

To be continuedSupporting physicians' lifelong learning

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To be continued...

Supporting physicians' lifelong learning

Carolin Sehlbach

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To be continued...

Supporting physicians' lifelong learning

DISSERTATION

to obtain the degree of Doctor at the Maastricht University,
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in accordance with the decision of the Board of Deans,
to be defended in public
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by

Carolin Sehlbach

Supervisors:

Prof.dr. Erik Driessen
Prof.dr. Gernot Rohde
Prof.dr. Frank Smeenk

Co-supervisor:

Dr. Marjan Govaerts

Assessment Committee:

Prof.dr. Sylvia Heeneman (chair)
Prof.dr. Sören Huwendiek, University of Bern
Prof.dr. Kiki Lombarts, University of Amsterdam
Prof.dr. Geertjan Wesseling
Dr. Jill Whittingham

Für Opa

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Chapter 1

General Introduction

We expect physicians to be competent healthcare professionals. We expect them to be self-regulated, self-directed lifelong learners, who maintain and continuously develop their professional competence. Based on the saying 'practice makes perfect', we may assume that physicians' practice improves with more experience. However, evidence suggests that physicians' knowledge and skills may decline over time.¹ In the ever-changing field of medicine, where healthcare, work-environments and patient populations are becoming increasingly complex, physicians need to keep up to date with various new developments to remain competent. In order to support and ensure their learning and to warrant professional competence, continuing professional development (CPD) activities are increasingly offered and recertification systems are being widely implemented.

CONTINUING PROFESSIONAL DEVELOPMENT

To meet growing demands of the medical field and changing needs of patient populations, physicians need to engage in continuing learning and development. CPD aims to guide physicians in their personal and professional development and supports their quest to stay up to date with progress in the medical field: newly introduced therapies, emerging best practices, updated guidelines etc.

The initial concept of continuing medical education (CME) has been replaced by CPD, to underline the importance of clinical, managerial, and professional skills development beyond knowledge acquisition.^{2,3} Although both terms are often used interchangeably, there are distinct differences in focus, mode of delivery, and outcome. CME activities mostly focus on specialty-based knowledge and skills development and take shape of formal activities such as courses or conferences.⁴ In CME, there is limited room to address individual learning needs, as most CME activities are mainly lecture-based and teacher-driven.⁵ Consequently, they are often situated outside the clinical practice context, which has been one of the reasons to move from CME to CPD.

CPD activities are more tailored towards individual learners and their needs, aiming to improve patient outcomes by maintaining and improving physicians' medical knowledge and skills, ethical understanding, attitudes and behaviours.^{6,7} CPD addresses all competences required for a physician, and assists individuals in their professional and personal growth. The term furthermore emphasizes that engaging in lifelong learning can be considered an ethical duty and professional imperative for physicians with the overall aim to continuously strive for improving delivery of high-quality healthcare.^{8,9} This thesis, therefore, sticks to the term 'CPD'. CPD includes different learning formats as well as it may include informal learning such

as workplace-based learning in a team or interdisciplinary setting (e.g. case discussions or peer review), professional activities (e.g. teaching or lecturing), and self-directed learning through reading scientific journals. Some of these activities might already be part and parcel of clinical practice. In an interprofessional and collaborative work environment, those activities might also help to assess learning needs in dialogue with others, without being recognized as CPD activities.



CRITICISM ON CPD

Most physicians are intrinsically motivated to learn in a self-directed, problem-oriented and relevant manner.¹⁰ As adult learners, physicians are presumed to reflect on and self-assess their learning needs and to systematically address these through appropriate training.¹¹ Yet, it is questionable whether all physicians engage in effective self-assessment to unravel gaps in their performance. A substantial body of literature questions the validity of self-assessment as it tends to mirror self-confidence and self-efficacy instead of physicians' competence, which is most problematic for the least competent.¹² The discrepancy between self-assessment and external assessments as described in the literature, calls for input from multiple sources such as peers and patients to evaluate different competence domains and to drive competence development forward.¹²⁻¹⁵

In addition to critiques on self-regulation and self-assessment, critical voices claim that chosen activities may not always be aligned with individual learning needs. Anecdotal evidence suggests that physicians often engage in educational activities that mismatch their learning needs, which might partly be attributed to ineffective self-assessment. Due to high workload and busy schedules, physicians might occasionally choose activities based on proximity or timing instead of content.¹⁶ Next to convenience, fear of leaving one's comfort zone might be another reason to choose certain learning activities. Often, physicians select activities that fall into their area of interest or own practice, which might diminish individual learning outcome. Other critiques concern participation often being measured in number of credits collected or hours spent, presuming that each hour of educational activity is equally valuable to an individual's learning. To fulfil mandatory recertification requirements, physicians might then be inclined to focus on collecting a sufficient number of credits, thereby potentially losing sight of their learning needs. This mismatch may turn participation in educational activities for recertification purposes into tick-box exercises.¹⁷ Taken together, these criticisms introduce the question whether formal educational activities support physicians' learning, and to what extent they can affect physicians' performance. At the same time, it opens doors for discussion on need- and opportunity-based learning.

Although independent accreditation bodies are tasked with ensuring the quality of CPD activities, the actual outcomes of single activities are hard to measure as their results are seldom tangible and often based on self-reported data.¹⁸ A growing concern around the impact of CPD on physician performance and patient care has led to the implementation of recertification systems in several countries.¹⁹ Most of these systems behold the formative character of CPD to support physicians' professional development while also incorporating a summative component to assess physicians' performance, ensuring that physicians practise at least up to a minimum standard.

RECERTIFICATION OF PHYSICIANS

In times of publicized failures of medical performance such as the Bristol or Shipman case in the UK,^{20,21} the public has raised concerns regarding patient safety and has called for improved quality of care, greater accountability and transparency.^{22,23} With the overarching purpose of ensuring safe and high quality care, many countries have implemented recertification systems¹ that support physicians' learning and that periodically evaluate professionals' competence.^{6,19,24}

Literature on recertification portrays its dual function. Archer et al. describe two discourses within recertification: to support physicians' lifelong learning on the one hand, and to periodically assess whether they maintain their competence, skills, and knowledge on the other hand.²⁵ Brennan and colleagues²⁶ also clearly distinguish assessment *for* learning from assessment *of* learning in the aims of recertification: supporting change instead of trying to catch malfunctioning doctors or "bad apples".²⁶ It can be questioned, however, how effective current systems are in reaching their intended aims.

Despite their defined aims, national recertification standards might be insufficient to detect cases of malpractice in time as to ensure quality of care and patient safety. The question of safe-guarding care both nationally and internationally, received particular attention in the Netherlands when the Dutch neurologist Jansen Steur started practicing in Germany after he had to give up his licence to practice in the Netherlands. Although the neurologist's case raises red flags on the effectiveness of national recertification systems to detect malpractice, it also introduces questions on the effectiveness and suitability of recertification initiatives to safeguard patient care internationally.²²

1 Although this thesis refers to 'recertification' systems, these systems are coined differently across countries (revalidation in the UK, maintenance of certification in Canada and the USA).



To ensure patient safety and prevent that physicians who have lost their licence move to another EU country and continue practicing there, a European-wide “blacklist” of malfunctioning healthcare professionals has been initiated in 2016 to report national cases of misconduct. This list could have potentially uncovered and warned the French authorities, when Dutch dentist Van Nierop established a new practice in France. The dentist had left the Netherlands to settle in France when the authorities started investigating him based on repeated malpractice claims. Eventually, the dentist fled to Canada once patient complaints mounted in France, where he was convicted eventually. Obviously, these are extreme cases. Nonetheless, the question remains whether recertification initiatives are capable of detecting struggling or underperforming individuals on time, to support their change in practice through remediation.^{27,28}

CROSS-BORDER COMPETENCE ASSESSMENT

Professional mobility creates additional challenges for attesting physicians’ competence and ensuring quality of care on the national as well as international level. To facilitate professional cross-border mobility, the European Commission launched a directive providing international acceptance of experience and diplomas (Directive 2005/36/EC).²⁹ Although the Directive recognizes titles and initial qualifications, it fails to guarantee that individuals are competent professionals.⁶

The Directive falls short on three aspects. First, it focusses on initial certification and does not consider continuing recertification. Second, standards for speciality training and initial certification, as well as recertification requirements may differ across countries.³⁰⁻³² This lack of harmonisation may hinder international comparison as well as cross-border quality assurance. Third, the Directive assumes that a physician who is considered competent in one context will also be competent in another context. Physicians’ competence is, however, context-dependent and marked by encultured knowledge.³³ Quality of delivered care as well as competence can be perceived differently in two specific contexts depending on the local situation, the infrastructure, the health care system, and patients’ perceptions.³⁴

Imagine for instance the case of a German medical specialist who moves to the Netherlands. Despite the geographic proximity, this person might face a multitude of barriers: new working environments and organisation of workforce, a distinct healthcare system with specific quality guidelines and processes of care, as well as different patient interactions and demands.^{35,36} As the new work setting may require other knowledge, skills and values different from the German context, one might wonder: Is this physician then still considered competent to deliver high quality care?

ASSESSMENT OF COMPETENCE

There is an on-going debate on how to assess professional competencies, and how to balance attention for all of the relevant competence domains necessary.³⁷ Competencies describe the ability to integrate knowledge, skills and attitudes in a certain context to ensure safe and effective patient care.^{38,39} Competency-based medical education is specifically focused on the domains required for medical professionals.⁴⁰

Medical education systems across different countries have introduced a variety of frameworks that have been created, modified or adapted to their local context. According to the Accreditation Council for Graduate Medical Education crucial competences encompass: medical knowledge, patient care, professionalism, practice-based learning and improvement, interpersonal and communicative skills, and system-based practice.⁴¹ Competencies such as the ability to fulfil the role of the medical expert, communicator, collaborator, manager, health advocate, scholar and professional have previously been described in the CanMEDS framework that is nowadays applied internationally.⁴²

With the introduction of competency-based medical education, the focus shifted from assessment of learning to assessment for learning. Competence assessment should have an educational and catalytic effect in driving the individual's development forward.⁴³ The assessment should furthermore be valid, reproducible, comparable and fair, as well as feasible.⁴³ At the same time, assessment measures for competence need to be robust and focused on the healthcare system's needs and outcomes. Next to basic medical skills, competences as clinical judgement, collaboration, communication, and integration of knowledge, skills, judgement, values and norms in day-to-day practice should be assessed.^{44,45}

Miller offers an assessment framework which distinguishes between competence (level 3) and practical performance (level).⁴⁶ Knowledge-based assessment (level 1 and 2) can best be complemented by skills-based assessment to cover a breadth of a competency, while addressing level 3 and 4 of Miller's pyramid.^{14,46} These assessments may include appraisals, feedback and audits.⁴⁷ In isolation, the effect of all these assessment tools is small to moderate but combined they can lead to significant changes in practice.⁴⁸ Clinical audits, for example, provide information on clinicians' performance and quality of process. Multi-source feedback and audits target healthcare processes as well as outcomes. Professional competences can best be judged through a combination of different assessment methods and key stakeholders, including patients.⁴⁹

Patients may represent one source of feedback for physicians' performance. Although different in focus from feedback received from peers or other healthcare workers, patient feedback could provide physicians with valuable information on how to improve their learning and performance. By listening actively to patient feedback, for instance, healthcare providers could gain new insights, be inspired to reflect and learn from patients' additional perspective. Similarly, patients' evaluations of physician performance could help to make decisions about physician competence and to identify underperforming physicians. Especially in the assessment of non-clinical competences, such as communication and professionalism, patient evaluations could serve as meaningful additional assessment evidence.⁵⁰⁻⁵³ The inclusion of patients' views may render more holistic and transparent performance evaluations, allowing physicians to truly reflect on their practice.^{54,55}



RESEARCH GAPS & RESEARCH QUESTIONS

While most research in medical education focuses on undergraduate education or postgraduate education, this PhD thesis focuses on the life after residency training and the longest part of the medical education continuum: physicians' lifelong learning.

Although recertification systems aim to maintain and improve physicians' performance, it remains unclear how they induce a performance change and ultimately improve the quality of care.⁵⁶ To understand how recertification produces an effect, literature advocates investigating physicians' experiences and perceptions in light of contextual factors in order to explore the effectiveness of national recertification systems.²⁶ The effectiveness of recertification systems is mostly defined by key stakeholders' perceptions on procedures and outcomes (e.g. policy makers and governmental bodies, medical specialists, patients).^{57,58} Literature in organizational psychology and assessment consistently shows that participants' perceptions of assessments' quality influence their acceptance and approach to assessment tasks as well as the learning outcomes.^{59,60} Hence, acceptability and perceptions of different stakeholders involved in physician competence assessment presented an important aspect of research to consider for this thesis.^{10,23}

We aimed to understand if and how different systems work, and how the interaction between individuals and context affect the systems' effectiveness.²⁶ In doing so, we investigated physicians' lifelong learning and performance assessment from three different perspectives: from an organisational and regulatory perspective, from physician perspectives and from patient perspectives.

The primary purpose of this PhD project has been to explore assessment of learning and assessment for learning of practicing physicians through recertification, with the purpose to support physicians in delivering high quality care. We aimed to understand how and to what extent formal recertification systems support medical specialists in remaining competent professionals and lifelong learners. To this end, we have examined various types of recertification systems across Europe and explored stakeholders' perceptions regarding the effectiveness of and their roles within recertification processes. Furthermore, we tried to add to the conceptual understanding of patients' role in medical education. Although patient empowerment is gaining momentum, patient involvement often remains restricted to filling out satisfaction surveys. To explore a broader involvement, we explored if patients could foresee a role for themselves in physicians' performance assessment and their lifelong learning. After all, patients are the very essence of why healthcare systems exist, and physicians are trained to practise.

Because of these considerations, this thesis addresses four main research questions:

1. How is recertification organized in different countries and how are performance assessment criteria incorporated in recertification?
2. How and to what extent do recertification systems support physicians' lifelong learning?
3. How do physicians informally learn in and from the workplace, and how can formal recertification systems support informal learning?
4. Which role can patients play in physician performance assessment and lifelong learning?

