, we would like to thank all inter-
10
11 392 viewees for their contribution.
12
13

14 393
15
16 394 Contributors: CS wrote the research plan, collected, cleaned and analysed the data, and draft-
17
18 395 ed and revised the paper. She is guarantor. All authors were involved with conceptualizing the
19
20 396 research. MG analysed the data, and drafted and revised the paper. SM revised the paper. GR
21
22 397 drafted and revised the paper. FS drafted and revised the paper. ED analysed the data, drafted
23
24 398 and revised the draft paper.
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27 399
28
29 400 Funding statement: Carolin Sehlbach is a PhD student at Maastricht University, on a project
30
31 401 funded by the European Respiratory Society. The research conducted by Carolin Sehlbach is
32
33 402 however independent from this funding.
34
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36 403
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38 404 Competing interests: None declared. All authors have completed the *Unified Competing In-*
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40 405 *terest* form (available on request from the corresponding author).
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43 406
44
45 407 Ethical Approval: Ethical approval was obtained from the Netherlands Association for Medi-
46
47 408 cal Education (NVMO; file number 669).
48
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50 409
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52 410 Data sharing: The dataset(s) supporting the conclusions of this article is available from the
53
54 411 author upon request by emailing the corresponding author.
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3 413 Transparency declaration: Carolin Sehlbach affirms that the manuscript is an honest, accurate,
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5 414 and transparent account of the study being reported; that no important aspects of the study
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7 415 have been omitted; and that any discrepancies from the study as planned (and, if relevant,
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BMJ Open

Doctors on the move: a European case study on the key characteristics of national recertification systems

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-019963.R1
Article Type:	Research
Date Submitted by the Author:	08-Jan-2018
Complete List of Authors:	Sehlbach, Carolin; Maastricht University - Location Randwyck, Department of Educational Research and Development Govaerts, MJ; Maastricht University, Department of Educational Research and Development Mitchell, Sharon; European Respiratory Society, Education Rohde, Gernot; Johann Wolfgang Goethe University Hospital, Respiratory Medicine Smeenck, Frank; Department of Respiratory Medicine, Catharina Hospital; Maastricht University - Location Randwyck, Department of Educational Research and Development Driessen, Erik ; Maastricht University , Department of Educational Research and Development
Primary Subject Heading:	Medical education and training
Secondary Subject Heading:	Medical education and training
Keywords:	Recertification, Continuing Professional Development, Performance assessment, Patient safety, Quality assurance, Professional mobility

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1 **Doctors on the move: a European case study on the key characteristics of national recer-**
2 **tification systems**

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26 Word count: 3,265 words

27 Details on funding: Carolin Sehlbach is a PhD student at Maastricht University, on a project

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4
5 28 funded by the European Respiratory Society.
6

7 29 Copyright: The Corresponding Author has the right to grant on behalf of all authors and does
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5 34 **Doctors on the move: a European case study on the key characteristics of national recer-**
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7 35 **tification systems**
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10 36 **ABSTRACT**
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12 37 **Objectives:** With increased cross-border movement, ensuring safe and high-quality healthcare
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14 38 has gained primacy. The purpose of recertification is to ensure quality of care through period-
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16 39 ically attesting doctors' professional proficiency in their field. Professional migration and
17
18 40 facilitated cross-border recognition of qualifications, however, make us question the fitness of
19
20 41 national policies for safeguarding patient care and the international accountability of doctors.
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23 42 **Design and setting:** We performed document analyses and conducted 19 semi-structured
24
25 43 interviews to identify and describe key characteristics and effective components of 10 differ-
26
27 44 ent European recertification systems, each representing one case (collective case study). We
28
29 45 subsequently compared these systems to explore similarities and differences in terms of as-
30
31 46 sessment criteria used to determine process quality.
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34 47 **Results:** Great variety existed between countries in terms and assessment formats used, tar-
35
36 48 geting cognition, competence and performance (Miller's assessment pyramid). Recertification
37
38 49 procedures and requirements also varied significantly, ranging from voluntary participation in
39
40 50 professional development modules to the mandatory collection of multiple performance data
41
42 51 in a competency-based portfolio. Knowledge assessment was fundamental to recertification in
43
44 52 most countries. Another difference concerned the stakeholders involved in the recertification
45
46 53 process: while some systems exclusively relied on doctors' self-assessment, others involved
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48 54 multiple stakeholders but rarely included patients in assessment of doctors' professional com-
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50 55 petence. Differences between systems partly reflected different goals and primary purposes of
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52 56 recertification.
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55 57 **Conclusion:** Recertification systems differ substantially internationally with regard to the
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5 58 criteria they apply to assess doctors' competence, their aims, requirements, assessment for-
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7 59 mats, and patient involvement. In the light of professional mobility and associated demands
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9 60 for accountability, we recommend that competence assessment include patients' perspectives,
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11 61 and recertification practices be shared internationally to enhance transparency. This can help
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13 62 facilitate cross-border movement, while guaranteeing high-quality patient care.
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18 64 Word count: 277
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22 66 **Key words:** Recertification; Continuing Professional Development; Performance assessment;
23
24 67 Patient safety; Quality assurance; Professional mobility
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28 69 **Strengths and limitations of this study**

- 30
31 70 • Our research provides a comprehensive comparison of ten European recertification sys-
32
33 71 tems and their assessment criteria used to ensure quality of care delivered. It highlights
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35 72 how physicians' knowledge and competence are assessed, which stakeholders are in-
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37 73 volved and how the processes are regulated.
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39 74 • Our research focuses on European countries only as free cross-border movement of pro-
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41 75 fessionals is unique to the European context.
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43 76 • We cannot exclude that interregional variations were missed because recertification sys-
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45 77 tems were decentralized in some countries and we explored the national level only.
46
47 78 • The diversity and ambiguity in terminology (recertification, revalidation, continuing pro-
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49 79 fessional development) underline the challenge of comparing various recertification sys-
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51 80 tems.
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5 81 **Doctors on the move: a European case study on the key characteristics of national recer-**
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7 82 **tification systems**

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10 83 **INTRODUCTION**

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12 84 Increased mobility of health professionals can pose potential threats to the quality of care.
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14 85 Suppose, for instance, a high performing, Romanian doctor moves to the Netherlands. There,
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16 86 this person will face a new work environment in a distinct healthcare system with specific
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18 87 quality guidelines, and different morbidity patterns, and patient demands. As this new work
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20 88 setting requires specific knowledge, skills, and values that differ from the Romanian context
21
22 89 and culture, you may wonder: Will this doctor still be competent to deliver high-quality care?

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25 90 While the problem of safeguarding quality of care across borders is omnipresent, it is
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27 91 particularly pertinent in Europe where the free movement of professionals has long historical
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29 92 and legal roots. Although a European Commission directive has facilitated mobility by
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31 93 providing for international recognition of professional qualifications, it fails to guarantee that
32
33 94 doctors actually meet the minimum and context-specific quality standards. To safeguard qual-
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35 95 ity of patient care, regulatory bodies around the world have implemented different systems,^{1 2}
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37 96 such as recertification systems. Recertification entails lifelong learning and periodic assess-
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39 97 ment of doctors' competence and performance through various methods.³ It describes the pro-
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41 98 cess designed to promote and demonstrate continuous professional competence.⁴ More specif-
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43 99 ically, it requires a formal procedure of assessing and attesting quality of service provided "in
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45 100 accordance with established requirements or standards."⁵ By renewing initial certification,
46
47 101 *recertification* aims to address any decline in performance as well as ensure trained doctors'
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49 102 adaptation to advances in knowledge and technology.^{6 7} This is particularly important in times
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51 103 of increased publicity over individual failures of medical performance, demands for doctors'
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53 104 accountability, and concerns about patient safety.⁸

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5 105 Despite its well-intended aim, recertification harbours two inherent problems. First,
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7 106 current national recertification practices fail to ensure quality of care internationally, as they
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9 107 assess doctors' competence and performance in accordance with *national* quality standards.
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11 108 Differences in standards across countries and the absence of international recertification sys-
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13 109 tems may complicate international quality assurance and quality improvement.⁷ This begs the
14
15 110 question of whether such discrete practices can respond to repeated calls for international ac-
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17 111 countability and transparency.⁴ Second, although research on assessment of professional
18
19 112 competence provided a set of guidelines for assessment criteria to ensure high quality assess-
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21 113 ment,⁹ the question on how to assess doctors' competence has often turned into a political
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23 114 rather than an educational one,¹⁰ potentially impacting on effectiveness of recertification sys-
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25 115 tems.

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29 116 "Competence" is defined as the ability to integrate knowledge, skills, and attitudes into
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31 117 a certain context to ensure safe patient care.^{11 12} This definition suggests to pay balanced at-
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33 118 tention to multiple competency domains relevant to a doctor, when assessing professional
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35 119 competence.¹³ Indeed, many scholars and institutions advocate the assessment of not only
36
37 120 medical knowledge and skills, but also competencies, such as communication, collaboration,
38
39 121 and clinical judgment, as well as cultural competence or critical consciousness.¹⁴⁻¹⁶ Assess-
40
41 122 ment measures must also be robust and focus on the healthcare system's needs and outcomes,
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43 123 implying involvement of key stakeholders, particularly patients when evaluating quality of
44
45 124 care.¹⁷⁻²⁰ It is furthermore acknowledged that, for each of the competencies, outcomes of dif-
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48 125 ferent assessment methods must be combined to ensure robust decision making about profes-
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50 126 sional competence^{21 22}

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52 127 To conclude, cross-border quality of care will be promoted if countries not only share their
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54 128 recertification practices, but also are willing to critically reflect on quality of assessment pro-
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cesses embedded in recertification procedures.^{8 23} In the present study, we attempt taking a first step in this direction by identifying different national recertification approaches. The question of the present study, therefore, was what are the key characteristics of recertification systems for doctors of different countries? More specifically, we aimed at exploring use of assessment criteria in design of recertification procedures. We used a collective case study design to describe and compare different national systems. We were particularly interested in the assessment criteria used, if any, and how they were applied. Although recertification is sometimes also coined “revalidation,” “re-accreditation,” and “maintenance of certification” or used interchangeably with “continuing professional development” in other contexts, this article keeps to the former term. The article builds on previous work on certification but primarily focuses on recertification.