As such, this PhD project aims to compare and categorize strengths and weaknesses of different performance assessment approaches as well as key stakeholders' perceptions on physicians' lifelong learning.

**Table 1.** Overview of studies, research questions, data sources, designs and settings

Chapter	Research question	Data source	Approach/ Design	Setting
Chapter 2	What are the key characteristics of recertification systems for physicians of different European countries, and how are assessment criteria incorporated?	Document analysis and semi-structured interviews	Collective case study	10 EU countries: Denmark, Germany, Hungary, Ireland, The Netherlands, Poland, Portugal, Spain, Switzerland, United Kingdom
Chapter 3	What are physicians' perceptions and self-reported acceptance of recertification across different systems?	Semi-structured interviews	Constructivist Grounded Theory	Denmark, Germany, United Kingdom
Chapter 4	How do physicians learn informally through daily practice?	Ethnographic observations and semi-structured interviews	Constructivist Grounded Theory	The Netherlands
Chapter 5	How do patients perceive their potential role in physician performance assessment?	Semi-structured interviews	Pragmatic qualitative research	The Netherlands

DISSERTATION OUTLINE

The chapter at hand, Chapter 1, sets the scene for this dissertation and gives some background information. It describes the problem around physicians' competence assessment across the continuum and sheds light on recent developments and gaps in the scientific literature. The first chapter introduces the main concepts of this doctoral thesis, physicians' lifelong learning, CPD and recertification, and lists the main research questions.

Chapter 2 explores different national recertification systems and the assessment criteria incorporated within. It gives an overview of ten recertification systems in Europe and maps whether and how their national bodies have incorporated assessment criteria.

Chapter 3 and Chapter 4 investigate physicians' perspectives on national recertification systems. Chapter 3 looks into whether national recertification

systems can detect malfunction, and how they support physicians' pursuit of remaining competent and lifelong learners. Chapter 4 focuses on physicians' learning and pinpoints learning cues afforded in and by the workplace, which physicians consider learning opportunities.

Chapter 5 then portrays patient perspectives on their potential role in physicians' performance assessment and lifelong learning, and sheds light on power dynamics in the patient-physician relationship.

The last chapter summarizes the main findings of this doctoral thesis and presents the key messages of the different chapters. It further discusses the findings in light of previous literature and future research, and gives implications for policy makers, physicians and other healthcare professionals as well as patients.

EUROPEAN RESPIRATORY SOCIETY

This PhD research has been made possible as a result of the European Respiratory Society's first PhD funding for medical education, in collaboration with Maastricht University. Although the PhD project was funded by the ERS, ERS had no influence on the design and conduct of any of the empirical studies in this thesis.

The European Respiratory Society (ERS), founded in 1990, is an international, non-profit organisation which unites trainees and trained physicians, healthcare professionals and scientist working in respiratory medicine from over 160 countries.⁶¹ With high incidence and mortality levels of lung diseases, the Society's mission is to promote lung health worldwide. Its core pillars are science, education and advocacy with the overall aim to diminish suffering from lung diseases. The Society promotes scientific research and provides a great wealth of educational resources to its members and beyond.

In 2000, ERS founded the European Lung Foundation (ELF) to unite patients and the public, promote lung health on a European level and involve patients in healthcare. The Foundation further empowers patients and offers educational material on lung disease.⁶²

Medical societies like the ERS often develop educational programs and offer trainings or scientific events for physicians and allied healthcare professionals. With the majority of its members being trained healthcare professionals, ERS started to fund medical education research via this PhD project in 2015 to better understand its members' learning needs. This doctoral thesis is the result of this project and covers different stakeholders' perspectives on respiratory physicians' lifelong learning and recertification.



It raises awareness of patient perspectives and thereby continues to advocate the core principles of ERS' and ELF's aim to positively influence lung health. Likewise, this research generates practical and scientific relevance for a national as well as an international medical education audience, and has implications for physicians, healthcare professionals, policymakers and patients.

REFLEXIVITY

My German nationality as well as my background in health sciences have aided me to critically reflect on and shape my view of the research within this PhD trajectory.

Moving to a foreign country certainly offers new opportunities to any individual, but it also bears challenges. I have lived the experience and faced the challenge of learning a new language and adapting to a new culture while embarking on the journey to establish myself in Maastricht. It was, however, only until my PhD research that I became increasingly aware of and fascinated by the phenomenon of cultural competence. I realized myself and learned from scientific literature how easily a lack of linguistic fluency or familiarisation with the culture can easily be mistaken for disinterest, unwillingness or ignorance. What might appear as lack of knowledge does not necessarily equal a lower level of understanding. Instead, it might reflect on knowledge confined to a certain area of expertise. Throughout this PhD trajectory, I have also come to realize that language does not only differ per geographical area but also per area of expertise or cultural groups, meaning that I noticed language barriers between physicians and patients. My research highlights the challenges and opportunities of a shared language, particularly in Chapter 4 and Chapter 5.

These findings helped me to build my own methodological stance. Knowledge is encultured and shaped by previous experiences, and interpretations of those experiences and encounters, as described in social constructivism and social learning.^{33,63} Although in some fields of research one might argue to unveil and measure the objective truth, my own research shows that different opinions and ways of learning might co-exist. One opinion neither rules out another nor does it represent the universal truth. Hence, individuals should strive to understand their counterpart's point of view while being respectful to differences.

Being able to combine the 'best of both worlds' can be enriching. Throughout the course of this research, I have come to realise that I increasingly tried to understand other opinions, ways of reasoning or actions. Listening to others' voices has motivated the research on patient involvement in

physician performance assessment. I stand behind the idea that healthcare professionals are trained to become and remain competent professionals for the patients' sake. Therefore, it appeared most logical to do justice to patient voices by researching patient involvement in Chapter 5 and acknowledging the social constructivist stance.

Recognizing that we all have our blind spots, we invited a patient contributor to the research team (Chapter 5) as well as researchers with a specific area of interest and expertise in workplace-based learning in health care (Chapter 4). We furthermore asked an education manager working for a medical society to join our team for all studies conducted. Collaborating with others enabled me to critically reassess my own constructs, my research findings and theoretical underpinning. Likewise, I made an attempt to do justice to the role of patients and to be respectful to the work of medical specialists while remaining faithful to my own perspectives.

Fortunately, my own experiences with and exposure to the Dutch healthcare system from a patient perspective have been rather limited. With my research, I have entered the world of medical practice -aiming to understand different stakeholder's perspectives- which has most certainly enriched my own understanding. My outsider perspective most likely offered the needed focus and distance to my research and helped me to refrain from judging clinic decisions. Even though I intended to observe physician-patient interactions from afar, I was often surprised by how people reacted to my appearance and presence in the room. It also served as an impetus to consider the professionalism of patients. In many circumstances it made me critically reflect on my own position and acceptance as researcher.

Overall, these considerations made me approach the complexity of medical education research critically, specifically physicians' lifelong learning as addressed in this doctoral thesis. Without background or experience in medicine, interpreting research findings and giving practical recommendations without being judgemental or overly patronizing was walking a tightrope.



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Chapter 2

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

Sehlbach, C., Govaerts, M. J., Mitchell, S., Rohde, G. G. U., Smeenk, Frank W. J. M, Driessen, E. W.

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ABSTRACT

Objectives: With increased cross-border movement, ensuring safe and high-quality healthcare has gained primacy. The purpose of recertification is to ensure quality of care through periodically attesting doctors' professional proficiency in their field. Professional migration and facilitated cross-border recognition of qualifications, however, make us question the fitness of national policies for safeguarding patient care and the international accountability of doctors.

Design and setting: We performed document analyses and conducted 19 semi-structured interviews to identify and describe key characteristics and effective components of 10 different European recertification systems, each representing one case (collective case study). We subsequently compared these systems to explore similarities and differences in terms of assessment criteria used to determine process quality.

Results: Great variety existed between countries in terms and assessment formats used, targeting cognition, competence and performance (Miller's assessment pyramid). Recertification procedures and requirements also varied significantly, ranging from voluntary participation in professional development modules to the mandatory collection of multiple performance data in a competency-based portfolio. Knowledge assessment was fundamental to recertification in most countries. Another difference concerned the stakeholders involved in the recertification process: while some systems exclusively relied on doctors' self-assessment, others involved multiple stakeholders but rarely included patients in assessment of doctors' professional competence. Differences between systems partly reflected different goals and primary purposes of recertification.

Conclusion: Recertification systems differ substantially internationally with regard to the criteria they apply to assess doctors' competence, their aims, requirements, assessment formats, and patient involvement. In the light of professional mobility and associated demands for accountability, we recommend that competence assessment include patients' perspectives, and recertification practices be shared internationally to enhance transparency. This can help facilitate cross-border movement, while guaranteeing high-quality patient care

INTRODUCTION

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

While the problem of safeguarding quality of care across borders is omnipresent, it is particularly pertinent in Europe where the free movement of professionals has long historical and legal roots. Although a European Commission directive has facilitated mobility by providing for international recognition of professional qualifications, it fails to guarantee that doctors actually meet the minimum and context-specific quality standards. To safeguard quality of patient care, regulatory bodies around the world have implemented different systems such as recertification systems.^{1 2} Recertification entails lifelong learning and periodic assessment of doctors' competence and performance through various methods.³ It describes the process designed to promote and demonstrate continuous professional competence.⁴ More specifically, it requires a formal procedure of assessing and attesting quality of service provided "in accordance with established requirements or standards."⁵ By renewing initial certification, recertification aims to address any decline in performance as well as ensure trained doctors' adaptation to advances in knowledge and technology.^{6 7} This is particularly important in times of increased publicity over individual failures of medical performance, demands for doctors' accountability, and concerns about patient safety.⁸

Despite its well-intended aim, recertification harbours two inherent problems. First, current national recertification practices fail to ensure quality of care internationally, as they assess doctors' competence and performance in accordance with national quality standards. Differences in standards across countries and the absence of international recertification systems may complicate international quality assurance and quality improvement.⁷ This begs the question of whether such discrete practices can respond to repeated calls for international accountability and transparency.⁴ Second, although research on assessment of professional competence provided a set of guidelines for assessment criteria to ensure high quality assessment,⁹ the question on how to assess doctors' competence has often turned into a political rather than an educational one,¹⁰ potentially impacting on effectiveness of recertification systems.



“Competence” is defined as the ability to integrate knowledge, skills, and attitudes into a certain context to ensure safe patient care.^{11,12} This definition suggests to pay balanced attention to multiple competency domains relevant to a doctor, when assessing professional competence.¹³ Indeed, many scholars and institutions advocate the assessment of not only medical knowledge and skills, but also competencies, such as communication, collaboration, and clinical judgment, as well as cultural competence or critical consciousness.¹⁴⁻¹⁶ Assessment measures must also be robust and focus on the healthcare system’s needs and outcomes, implying involvement of key stakeholders, particularly patients when evaluating quality of care.¹⁷⁻²⁰ It is furthermore acknowledged that, for each of the competencies, outcomes of different assessment methods must be combined to ensure robust decision making about professional competence.^{21,22}

To conclude, cross-border quality of care will be promoted if countries not only share their recertification practices, but also are willing to critically reflect on quality of assessment processes 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).

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

EU10 = countries which joined the EU in 2004: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia.

EU12 = EU2 and EU10 countries: Cyprus, Czech Republic, Bulgaria, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.

EU15 = countries which were already EU member states in 2003: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, and the UK.

Based on these criteria, the final study sample included Denmark, Germany, Hungary, Ireland, Poland, Portugal, Spain, Switzerland¹, the Netherlands, and the United Kingdom (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 made it relevant for our study.



Table 2. Overview of selected countries and their health insurance systems, their coverage, and the existence of a gatekeeper system²⁵⁻³³

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

Table 2. Continued

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
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

Data collection

We collected data on the respective recertification procedures by performing a document analysis for each case in addition to conducting semi-structured interviews with two or three representatives from each country.

For the document analyses, we retrieved documents describing national recertification procedures for doctors from the websites of national certification organizations and translated them into English if needed. The documents included national recertification schemes and regulations, rules and reports of medical education and training, user guidelines, laws and grey literature articles. We focused on documents that clarified rationale, form and procedure, as well as requirements and rewards of each recertification program.

To validate and corroborate our interpretation of data from document analysis, we conducted one to three semi-structured interviews with representatives of each national regulatory body responsible for postgraduate medical education and recertification or the recognition of professional qualifications (e.g., international affairs offices) (N=19). These interviewees were directors of professional development and practice, heads of recertification departments, experts on continuing professional development, and official secretaries or legal advisors to national medical education offices, medical or scientific societies, accreditation bodies, medical royal colleges, councils, or chambers (Table 3).

Table 3. Number and profile of respondents per country

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

The first author (CS) conducted all interviews via video or phone, based on an interview protocol adapted from a study on continuing professional development and lifelong learning for health professionals.³⁷ The interview

protocol was piloted in the Netherlands. Questions addressed competency frameworks as well as rules and regulations of recertification, asking about regulatory authorities involved, main objective(s), structure, requirements, and consequences of compliance or non-compliance. Before the interview, we explained the research purposes to participants and asked them to give informed consent. Interviews were audio-taped and lasted 50-90 minutes, during which notes were taken. Notes were subsequently presented to interviewees to approve or to add information.

Data collection took place from April to September 2016.

Patient involvement

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

Data analysis

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

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



Box 1. Strategies embedded in recertification, affecting assessment quality

Criterion		Features
What is assessed?	Program of assessment	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	Yearly Every 2-3 years Every 4-5 years Every > 5 years No time frame
Who assesses?	Stakeholders involved in the assessment	Individual (self-assessment) Peers Employer Patients Others
How is it assessed?	Assessment methods	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	Voluntary vs. mandatory Legal vs. professional obligation
What are the objectives?	Assessment goal	Quality of care and patient safety Professional development Maintenance of doctors' knowledge and skills
	Consequences of non-compliance	Loss of license Financial sanctions Follow-up Work under supervision Feedback

RESULTS

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

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

1. Purpose of recertification

As shown in Table 4, the purpose of recertification constituted a major source of variance. While several countries aimed to improve quality of care and patient safety, a minority (N=2), essentially those countries where recertification was not mandatory, upheld personal development and career advancement as their primary objective (Table 4).

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).

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.



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)		Employers	Individual doctor	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
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

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

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

³ Assessment methods: 1. CPD; [1.1 speciality-specific CPD course; 1.2 General CPD course (communication skills); 1.3 Individual learning (reading); 1.4 Conference attendance; 1.5 Teaching; 1.6 Research & scientific publications; 1.7 E-learning; 1.8 Time spent as visiting professional] 2. Clinical audit; 3. Appraisal/ peer reviews; 4. Portfolio; 5. Minimum hours of patient contact; 6. Mandatory intensive course; 7. Significant events.
yes = +, no = -

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

Case	Who sets rules for recertification?				Potential 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.

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.

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).



4. Assessment methods

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

5. Stakeholder involvement

In most cases (N=9), doctors decided which learning activities to take based on their self-assessed learning needs. Several countries, however, also based the assessment of performance outcomes and the process of care on feedback from peers (N=5) or patients (N=2), yet only one country (the UK) demanded involving patients in the assessment regularly.

6. Synopsis

All things considered, what stood out was that most recertification systems relied heavily on doctors' self-assessments, attached little weight to patient outcomes, patient involvement, and the assessment of practice performance, as well as lacked an overarching competency framework. Only four countries seem to match the content of assessment programs with evaluation of professional practice. These findings clearly contrast with the aim to ensure quality of care and patient safety most systems pursued. Evaluation of practice performance seems to be a *sine qua non*, an indispensable condition, for assessment of competence, i.e. what doctors actually do in day-to-day practice. Two countries (the Netherlands and the UK), however, did use a more comprehensive system, covering both self-assessment and practice performance through multi-source feedback, including patients' feedback.

Three other countries deserve mention for their apparent distinctness from the rest. Denmark, though not formally requiring continuing professional development, assessed practice performance based on an annual dialog between doctor and employer. This left little room for individual doctors to self-assess their performance and independently decide on activities to be taken, which was the case in all other countries where the individual doctor was responsible for high-quality patient care. The systems in Spain and Portugal stood out as being career-focused: they did not require doctors to

engage in lifelong learning and professional development for purposes of patient safety and quality patient care, but rather encouraged the use of a portfolio to enhance chances of promotion.

DISCUSSION

The purpose of this study was to investigate how recertification is organized across different countries. We found substantial differences in recertification requirements and procedures. Moreover, these requirements in many respects seemed to conflict with aims to ensure quality of care and patient safety.

First, we observed that only a few systems included feedback from patients in the assessment. Involving patients in assessing quality of healthcare and doctor performance seems inevitable for accountability and transparency purposes.⁴⁰ Although many patients are needed to obtain reliable evaluations, their involvement in recertification procedures can help respond to public calls for doctors' accountability.⁹ Wright et al recommend including data from 34 patient questionnaires and 15 colleague questionnaires to obtain reliable performance evaluation for appraisal purposes.⁴¹ Despite the fact that the literature reports peers to give accurate, credible, and valid assessments of performance, peer feedback was absent in most systems investigated but is for example employed in some Canadian provinces.^{9,14,42,43} Use of multi-source feedback to assess practice performance, requires high quality and credible feedback to induce reflection on practice.⁴⁴ Multi-source feedback, including patients' feedback, can be especially effective when the feedback received contrasts with individual perceptions and is facilitated by a mentor or coach.⁴⁵ A mentor can help to deal with the emotional aspects of the multi-source feedback and to structure individual reflection and follow-up.⁴⁶ Use of multisource feedback and mentoring systems could thus help countries transitioning from a system based on self-assessments to "directed" self-assessments as suggested by Sargeant et al.⁴⁷

Second, most systems relied on self-assessments and lifelong learning activities doctors selected themselves without attending to external assessment of practice performance. More specifically, by relying on credit accumulation systems that allowed doctors to choose their learning activities,⁴⁸ it was entirely at the doctors' discretion to judge their performance and learning needs. There's strong evidence however, that several individual and social factors obscure the validity of self-assessments such as age and experience.^{48 49} Additionally, self-assessments tend to mirror self-confidence and self-efficacy which are not necessarily good measures of doctors' competence.⁴⁸ This evidence provides ample ground to question both the effectiveness of recertification systems that rely on



doctors' self-assessments and the autonomy granted to clinicians.^{17,50} Hence, assessments of competence will become more meaningful when they involve multiple assessors, including patients.

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

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

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

Limitations

Since recertification systems were decentralized in some countries and we explored the national level only, we cannot exclude that interregional variations were missed. Moreover, although the interviewees ideally represented at least two different national organizations, interviews were mostly limited to two or three respondents per country. A final and possibly the most complex and intervening limitation constituted the diversity in terminology and language. This may have affected the translation

of national concepts into English during the interviews and of written descriptions, potentially causing loss of detail during the analyses. These language differences and ambiguity in terms underline the challenge of comparing various recertification systems.

Practical implications for professional mobility

Defining universal criteria for assessing professional competence will be no easy feat, especially not when considering the differences between national recertification approaches, rising cross-border mobility. Since each system is customized to a specific context, culture, and healthcare system, a universal recertification system may neither be desirable nor achievable, as doctors are required to consciously reflect on the local culture, and adapt to the unique features of their work setting and health care system.¹⁶ To our knowledge, currently there is no requirement or overarching effort in striving towards harmonising recertification processes across countries within the European Union. Its member states have agreed that each individual country will remain responsible for national health care affairs, without European regulations interfering. Moving towards a standardised system would however require an EU-wide regulation, which is currently interrupted by those strong nationally regulatory powers. For transparency purposes, however, national bodies and medical societies could share their competency assessment procedures and quality standards, turning a political matter into an educational (and quality assurance) matter.⁸ Moreover, national bodies can incorporate performance evaluation, involve multiple stakeholders including patients, and use other assessments besides clinicians' self-assessments in their re-certification procedures to enhance liability.⁶⁰ Considering the increasing internationalisation of healthcare, doctors' cultural competency should also be incorporated into recertification programmes.

Achieving an overarching quality assurance system being an unrealistic goal, we need to have a shared understanding of what are minimum standards for a doctor thereby creating a base for international comparison while allowing for local adaptations.⁵⁰ This however asks for an increased collaboration between countries and understanding of differences inherent to each system and culture. Such standards of training content and certification directives could meet the challenges posed by the free, cross-border movement of professionals, improving patient safety, and enhancing accountability and transparency.



CONCLUSION

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

ETHICS APPROVAL

Ethical approval was obtained from the Netherlands Association for Medical Education (NVMO; file number 669).

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Chapter 3

Box-ticking and Olympic high jumping – Physicians' perceptions
and acceptance of national physician validation systems

Sehlbach, C., Govaerts, M. J. B., Mitchell, S., Rohde, G.G. U.,
Smeenk, F.W. J. M., Driessen, E. W.

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ABSTRACT

Purpose: National physician validation systems aim to ensure lifelong learning through periodic appraisals of physicians' competence. Their effectiveness is determined by physicians' acceptance of and commitment to the system. This study, therefore, sought to explore physicians' perceptions and self-reported acceptance of validation across three different physician validation systems in Europe.

Materials and methods: Using a constructivist grounded-theory approach, we conducted semi-structured interviews with 32 respiratory specialists from three countries with markedly different validation systems: Germany, which has a mandatory, credit-based system oriented to continuing professional development; Denmark, with mandatory annual dialogs and ensuing, non-compulsory activities; and the UK, with a mandatory, portfolio-based revalidation system. We analysed interview data with a view to identifying factors influencing physicians' perceptions and acceptance.

Results: Factors that influenced acceptance were the assessment's authenticity and alignment of its requirements with clinical practice, physicians' beliefs about learning, perceived autonomy, and organizational support.

Conclusions: Users' acceptance levels determine any system's effectiveness. To support lifelong learning effectively, national physician validation systems must be carefully designed and integrated into daily practice. Involving physicians in their design may render systems more authentic and improve alignment between individual ambitions and the systems' goals, thereby promoting acceptance.

INTRODUCTION

Nowadays, many countries have adopted national physician validation systems that differ widely in focus, requirements and procedures.¹ Yet, they all share a common goal which is to improve quality of care.² To achieve this, all validation processes and procedures are geared towards safeguarding competence and improving performance. While 'validation' has a number of alternative expressions (e.g. recertification, revalidation and maintenance of certification), for the purpose of our study we selected the term 'national physician validation system'.³

The effectiveness of a validation system which finds expression in improved practice performance is determined by a physician's commitment to the system. Prior research has suggested that physicians' perceptions of the system, its procedures, the context and outcomes are important determinants of commitment.^{4,5} Although several studies have explored physician's perceptions of a single national physician validation system,⁶⁻⁸ none of these, to our knowledge, have explored perceived effectiveness across systems. Hence, the question remains whether and how differences between validation systems affect perceived effectiveness and reported acceptance of these systems and whether such differences in perceptions, if any, entail a performance change and healthcare quality improvement.⁹⁻¹¹

The present research seeks to address this question by comparing physicians' perceptions and acceptance of validation across different physician validation systems. To this end, we conducted semi-structured interviews with physicians from three different European countries, using a constructivist grounded theory approach to analysing the data.

METHODS

Settings and Participants

Drawing on a previous study on European national physician validation systems,¹² we chose three countries that differed markedly in their assessment formats and requirements for physician validation: Germany (DE), Denmark (DK) and the United Kingdom (UK) (please refer to appendix I for a detailed description of each system). The German system is mandatory and credit-based, consisting of a five-year repetitive cycle during which period physicians must seek to collect 250 credits. In Denmark, validation takes the form of an annual dialogue between physician and employer during which they discuss the physician and institution's needs and related learning needs and activities. Although such dialogue is framed as an obligatory, annual development talk, participation in formal educational activities is voluntary. In the UK, by contrast, mandatory annual appraisals constitute



the backbone of a five-year revalidation cycle. Appraisals are guided by a physician's portfolio that includes information about educational and quality improvement activities undertaken (audits), a systematic evaluation of work delivered (significant events, compliments and complaints), and peer and patient feedback.

For each country, we purposefully selected practising physicians to reflect diversity in levels of clinical experience and expertise, in experience with the validation system and in settings - by including participants from academic and non-academic hospitals as well as private and public institutions. In employing this sampling strategy, the principal researcher (CS) selected participants from a large European database of respiratory physicians, inviting them to participate via email. In case they were unable to participate or deemed themselves unsuitable, participants were asked to suggest colleagues (snowballing) who could offer a distinct view on physician validation. In the end, we interviewed nine German, eleven Danish and twelve British physicians.

Data Collection

CS conducted all interviews by phone or Skype, either in English or German, which required the Danish interviewees to translate their experiences into English. Interviews lasted between 40-70 minutes, were recorded digitally and transcribed verbatim. We conducted the interviews until no new information could be obtained and the interviewees did not address any new topics.¹³ We felt that theoretical sufficiency was reached after interviews with ten British, nine Danish and eight German physicians, as no new concepts surfaced during the last interviews.

Questions asked participants about the perceived goal of their national system, its perceived effectiveness in ensuring competence or supporting professional development and its perceived impact on clinical practice (Appendix II). To assess the validity and feasibility of the interview protocol, we piloted it on physicians in the Netherlands, as a result of which few questions were left out or rephrased. We collected and analysed the data in an iterative process whereby preliminary findings from the first interviews informed the structure of later interviews, leading to adjustments to the interview guide. Moreover, the collection of new data and the analysis of existing data took place simultaneously. Data were collected in the period between February and August 2017.

Data Analysis

After a preliminary exploratory analysis, we coded the data in an inductive process that was guided by sensitising concepts pertinent to national physician validation systems. Adhering to the principles of grounded theory, we used the codes to build themes around participants' perceptions of

national physician validation systems. Open coding of transcripts was performed independently by CS and two research assistants (CN and AB). After coding five interview transcripts, CS and SM discussed and clustered the codes that had arisen and subsequently used these for further, focused coding of interview transcripts. CS collated initial codes into broader themes and linked categories with subcategories (axial coding).¹⁴ CS and MG connected the themes further and reviewed the adapted coding manual used for coding of the next transcripts. CS, MG, FS, GR and ED discussed codes and themes, using constant comparison of distinctive examples throughout, until CS had analysed all interviews. The data analysis became more deductive towards the end when CS, MG and ED discussed existing themes around perceptions of national physician validation systems until they reached consensus. The analysis of the last interview transcripts, the German ones, confirmed our final themes. We further validated our data by sending participants written summary notes after their interview for approval (member checking). We used the software Atlas.ti to support data analysis.

Ethical Approval

All participants gave written and oral informed consent. We obtained ethical approval from the Netherlands Association for Medical Education (NVMO; file number 813).

RESULTS

In the following subsections we will first give an overview of the validation system of each country and describe how physicians perceived and accepted their respective system. In doing so we will focus on both differences and similarities within each country, taking into account that perceptions are the likely result of an interplay between individual, system- and context-specific features. In a second step, we discuss participants' perceptions across validation systems, flagging differences and similarities in perceptions across countries and distilling influencing factors which all countries share.

Germany: A Credit-Based System

The German system relies on the collection of credits for continuing learning and development activities. One major concern voiced by participants was that the educational opportunities offered were often not linked to the workplace. In their perception, this absence of workplace-based learning suggested that the system's requirements and their work were not properly aligned. Activities from which they felt they learned the most, such as daily patient encounters or case discussions, were not among the accredited options, which, according to participants, detracted from the system's authenticity. This was especially the case for hospital-based physicians,



who felt that exchanging experiences or seeking advice from colleagues was much more meaningful than taking part in accredited activities.

Adding to this misalignment was the fact that physicians were free to choose their own accredited activities. Faced with a heavy workload, some physicians saw themselves forced to take courses that, however irrelevant to their practice, were held in close proximity or at a convenient time. This allowed them to fulfil their duty by ticking the required boxes but did little to actually promote their development: 'You are totally free to choose what you want. As a pulmonary physician I could go exclusively to gynaecological or dermatological events'. (Participant 28, DE)

Although physicians' trust in their credit-based system had waned, they did understand such a system was needed to ensure quality of care by filtering out noncompliant physicians. However, they themselves being intrinsically motivated, they were not so much concerned about whether or not they had collected enough credits, and used the pre-set number merely as a guideline for their learning. Hence, German physicians essentially designed their continuing learning independently of the credit system. The disconnectedness between meaningful learning opportunities and the formal validation system made participants perceive the system as a tick-box exercise.