METHODS

Study Design and Case Selection

We described and analysed the recertification systems of ten individual European countries. Each country’s national recertification system represented a single case. We selected our cases using purposeful sampling to reach maximum heterogeneity in terms of geographical spread across Europe, demographics, health professionals’ migration profile, and type of healthcare system (Table 1).²⁴

Table 1. *Sampling criteria*

Sampling criterion	Specification of criterion
Geographical spread	Include countries of different sizes, demographic make-up, with different cultures, and from a range of geographical locations (Northern, Eastern, Southern, Western, and Central Europe).

Migration profile and position	Include countries that have different levels of health professional migration (inflow and outflow) and rely more or less on foreign doctors; include both “junior” (EU12) and “senior” EU member states (EU15) as indicated by the length of EU membership.
Different healthcare systems	Include countries with different structures of healthcare services in terms of how they are financed and covered by the insurance system (publicly, privately, or both).

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150 EU2 = countries which joined the EU in 2007: Bulgaria and Romania.

151 EU10 = countries which joined the EU in 2004: Cyprus, Czech Republic, Estonia, Hungary,
152 Latvia, Lithuania, Poland, Slovakia, and Slovenia.153 EU12 = EU2 and EU10 countries: Cyprus, Czech Republic, Bulgaria, Estonia, Hungary, Lat-
154 via, Lithuania, Poland, Romania, Slovakia, and Slovenia.155 EU15 = countries which were already EU member states in 2003: Austria, Belgium, Den-
156 mark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portu-
157 gal, Spain, Sweden, and the UK.

158

159 Based on these criteria, the final study sample included Denmark, Germany, Hungary,

160 Ireland, Poland, Portugal, Spain, Switzerland, the Netherlands, and the United Kingdom (Ta-

161 ble 2).

162 **Table 2.** *Overview of selected countries and their health insurance systems, their coverage, and the existence of a gatekeeper system*²⁵⁻³³

Country	Geographic location	Net migration rate (migrants/1,000 inhabitants) ³⁴	% of foreign-trained doctors, latest available year ^{24 35 36}	Type of health insurance system	Financing of healthcare
Denmark	North	2.25	5.27%	Decentralized, offers universal and nearly free access	Taxation
Germany	Central	1.06	10.26%	Mix of compulsory public and voluntary private health insurance; highly decentralized	Statutory insurance, taxation, out-of-pocket payments, and private health insurance
Hungary	East	1.34	7.79%	National Health Insurance Fund is state-owned and offers complete coverage, partly free of charge	Taxation and social health insurance contributions
Ireland	West	3.31	41.6%	National Healthcare System, Mix of public and voluntary private health insurance	Taxation and supported by co-payments for specialist's treatment from insurance providers.
Poland	East	-0.47	1.8%	Decentralized, mandatory health insurance system	National Health Funds
Portugal	South	2.74	7.74%	Private and public insurance schemes plus voluntary private	Taxation, public and private insurance schemes, and direct

					insurances	payment
Spain	South	7.24	9.4%		National Health Service Private and public insurance schemes	Taxation and payroll contribu- tions
Switzerland	Central	5.43	27.05%		Obligatory, statutory, decentral- ized insurance system Federal Office for Social Insur- ance monitors providers	Compulsory health insurance premiums and out-of-pocket payments
The Nether- lands	Central	1.97	2.13%		Mixed model of compulsory social and voluntary private in- surance	Health Insurance, taxation and direct payments
United Kingdom	West	2.56	28.07%		Mix of public and voluntary pri- vate health insurance	National Health Service, taxa- tion, and national insurance contributions

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3 164 **Data collection**
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5 165 We collected data on the respective recertification procedures by performing a document
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7 166 analysis for each case in addition to conducting semi-structured interviews with two or three
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9 167 representatives from each country.
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11 168 For the document analyses, we retrieved documents describing national recertification
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13 169 procedures for doctors from the websites of national certification organizations, and translated
14
15 170 them into English if needed. The documents included national recertification schemes and
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17 171 regulations, rules and reports of medical education and training, user guidelines, laws and
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19 172 grey literature articles. We focused on documents that clarified rationale, form and procedure,
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21 173 as well as requirements and rewards of each recertification program.
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24 174 To validate and corroborate our interpretation of data from document analysis, we
25
26 175 conducted one to three semi-structured interviews with representatives of each national regu-
27
28 176 latory body responsible for postgraduate medical education and recertification or the recogni-
29
30 177 tion of professional qualifications (e.g., international affairs offices) (N=19). These interview-
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32 178 ees were directors of professional development and practice, heads of recertification depart-
33
34 179 ments, experts on continuing professional development, and official secretaries or legal advi-
35
36 180 sors to national medical education offices, medical or scientific societies, accreditation bodies,
37
38 181 medical royal colleges, councils, or chambers (Table 3).
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44 183 **Table 3.** *Number and profile of respondents per country*
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Country investigated	Number of interviews	Profile of respondents
Netherlands	1	
Switzerland	2	
Germany	3	
United Kingdom	2	
Ireland	2	
Denmark	2	

Hungary	1
Poland	2
Portugal	2
Spain	2

184

185 The first author (CS) conducted all interviews via video or phone, based on an interview pro-
186 tocol adapted from a study on continuing professional development and lifelong learning for
187 health professionals.³⁷ The interview protocol was piloted in the Netherlands. Questions ad-
188 dressed competency frameworks as well as rules and regulations of recertification, asking
189 about regulatory authorities involved, main objective(s), structure, requirements, and conse-
190 quences of compliance or non-compliance. Before the interview, we explained the research
191 purposes to participants and asked them to give informed consent. Interviews were audio-
192 taped and lasted 50-90 minutes, during which notes were taken. Notes were subsequently pre-
193 sented to interviewees to approve or to add information.

194 Data collection took place from April to September, 2016.

195 **Patient involvement**

196 No patients were involved in this research, given our specific aim.

197 **Data analysis**

198 Data analysis spanned a two-step process. First, we analysed the data from the document
199 analyses and interviews to identify and describe key characteristics of each case. We asked at
200 least one interviewee per country to comment on the accuracy and completeness of the de-
201 scribed recertification system. We subsequently re-analysed the data, specifically focusing on
202 the application of criteria for high quality assessment: validity, reliability, educational and
203 catalytic effect.^{9 14 38} For that purpose we identified specific strategies used to ensure assess-
204 ment quality in terms of validity, reliability and educational consequences, for each of the re-

205 certification system (Box 1).

206

207 **Box 1.** *Strategies embedded in recertification, affecting assessment quality*

Criterion		Features
What is assessed?	Program of assessment	<ul style="list-style-type: none"> • Inclusion of competency domain(s) or domain(s) of professional practice (including lifelong learning) • Use of overarching framework (based on needs healthcare system; key domains professional practice) • Assessment and learning aligned with individual needs • Focus on process of care • Focus on patient outcome (including patient satisfaction)
When is it assessed?	Frequency of recertification cycle	<ul style="list-style-type: none"> • Yearly • Every 2-3 years • Every 4-5 years • Every > 5 years • No time frame
Who assesses?	Stakeholders involved in the assessment	<ul style="list-style-type: none"> • Individual (self-assessment) • Peers • Employer • Patients • Others
How is it assessed?	Assessment methods	<ul style="list-style-type: none"> • Competence level according to Miller's assessment pyramid (cognition versus performance) • Self-assessment • Portfolios • Credit collection through course participation • Examinations (standardised) • Simulations • Clinical audits • Multi-source feedback
	Regulations	<ul style="list-style-type: none"> • Voluntary vs. mandatory

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	What are the objec- tives?	Assessment goal	<ul style="list-style-type: none"> • Legal vs. professional obligation • Quality of care and patient safety • Professional development • Maintenance of doctors' knowledge and skills
18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60	208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225	Consequenc- es of non- compliance	<ul style="list-style-type: none"> • Loss of license • Financial sanctions • Follow-up • Work under supervision • Feedback

208

209 These strategies included program of assessment, assessment goals and methods (i.e.,

210 authentic and suitable methods which aim at measuring day-to-day performance and profes-

211 sional competence), as well as frequency of assessment (i.e., consistent outcomes across

212 measurements and decisions). We also addressed the involvement of different stakeholders

213 including patients, and consequences for learning and development. Self-assessment as tool

214 for lifelong learning and assessment of practice performance were the two major components

215 of recertification considered.³⁹ Finally, we compared recertification systems across cases to

216 identify similarities and differences with respect to use of the aforementioned assessment cri-

217 teria.