Denmark: The Annual Dialogue

In Denmark, validation occurs through an annual dialogue between the physician and his/her department head with the aim of reviewing the physician's personal or career development, rather than evaluating competence. Our interviewees greatly valued this approach, for it allowed them to customise their learning to their own needs, personal goals and daily work. Moreover, it increased their sense of ownership and motivation to improve further. These features all bolstered the system's authenticity, causing physicians to accept the annual development dialogue and even to insist on it taking place annually.

This same approach, however, also carried the inherent risk of department heads not attaching similar importance to the dialogue. As the ones controlling the process, department heads wielded the power to dismiss the annual dialogue as something of secondary importance. Hence, without the support of their managers, physicians were little short of disempowered:

It's a bit of a joke and it's also a bit of an issue, because I have taken it up with the head of department, that we should have this done. And he says, well that is compulsory, so it should be done. But it doesn't seem to happen.
(Participant 22, DK)

Another potential risk was that the department head was unfit to evaluate daily work, affecting the credibility of feedback received and, consequently, physicians' acceptance of the validation procedure. Since feedback often appeared insignificant, Danish physicians suggested that feedback designed to evaluate their practice should actually come from peers:

The ones who should evaluate your skills should be your closest mentor, supervisor or peers who work with you in daily practice, the ones who actually know you. The annual talk with the head of your department is more for a career planning thing. They really, of course they know what you do, but I don't think that they really know your skills. (Participant 18, DK)

In a similar vein, one interviewee dubbed the annual dialogue as 'just a little social conversation with your boss' (Participant 13, DK). These circumstances could cause physicians to lose trust in the department head and in the system for personal development, transforming the personalised feedback dialogue – if improperly performed – into a tick-box exercise. As one of the participants explained:

We have so many systems controlling us in many different ways and that is not a stimulation factor in order to, to become a decent doctor. That's just another thing you have to do before you can go to bed. (Participant 20, DK)

The United Kingdom: A Portfolio-Based Revalidation System

As briefly touched upon previously, British physicians must demonstrate their fitness to practise during annual appraisals which are guided by a portfolio that includes evidence of continuing professional development activities undertaken or feedback received, for example. During such meetings, the physicians reflect on this supporting information and, together with their appraisers, formulate a personal development plan. Our British participants recognised that the appraisal, indeed, focused on learning needs, facilitated development and helped improve practice. They felt the discussions encouraged reflection on past performance and future ambitions relevant to their practice. On the other hand, however, they sometimes perceived the obligation to document activities in the portfolio for validation purposes as bureaucratic, often saving it until the last moment:

It is a very easy process to go through with your eyes and brains half closed. So, I think the responsibility for your learning still remains very much with you. And the appraisal and the revalidation process are boxes that you have to jump through in order to achieve that. (Participant 9, UK)

What resulted critical in determining the appraisal's quality was the commitment of the appraiser. Appraisers who were most effective were dedicated, properly prepared for the appraisal, studied the personal



development plan, discussed its relevance or suggested alternatives. Physicians particularly accepted appraisers whom they considered a 'critical friend' who encouraged them to reflect on the relevance of activities: 'So it is not just about, you know, ticking the boxes and saying that you've had all those activities. It's also about how these activities have changed your practice and your perception of things.' (Participant 2, UK) In our interviewees' experience, however, such commitment was not always the rule as several appraisers skimmed through the portfolio in a ticking-the-box fashion, paying little regard to physicians' development. This undermined the quality and credibility of feedback received and, in turn, the physicians' trust in and respect for the appraiser: 'So nobody ever looked at them to see if they're any good. I could, to be honest; I could write a whole load of rubbish.' (Participant 1, UK)

Similarly, questionable peer or patient feedback could also clearly affect the system's validity. Bound by a collegial culture, physicians, rather than being critical, tended to overemphasise positive feedback. Although such feedback was flattering, our interviewees were fully aware that avoiding criticism was part of the behavioural code among colleagues. Therefore, uncritical feedback failed to induce change, or reduced physicians' trust in the systems' effectiveness.

Cross-Country Comparison

From our comparison of perceptions across countries, we could distil several overarching factors that influenced physicians' perceptions and acceptance of their validation system. These were: physicians' beliefs about learning, the credibility of requirements, support from supervisors or colleagues, and respect for and trust in the appraiser. What deserves first mention is the observation that all our participants, regardless of country, unanimously declared to be committed to lifelong learning and acknowledged the need for some form of validation system to stimulate continuing development, to evaluate competence for accountability purposes, and to keep their knowledge and skills up to date. On the other hand, however, participants also unanimously agreed that their country's validation system, in its current form, somewhat missed its purpose of improving practice performance or identifying physician incompetence. The mandatory requirements all three validation systems rested on bore little relation to clinical practice, leading participants to perceive their system as punitive and ineffective.

All participants reported, without exception, that they had intrinsic motivation to work on their personal development. That is, rather than complying with the physician validation requirements, most physicians mentioned that they exceeded them. Consequently, there was a general sentiment among physicians that the system was not geared towards them, but designed to monitor only a minor group of physicians who failed

to meet the standards and required formal guidance. Hence, they deemed the system particularly useful during early career, for older physicians close to retiring, those working in isolated settings, or for those who would otherwise refrain from continuous learning: 'Should we punish all the ambitious doctors because a few doctors just sit on the couch and watch soccer?' (Participant 20, DK)

Physicians voiced concern over the systems being disconnected from true, work-related learning and being incapable of determining actual functioning or detecting deficiencies, as testified by the opportunities available to cheat the system. More specifically, they questioned the systems' effectiveness, particularly its ability to detect "bad apples" or those unfit to practise: 'If I was doctor Shipman at the moment, I would be passing the revalidation with flying colours.' (Participant 1, UK)

Although a heavy workload sometimes forced physicians to favour efficiency over effectiveness, they sought to strike a balance as much as possible by choosing educational activities according to their learning needs. Nonetheless, physicians felt that most of their learning needs were largely addressed in daily practice, and that continuous development and lifelong learning were embedded in daily work. Our interviewees learned from case discussions, consulting with colleagues, giving presentations or reflecting on their work. Finally, physicians believed that a mere obligation to comply with minimum competency standards was not enough, by far, to achieve excellence and high-quality patient care:

I suppose you could call it the Olympic high jump. I don't regard the entry level, that is the revalidation level, as good enough for what I'm doing. I need to be better than that, a long way better than that. (Participant 5, UK)

DISCUSSION

The present study aimed to explore physicians' perceptions and acceptance of validation across different national physician validation systems. Our findings suggest that physician validation systems are often misaligned with daily practice, clearly jeopardising physicians' trust in the system and inviting game playing, most notably in the form of credit collection. More specifically, the requirement to obtain a specified number of credits was conducive to box-ticking behaviour among physicians who sometimes saw themselves forced to select educational activities that were irrelevant to their learning needs for the sole purpose of obtaining the credits required for physician validation. These findings tie in neatly with previous research illustrating that credit-based evaluation systems may turn into a tick-box exercise, particularly when quality control is lacking.¹⁵⁻¹⁷ Drazen,



Weinstein,¹⁸ by extension, also warned of systems' clinical irrelevance and inability to support change. As our study revealed, such circumstances corroded physicians' trust in the system. Other factors that contributed to a further loss of trust in the system were the workplace culture and a lack of support. Physicians often questioned the feedback received from the validation system or cast doubt on its credibility. Instead, they preferred to consult with colleagues informally, outside the system, to inform their self-assessment, while resorting to pure game playing when it came to meeting the requirements.^{9,19}

Despite their scepticism towards physician validation systems, physicians embraced their continuing development, an observation that finds resonance in other studies.^{8,20} Furthermore, physicians felt that lifelong learning was essentially achieved in their daily work, by practising, asking for or receiving feedback, and reflecting on their actions. These findings point to an evident need for a better and more meaningful alignment between physicians' practice and the system's requirements, to render more authentic and effective physician validation systems.

The challenge to overcome a lack of trust and game playing is not specific to our field of study. On the contrary, literature on industrial and organisational psychology and student assessment report similar difficulties in evaluating competence and supporting development. In student assessment, for instance, it has been demonstrated that students' perceptions of assessments' quality influence their approach to the assessment tasks and, consequently, their learning outcomes.^{21,22} Similarly, perceived fairness, meaningfulness, and practicality of the assessment all determined acceptability, while in management, performance appraisals have been reported to lack purpose, with red tape exceeding developmental achievements.²³ In the business world, moreover, there is a growing tendency to regard performance appraisals as too strict, considering that daily routine offers plenty of opportunities to gauge employees' performance.²⁴ Hence the current trend to replace formal appraisals by regular informal dialogues with the aim to integrate timely feedback into daily practice.

The answer to the challenges unravelled by our findings relate to key principles of the self-determination theory.²⁵ According to this theory, perceived autonomy paired with a sense of relatedness through coordinated or organisational support can help in shaping a quality culture. Such a quality culture encourages individuals to engage in procedures for continuing development such as physician validation systems driven by intrinsic motivation, thereby remaining competent and strengthening capability.²⁶ Our interview data confirm that activities that promoted reflection and development, such as annual dialogues or appraisals, were, in effect, preferred to disciplinary measures such as formal performance evaluations and assessments.^{27,28}

Implications

Managing tensions between accountability and development is difficult. A greater emphasis on formative components could help align the systems' requirements with physicians' beliefs about learning in the workplace, thereby strengthening physicians' motivation and their trust in validation systems.²⁹ Moreover, accrediting workplace-based activities such as institutional group meetings or interprofessional rounds would accentuate the relevance of practice-based activities within physician validation systems.³⁰ Instead of being time-based, these activities should be outcome-based, tailored to the individual's needs and practice.³¹ Offering regular informal dialogues to discuss relevant educational activities with a colleague or a mentor could increase systems' authenticity. This could also improve the credibility and acceptance of feedback, inducing deeper reflection on individual and group performance and creating a sense of relatedness and autonomy. Such changes could ultimately result in systems being perceived as more authentic and flexible, countering current experiences of the system being a mere tick-box exercise.^{26,30} Perhaps, then, physicians may come to perceive validation as an indispensable contributor to their continuing development, their capabilities, and quality improvement instead of regarding them as unavoidable.^{7,26,32,33}

Limitations

Our research design carries potential limitations. We enrolled participants across three different European countries. While we consider it a strength that we performed a cross-country comparison, physicians' perceptions of other systems may yield different results. Future research should explore systems' core characteristics beyond our setting to better understand the importance of context. We selected participants from one single medical speciality, respiratory medicine. Other specialties may yield different results. We invited self-selected volunteers from a pool of physicians who are involved in international activities. This self-selected group may have been more or less critical or ambitious than their colleagues.

CONCLUSION

For national physician validation systems to truly support lifelong learning and reliably assess competence, they need to be carefully designed and integrated into daily work. The assessment tools applied, the stakeholders involved, and the entire process determine if systems appear authentic and valuable for continuing professional development. Engaging physicians as key stakeholders in the design of those systems may cultivate a sense of relatedness fostering a culture of quality and promoting acceptance and commitment. Practising physicians' lifelong learning is the cornerstone of safe medical practice. The findings of this study underscore the need for



enhanced national physician validation systems to improve authenticity and engage our physicians in a learning culture that will ultimately lift our medical systems to a state of high-quality patient care.

Practice Points

- Involving physicians in the design and improvement of physician validation systems can enhance acceptance.
- To prevent credit collection from becoming a tick-box exercise, accredited activities should be embedded in clinical practice.
- Regular, informal meetings between physicians can enhance feedback credibility and increase relatedness and, consequently, acceptance.
- Authentic systems require alignment between requirements and the individuals' goals and motivation, and practice.

Glossary terms: 'National Physician Validation System' is a key feature of our article, a concept also referred to as recertification, revalidation or maintenance of certification. We drew this definition from: Horsley T, Lockyer J, Cogo E, Zeiter J, Bursey F, Campbell C. 2016. National programmes for validating physician competence and fitness for practice: A scoping review. *BMJ Open*. 6(4).

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APPENDIX I. DESCRIPTION OF NATIONAL PHYSICIAN VALIDATION SYSTEMS IN THE COUNTRIES UNDER SCRUTINY

Germany requires medical specialists registered at the Statutory Health System to collect 250 CME points over five years. Also, physicians engaged in the inpatient sector are obliged to collect CME points, although the burden of proof differs.

CME points can be collected by undertaking a combination of activities, such as presentations, attending conferences, be a visiting physician, print media, scientific publications, and online or blended learning. The content of each programme depends on the physician's speciality. CME points can also be collected in another state or country as long as the programme is accredited. Credits obtained abroad are only recognised automatically if the respective event is accredited by one of the 17 state chambers.

Anyone who fails to achieve 250 CME points is allowed an initial prolongation period of three to six months. If the responsible doctor still fails to meet the requirements, the doctor will be interviewed by the state medical chamber. Consequently, the doctor may face a financial penalty in the form of a 10-25% income reduction of the statutory health insurance affiliation, and, ultimately, a loss of licence.

For physicians working in hospitals, the hospital administration is responsible for checking compliance with CME points and for publishing a quality report. In case of failure to adhere to the CME rules, the institute faces financial sanctions.

In Germany, the medical fraternity is a self-administrative body which sets the rules for physician validation. The underlying legal basis for keeping medical knowledge up to date is two-fold. Rules to deliver proof of CME activities performed are laid down in article 4 of the Professional Code agreed on by all 17 German State Medical Chambers. Yet, CME is regulated on the regional level and is subject to each state national chamber. The national chamber can only make recommendations but has no legal power as it groups all 17 state chambers. The upkeep of knowledge was also included in the Fifth Social Code in 2005, making CME a legal obligation for doctors.

Denmark offers a system for CPD which is non-formalised and not credit-based. Hence, it does not apply sanctions in the case of non-attendance. As everyone is responsible for reporting someone's malpractice to the National Board of Health, a formal regulation or assessment would be incapable of detecting malpractice. As such, the Danish system relies heavily on leaders and colleagues being proactive. During an obligatory annual dialogue



between the doctor and the employer, a decision is made on courses to be followed based on the individual doctor's needs. Accordingly, the employer is responsible for paying for these activities which are aimed at delivering the safest and best possible patient care.

CPD programmes can be undertaken during paid working time (eight to ten days per year). The choice of activities should be made based on employers' and individual needs and interests, and refers to the liberal principle of self-monitoring and employer's feedback. The emphasis is on the dialogue between employee and employer, or colleagues, or patients. The dialogue between employer and employee can also lead to a restriction of the licence, which is decided on a case-by-case basis by the National Board of Health. The Danish Medical Association envisions CPD as a mandatory framework consisting of courses, congresses, and peer-to-peer training, customised to a doctor's individual needs. However, the movement towards a more formalised CPD progresses slowly.

Although no formal regulations exist, the Danish medical societies and the Danish Health and Medicine Authority regularly publish speciality-specific guidelines, and the Danish Quality Model assures quality by guaranteeing the qualifications of its hospital staff members.

The **United Kingdom** applies a national system of revalidation, which combines re-certification with relicensing. Its focus is more on the maintenance of a doctor's licence to practise than on the doctor remaining registered as a medical specialist.

The General Medical Council (GMC) is responsible for guidance, for setting professional standards that all doctors need to follow and for making sure they continue to meet these standards throughout their careers. It has the power to grant and withdraw licences. Designated bodies, such as healthcare organisations or specialists' organisations, send Responsible Officers (trusted senior doctors) to check medical specialists' compliance with the revalidation process. The Responsible Officer has a statutory duty to make sure robust systems of appraisal and clinical governance are in place within the organisation, and to make recommendations to the GMC about each doctor's revalidation. Based on that recommendation, the GMC will decide whether or not a doctor can maintain their licence.

The Medical Profession Regulations stipulate that, as of 2010, the revalidation process should consist of a five-year cycle and annual appraisals to ensure licensed doctors are fit to practise. At least once every five years medical specialists have to discuss a subset of six revalidation aspects with their supervisor. Evidence of having attended CPD activities tailored to the individual's needs has to be provided, as well as evidence

of having undertaken quality improvement activities. The latter can consist of clinical audits and case reviews. This evidence should reflect a systematic evaluation of work delivered, complemented by significant events. Feedback from colleagues and patients form the fourth and fifth requirements for revalidation. Finally, the doctor's annual appraisal considers reviews and complaints, as well as reactions and adaptations in behaviour. The revalidation process does not differ per speciality although medical specialists need to provide evidence relevant to their work domain. The organisation of revalidation is centralised in the GMC, but it is delivered locally in accordance with the regional healthcare needs.



APPENDIX II. INTERVIEW GUIDE

1. What are your experiences with physician validation?
2. How do you keep up-to-date with recent developments? (i.e. therapeutics, techniques, knowledge)
3. How do you make a decision on which learning activities to undertake?
4. How do the validation requirements guide your choice of activities?
5. What is the effect of physician validation on your performance as a doctor?
6. How manageable is physician validation alongside your daily work schedule?
7. What element, if any, of the current national physician validation system would you certainly change? And why?

3





Chapter 4

**Physicians' learning in workplace settings:
the role of informal feedback cues in daily practice**

Sehlbach, C., Teunissen, P. W., Driessen, E. W., Mitchell, S., Rohde, G. G. U.,
Smeenk, F. W. J. M, Govaerts, M. J. B

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ABSTRACT

Purpose: We expect physicians to be lifelong learners. Learning from clinical practice is an important potential source for that learning. To support physicians in this process, a better understanding of how they learn in clinical practice is necessary. This study investigates how physicians use informal feedback as learning cues to adjust their communication from interactions with patients in the outpatient setting.

Methods: To understand physicians' use of informal feedback, we combined non-participant ethnographic observations with semi-structured interviews. We enrolled 10 respiratory physicians and observed 100 physician-patient interactions at one academic and one non-academic hospital in the Netherlands. Data collection and analysis were performed iteratively according to the principles of constructivist grounded theory. Our conceptual model describes how physicians use cues to reflect on and adjust their communication as well as to further develop their adaptive expertise.

Results: In addition to vast variations within and across patient encounters, we observed recurring patterns in physicians' communications in reaction to specific learning cues. Physicians had learnt to recognise and use different cues to adjust their communication in patient encounters. They established a 'communication repertoire' based on multiple patient interactions, which many saw as learning opportunities, contributing to the development of adaptive expertise. Our findings show differences in physicians' sensitivity to recognising learning opportunities in daily practice which was further influenced by contextual, personal and interpersonal factors. Whereas some reported to have little inclination to change, others used critical incidents to fine-tune their communication repertoire, while others constantly reshaped it, seeking learning opportunities in their daily work.

Conclusions: There is a large variation in how physicians use learning cues from daily practice. Learning from daily practice is a collaborative effort and requires a culture that promotes lifelong learning. Raising physicians' awareness of experiences as potential learning opportunities might enhance their development of adaptive expertise.

INTRODUCTION

Certified physicians are expected to engage in lifelong learning. As such, they are often required to prove their participation in formal learning activities, such as courses or congresses which too often are didactic and primarily knowledge-based.¹⁻³ In fact, research findings suggest that most of physicians' learning occurs informally through work.⁴⁻⁶ Compared to formal learning activities, informal learning is mostly unplanned, unconscious or tacit, and involves others through meaningful experiences in an authentic setting.^{7,8} Informal learning can also be deliberate when physicians consciously aim to improve performance by, for example, seeking feedback or reflecting on experiences from their clinical practice, thereby engaging in self-regulated learning.^{4,9-12} Feedback-seeking behaviour along with ongoing reflection on performance and performance feedback for the purpose of learning are at the heart of deliberate practice; fundamental to the development of professionals' adaptive expertise.¹²

Making informal learning more explicit and deliberate, therefore, remains imperative for physicians' lifelong learning.^{4,1} This specifically counts for further development and refinement of physicians' communication skills. Communication is a complex yet crucial skill in patient care that is predominantly developed through practice and informal learning.¹⁴

Feedback and reflection on interactions with patients or peers in the workplace may stimulate physicians' deliberate practice. It is well noted that certified physicians receive little formal feedback. Yet, informal feedback through other 'learning cues' including for example informal feedback from patient responses, clinical outcomes or conversations with colleagues, specifically reported by Watling and colleagues (2012), may "facilitate the interpretation of the experience and the construction of knowledge from it."¹⁵⁻¹⁷ However, it may be challenging for physicians to recognise those cues as cues for learning, as they can be ambiguous and are part of their daily routine.⁴ In day-to-day practice, physicians predominantly engage with patients using their routine expertise, while being less involved with their workplace learning.¹² They may therefore benefit from support in how to recognise learning cues, as well as in knowing how to use and learn from them, so they may consider adapting and improving practice.^{2,13,15-17}

A better understanding of how physicians interpret meaningful experiences and use cues from daily practice as informal feedback may support strategies for physicians to develop their expertise, essential to ensure high-quality care.¹⁸ Our objectives, therefore, are to obtain an in-depth understanding of how physicians informally learn in and from the workplace.¹⁹ We aim to further refine theory on how physicians build and adapt expertise in the workplace setting.¹⁸ More specifically, we investigate how physicians recognise and



reflect on learning cues related to their communication with patients and consequently, learn and adjust practice through patient interactions.

METHODS

Using a constructivist grounded theory approach, we combined non-participant observations with semi-structured interviews.²⁰

Setting and participants

We approached physicians from an academic and a non-academic hospital in the Netherlands. To ensure homogeneity with respect to the area of patient care, we selected respiratory specialists working with outpatients in respiratory clinics. Respiratory medicine includes a varied patient population including acute, chronic and terminally ill patients, which often results in long-standing and intensive physician-patient relationships. We purposefully sampled respiratory specialists with variation in age, gender, subspecialisation and experience. After the first round of data analysis, the research team decided to include additional physicians who were in the beginning, in the middle or at the end of their career for theoretical sampling. All physicians consented to participate.

Upon registration for outpatient appointments, patients received a short letter, which informed them about the research, the presence of a researcher as an observer (CS) and were asked for consent. The participating physicians verbally briefed each individual patient, emphasising that the research focused on the physician, that no patient data would be collected, and that CS did not have a medical background. If, after starting the consultation, either physician or patient preferred the researcher not to be present, CS left the room.

We obtained ethical approval from the Netherlands Association for Medical Education (NVMO: file number 2018.7.9), and from the ethical committees of both participating hospitals (file numbers 2018-0864 and nWMO-2018.118).

Data collection

We combined data from non-participatory observations with informal and semi-structured interviews in an iterative design. CS shadowed 100 appointments of ten physicians in outpatient clinics. She observed physician-patient encounters and what cues physicians seemed to react to. She particularly focused on variations in communication styles during and across consultations and if, how and when physicians changed their communication with patients. During the observations, CS took field notes using ethnographic techniques, which she worked out after the observation within the following 48 hours. Observations lasted 1.5 to 3.5 hours, during

which CS usually observed eight to twelve outpatient appointments (Table 1). CS sat with some distance from the physicians and patients, and asked participating physicians to conduct the clinic following a typical daily routine.

After the observations, CS used her notes to prepare interview questions on situations observed. Following this preparation (0.5 to 1.5 hours), CS conducted semi-structured interviews (Appendix I). During the interviews, physicians considered and reflected on cues they used to adjust their communication. First, CS inquired about changes she had observed in physicians' non-verbal or verbal communication during specific patient encounters. Second, her questions addressed differences in how physicians approached different patients. Drawing on these observations, CS probed the physicians interviewed on their awareness of the learning cues that led them to alter communication during interactions with patients. Semi-structured interviews lasted 30 to 55 minutes and were recorded and transcribed verbatim. With the help of the transcriptions, notes were transformed into concrete reconstructions with analytic memos and commentaries.²¹ The data were subsequently analysed to obtain an in-depth understanding of the cues physicians considered relevant to their communication, and how they used these cues for learning.

Table 1. Overview of physician-patient interactions observed

Interviewee	Number of Patient encounters	Number of hours observed
A1	12	3
A2	8	2,5
A3	11	3,5
A4	11	2,5
A5	12	3
A6	11	3
A7	11	3
A8	10	3
A9	10	3
A10	4*	1,5
Total	100	28

**One observation included four patient encounters in a highly specialised outpatient clinic for patients with a certain rare disease.*

Data analysis

Data collection and data analysis were performed in an iterative manner, so that early analysis influenced the focus of the following observations and interviews. CS started by open, line-by-line coding of three interviews and



the corresponding observational field notes. The authors FWJMS, EWD, PWT, GGUR and MJBG each read and coded one interview transcript and related field notes and discussed their respective codes with CS independently. After refining the coding framework, the research team discussed and collated codes into preliminary categories. PWT and CS jointly discussed these, which resulted in the following preliminary categories: context, physician-patient relationship, patient characteristics, anticipating or reactive change in communication, and routine. CS used the preliminary categories in focused coding of two more interview transcripts, before discussing categories with SM and PWT separately. This led to the construction of the following additional categories: external factors, examples of learning cues (patient reaction, physician reaction), reflection, and communication repertoire. CS and SM conceptualised the categories into a conceptual model, based on which CS coded three more interviews. CS, SM, FWJMS, EWD and MJBG discussed and agreed on the conceptual model, and further deliberated how contextual factors affected physicians' decisions to react to and learn from cues or not. After CS had coded the two remaining transcripts, the research team re-examined the conceptual model and adjusted it into a final conceptual model of how physicians recognised and used informal feedback cues for their learning and how using cues resulted in a change of communicative behaviour.

We collected and analysed data until the authors felt that no new concepts came up and theoretical sufficiency was reached to answer the research question and to build theory.^{22,23} Data was managed with ATLAS.ti (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany) and the analysis reported with the COREQ checklist (Appendix II).

Reflexivity

The research team maintained reflexivity throughout data collection, data analysis, and writing up the results by discussing underlying assumptions about physician-patient communication and learning cues. CS used reflective memos throughout data collection to reflect on how her own experiences and pre-constructed knowledge influenced the interpretation of findings. She has a background in health sciences and is a PhD student in medical education, focusing on physicians' lifelong learning. The research team also consisted of medical educators (MJBG and EWD) and medical specialists (FWJMS, GGUR, PWT). FWJMS and GGUR are experienced respiratory specialists. PWT is specialised in gynaecology and obstetrics. SM is a medical education manager. All members of the research team are involved in medical education, having a special focus on workplace learning, continuing education or performance assessment. Their respective backgrounds might have influenced the research in presuming that physicians learn from daily patient encounters.

RESULTS

Our analysis revealed differences in how physicians reacted to, reflected on and learnt from various cues related to outpatient communication. The table below underlines potential cues that participants identified, and the researcher observed (Table 2).

Table 2. Examples of different cues in patient interactions

Cues physicians may react to	Examples
Circumstantial cues	Time constraints Goal of the outpatient appointment
Environmental cues	Physical set-up of the room
Patient characteristics	Diagnosis, disease status, physical condition, age, gender, education, patient's mood, values or beliefs
Physician characteristics	Physician's mood, values or beliefs
Interpersonal cues	Previously established physician-patient relationship

In the following paragraphs, we first describe the variation in the physicians' communicative behaviour we observed within and across outpatient appointments. Subsequently, we report how physicians felt they learnt or did not learn from opportunities in their current practice.

Variation in communication within and between patient encounters

Physicians faced large variations of interactions in the outpatient setting. We noticed recurring behaviours in physicians' communication, which they indicated to have acquired from previous interactions.

Physicians' communication differed between patient encounters. They continuously adjusted to patients' reactions and circumstantial cues, smoothly manoeuvring through different patient encounters. One physician portrayed this as 'the game in the consulting room' (observational field notes, A7). They had a 'communication repertoire' at their disposal, which guided them through their daily routine while either deliberately or unconsciously reacting to context-specific cues:

It is actually just one strategy: ... that is, responding to what the patient gives you back. That can be really easy sometimes and passes very quickly, but other times you really need to manoeuvre carefully. ... I now have a huge repertoire of standard reactions that I can draw on (Interview, A4)

Physicians' communication repertoire included, but was not limited to, different strategies of taking the lead in the conversation, drawing to illustrate or explain a diagnosis, prognosis or treatment, change in body



language and/or non-verbal communication. Some observations showed, for instance, that physicians leaned forward to show interest in and empathy for the patient or to emphasise the severity of a patient's condition. Some used physical contact to comfort or console patients by shortly touching an emotional patient's hand or patting them on their back when saying goodbye. Similarly, physicians signalled the end of a consultation by leaning backwards, pushing back their chair or standing up.