218 **RESULTS**

219 In the following paragraphs, we highlight differences and/or similarities across countries in

220 terms of the purpose, focus, frequency, and methods of recertification, and the stakeholders

221 involved in the process. Exact details are provided in Table 4, while Table 5 outlines the bod-

222 ies (Medical specialties, Ministries of Health or Medical Authorities) responsible for recertifi-

223 cation. The final paragraph provides a synopsis of the most striking results.

224 All systems uncovered applied to all registered practicing doctors, irrelevant of whether they

225 were trained nationally or internationally, as they are automatically enrolled in the national

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3 226 scheme upon registration.
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7 228 **1. Purpose of recertification**
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9 229 As shown in Table 4, the purpose of recertification constituted a major source of variance.
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11 230 While several countries aimed to improve quality of care and patient safety, a minority (N=2),
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13 231 essentially those countries where recertification was not mandatory, upheld personal devel-
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15 232 opment and career advancement as their primary objective (Table 4).
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233 **Table 4.** *Competence assessment in recertification systems of investigated cases*

Case	Purpose ¹	Focus ²			Based on competency framework	Frequency		Assessment methods ³	Who decides on activities to be followed?		Stakeholders involved in the assessment				How is internal quality of assessment assured?
		LLL	PP	Mandatory (yes/no)		After ... credits	Every ... year(s)		Individual doctor	Employers	Doctor him/herself	Colleagues	Patients	Employers	
Netherlands	1, 3	+	+	+	+	200	5	1.4-1.7; 2; 3; 4; 5	+	-	+	+	+	+	quality visitations, assessment of group functioning
Switzerland	1, 2	+	+	+	N/A	150	3	1.1-1.7; 2; 3	+	-	+	+	-	-	N/A
Germany	1, 3	+	-	+	N/A	250	5	1.1-1.4; 1.6-1.8	+	-	+	-	-	-	accreditation of CME providers
United Kingdom	1, 2, 3	+	+	+	+	~250	5	1.1-1.4; 1.6; 1.7; 2; 3; 4; 7	+	-	+	+	+	+	independent assessors, information triangulation, audits
Ireland	3	+	+	+	+	50	1	1.2-1.6; 2	+	-	+	-	-	-	N/A
Denmark	1, 2	-	+	-	-	N/A	1	1; 3; 4	+	+	+	-	-	+	local management
Hungary	2	+	-	+	N/A	250	5	1.1; 1.2; 1.6-1.8; 4; 5; 6	+	-	+	-	-	-	more credits for CPD activities with exams

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Poland	3	+	-	+	N/A	200	4	1.1; 1.2; 1.4-1.7	+	-	+	-	-	-	accreditation of CME providers
Portugal	4	+	+	-	N/A	N/A	5	4	+	-	-	+	-	(+)	N/A
Spain	4	+	+	-	+	N/A	3	1.2; 4	+	-	+	+	-	+	organization's quality con- trol

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235 ¹. Recertification purpose: 1. Quality of care; 2. Patient safety; 3. Maintenance of doctors' knowledge and skills; 4. Career.

236 ². Focus of recertification: LLL = lifelong learning; PP = Practice performance.

237 ³. Assessment methods:

238 1. CPD: [1.1 specialty-specific CPD course; 1.2 General CPD course (communication skills); 1.3 Individual learning (reading); 1.4 Conference attend-
239 ance; 1.5 Teaching; 1.6 Research & scientific publications; 1.7 E-learning; 1.8 Time spent as visiting professional]

240 2. Clinical audit;

241 3. Appraisal/peer reviews;

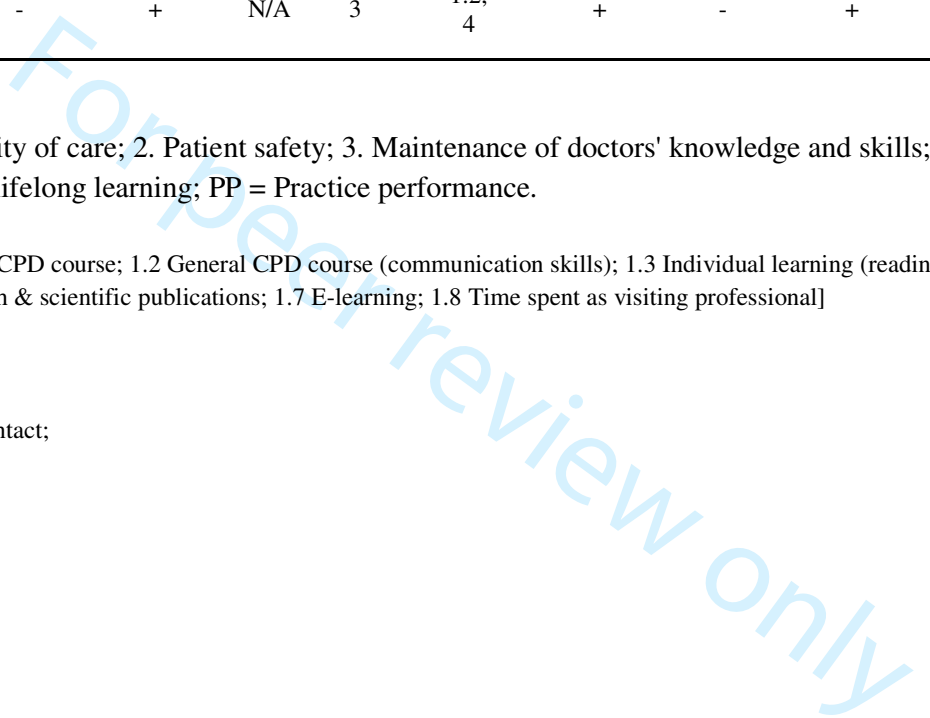
242 4. Portfolio;

243 5. Minimum hours of patient contact;

244 6. Mandatory intensive course;

245 7. Significant events.

246 yes = + , no = -



247 Participation in a recertification program was voluntary in three countries only, Den-
 248 mark, Spain and Portugal, though all countries imposed a professional or legal obligation to
 249 engage in lifelong learning. Consequences of non-compliance were non-existent in volun-
 250 tary systems; in the mandatory systems (N=7), however, they varied from financial sanc-
 251 tions (Switzerland and Germany) or work under supervision to suspension of the license to
 252 practice (Germany, the UK, Hungary and partly the Netherlands), with two countries allow-
 253 ing for license recovery. Finally, one country conferred a lifelong registration upon doctors,
 254 obviating the need to impose any sanctions in practice (Table 5).

255

256 **Table 5.** Regulation of recertification process in the countries under scrutiny

Case	Who sets rules for recertification?				Potential ²⁵⁷
	Medical Specialties	Ministry of Health	Medical Authority ¹	Type of obligation ²	consequences of non-compliance ³
Netherlands	yes	yes	yes	1	(1), 2
Switzerland	yes	no	no	1,2	3, 4
Germany	no	yes	yes	1,2	1, 3
United Kingdom	no	no	yes	1,2	1, 2
Ireland	yes	no	yes	1	4, 5
Denmark	/	/	yes	2	4
Hungary	/	yes	yes	1	1
Poland	/	yes	yes	1	4
Portugal	/	/	/	/	4
Spain	yes	/	yes	1	4

258 ¹ Medical Authority such as the General Medical Council259 ² Type of obligation: 1. Legal; 2. Professional260 ³ Potential consequences of non-compliance are: 1. Work supervised or suspen-
 261 sion of license; 2. Suspension of license with possibility to restore license; 3. Fi-
 262 nancial sanctions; 4. No formal consequences / license for lifetime; 5. Follow-up.

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Information obtained from interviews confirmed information from documents with the exception of handling of con-compliance: compared to the rules laid down in official documents, interviewees reported a more lenient handling of con-compliance in practice.

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2. Focus of the assessment

As regards focus, almost all recertification systems emphasized the lifelong learning of doctors. Likewise, most systems relied on the collection of a minimum number of credits per year, mostly 50 (N=5), where one credit typically represented one hour of learning activity. Although the three voluntary systems did not require credits to be earned for recertification, one did recommend it (Denmark). Such practice was often embedded in a continuing professional development framework as part of a voluntary recertification process. In Hungary doctors must take a specific course followed by an exam. Generally, they received more credits for courses if these were concluded with an examination. Of the countries that assessed practice performance, only five did so through audits and appraisals or multi-source feedback. Four countries evaluated doctors' individual and team functioning focusing on communication and collaboration skills.

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3. Frequency of recertification

The frequency of recertification and timeframe within which requirements must be fulfilled varied widely: some countries had annual appraisals (N=2), others three-year procedures (N=2), but most of the countries undertook quinquennial assessments (N=5).

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4. Assessment methods

To demonstrate their knowledge and engagement in lifelong learning, doctors in most coun-

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2
3 288 tries must earn credits, for instance by participating in workshops and national or international
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5 289 conferences, doing individual reading, teaching, writing scientific articles, spending time as
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7 290 visiting doctor, and/or e-learning. Denmark assessed performance on the basis of a dialog
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9 291 between employer and employee who jointly discussed learning needs. The United Kingdom
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11 292 counted reflection on significant events, that is, unintended critical events which potentially
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13 293 harmed the patient, to measure patient outcomes. Yet other countries (N=4) used clinical au-
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15 294 dits, number of complaints, reviews or appraisals, and peer reviews to measure processes of
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17 295 healthcare delivery. Finally, some countries deployed portfolios (N=6), clinical audits (N=4),
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19 296 and multi-source feedback (N=4) to reflect on individual and team functioning.
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25 298 **5. Stakeholder involvement**

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27 299 In most cases (N=9), doctors decided which learning activities to take based on their self-
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29 300 assessed learning needs. Several countries, however, also based the assessment of perfor-
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31 301 mance outcomes and the process of care on feedback from peers (N=5) or patients (N=2), yet
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33 302 only one country (The UK) demanded involving patients in the assessment regularly.
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37 304 **6. Synopsis**

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39 305 All things considered, what stood out was that most recertification systems relied heavily on
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41 306 doctors' self-assessments, attached little weight to patient outcomes, patient involvement, and
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43 307 the assessment of practice performance, as well as lacked an overarching competency frame-
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45 308 work. Only four countries seem to match the content of assessment programs with evaluation
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47 309 of professional practice. These findings clearly contrast with the aim to ensure quality of care
48
49 310 and patient safety most systems pursued. Evaluation of practice performance seems to be a
50
51 311 *sine qua non*, an indispensable condition, for assessment of competence, i.e. what doctors
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53 312 actually do in day-to-day practice. Two countries (the Netherlands and the UK), however, did
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3 313 use a more comprehensive system, covering both self-assessment and practice performance
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5 314 through multi-source feedback, including patients' feedback.
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7 315 Three other countries deserve mention for their apparent distinctness from the rest.
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9 316 Denmark, though not formally requiring continuing professional development, assessed prac-
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11 317 tice performance based on an annual dialog between doctor and employer. This left little room
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13 318 for individual doctors to self-assess their performance and independently decide on activities
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15 319 to be taken, which was the case in all other countries where the individual doctor was respon-
16
17 320 sible for high-quality patient care. The systems in Spain and Portugal stood out as being ca-
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19 321 reer-focused: they did not require doctors to engage in lifelong learning and professional de-
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21 322 velopment for purposes of patient safety and quality patient care, but rather encouraged the
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23 323 use of a portfolio to enhance chances of promotion.
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27 324 **DISCUSSION**

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29 325 The purpose of this study was to investigate how recertification is organized across different
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31 326 countries. We found substantial differences in recertification requirements and procedures.
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33 327 Moreover, these requirements in many respects seemed to conflict with aims to ensure quality
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35 328 of care and patient safety.
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38 329 First, we observed that only a few systems included feedback from patients in the as-
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40 330 sessment. Involving patients in assessing quality of healthcare and doctor performance seems
41
42 331 inevitable for accountability and transparency purposes.⁴⁰ Although many patients are needed
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44 332 to obtain reliable evaluations, their involvement in recertification procedures can help respond
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46 333 to public calls for doctors' accountability.⁹ Wright et al recommend including data from 34
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48 334 patient questionnaires and 15 colleague questionnaires to obtain reliable performance evalua-
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50 335 tion for appraisal purposes.⁴¹ Despite the fact that the literature reports peers to give accurate,
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52 336 credible, and valid assessments of performance, peer feedback was absent in most systems
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54 337 investigated but is for example employed in some Canadian provinces.^{9 14 42 43} Use of multi-
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3 338 source feedback to assess practice performance, requires high quality and credible feedback to
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5 339 induce reflection on practice.⁴⁴ Multi-source feedback, including patients' feedback, can be
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7 340 especially effective when the feedback received contrasts with individual perceptions and is
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9 341 facilitated by a mentor or coach.⁴⁵ A mentor can help to deal with the emotional aspects of the
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11 342 multi-source feedback and to structure individual reflection and follow-up.⁴⁶ Use of multi-
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13 343 source feedback and mentoring systems could thus help countries transitioning from a system
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15 344 based on self-assessments to "directed" self-assessments as suggested by Sargeant et al.⁴⁷

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18 345 Second, most systems relied on self-assessments and lifelong learning activities doc-
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20 346 tors selected themselves without attending to external assessment of practice performance.
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22 347 More specifically, by relying on credit accumulation systems that allowed doctors to choose
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24 348 their learning activities,⁴⁸ it was entirely at the doctors' discretion to judge their performance
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26 349 and learning needs. There's strong evidence however, that several individual and social fac-
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28 350 tors obscure the validity of self-assessments such as age and experience.^{48 49} Additionally,
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30 351 self-assessments tend to mirror self-confidence and self-efficacy which are not necessarily
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32 352 good measures of doctors' competence.⁴⁸ This evidence provides ample ground to question
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34 353 both the effectiveness of recertification systems that rely on doctors' self-assessments and the
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36 354 autonomy granted to clinicians.^{17 50} Hence, assessments of competence will become more
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38 355 meaningful when they involve multiple assessors, including patients.

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42 356 Another deviation from the purpose of recertification constituted the assessment meth-
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44 357 ods used. Whereas activities such as reading written materials, and attending conferences or
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46 358 presentations have been shown to deepen specific knowledge, there is no evidence that such
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48 359 didactic and passive learning interventions alone improve performance and patient
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50 360 outcomes.⁵¹⁻⁵³ A causal link between educational activities and improved patient health status
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52 361 yet remains to be established.⁵⁴ This casts doubt on the impact of the recertification systems in
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54 362 our study on doctors' performance. Consequently, our findings reinforce concerns about the
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3 363 validity of recertification procedures and emphasize the need to combine various assessment
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5 364 methods, likely resulting in greater accountability as previously been proven.⁵⁵ As stated by
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7 365 Forsetlund and colleagues (2009), a combination of multiple media, multiple instructional
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9 366 techniques and multiple exposures can help to induce change in performance towards im-
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11 367 proved patient outcomes.⁵⁶

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14 368 Other non-European countries have experienced similar challenges in implementing
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16 369 adequate assessment methods for recertification purposes.^{4 43 57 58} Also Australia and North
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18 370 America investigate new methods to evaluate competence and practice performance, cautious-
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20 371 ly moving away from self-assessment.^{4 43 58}

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22 372 Since medical specialists invest substantial time and money in their professional de-
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24 373 velopment, the feasibility, applicability, and acceptability of recertification are topics worth
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26 374 exploring in the context of quality assurance. We therefore invite future studies into stake-
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28 375 holders' perceptions of recertification and their effectiveness and impact,⁵⁹ and also to bring
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30 376 into focus the content and formal aspects of learning activities which, by facilitating its design
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32 377 and implementation, may improve recertification. To shed light on the full picture, we would
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34 378 furthermore welcome studies investigating the feasibility and acceptability of involving pa-
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36 379 tients in evaluating physicians' competency.

380 **Limitations**

381 Since recertification systems were decentralized in some countries and we explored the na-
382 tional level only, we cannot exclude that interregional variations were missed. Moreover, alt-
383 hough the interviewees ideally represented at least two different national organizations, inter-
384 views were mostly limited to two or three respondents per country. A final and possibly the
385 most complex and intervening limitation constituted the diversity in terminology and lan-
386 guage. This may have affected the translation of national concepts into English during the
387 interviews and of written descriptions, potentially causing loss of detail during the analyses.

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3 388 These language differences and ambiguity in terms underline the challenge of comparing var-
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5 389 ious recertification systems.
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8 390 **Practical implications for professional mobility**

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10 391 Defining universal criteria for assessing professional competence will be no easy feat,
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12 392 especially not when considering the differences between national recertification approaches,
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14 393 rising cross-border mobility. Since each system is customized to a specific context, culture,
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16 394 and healthcare system, a universal recertification system may neither be desirable nor achiev-
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18 395 able, as doctors are required to consciously reflect on the local culture, and adapt to the
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20 396 unique features of their work setting and health care system.¹⁶ To our knowledge, currently
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22 397 there is no requirement or overarching effort in striving towards harmonising recertification
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24 398 processes across countries within the European Union. Its member states have agreed that
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26 399 each individual country will remain responsible for national health care affairs, without Euro-
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28 400 pean regulations interfering. Moving towards a standardised system would however require
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30 401 an EU-wide regulation, which is currently interrupted by those strong nationally regulatory
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32 402 powers. For transparency purposes, however, national bodies and medical societies could
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34 403 share their competency assessment procedures and quality standards, turning a political matter
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36 404 into an educational (and quality assurance) matter.⁸ Moreover, national bodies can incorporate
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38 405 performance evaluation, involve multiple stakeholders including patients, and use other as-
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40 406 sessments besides clinicians' self-assessments in their re-certification procedures to enhance
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42 407 liability.⁶⁰ Considering the increasing internationalisation of healthcare, doctors' cultural
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44 408 competency should also be incorporated into recertification programmes.
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49 409 Achieving an overarching quality assurance system being an unrealistic goal, we need
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51 410 to have a shared understanding of what are minimum standards for a doctor⁵⁰ thereby creating
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53 411 a base for international comparison while allowing for local adaptations. This however asks
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55 412 for an increased collaboration between countries and understanding of differences inherent to
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3 413 each system and culture. Such standards of training content and certification directives could
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5 414 meet the challenges posed by the free, cross-border movement of professionals, improving
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7 415 patient safety, and enhancing accountability and transparency.
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10 416 **Conclusion**

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12 417 Recertification can help assess and improve knowledge, skills, professional performance, and,
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14 418 ultimately, patient outcomes. Yet, systems vary widely across countries in terms of being
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16 419 compulsory or not, requirements, patient involvement, and consequences of compliance or
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18 420 non-compliance. A shift toward a broader program of assessment focused on competence as-
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20 421 sessment and lifelong learning might create a more valid, credible, and reliable basis for
21
22 422 recertification, meeting growing demands for accountability and transparency.
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26 423