Our participants realised that different factors, such as the atmosphere or goal of the consultation, the physical space of the clinic and time pressure, added complexity to the outpatient appointments. Recognising these circumstantial cues, they understood that patients might be agitated when coming for a test result or check-up after a treatment and had learnt to adjust their communication accordingly. One interviewee, for example, gauged the atmosphere during a patient encounter for deciding, deliberately, whether to open or wrap up a consult or reassure patients with a joke: [The physician jokes:] 'With this, you should be able to live to be a 100. But I cannot give you any guarantee, of course.' (Observational field notes, A4) The same physician had made identical, age-related jokes in previous consultations. In another consultation, however, he remained distant and refrained from making jokes, because, as he explained afterwards, 'this was not the most cheerful patient'. These observations underline that, depending on the circumstances, physicians deliberately adapted their communication. Along with circumstantial cues such as atmosphere, workload or time constraints, interpersonal and personal cues also affected physician-patient communication, including the relationship previously established, physicians' and patients' mood as well as their norms, values and attitudes:

You only really get to know people if you see them often. ... At a regular check-up - I do think that when you see familiar people ... that I pay more attention to 'What kind of person was that again?' ... That is, I think, your mental preparation, and I think at that point you are already largely determining your communication strategy. (Interview, A2)

We observed how physicians adjusted their communication while anticipating their patients' reaction by slowing down, leaving a silence, increasingly using gestures or giving more detailed information. We could distinguish between *ad hoc* adjustments in reaction to an unexpected turn of events such as a patient bursting out in tears or a phone ringing, and planned behaviour in anticipation of the consultation flow (i.e. breaking bad news), as in the observed consultation described below:

A cancer patient and his partner return to discuss treatment options, because their son had expressed his dissatisfaction about the diagnosis and treatment option the trainee had given his father. The trainee asked the

attending physician to lead the consultation and to discuss the diagnosis and treatment plan with the patient and his partner.

The physician explains the diagnosis. He speaks calmer than before when listing treatment options, pauses and gesticulates with his hands. 'Let me draw it. You will receive more information about this later, but schematically for now...'

The phone rings twice during the consultation. The physician silences it both times, the second time even without looking at the phone or pausing his explanations. When there is a third call, the trainee takes it.

*The phone also rang during other consultations that day, but this time the physician did interrupt the ongoing conversation to answer it.
(Observational field notes, A7)*

Physicians had developed a communication repertoire that enabled them to quickly adapt their behaviours depending on how various interrelated factors influenced the patient consultation.

Learning from daily practice

Our analysis of the observation and interview data revealed two possibilities of how physicians applied their communication repertoire in daily practice, recognising learning opportunities in past or present patient encounters. Although all physicians had acquired a daily routine, some were able to uncover learning opportunities within this routine and engaged in ongoing expertise development.

Some physicians felt that they were no longer able or willing to learn or adjust. They felt that time constraints and daily routine took priority over using patient encounters as learning opportunities to adapt their communication. They remarked to be 'stuck in this pattern' (interview, A5), preventing them from learning communicative subtleties, and described that the ever-repeating routine had decreased sensitivity and willingness to learn from their interactions with patients. Reflecting retrospectively on their communication helped them realise how they had acquired their behaviour. Our interviews forced physicians to deliberate on the preceding patient encounters and potential learning opportunities. They were unconscious of their communication repertoire and how they used similar strategies across patients: 'How funny. ... It could be. ... I didn't know that I pushed my chair back, but now that you mention it, I think, oh yeah, that's right, I do that.' (Interview, A8)

Interviewees repeatedly mentioned that an absence of patient complaints implied that their communication repertoire was sufficient with no need for



further development. They heavily relied on the repertoire built and believed they could 'no longer be corrected' (Interview, A5). While comprehending its importance, physicians hardly dwelt on their communication during or after patient encounters. Some struggled to pinpoint how they adapted their communication throughout patient encounters, which reflects an automatic behavioural adjustment. Others knew they used humour in their consultation but often mentioned it as an unintentional and automated strategy:

That way you try to keep it a bit personal, to put people at ease perhaps. ... But that is something that you sense unconsciously. It's not as if I think like 'oh, let's make a joke now', it's something that happens unknowingly, actually. (interview, A10)

Even stronger, many considered their communication repertoire as part of their personality: 'That's how I am. Some [physicians] are more cheerful or more business-like. It's not something you can switch on or off'. (Interview, A1). As one of our respondents explained:

If this is the right way or [if] it could be better, yes, that may be so, but this is my way. And I don't think that I'm doing it a lot differently now from the way I did it 10, 20 or 30 years ago. (Interview, A5)

We found a notable contradiction in this response as the same physician claimed to still learn:

You know, frankly, that sounds very arrogant, but I don't think I'm doing a very bad job. But I know for sure that sometimes I can be entirely wrong. And I do try to learn from that. It touches me. It certainly touches me. (Interview, A5)

For this physician and most of his colleagues, ongoing learning does not represent a smooth learning curve, but occurs intermittently induced by emotion or critical events. Some indicated to learn from difficult or peculiar patient encounters, which were out the scope of our observations. They reported that those learning events often stood out from daily routine, 'ranging from someone who [is holding] a chair above his head and threatening you, so to speak, to people who ... well, all sorts of variations' (interview, A7). Critical incidents resulted in increased reflection which made physicians question their own behaviour and re-evaluate their communication repertoire. One of our physicians painfully described his communication as a shortcoming, because his patient continued smoking after repeated warnings. He believed to 'be failing as a doctor' (interview and observational field note, A6) and recognised that he needed to learn how to deal with patients who trivialise their condition. This shows

that despite having developed a reliable repertoire, physicians' learning behaviours may change when experiences elicit emotions, especially when they feel to have failed.

Other participants internalised regular reflection as part of practising, continuing improvement and learning from their practice. These physicians readily acknowledged that their communication repertoire was 'based on previous experiences' (interview, A4). They were aware of the constant yet subtle adaptations in their behaviour within and between patient encounters. Physicians used these to play 'the game in the consulting room' of deliberately fine-tuning and mastering their communication repertoire: 'You try to act on the patient's level. This morning, we had that farmer, right, that man who reacts primarily driven by his emotions with a certain rigidity and then you try to tune into that level' (Interview, A7). Some indicated that reflection on and learning from patient encounters had become fully ingrained in their daily practice: 'I'm always, I think, learning a bit anyway' (interview, A8). As someone explained in reaction to our observations:

Yes, I do think that I actually always take note, when the patient [is] in the consulting room or [when I] start preparing for the next patient. Like, ... for this patient, but also for similar cases, ... how do I say that in plain and clear language? ... I did learn from this and reflected [on it] again and that's actually how I do it every time. (Interview, A2)



DISCUSSION

We aimed to explore how physicians use cues from their clinical practice as informal feedback to adjust their communication and learn from daily patient interactions. Our data showed variation in physicians' communication patterns within and across outpatient encounters influenced by personal, interpersonal and contextual factors. Physicians reported to have learnt from previous interactions, which established a communication repertoire that guided them through their practice. We described different degrees of the extent to which physicians recognised and used informal feedback from daily practice as cues for learning and learning opportunities.

The two opposites we present show that some physicians are less likely to engage in reflection and deliberate learning from day-to-day patient care, whereas others appeared more sensitive to learning cues to reflect and adapt their communication. Some of our participants were caught up in the demands of daily practice and did not have the time or willingness to reflect on their communication repertoire. According to Ericsson's model of deliberate practice and expert performance, these physicians were in a phase of arrested development.⁹ Yet, they felt competent in their performance

and would potentially reinitiate a learning process in response to critical events. Others continuously challenged their communication repertoire to ultimately increase control over unknown situations.²⁴ They reflected on whether they had used their repertoire effectively and efficiently which allowed them to smoothly navigate through practice as an indicator of mastery and expert performer.⁹ This variation in physicians' willingness to lifelong learning reflects on previous findings on expertise development.^{9,25} Mylopoulos et al.²⁵ argue that adaptive experts may not only recognise the "old in the new" but that they also reconceptualise their practice by reflecting on the "new in the old". This echoes our findings that some physicians may regard patient encounters as learning opportunities to confirm or fine-tune their communication repertoire. It also induces the questions about which factors influence physicians' position on the learning curve, or how we can create a stimulating work environment for all physicians to become lifelong learners.

The way participants in our study described and reflected on the development and use of their communication repertoire reflects findings from a recent study on how trainees develop expertise in communication.²⁶ Kawamura and colleagues²⁶ distinguish between procedural fluency and conceptual understanding in expertise development in communication. The use of humour or physical contact to comfort a patient can be considered procedural fluency, whereas 'shifting' between patients and moving towards patients' 'level' reflects a physician's conceptual understanding of distinct patient needs.²⁶ Adaptive experts thus command a conceptual understanding of when to use their established communication repertoire and when to adapt how they communicate their clinical knowledge to different patients or when to innovate strategies for adapting to non-routine situations. Findings from our study seem to confirm Kawamura and colleagues' conclusion that learning how to 'shift' between patients is key to expertise development in communication.

The degree of willingness and sensitivity to recognise learning opportunities that we describe, stress Teunissen and Bok's reflection on goal orientation and self-theories.²⁷ Their distinction between incremental and entity theorists shows parallels to our results.^{27,28} Physicians who reflected on their actions and emotions, and who continuously tested their communication repertoire showed signs of a growth mind-set. They appeared as intrinsically motivated lifelong learners and adaptive experts. Among our participants, we, however, also recognised individuals who were more performance-oriented. They were mainly absorbed in the acquired routine and considered the absence of patient complaints as affirmation of good practice. Possibly, contextual factors within daily practice had diminished their incremental mind-set over time which hints at possibilities for improving the overall learning climate in hospital departments.²⁸ Engaging physicians in lifelong learning may

require a culture in which the tension between performance and continuing learning is recognised. When physicians are given the opportunity to reflect more on their communicative behaviour during patient care, through formal and informal feedback, a growth-mind-set may be stimulated.

Contextual factors such as workload and time pressure in the clinical workplace may impede physicians' reflection on learning cues and their learning.^{17,29-31} Some of our participants were more sensitive to time pressure and preoccupied with daily routine than others, which may explain the individual differences in how deliberately our participants recognised learning opportunities. This aligns with the findings of Kyndt and colleagues³⁰ who suggest that learners' characteristics as well as organisation type and size determine the acknowledgement of learning opportunities at work. Engaging physicians in lifelong learning may thus require a culture which pro-actively stimulates reflection and the development of a growth mind-set and adaptive expertise.

Implications in relation to lifelong learning

Our results indicate that we may need to support physicians in engaging in reflection on action, while being cautious of potentially negative effects. We need to balance routine practice with reflective practice (to support development and maintenance of expert performance) since continuous reflection may hinder physicians in delivering care.⁹ That is, physicians need to have a certain level of automaticity to practise considering the increasing practice demands and contextual factors such as workload and time pressure.

Nonetheless, if feedback and reflection are truly valued as essential attributes for lifelong learning, more importance must be placed upon physicians' awareness of their own behaviour during practice, combined with a willingness to learn in order to improve. The UK revalidation system, as one of few national recertification systems, already requires physicians to reflect on critical incidents, feedback received, and complements or complaints during an annual appraisal. Although this creates workplace-based opportunities for physicians' learning, physicians are likely to reflect on aggregated data only, de-emphasizing learning-in-context. Rather, if we want to stimulate more reflective behaviour in practice, we may consider it as a collective effort by creating an environment that stimulates learning. Physicians could, for instance, occasionally observe peers to face diverse communication approaches to learn for their own practice, similar to how trainees learn from observing faculty.^{26,32} To initiate collaborative learning, physicians could also engage in peer consultation and share experiences and recent learning as described by Mylopoulos et al. as "discover then tell".²⁵ Those who are capable of discovering learning opportunities among patient interactions, could guide their colleagues who are less sensitive to cues in



a collective effort to engage in deliberate practice.⁹ Perhaps some of these collective learning activities could then serve as evidence that a physician contributes to a learning environment as a marker for recertification.

Strengths and limitations

A first limitation is that we base our data on single day observations and self-perceived learning strategies. We did not observe the same physician for a longer period of time. Following a number of physicians longer, would have resulted in multiple observations on physicians' learning behaviour, also outside of the outpatient setting. We collected data in outpatient clinics for respiratory disease, observing and interviewing respiratory specialists. Both hospitals were teaching hospitals. This might present another limitation as physicians working there might be more aware of and involved in others' or their own learning due to their teaching role. These physicians might have (developed) a more learning-focused mind-set than physicians without educational duties. It would be worthwhile exploring how physicians learn informally in a non-teaching context. In the Netherlands, recertification procedures and requirements to guide physicians' lifelong learning are similar across medical specialties. This makes our results transferable to other specialties, particularly considering that variations between and within individuals are presumably present across all specialties. Research in other specialties or clinical contexts and settings, however, may lead to different findings.

A strength of our study was the combination between non-participant observations and interviews. Many others have previously recommended this combination of methods to present data on what physicians report themselves but also on what can be observed.^{11,17,18} Observing physicians in the outpatient setting was instrumental to help us to explore learnt behaviour and learning opportunities in practice.

CONCLUSION

There is a large variation in how physicians use learning opportunities in outpatient settings. Their informal learning is influenced by contextual, personal and interpersonal factors, which might either promote or inhibit physicians' reflection and learning. Our findings suggest that there is some importance that can be attributed to making physicians more aware of when and how they can learn from daily practice, also in collaboration with others. Learning from daily practice is a collaborative effort and requires a learning culture, in which physicians can use existing differences between their own and their peers' performance to learn from each other.