27 424 Acknowledgements: We would like to thank Professor Dame Lesley Southgate, FRCGP,
28
29 425 FRCP, MClIn, Sci, for contributing to this manuscript with discussing the study design and
30
31 426 suggesting possible interview partners. Angelique van den Heuvel provided help in form of
32
33 427 language editing, which we highly appreciated. Furthermore, we would like to thank all inter-
34
35 428 viewees for their contribution.
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39
40 430 Contributors: CS wrote the research plan, collected, cleaned and analysed the data, and draft-
41
42 431 ed and revised the paper. She is guarantor. All authors were involved with conceptualizing the
43
44 432 research. MG analysed the data, and drafted and revised the paper. SM revised the paper. GR
45
46 433 drafted and revised the paper. FS drafted and revised the paper. ED analysed the data, drafted
47
48 434 and revised the draft paper.
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52
53 436 Funding statement: Carolin Sehlbach is a PhD student at Maastricht University, on a project
54
55 437 funded by the European Respiratory Society. The research conducted by Carolin Sehlbach is
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3 438 however independent from this funding.
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7 440 Competing interests: None declared. All authors have completed the *Unified Competing In-*
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9 441 *terest* form (available on request from the corresponding author).
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13 443 Ethical Approval: Ethical approval was obtained from the Netherlands Association for Medi-
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15 444 cal Education (NVMO; file number 669).
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20 446 Data sharing: The dataset(s) supporting the conclusions of this article is available from the
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22 447 author upon request by emailing the corresponding author.
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27 449 Transparency declaration: Carolin Sehlbach affirms that the manuscript is an honest, accurate,
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29 450 and transparent account of the study being reported; that no important aspects of the study
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31 451 have been omitted; and that any discrepancies from the study as planned (and, if relevant,
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33 452 registered) have been explained.
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COREQ (CONsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

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BMJ Open

Doctors on the move: a European case study on the key characteristics of national recertification systems

Journal:	<i>BMJ Open</i>
Manuscript ID	bmjopen-2017-019963.R2
Article Type:	Research
Date Submitted by the Author:	09-Mar-2018
Complete List of Authors:	Sehlbach, Carolin; Maastricht University - Location Randwyck, Department of Educational Research and Development Govaerts, MJ; Maastricht University, Department of Educational Research and Development Mitchell, Sharon; European Respiratory Society Rohde, Gernot; Johann Wolfgang Goethe University Hospital, Respiratory Medicine Smeenck, Frank; Department of Respiratory Medicine, Catharina Hospital; Maastricht University - Location Randwyck, Department of Educational Research and Development Driessen, Erik ; Maastricht University , Department of Educational Research and Development
Primary Subject Heading:	Medical education and training
Secondary Subject Heading:	Medical education and training
Keywords:	Recertification, Continuing Professional Development, Performance assessment, Patient safety, Quality assurance, Professional mobility

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1 **Doctors on the move: a European case study on the key characteristics of national**
2 **recertification systems**

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26 Word count: 3,322 words

27 Details on funding: Carolin Sehlbach is a PhD student at Maastricht University, on a project

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4
5 28 funded by the European Respiratory Society.
6

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5 34 **Doctors on the move: a European case study on the key characteristics of national**
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10 36 **ABSTRACT**
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12 37 **Objectives:** With increased cross-border movement, ensuring safe and high-quality healthcare
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14 38 has gained primacy. The purpose of recertification is to ensure quality of care through
15
16 39 periodically attesting doctors' professional proficiency in their field. Professional migration
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18 40 and facilitated cross-border recognition of qualifications, however, make us question the
19
20 41 fitness of national policies for safeguarding patient care and the international accountability of
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22 42 doctors.
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25 43 **Design and setting:** We performed document analyses and conducted 19 semi-structured
26
27 44 interviews to identify and describe key characteristics and effective components of 10
28
29 45 different European recertification systems, each representing one case (collective case study).
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31 46 We subsequently compared these systems to explore similarities and differences in terms of
32
33 47 assessment criteria used to determine process quality.
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36 48 **Results:** Great variety existed between countries in terms and assessment formats used,
37
38 49 targeting cognition, competence and performance (Miller's assessment pyramid).
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40 50 Recertification procedures and requirements also varied significantly, ranging from voluntary
41
42 51 participation in professional development modules to the mandatory collection of multiple
43
44 52 performance data in a competency-based portfolio. Knowledge assessment was fundamental
45
46 53 to recertification in most countries. Another difference concerned the stakeholders involved in
47
48 54 the recertification process: while some systems exclusively relied on doctors' self-assessment,
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50 55 others involved multiple stakeholders but rarely included patients in assessment of doctors'
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52 56 professional competence. Differences between systems partly reflected different goals and
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54 57 primary purposes of recertification.
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5 58 **Conclusion:** Recertification systems differ substantially internationally with regard to the
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7 59 criteria they apply to assess doctors' competence, their aims, requirements, assessment
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9 60 formats, and patient involvement. In the light of professional mobility and associated
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11 61 demands for accountability, we recommend that competence assessment include patients'
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13 62 perspectives, and recertification practices be shared internationally to enhance transparency.
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15 63 This can help facilitate cross-border movement, while guaranteeing high-quality patient care.
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20 65 Word count: 277
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24 67 **Key words:** Recertification; Continuing Professional Development; Performance assessment;
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26 68 Patient safety; Quality assurance; Professional mobility
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30 31 70 **Strengths and limitations of this study**

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33 71 • Our research provides a comprehensive comparison of ten European recertification
34
35 72 systems and their assessment criteria used to ensure quality of care delivered. It
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37 73 highlights how physicians' knowledge and competence are assessed, which stakeholders
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39 74 are involved and how the processes are regulated.
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42 75 • Our research focuses on European countries only as free cross-border movement of
43
44 76 professionals is unique to the European context.
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46 77 • We cannot exclude that interregional variations were missed because recertification
47
48 78 systems were decentralized in some countries and we explored the national level only.
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51 79 • The diversity and ambiguity in terminology (recertification, revalidation, continuing
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53 80 professional development) underline the challenge of comparing various recertification
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55 81 systems.
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5 82 **Doctors on the move: a European case study on the key characteristics of national**
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7 83 **recertification systems**
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10 84 **INTRODUCTION**
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12 85 Increased mobility of health professionals can pose potential threats to the quality of care.
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14 86 Suppose, for instance, a high performing, Romanian doctor moves to the Netherlands. There,
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16 87 this person will face a new work environment in a distinct healthcare system with specific
17
18 88 quality guidelines, and different morbidity patterns, and patient demands. As this new work
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20 89 setting requires specific knowledge, skills, and values that differ from the Romanian context
21
22 90 and culture, you may wonder: Will this doctor still be competent to deliver high-quality care?
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25 91 While the problem of safeguarding quality of care across borders is omnipresent, it is
26
27 92 particularly pertinent in Europe where the free movement of professionals has long historical
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29 93 and legal roots. Although a European Commission directive has facilitated mobility by
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31 94 providing for international recognition of professional qualifications, it fails to guarantee that
32
33 95 doctors actually meet the minimum and context-specific quality standards. To safeguard
34
35 96 quality of patient care, regulatory bodies around the world have implemented different
36
37 97 systems,^{1 2} such as recertification systems. Recertification entails lifelong learning and
38
39 98 periodic assessment of doctors' competence and performance through various methods.³ It
40
41 99 describes the process designed to promote and demonstrate continuous professional
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43 100 competence.⁴ More specifically, it requires a formal procedure of assessing and attesting
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45 101 quality of service provided "in accordance with established requirements or standards."⁵ By
46
47 102 renewing initial certification, *recertification* aims to address any decline in performance as
48
49 103 well as ensure trained doctors' adaptation to advances in knowledge and technology.^{6 7} This is
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51 104 particularly important in times of increased publicity over individual failures of medical
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53 105 performance, demands for doctors' accountability, and concerns about patient safety.⁸
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5 106 Despite its well-intended aim, recertification harbours two inherent problems. First,
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7 107 current national recertification practices fail to ensure quality of care internationally, as they
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9 108 assess doctors' competence and performance in accordance with *national* quality standards.
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11 109 Differences in standards across countries and the absence of international recertification
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13 110 systems may complicate international quality assurance and quality improvement.⁷ This begs
14
15 111 the question of whether such discrete practices can respond to repeated calls for international
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17 112 accountability and transparency.⁴ Second, although research on assessment of professional
18
19 113 competence provided a set of guidelines for assessment criteria to ensure high quality
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21 114 assessment,⁹ the question on how to assess doctors' competence has often turned into a
22
23 115 political rather than an educational one,¹⁰ potentially impacting on effectiveness of
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25 116 recertification systems.

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29 117 "Competence" is defined as the ability to integrate knowledge, skills, and attitudes into
30
31 118 a certain context to ensure safe patient care.^{11 12} This definition suggests to pay balanced
32
33 119 attention to multiple competency domains relevant to a doctor, when assessing professional
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35 120 competence.¹³ Indeed, many scholars and institutions advocate the assessment of not only
36
37 121 medical knowledge and skills, but also competencies, such as communication, collaboration,
38
39 122 and clinical judgment, as well as cultural competence or critical consciousness.¹⁴⁻¹⁶
40
41 123 Assessment measures must also be robust and focus on the healthcare system's needs and
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43 124 outcomes, implying involvement of key stakeholders, particularly patients when evaluating
44
45 125 quality of care.¹⁷⁻²⁰ It is furthermore acknowledged that, for each of the competencies,
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47 126 outcomes of different assessment methods must be combined to ensure robust decision
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49 127 making about professional competence^{21 22}
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51 128 To conclude, cross-border quality of care will be promoted if countries not only share their
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53 129 recertification practices, but also are willing to critically reflect on quality of assessment
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5 130 processes embedded in recertification procedures.^{8 23} In the present study, we attempt taking a
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7 131 first step in this direction by identifying different national recertification approaches. The
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9 132 question of the present study, therefore, was what are the key characteristics of recertification
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11 133 systems for doctors of different countries? More specifically, we aimed at exploring use of
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13 134 assessment criteria in design of recertification procedures. We used a collective case study
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15 135 design to describe and compare different national systems. We were particularly interested in
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17 136 the assessment criteria used, if any, and how they were applied. Although recertification is
18
19 137 sometimes also coined “revalidation,” “re-accreditation,” and “maintenance of certification”
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21 138 or used interchangeably with “continuing professional development” in other contexts, this
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23 139 article keeps to the former term. The article builds on previous work on certification but
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25 140 primarily focuses on recertification.
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141 **METHODS**

142 **Study Design and Case Selection**

143 We described and analysed the recertification systems of ten individual European countries.
144 Each country’s national recertification system represented a single case. We selected our
145 cases using purposeful sampling to reach maximum heterogeneity in terms of geographical
146 spread across Europe, demographics, health professionals’ migration profile, and type of
147 healthcare system (Table 1).²⁴
148

149 **Table 1. Sampling criteria**

147 Sampling criterion	148 Specification of criterion
149 Geographical spread	150 Include countries of different sizes, demographic make-up, 151 with different cultures, and from a range of geographical 152 locations (Northern, Eastern, Southern, Western, and Central 153 Europe). 154 155 156 157 158 159 160

1 2 3 4 5 6 7 8 9 10 11 12	Migration profile and position	Include countries that have different levels of health professional migration (inflow and outflow) and rely more or less on foreign doctors; include both “junior” (EU12) and “senior” EU member states (EU15) as indicated by the length of EU membership.
13 14 15 16 17	Different healthcare systems	Include countries with different structures of healthcare services in terms of how they are financed and covered by the insurance system (publicly, privately, or both).

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151 EU2 = countries which joined the EU in 2007: Bulgaria and Romania.

152 EU10 = countries which joined the EU in 2004: Cyprus, Czech Republic, Estonia, Hungary,
153 Latvia, Lithuania, Poland, Slovakia, and Slovenia.154 EU12 = EU2 and EU10 countries: Cyprus, Czech Republic, Bulgaria, Estonia, Hungary,
155 Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.156 EU15 = countries which were already EU member states in 2003: Austria, Belgium,
157 Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands,
158 Portugal, Spain, Sweden, and the UK.

159

160 Based on these criteria, the final study sample included Denmark, Germany, Hungary,
161 Ireland, Poland, Portugal, Spain, Switzerland¹, the Netherlands, and the United Kingdom

162 (Table 2).

¹ Although Switzerland is not a member of the European Union, it is part of the European Economic Area and characterised by a high migration rate, and high reliance on foreign trained doctors, which makes it relevant for our study.

163 **Table 2.** *Overview of selected countries and their health insurance systems, their coverage, and the existence of a gatekeeper system*²⁵⁻³³

Country	Geographic location	Net migration rate (migrants/1,000 inhabitants) ³⁴	% of foreign-trained doctors, latest available year ^{24 35 36}	Type of health insurance system	Financing of healthcare
Denmark	North	2.25	5.27%	Decentralized, offers universal and nearly free access	Taxation
Germany	Central	1.06	10.26%	Mix of compulsory public and voluntary private health insurance; highly decentralized	Statutory insurance, taxation, out-of-pocket payments, and private health insurance
Hungary	East	1.34	7.79%	National Health Insurance Fund is state-owned and offers complete coverage, partly free of charge	Taxation and social health insurance contributions
Ireland	West	3.31	41.6%	National Healthcare System, Mix of public and voluntary private health insurance	Taxation and supported by co-payments for specialist's treatment from insurance providers.
Poland	East	-0.47	1.8%	Decentralized, mandatory health insurance system	National Health Funds

Portugal	South	2.74	7.74%	National Health Service Private and public insurance schemes plus voluntary private insurances	Taxation, public and private insurance schemes, and direct payment
Spain	South	7.24	9.4%	National Health Service Private and public insurance schemes	Taxation and payroll contributions
Switzerland	Central	5.43	27.05%	Obligatory, statutory, decentralized insurance system Federal Office for Social Insurance monitors providers	Compulsory health insurance premiums and out-of-pocket payments
The Netherlands	Central	1.97	2.13%	Mixed model of compulsory social and voluntary private insurance	Health Insurance, taxation and direct payments
United Kingdom	West	2.56	28.07%	Mix of public and voluntary private health insurance	National Health Service, taxation, and national insurance contributions

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3 165 **Data collection**
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5 166 We collected data on the respective recertification procedures by performing a document
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7 167 analysis for each case in addition to conducting semi-structured interviews with two or three
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9 168 representatives from each country.
10

11 169 For the document analyses, we retrieved documents describing national recertification
12
13 170 procedures for doctors from the websites of national certification organizations, and translated
14
15 171 them into English if needed. The documents included national recertification schemes and
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17 172 regulations, rules and reports of medical education and training, user guidelines, laws and
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19 173 grey literature articles. We focused on documents that clarified rationale, form and procedure,
20
21 174 as well as requirements and rewards of each recertification program.
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24 175 To validate and corroborate our interpretation of data from document analysis, we
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26 176 conducted one to three semi-structured interviews with representatives of each national
27
28 177 regulatory body responsible for postgraduate medical education and recertification or the
29
30 178 recognition of professional qualifications (e.g., international affairs offices) (N=19). These
31
32 179 interviewees were directors of professional development and practice, heads of recertification
33
34 180 departments, experts on continuing professional development, and official secretaries or legal
35
36 181 advisors to national medical education offices, medical or scientific societies, accreditation
37
38 182 bodies, medical royal colleges, councils, or chambers (Table 3).
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44 184 **Table 3.** *Number and profile of respondents per country*
45

Country investigated	Number of interviews
Netherlands	1
Switzerland	2
Germany	3
United Kingdom	2
Ireland	2
Denmark	2
Hungary	1

Poland	2
Portugal	2
Spain	2

185

186 The first author (CS) conducted all interviews via video or phone, based on an interview
187 protocol adapted from a study on continuing professional development and lifelong learning
188 for health professionals.³⁷ The interview protocol was piloted in the Netherlands. Questions
189 addressed competency frameworks as well as rules and regulations of recertification, asking
190 about regulatory authorities involved, main objective(s), structure, requirements, and
191 consequences of compliance or non-compliance. Before the interview, we explained the
192 research purposes to participants and asked them to give informed consent. Interviews were
193 audio-taped and lasted 50-90 minutes, during which notes were taken. Notes were
194 subsequently presented to interviewees to approve or to add information.

195 Data collection took place from April to September, 2016.

196 **Patient involvement**

197 No patients were involved in this research, given our specific aim.

198 **Data analysis**

199 Data analysis spanned a two-step process. First, we analysed the data from the document
200 analyses and interviews to identify and describe key characteristics of each case. We asked at
201 least one interviewee per country to comment on the accuracy and completeness of the
202 described recertification system. We subsequently re-analysed the data, specifically focusing
203 on the application of criteria for high quality assessment: validity, reliability, educational and
204 catalytic effect.^{9 14 38} For that purpose we identified specific strategies used to ensure
205 assessment quality in terms of validity, reliability and educational consequences, for each of
206 the re-certification system (Box 1).

207

208 **Box 1.** *Strategies embedded in recertification, affecting assessment quality*

Criterion		Features
What is assessed?	Program of assessment	<ul style="list-style-type: none"> • Inclusion of competency domain(s) or domain(s) of professional practice (including lifelong learning) • Use of overarching framework (based on needs healthcare system; key domains professional practice) • Assessment and learning aligned with individual needs • Focus on process of care • Focus on patient outcome (including patient satisfaction)
When is it assessed?	Frequency of recertification cycle	<ul style="list-style-type: none"> • Yearly • Every 2-3 years • Every 4-5 years • Every > 5 years • No time frame
Who assesses?	Stakeholders involved in the assessment	<ul style="list-style-type: none"> • Individual (self-assessment) • Peers • Employer • Patients • Others
How is it assessed?	Assessment methods	<ul style="list-style-type: none"> • Competence level according to Miller's assessment pyramid (cognition versus performance) • Self-assessment • Portfolios • Credit collection through course participation • Examinations (standardised) • Simulations • Clinical audits • Multi-source feedback
	Regulations	<ul style="list-style-type: none"> • Voluntary vs. mandatory • Legal vs. professional obligation
What are the	Assessment goal	<ul style="list-style-type: none"> • Quality of care and patient safety • Professional development

objectives?	<ul style="list-style-type: none">• Maintenance of doctors' knowledge and skills
Consequence	<ul style="list-style-type: none">• Loss of license
s of non-	<ul style="list-style-type: none">• Financial sanctions
compliance	<ul style="list-style-type: none">• Follow-up• Work under supervision• Feedback

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210 These strategies included program of assessment, assessment goals and methods (i.e.,
211 authentic and suitable methods which aim at measuring day-to-day performance and
212 professional competence), as well as frequency of assessment (i.e., consistent outcomes across
213 measurements and decisions). We also addressed the involvement of different stakeholders
214 including patients, and consequences for learning and development. Self-assessment as tool
215 for lifelong learning and assessment of practice performance were the two major components
216 of recertification considered.³⁹ Finally, we compared recertification systems across cases to
217 identify similarities and differences with respect to use of the aforementioned assessment
218 criteria.