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APPENDIX I. INTERVIEW PROTOCOL

Opening:

- For this research we want to investigate which information sources doctors use to gain insight into their functioning, in particular their communication with patients.
- How did you experience the today? What were your experiences with regard to communication and interaction with patients?
- What influences your communication in daily practice?
- Do you ever reflect on your daily functioning? When? How? Induced by what?

Key questions:

- Were there interactions / situations today that made you to aware of the way your communication? Or when did you alter the way you communicated?
 - Did you feel uncomfortable at any when communication with your patients? Or were there actually pleasant experiences?
 - Elaboration (what, how, why, etc)
- What did these experiences / emotions / reflection mean for you?
 - Are you going to do something with this? If so what (Further training? Intersivision?)
- What struck me today during my observation was [refer to a particular encounter/specific situation] what was relevant to you in this situation / interaction?
 - What were your assumptions when patient XY entered?
 - What made you change the way you interact between patient A and patient B?
 - When did you adjust the way you communicated? Was this a deliberate decision?
 - Would you do it differently at a different time / with another patient? How? Why? Can you give an example? Please elaborate.
 - What strategy have you followed?
- Which sources of information/cues that are relevant to your communication do you consult in daily practice?
 - Feedback from colleagues? From patients? Online modules? Online databases?
 - What other information sources are you aware of?



Additional questions:

- Are there things that you are going to change in your practice based on the interview / observations today?
- What was the effect of me being present today? Did it have an affect the way you practiced? How? In which way? Please elaborate.

APPENDIX II. COREQ (CONSOLIDATED CRITERIA FOR REPORTING QUALITATIVE RESEARCH) CHECKLIST

A checklist of items that should be included in reports of qualitative research.

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?	74-75
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	76
Occupation	3	What was their occupation at the time of the study?	76
Gender	4	Was the researcher male or female?	74
Experience and training	5	What experience or training did the researcher have?	76
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	n/a
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	74
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	74+76
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	74
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	74
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	74
Sample size	12	How many participants were in the study?	74-75
Non-participation	13	How many people refused to participate or dropped out? Reasons?	n/a



Appendix II. Continued

Topic	Item No.	Guide Questions/Description	Reported on Page No.
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	74-75
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	n/a
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	74
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	74-75
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	n/a
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	75
Field notes	20	Were field notes made during and/or after the inter view or focus group?	74
Duration	21	What was the duration of the inter views or focus group?	74-75
Data saturation	22	Was data saturation discussed?	76
Transcripts returned	23	Were transcripts returned to participants for comment and/or correction?	n/a
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	75-76
Description of the coding tree	25	Did authors provide a description of the coding tree?	76
Derivation of themes	26	Were themes identified in advance or derived from the data?	76
Software	27	What software, if applicable, was used to manage the data?	76
Participant checking	28	Did participants provide feedback on the findings?	n/a
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	77-81
Data and findings consistent	30	Was there consistency between the data presented and the findings?	77-81

Appendix II. Continued

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Clarity of major themes	31	Were major themes clearly presented in the findings?	76-81
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	76-84

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





Chapter 5

Respiratory patient perceptions on physician performance evaluation – a qualitative study

* Award for the best research paper at NVMO congress 2019

Sehlbach, C., Govaerts, M. J. B., Mitchell, S., Teunissen, T. G. J., Smeenk,
F.W.J. M., Driessen, E. W., Rohde, G. G. U.

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ABSTRACT

Background: Despite increasing calls for patient and public involvement in health care quality improvement, the question of how patient evaluations can contribute to physician learning and performance assessment has received scant attention.

Objective: The objective of this study was to explore, amid calls for patient involvement in quality assurance, patients' perspectives on their role in evaluation of physician performance, to support physicians' learning and decision making on professional competence.

Design: A qualitative study based on semi-structured interviews.

Setting and Participants: The study took place in a secondary care setting in the Netherlands. The authors selected 25 patients from two Dutch hospitals and through the Dutch Lung Foundation, using purposive sampling.

Methods: Data was analysed according to the principles of template analysis, based on an a priori coding framework developed from the literature about patient empowerment, feedback and performance assessment.

Results: The analysis unearthed three predominant patient perspectives: the proactive perspective, the restrained perspective and the outsider perspective. These perspectives differed in terms of perceived power dynamics within the doctor-patient relationship, patients' perceived ability, and willingness to provide feedback and evaluate their physician's performance. Patients' perspectives thus affected the role patients envisaged for themselves in evaluating physician performance.

Discussion and conclusion: Although not all patients are equally suitable or willing to be involved, patients can play a role in evaluating physician performance and continuing training through formative approaches. To involve patients successfully, it is imperative to distinguish between different patient perspectives and empower patients by ensuring a safe environment for feedback.

INTRODUCTION

While patient empowerment is gaining momentum,^{1,2} the involvement of patients, hereinafter referred to as patient and public involvement (PPI), in the improvement of healthcare quality, particularly in the evaluation of healthcare professional performance, is often lacking or underreported.³⁻⁹ PPI across the medical education continuum ranges from patients' participation in teaching, feedback and assessment or involvement in course design towards partnership and collaboration.¹⁰ Lalani and colleagues present the worldwide variability of PPI across medical performance processes and call for more collaborative ways of involvement, beyond formal patient feedback and complaints.¹¹ Patients are the very essence of why healthcare systems exist and as healthcare consumers, they have a direct stake in the way both quality and providers of care are evaluated.^{12,13}

Patients' participation in feedback processes as a form of PPI is generally established through evaluation or satisfaction surveys in which patients communicate their views on care received or evaluate healthcare processes and physicians' professional practice.^{4,11,14} Research findings show that the inclusion of patients' views render performance evaluations more holistic and transparent, potentially allowing physicians to reflect on their practice.¹⁵⁻¹⁷ Although different in focus from feedback received from peers or other healthcare workers, patient feedback can provide physicians with valuable information on how to improve their learning and performance.¹⁰ Similarly, patients' evaluations of physician performance can help to make decisions about physician competence and to identify underperforming physicians.¹⁸ Especially in the assessment of non-clinical competences, such as communication and professionalism, patient evaluations on physicians' performance can serve as meaningful additional evidence.^{11,19-22}

Patient involvement in physician performance evaluation, however, reaches further than restrictive satisfaction questionnaires. It also entails lay representation in the design of performance evaluation processes or guideline development and strategic planning.¹⁰ How patient evaluations can contribute to physicians' learning and performance assessment has received little attention - particularly informal patient feedback on the individual functioning of a physician.²³ Providing feedback is a complex cognitive and affective process and the resulting evaluation is determined by its provider's beliefs, cognition and emotions.²⁴ Even though patients' beliefs are often presumed to be known, a recent review on the impact of patient feedback of physician's performance highlights that research on patient feedback from the patient perspective is currently lacking.²⁵ Although Lalani et al.¹¹ disclose that patient characteristics such as age or socioeconomic characteristics may act as barriers to PPI, the authors do not discuss the underlying processes or address patients' perspectives



on their role in physician performance evaluation or evaluation systems. In order to understand how to use patient-generated data, however, we need to explore the assessor perspective and likewise add to a clear conceptual understanding of 'the patient perspective'.^{26,27} Before we can address such a practical need, we must unpick factors that influence patients' possible role in physicians' learning and performance evaluation, such as their beliefs, preferences and concerns.^{10,28,29} By addressing these gaps, we may be able to achieve a meaningful patient contribution to the evaluation of physician performance processes.^{30,31} The purpose of the present study, therefore, is to answer the question: What are patients' perspectives on their possible role within evaluation of physician performance and physicians' lifelong learning, particularly in providing feedback?

METHODS

We conducted a qualitative study based on semi-structured interviews with the aim to explore patients' notions of evaluation of physician performance, and to better understand their perspectives on their role in the evaluation of physician performance by providing feedback.

Setting and participants

The study was set in the Netherlands that has an obligatory national recertification system in place with limited PPI.

Box 1. The Dutch recertification system

The Dutch recertification system emphasises continuing development over the detection of malpractice. At present, medical specialists must meet the following three requirements after each period of five years: 1) they must prove that they have practised medicine sufficiently and regularly (i.e. ≥ 16 hours per week on average); 2) they must have engaged in continuing medical education (CME) activities worth 200 CME points; and 3) they must have undergone an external quality assessment of their department by a committee of the National Specialty Society. As of 2020, an additional requirement will apply: 4) physicians must demonstrate that they did prepare a personal development plan and participated in an assessment of individual functioning.

We selected patients using purposive sampling based on the following inclusion and exclusion criteria. First, we aimed to include patients who were most likely to have developed a longstanding or intensive treatment relationship with their physician and who had high levels of experience

regarding healthcare delivery. Therefore, we decided to include patients with lung cancer or a chronic lung disease. Second, in order to obtain maximum variation of the patient population, we selected patients with a variation in burden of disease and age. Third, we wanted the sample to reflect varying degrees of patient experiences, views and knowledge, and therefore included not only individual patients, but also patient group members and patient representatives.³² Finally, we excluded patients who practised as physicians themselves or who were receiving care from any of the researchers at the time of the study or in the past.

We approached patients in two ways. First, we asked the Dutch Lung Foundation to include a call in their periodical newsletter to their patient panel, inviting interested individuals to contact the CS through the foundation. This resulted in enrolling ten patients. Second, to sample across different diseases within secondary care, we visited the respiratory outpatient clinic of one academic and one non-academic hospital, which yielded seven and three patients, respectively. To include not only patients, but also their informal carers (mostly partners),³³ we also enrolled five patient partners, leading to a total number of 25 participants (12 male and 13 female). The mean age of participants enrolled was 65 (ranging from 35 to 82 years old, SD = 10.9).

Data collection

We developed the interview protocol based on literature on patient engagement, evaluation of physician performance and feedback for performance assessment purposes in the health professions. We used the literature^{12,14,20} to include questions that asked explicitly about whether and how patients envisaged a role for themselves in providing informal feedback and evaluating physicians beyond formal satisfaction questionnaires. Having piloted the interview guide (Appendix I) by conducting the interview with patients who were not included in the study, we revised and simplified the language of the introductory questions. CS interviewed members of the Lung Foundation via phone, while outpatients were interviewed either face-to-face after their visit to the clinic or by phone. Semi-structured interviews lasted 37 minutes on average (SD = 8,1) and were transcribed verbatim. We collected and analysed the data in an iterative process, allowing the analysis to inform subsequent interviews. Data collection and simultaneous analysis took place from June to August 2018, until the research team agreed that thematic saturation was reached.³⁴

Patient involvement in this study

Besides enrolling patients as research participants, a patient TGJT was also a member of the research team and co-author. Being a chronic patient herself who has extensively researched the topic of PPI, TGJT represented the patient voice in the research team by advising on the feasibility and



burden of ideas and pointing out potential pitfalls in the study design and conduct. After publication of this study, the results will be distributed in a plain language summary to the research participants and wider patient groups.

Data analysis

We performed a template analysis of our data, which is a form of thematic analysis.³⁵ In accordance with this technique, we iteratively applied a sequence of templates to the data set, starting with a *priori* codes followed by constant modification of themes throughout the analysis. As a first step, the primary researcher CS familiarised herself with the data and initially coded five interview transcripts based on an *a priori* coding framework that was developed from the literature about PPI, feedback and performance assessment. A *priori* codes based on the literature^{21,28,36,37} included perceptions of the doctor-patient relationship and communication, particularly in light of a potential hierarchical relationship, the role of feedback, and in particular the preferred way of providing feedback, patient empowerment, PPI and patient identity. As a second step, CS modified and replenished the initial codes during the analysis of further interviews, which led to an initial template. This template served to describe whether patients envisaged a role for themselves in evaluation of physician performance and depicted the levels of trust patients experienced in the relationship with their physician and associated feelings and readiness to provide feedback. As a third step, CS and SM discussed themes; and devised and produced a final template that included themes around patient voices and power dynamics. Based on this final template, CS and FWJMS independently coded and discussed two more transcripts. CS, SM and FWJMS subsequently discussed preliminary interpretations, following which they refined the final template into a focused template (Appendix II). CS applied this focused template to all interview transcripts and discussed the findings with the entire research team until they reached consensus about the final interpretation.³⁵

We ensured validity by conducting a member check among interviewees who confirmed our interpretations. Although all participants were offered the opportunity to participate in the member check, only one participant responded, which had no consequences for data interpretation. We used the software programme ATLAS.ti to manage our data, and the COREQ checklist to report on analysis (Appendix III).³⁸

Reflexivity

In order to maintain the quality of the study, reflective memos were used throughout data collection. CS has a background in health sciences and is a PhD Student in medical education. TGJT conducted scientific research in the area of patient involvement and is also a patient expert and

volunteer at the Dutch Lung Foundation. She conjured up the patient's perspective in the study design and analysis. MJBG and EDW are both medical educators. SM is an education manager. Two research team members (FWJMS and GGUR) are respiratory physicians. All members of the research team are involved in medical education, with either a special focus on assessment, continuing education and recertification or patient involvement. Together, the expertise of the research team members contributed to how we incorporated the patient voice into evaluation of physician performance, on the one hand, while helping us critique its effect on performance evaluation.

RESULTS

Our analysis led to the construction of three recurring perspectives on the role patients envisaged for themselves in providing feedback and evaluating physicians' performance. In the following sections, we describe which distinct patient perspectives we encountered and how they are characterised.

The predominant perspectives were shaped by patients' personal experiences and the consequences they expected to follow from evaluating their physician. The extent to which patients experienced a power balance within the doctor-patient relationship seemed to affect the role they envisaged for themselves. The perceived *power dynamics* of the doctor-patient relationship affected patients' perspective on their *role* in the evaluation of physician performance and their willingness to provide *feedback*. By levels of power, we refer to patients' perceived dependency on their attending physician during treatment. Table 1 summarises the three predominant perspectives.