219 RESULTS

220 In the following paragraphs, we highlight differences and/or similarities across countries in
221 terms of the purpose, focus, frequency, and methods of recertification, and the stakeholders
222 involved in the process. Exact details are provided in Table 4, while Table 5 outlines the
223 bodies (Medical specialties, Ministries of Health or Medical Authorities) responsible for
224 recertification. The final paragraph provides a synopsis of the most striking results.

225 All systems uncovered applied to all registered practicing doctors, irrelevant of whether they
226 were trained nationally or internationally, as they are automatically enrolled in the national
227 scheme upon registration.

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3 229 **1. Purpose of recertification**
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5 230 As shown in Table 4, the purpose of recertification constituted a major source of variance.
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7 231 While several countries aimed to improve quality of care and patient safety, a minority (N=2),
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9 232 essentially those countries where recertification was not mandatory, upheld personal
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11 233 development and career advancement as their primary objective (Table 4).
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234 **Table 4.** *Competence assessment in recertification systems of investigated cases*

Case	Purpose ¹	Focus ²			Based on competency framework	Frequency		Assessment methods ³	Who decides on activities to be followed?		Stakeholders involved in the assessment				How is internal quality of assessment assured?
		LLL	PP	Mandatory (yes/no)		After ... credits	Every ... year(s)		Individual doctor	Employers	Doctor him/herself	Colleagues	Patients	Employers	
Netherlands	1, 3	+	+	+	+	200	5	1.4-1.7; 2; 3; 4; 5	+	-	+	+	+	+	quality visitations, assessment of group functioning
Switzerland	1, 2	+	+	+	N/A	150	3	1.1-1.7; 2; 3	+	-	+	+	-	-	N/A
Germany	1, 3	+	-	+	N/A	250	5	1.1-1.4; 1.6-1.8	+	-	+	-	-	-	accreditation of CME providers
United Kingdom	1, 2, 3	+	+	+	+	~250	5	1.1-1.4; 1.6; 1.7; 2; 3; 4; 7	+	-	+	+	+	+	independent assessors, information triangulation, audits
Ireland	3	+	+	+	+	50	1	1.2-1.6; 2	+	-	+	-	-	-	N/A
Denmark	1, 2	-	+	-	-	N/A	1	1; 3; 4	+	+	+	-	-	+	local management
Hungary	2	+	-	+	N/A	250	5	1.1; 1.2; 1.6-1.8; 4; 5; 6	+	-	+	-	-	-	more credits for CPD activities with exams

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Poland	3	+	-	+	N/A	200	4	1.1; 1.2; 1.4-1.7	+	-	+	-	-	-	accreditation of CME providers
Portugal	4	+	+	-	N/A	N/A	5	4	+	-	-	+	-	(+)	N/A
Spain	4	+	+	-	+	N/A	3	1.2; 4	+	-	+	+	-	+	organization's quality control

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- 236 ¹. Recertification purpose: 1. Quality of care; 2. Patient safety; 3. Maintenance of doctors' knowledge and skills; 4. Career.
- 237 ². Focus of recertification: LLL = lifelong learning; PP = Practice performance.
- 238 ³. Assessment methods:
 - 239 1. CPD: [1.1 specialty-specific CPD course; 1.2 General CPD course (communication skills); 1.3 Individual learning (reading); 1.4 Conference
 - 240 attendance; 1.5 Teaching; 1.6 Research & scientific publications; 1.7 E-learning; 1.8 Time spent as visiting professional]
 - 241 2. Clinical audit;
 - 242 3. Appraisal/peer reviews;
 - 243 4. Portfolio;
 - 244 5. Minimum hours of patient contact;
 - 245 6. Mandatory intensive course;
 - 246 7. Significant events.
- 247 yes = + , no = -

Participation in a recertification program was voluntary in three countries only, Denmark, Spain and Portugal, though all countries imposed a professional or legal obligation to engage in lifelong learning. Consequences of non-compliance were non-existent in voluntary systems; in the mandatory systems (N=7), however, they varied from financial sanctions (Switzerland and Germany) or work under supervision to suspension of the license to practice (Germany, the UK, Hungary and partly the Netherlands), with two countries allowing for license recovery. Finally, one country conferred a lifelong registration upon doctors, obviating the need to impose any sanctions in practice (Table 5).

Table 5. Regulation of recertification process in the countries under scrutiny

Case	Who sets rules for recertification?				Potential ²⁵⁸ consequences of non-compliance ³
	Medical Specialties	Ministry of Health	Medical Authority ¹	Type of obligation ²	
Netherlands	yes	yes	yes	1	(1), 2
Switzerland	yes	no	no	1,2	3, 4
Germany	no	yes	yes	1,2	1, 3
United Kingdom	no	no	yes	1,2	1, 2
Ireland	yes	no	yes	1	4, 5
Denmark	/	/	yes	2	4
Hungary	/	yes	yes	1	1
Poland	/	yes	yes	1	4
Portugal	/	/	/	/	4
Spain	yes	/	yes	1	4

¹ Medical Authority such as the General Medical Council

² Type of obligation: 1. Legal; 2. Professional

³ Potential consequences of non-compliance are: 1. Work supervised or suspension of license; 2. Suspension of license with possibility to restore license; 3. Financial sanctions; 4. No formal consequences / license for lifetime; 5. Follow-up.

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5 266 Information obtained from interviews confirmed information from documents with the
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7 267 exception of handling of con-compliance: compared to the rules laid down in official
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9 268 documents, interviewees reported a more lenient handling of con-compliance in practice.

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12 270 **2. Focus of the assessment**

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16 271 As regards focus, almost all recertification systems emphasized the lifelong learning of
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18 272 doctors. Likewise, most systems relied on the collection of a minimum number of credits per
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20 273 year, mostly 50 (N=5), where one credit typically represented one hour of learning activity.

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22 274 Although the three voluntary systems did not require credits to be earned for recertification,
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24 275 one did recommend it (Denmark). Such practice was often embedded in a continuing
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26 276 professional development framework as part of a voluntary recertification process. In
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28 277 Hungary doctors must take a specific course followed by an exam. Generally, they received
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30 278 more credits for courses if these were concluded with an examination. Of the countries that
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32 279 assessed practice performance, only five did so through audits and appraisals or multi-source
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34 280 feedback. Four countries evaluated doctors' individual and team functioning focusing on
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36 281 communication and collaboration skills.

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40 283 **3. Frequency of recertification**

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42 284 The frequency of recertification and timeframe within which requirements must be fulfilled
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44 285 varied widely: some countries had annual appraisals (N=2), others three-year procedures
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46 286 (N=2), but most of the countries undertook quinquennial assessments (N=5).

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50 288 **4. Assessment methods**

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53 289 To demonstrate their knowledge and engagement in lifelong learning, doctors in most
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3 290 countries must earn credits, for instance by participating in workshops and national or
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5 291 international conferences, doing individual reading, teaching, writing scientific articles,
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7 292 spending time as visiting doctor, and/or e-learning. Denmark assessed performance on the
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9 293 basis of a dialog between employer and employee who jointly discussed learning needs. The
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11 294 United Kingdom counted reflection on significant events, that is, unintended critical events
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13 295 which potentially harmed the patient, to measure patient outcomes. Yet other countries (N=4)
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15 296 used clinical audits, number of complaints, reviews or appraisals, and peer reviews to measure
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17 297 processes of healthcare delivery. Finally, some countries deployed portfolios (N=6), clinical
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19 298 audits (N=4), and multi-source feedback (N=4) to reflect on individual and team functioning.
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25 300 **5. Stakeholder involvement**

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27 301 In most cases (N=9), doctors decided which learning activities to take based on their self-
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29 302 assessed learning needs. Several countries, however, also based the assessment of
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31 303 performance outcomes and the process of care on feedback from peers (N=5) or patients
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33 304 (N=2), yet only one country (The UK) demanded involving patients in the assessment
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35 305 regularly.
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40 307 **6. Synopsis**

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42 308 All things considered, what stood out was that most recertification systems relied heavily on
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44 309 doctors' self-assessments, attached little weight to patient outcomes, patient involvement, and
45
46 310 the assessment of practice performance, as well as lacked an overarching competency
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48 311 framework. Only four countries seem to match the content of assessment programs with
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50 312 evaluation of professional practice. These findings clearly contrast with the aim to ensure
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52 313 quality of care and patient safety most systems pursued. Evaluation of practice performance
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54 314 seems to be a *sine qua non*, an indispensable condition, for assessment of competence, i.e.
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3 315 what doctors actually do in day-to-day practice. Two countries (the Netherlands and the UK),
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5 316 however, did use a more comprehensive system, covering both self-assessment and practice
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7 317 performance through multi-source feedback, including patients' feedback.
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9 318 Three other countries deserve mention for their apparent distinctness from the rest.
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11 319 Denmark, though not formally requiring continuing professional development, assessed
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13 320 practice performance based on an annual dialog between doctor and employer. This left little
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15 321 room for individual doctors to self-assess their performance and independently decide on
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17 322 activities to be taken, which was the case in all other countries where the individual doctor
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19 323 was responsible for high-quality patient care. The systems in Spain and Portugal stood out as
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21 324 being career-focused: they did not require doctors to engage in lifelong learning and
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23 325 professional development for purposes of patient safety and quality patient care, but rather
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25 326 encouraged the use of a portfolio to enhance chances of promotion.
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29 327 **DISCUSSION**

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31 328 The purpose of this study was to investigate how recertification is organized across different
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33 329 countries. We found substantial differences in recertification requirements and procedures.
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35 330 Moreover, these requirements in many respects seemed to conflict with aims to ensure quality
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37 331 of care and patient safety.
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40 332 First, we observed that only a few systems included feedback from patients in the
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42 333 assessment. Involving patients in assessing quality of healthcare and doctor performance
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44 334 seems inevitable for accountability and transparency purposes.⁴⁰ Although many patients are
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46 335 needed to obtain reliable evaluations, their involvement in recertification procedures can help
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48 336 respond to public calls for doctors' accountability.⁹ Wright et al recommend including data
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50 337 from 34 patient questionnaires and 15 colleague questionnaires to obtain reliable performance
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52 338 evaluation for appraisal purposes.⁴¹ Despite the fact that the literature reports peers to give
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54 339 accurate, credible, and valid assessments of performance, peer feedback was absent in most
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3 340 systems investigated but is for example employed in some Canadian provinces.^{9 14 42 43} Use of
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5 341 multi-source feedback to assess practice performance, requires high quality and credible
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7 342 feedback to induce reflection on practice.⁴⁴ Multi-source feedback, including patients'
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9 343 feedback, can be especially effective when the feedback received contrasts with individual
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11 344 perceptions and is facilitated by a mentor or coach.⁴⁵ A mentor can help to deal with the
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13 345 emotional aspects of the multi-source feedback and to structure individual reflection and
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15 346 follow-up.⁴⁶ Use of multisource feedback and mentoring systems could thus help countries
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17 347 transitioning from a system based on self-assessments to "directed" self-assessments as
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19 348 suggested by Sargeant et al.⁴⁷

22 349 Second, most systems relied on self-assessments and lifelong learning activities
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24 350 doctors selected themselves without attending to external assessment of practice performance.
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26 351 More specifically, by relying on credit accumulation systems that allowed doctors to choose
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28 352 their learning activities,⁴⁸ it was entirely at the doctors' discretion to judge their performance
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30 353 and learning needs. There's strong evidence however, that several individual and social
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32 354 factors obscure the validity of self-assessments such as age and experience.^{48 49} Additionally,
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34 355 self-assessments tend to mirror self-confidence and self-efficacy which are not necessarily
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36 356 good measures of doctors' competence.⁴⁸ This evidence provides ample ground to question
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38 357 both the effectiveness of recertification systems that rely on doctors' self-assessments and the
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40 358 autonomy granted to clinicians.^{17 50} Hence, assessments of competence will become more
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42 359 meaningful when they involve multiple assessors, including patients.

46 360 Another deviation from the purpose of recertification constituted the assessment
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48 361 methods used. Whereas activities such as reading written materials, and attending conferences
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50 362 or presentations have been shown to deepen specific knowledge, there is no evidence that
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52 363 such didactic and passive learning interventions alone improve performance and patient
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54 364 outcomes.⁵¹⁻⁵³ A causal link between educational activities and improved patient health status

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3 365 yet remains to be established.⁵⁴ This casts doubt on the impact of the recertification systems in
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5 366 our study on doctors' performance. Consequently, our findings reinforce concerns about the
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7 367 validity of recertification procedures and emphasize the need to combine various assessment
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9 368 methods, likely resulting in greater accountability as previously been proven.⁵⁵ As stated by
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11 369 Forsetlund and colleagues (2009), a combination of multiple media, multiple instructional
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13 370 techniques and multiple exposures can help to induce change in performance towards
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15 371 improved patient outcomes.⁵⁶

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18 372 Other non-European countries have experienced similar challenges in implementing
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20 373 adequate assessment methods for recertification purposes.^{4 43 57 58} Also Australia, the USA and
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22 374 Canada investigate new methods to evaluate competence and practice performance, cautiously
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24 375 moving away from self-assessment.^{4 43 58}

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27 376 Since medical specialists invest substantial time and money in their professional
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29 377 development, the feasibility, applicability, and acceptability of recertification are topics worth
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31 378 exploring in the context of quality assurance. We therefore invite future studies into
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33 379 stakeholders' perceptions of recertification and their effectiveness and impact,⁵⁹ and also to
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35 380 bring into focus the content and formal aspects of learning activities which, by facilitating its
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37 381 design and implementation, may improve recertification. To shed light on the full picture, we
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39 382 would furthermore welcome studies investigating the feasibility and acceptability of involving
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41 383 patients in evaluating physicians' competency.

42 43 44 45 384 **Limitations**

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47 385 Since recertification systems were decentralized in some countries and we explored the
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49 386 national level only, we cannot exclude that interregional variations were missed. Moreover,
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51 387 although the interviewees ideally represented at least two different national organizations,
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53 388 interviews were mostly limited to two or three respondents per country. A final and possibly
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55 389 the most complex and intervening limitation constituted the diversity in terminology and

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3 390 language. This may have affected the translation of national concepts into English during the
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5 391 interviews and of written descriptions, potentially causing loss of detail during the analyses.
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7 392 These language differences and ambiguity in terms underline the challenge of comparing
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9 393 various recertification systems.
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11 12 394 **Practical implications for professional mobility**

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14 395 Defining universal criteria for assessing professional competence will be no easy feat,
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16 396 especially not when considering the differences between national recertification approaches,
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18 397 rising cross-border mobility. Since each system is customized to a specific context, culture,
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20 398 and healthcare system, a universal recertification system may neither be desirable nor
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22 399 achievable, as doctors are required to consciously reflect on the local culture, and adapt to the
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24 400 unique features of their work setting and health care system.¹⁶ To our knowledge, currently
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26 401 there is no requirement or overarching effort in striving towards harmonising recertification
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28 402 processes across countries within the European Union. Its member states have agreed that
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30 403 each individual country will remain responsible for national health care affairs, without
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32 404 European regulations interfering. Moving towards a standardised system would however
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34 405 require an EU-wide regulation, which is currently interrupted by those strong nationally
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36 406 regulatory powers. For transparency purposes, however, national bodies and medical societies
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38 407 could share their competency assessment procedures and quality standards, turning a political
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40 408 matter into an educational (and quality assurance) matter.⁸ Moreover, national bodies can
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42 409 incorporate performance evaluation, involve multiple stakeholders including patients, and use
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44 410 other assessments besides clinicians' self-assessments in their re-certification procedures to
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46 411 enhance liability.⁶⁰ Considering the increasing internationalisation of healthcare, doctors'
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48 412 cultural competency should also be incorporated into recertification programmes.
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53 413 Achieving an overarching quality assurance system being an unrealistic goal, we need
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55 414 to have a shared understanding of what are minimum standards for a doctor⁵⁰ thereby creating
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3 415 a base for international comparison while allowing for local adaptations. This however asks
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5 416 for an increased collaboration between countries and understanding of differences inherent to
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7 417 each system and culture. Such standards of training content and certification directives could
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9 418 meet the challenges posed by the free, cross-border movement of professionals, improving
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11 419 patient safety, and enhancing accountability and transparency.

14 420 **Conclusion**

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16 421 Recertification can help assess and improve knowledge, skills, professional performance, and,
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18 422 ultimately, patient outcomes. Yet, systems vary widely across countries in terms of being
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20 423 compulsory or not, requirements, patient involvement, and consequences of compliance or
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22 424 non-compliance. A shift toward a broader program of assessment focused on competence
23
24 425 assessment and lifelong learning might create a more valid, credible, and reliable basis for
25
26 426 recertification, meeting growing demands for accountability and transparency.
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30 427
31
32 428 Acknowledgements: We would like to thank Professor Dame Lesley Southgate, FRCGP,
33
34 429 FRCP, MClin, Sci, for contributing to this manuscript with discussing the study design and
35
36 430 suggesting possible interview partners. Angelique van den Heuvel provided help in form of
37
38 431 language editing, which we highly appreciated. Furthermore, we would like to thank all
39
40 432 interviewees for their contribution.
41
42

43 433
44
45 434 Contributors: CS wrote the research plan, collected, cleaned and analysed the data, and
46
47 435 drafted and revised the paper. She is guarantor. All authors were involved with
48
49 436 conceptualizing the research. MG analysed the data, and drafted and revised the paper. SM
50
51 437 revised the paper. GR drafted and revised the paper. FS drafted and revised the paper. ED
52
53 438 analysed the data, drafted and revised the draft paper.
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2
3 440 Funding statement: Carolin Sehlbach is a PhD student at Maastricht University, on a project
4
5 441 funded by the European Respiratory Society. The research conducted by Carolin Sehlbach is
6
7 442 however independent from this funding.
8

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10 443

11 444 Competing interests: None declared. All authors have completed the *Unified Competing*
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13 445 *Interest* form (available on request from the corresponding author).
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18 447 Ethical Approval: Ethical approval was obtained from the Netherlands Association for
19
20 448 Medical Education (NVMO; file number 669).
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24 450 Data sharing: The dataset(s) supporting the conclusions of this article is available from the
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26 451 author upon request by emailing the corresponding author.
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31 453 Transparency declaration: Carolin Sehlbach affirms that the manuscript is an honest, accurate,
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33 454 and transparent account of the study being reported; that no important aspects of the study
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35 455 have been omitted; and that any discrepancies from the study as planned (and, if relevant,
36
37 456 registered) have been explained.
38

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COREQ (CONsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.