It should be borne in mind that these three overarching, predominant patient perspectives by no means detract from the fact that each patient is unique. Even though we illustrate characteristics of three perspectives, every patient interviewed had their own individual feeling on their perceived 'place' to offer feedback, and to decide whether they followed through with this. Some interviewees exhibited characteristics of more than one perspective, or were doubtful of their role in physicians' continuing learning and performance evaluation and shifted between different perspectives. That is, the perspectives presented are not fixed categories but should rather be seen as a continuum across which patients can move, depending on time and context. Regardless of the different perspectives, most interviewees recognised the importance of physicians' continuing learning and performance evaluation systems: "*continuing training is really important because otherwise you will be overtaken by events at some point*" (Interview 7). Yet, they envisaged their involvement mainly as providing



feedback and not as being involved as a lay representative in system design, although some clearly expressed feelings about the need to feel safe within the system. In regard to their role in providing feedback, our interviewees voiced clear ideas about which physician competencies they were able to evaluate. They mostly addressed professionalism and communication as well as collaboration skills.

The proactive perspective

Patients who shared this perspective were assertive and had a relationship with their physician in which they felt power was equally distributed. These patients easily voiced their agreement, or dissatisfaction with care received. Considering themselves as healthcare consumers, they felt patients should be at the centre of any care process: *“I think it is very important that the patient has a voice in this. The patient is ultimately the customer and end user so to say”* (Interview 15). Consequently, they demanded a say in their treatment and management plan and directly conferred with the attending physician when dissatisfied. By providing constructive feedback, these patients felt they were responsible for and able to customise their own care: *“It is no longer Mr Consultant in a white coat and we have become more vocal. [...] Rather, it is Mr Patient, if you like”* (Interview 19). Among our interviewees, it was mostly the younger and better-educated ones who actively engaged in shared decision-making and saw themselves as equal partners, although the proactive patient perspective was represented across age groups.

It seemed logical to them that their experienced expert voice should be heard in the evaluation of physician performance. Being part of it was important to them, not for inclusion's sake but for ensuring value and worth within the evaluation process. In particular, they believed their feedback could encourage physicians to reflect, thereby creating a learning opportunity and complementing physicians' self-assessment: *“Because a doctor does not know about himself, well some do if they are honest, but they do not always know how they come across to people. And you can only find that out if someone else tells you”* (Interview 9). Pro-active patients underlined different reasons for engaging in the process of evaluating physicians' performance (Table 1). Although they recognised that their input would probably not have a direct impact on the care they received, they believed it could benefit future patients or the system overall. At the same time, however, these patients comprehended the limitations of their input, realising that their feedback could only be useful when it concerned specific areas of physician competence that they were actually able to evaluate. Additionally, they believed it should never be a replacement of, but an addition to, peer feedback: *“I think the feedback and the evaluation of colleagues are also very valuable ... they know what they are talking about, but ... I think the patient really does belong there as well”* (Interview 2).

The restrained perspective

Patients who showed characteristics of the restrained perspective did not envisage an active role for themselves in the evaluation of physician performance. These patients trusted that the current system would assure physicians' competence and quality of care. Consequently, they were reserved in offering their opinion: *"Well, that is not necessary. I know that they regulate it from above through, through an organization, or the government... I think that is sufficient"* (Interview 8). Considering their views as subordinate to their physicians', these patients did not spontaneously provide feedback or feel a need to evaluate their physician, especially not when they had complaints because *"as patient you just do not dare to"* (Interview 8). They fully relied on their physicians' competence and therefore did not venture to question them. As one interviewee explained: *"Because you also assume so. The doctor is also competent, someone you trust, because if you ask questions, some doctors will ask, wait a minute, do you think I'm not good enough?"* (Interview 12). Patients in this group shunned confrontational conversations with their physician, because they were afraid these would negatively affect their relationship, or the treatment received. In the treatment phase patients felt vulnerable and did *"not know where [a negative evaluation] would lead to"* (Interview 12). Since they felt uncomfortable criticising their physician, these patients preferred to give feedback indirectly or anonymously and only when solicited.

Typical of this perspective, moreover, was a perceived power imbalance with senior physicians, whom they portrayed as *"kings in their realm"* (Interview 12). Noteworthy, these patients experienced less power distance when dealing with younger physicians, GPs, nurses or other healthcare professionals such as physiotherapists. According to them, this power equilibrium was attributed to improved communication and openness, which they directly linked to physicians' age and dedicated skills training: *"Surely the training is different than in the past, I think they [younger physicians] do learn more communication skills nowadays, I could just talk to them more easily"* (Interview 9). Finally, interviewees in this group doubted that their feedback could promote physicians' learning and, consequently, have any real impact on their performance: *"I doubt it, I doubt it. ... Whether a doctor can do something with it and if (s)he indeed does something with it. I do not know"* (Interview 8). To assure physicians' competence and provision of feedback on quality of care, the restrained patient's voice relied on others within the system: *"There are people with more energy; they should put their energy into it"* (Interview 16).

The outsider perspective

Another group of interviewees labelled themselves as outsider: *"I consider myself too much of an outsider to be asked to evaluate my doctor's performance."* (Interview 7). Within this predominant perspective, we distinguished between the unintentional and the deliberate outsiders, both of whom felt



unable to evaluate physicians' performance: "*Who am I to evaluate a doctor?*" (Interview 15). Both groups doubted whether their opinion could contribute to the continuing development of their physician, albeit for different reasons. Patients holding the unintentional outsider perspective pointed to generic problems in the healthcare system, such as the brevity and irregularity of encounters caused by tight schedules and ever-changing physicians. These patients might be more ready to provide feedback if they had more regular and direct contact with their specialist. Even though patients with this perspective would occasionally give direct feedback when dissatisfied, they were hesitant to judge their physician's competence because they hardly knew their physician: "*I think you should have seen such a doctor a couple of times, before you are able to give an assessment*" (Interview 4).

For patients showing characteristics of the deliberate outsider perspective, on the other hand, power imbalance played a more prominent role. Being more susceptible to power dynamics, they automatically considered their attending physicians as the expert possessing the necessary skills and knowledge, and thus as superior within the context of the relationship, thereby putting their full trust in them. More specifically, patients sharing this perspective felt they lacked insight and knowledge in that field and felt unable to evaluate their physician: "*Really, on the performance of a doctor, who am I to give a judgement on that?*" (Interview 7). Unlike the restrained perspective, patients relating to the deliberate outsider perspective truly felt incompetent to judge physicians and therefore preferred not to give feedback, not even when anonymous or solicited.

DISCUSSION

With this study, we aimed to explore patients' perspectives on their role within evaluation of physician performance. We were able to define three predominant patient perspectives that depended on the extent to which patients felt competent to take this role and to which they experienced a power balance within the doctor-patient relationship: the proactive perspective, the restrained perspective and the outsider perspective.

Reflecting on the challenges inherent in PPI,^{31,39} our results underline that there is no such thing as a 'collective' patient voice, but that a multitude of patient perspectives must be considered. Indeed, not only are patient perspectives individually bound, they are tied to a specific moment in time.^{26,29,31} Patients might change their perspective depending on context (e.g., dependency on physician due to disease status, number of contacts with physician etc.) and therefore cannot be pegged into a fixed category. Examining the conceptualisation of 'the patient perspective', Rowland, McMillan, McGillicuddy, Richards²⁶ pointed out that patient perspectives are

temporal, contextual and based on embodied knowledge and experiences of vulnerability. This observation ties in with our finding that perceived power dynamics appear to influence patients' readiness to play a role in evaluation of physician performance. That is, the extent to which they experienced a power (im)balance within the doctor-patient relationship seemed to have a direct impact on their voicing behaviour. Feelings of vulnerability and dependency during treatment impacted negatively on the extent to which interviewees felt able and/or willing to evaluate physicians' competence.³⁷ This aligns with previous definitions of 'power' in social interactions in healthcare, characterised by an often unequal relationship between physicians and patients, in which patients are vulnerable and have to rely on and trust the medical experts.⁴⁰ Others, however, assign power and autonomy to patients instead, describing them as healthcare consumers and physicians as those being vulnerable, for instance when fearing that patient feedback may be defamatory and cause reputational damage.^{41,36} Conceptualizations of patients being autonomous and powerful healthcare consumers, align with the proactive patient perspective in our study where patients found themselves in power equilibrium with their physicians.³⁹

Similarly, Tazzyman et al ⁴² describe how power dynamics may affect acceptance of patient feedback by physicians. Their study findings illustrate how medical specialists struggle accepting or oppose patient feedback and link this to historical power difference and hierarchy as well as a lack of common language between patients and physicians.⁴² The latter argument, however, might be invalid for patient experts or representatives, who are well-trained to discuss patient perspectives with professionals and policy makers.³² Consequently, physicians might more readily accept feedback from these patients experts, presuming they have an understanding of their medical work.⁴³ This argues for more effort in the field of patient education and improved power dynamics, and suggests a change in the future once reliable patient-generated information become increasingly available.

Altogether, this highlights that not only the provision of feedback, but also its acceptance can be challenging for patients and physicians, respectively. The type of feedback, its credibility and the competence addressed, determines whether physicians accept patient feedback.⁴³ Physicians might accept patient feedback on their communication more easily, whereas they might consider for instance feedback on medical expertise as not credible.⁴⁴⁻⁴⁶ This is very much in line with our results, which show that, although patients felt they could evaluate physicians' communication or professionalism, they relied on other healthcare professionals to evaluate physicians' medical expertise.

Likewise, patient evaluations can be combined with other performance evaluations, particularly for non-medical competencies, as suggested by our



participants and supported by previous research.⁴⁷ This combination can be useful for formative purposes to induce physicians' reflection and insights into the strengths and weaknesses of their professional practice. It holds particularly true, however, for summative processes such as recertification elsewhere coined 'revalidation' or 'maintenance of certification'. Countries use recertification systems, to improve processes and outcomes of patient care, while ensuring patient safety. Based on standards for physicians' competence and fitness to practice, these systems aim to prevent and concurrently detect malpractice. Alongside regulatory approaches, most systems employ an educational approach to support physicians' continuing professional development and lifelong learning.¹⁵ Patients can be involved in recertification through providing feedback to their physician. The revalidation system in the United Kingdom for instance already structurally includes patient feedback in regulatory processes.⁴⁸⁻⁵⁰

Implications for clinicians and policymakers

Some patients can provide feedback on processes and outcomes of care, aiding quality improvement. Formal patient feedback on service delivery can for instance induce physicians' learning and likewise improve the care delivered.⁵¹ It is, however, paramount to not only ask patients to provide feedback on care received but to invite patients to collaborate with policymakers and medical content experts on quality guidelines or new implementations.⁵²

Our results fully support the need to design feedback systems that cater to patients' diversity and unique contributions. It remains a boundary condition, however, to collect numeric and narrative feedback from multiple patients and through credible formats.^{25,53,54} Patients suggested written forms to be compact, straightforward and easy to understand. Most patients interviewed preferred anonymous forms or face-to-face discussions mediated by a third party. Offering paper-based or electronic questionnaires might for instance help to include various perspectives from heterogeneous patient populations, including patients who would otherwise refrain from providing feedback themselves, such as patients showing characteristics of the restrained or the outsider perspective, or those who would be left out based on their socio-economic status, age or ethnicity.³⁷ For instance, by offering the opportunity to provide feedback anonymously and in a neutral environment outside the doctor-patient relationship, thereby creating a 'safe space', we may encourage restrained patients to become involved in physicians' learning. In addition, we must channel efforts into achieving better power dynamics, trust and prolonged relationships in healthcare so that outsiders can become insiders, if desired. This, however, requires paying attention to training physicians in asking patients for informal feedback in ways that are non-threatening. It further implies organising healthcare in a way that patients and physicians can establish trusting relationships, through continuity of care and increased patient education.

Strengths and weaknesses

First, the main strength of our work is the rigor with which we performed the data analysis, characterised by the iterative analysis process. The reflexivity and the deliberation within a mixed research team form an additional strength. Second, we sampled purposefully across a range of, mostly chronic, lung diseases, age and educational background in order to present a heterogeneous patient group. Patients with chronic disease can be considered experts regarding their health or disease status, treatment and healthcare service received and may likely perceive the doctor-patient relationship differently than patients with acute diseases do. This research can help physicians to become aware of predominant perspectives among their own patients and consult them accordingly. Altogether, our results enable us to suggest policy implications regarding patient participation in the organisation of health care, based on the patient perspectives we explored.

Some potential limitations of the present research are worth considering. First, we only included patients who resided in the Netherlands. As patient perspectives are context-bound, replications of this research in another country with a different healthcare system, diverse cultural context and performance evaluation system may produce different results. This process may yield different results depending on the context of the study as well as the patients interviewed. Our findings, however, remain relevant for a wider audience and give direction for future research. Second, patients reflected on their future role in evaluation of physician performance, potentially without having actual experience having provided it at least in the way they proposed. Third, we only included patients with lung cancer or a chronic lung disease who, moreover, tend to be older adults. Younger patients, other disease areas or people with non-chronic diseases may have perceived their role in performance evaluation differently. Fourth, a number of participants were self-selected volunteers from the Dutch Lung Foundation's patient panel. This self-selected group may have been more vocal than their outpatient peers whom we approached individually, since they already played an active role in giving their opinion and feedback on the healthcare system. The volunteers lived across the country and were often limited in travel due to their medical condition, which required us to conduct interviews by telephone. Finally, the authors' backgrounds have most certainly shaped their view on the topic of patient involvement in the evaluation of physician performance. It required constant deliberation within the team, and reminders of being critical and open towards any interviewees' statements, which was facilitated by TGJT as patient expert.



CONCLUSION

Patients have different perspectives on their roles in the evaluation of physician performance. This research suggests that, to be able to support physicians' learning and improve care, we must first gain a better understanding of patients' perspectives and reconceive 'the patient' within healthcare.^{32,39} Our findings highlight the ethical and moral obligation to acknowledge the unique contribution of individual patient voices. As not every patient is equally suitable or wishes to evaluate care processes or to provide feedback on physician performance, we must strive for the correct balance between patient empowerment and respect for patients' unique perspectives.^{37,55} This research importantly underlines the need to equalize the perceived power balance in the doctor-patient relationship and to invite patients to evaluate physician performance in line with their individual preferences. Ultimately, in an era of more complex and demanding health care systems, there is growing need to work with patients to design, implement and improve the evaluation of physician performance.

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ETHICAL APPROVAL

We informed potential study participants about the research as soon as they contacted the Dutch Lung Foundation or registered for their consultation at the outpatient clinic. We emphasized that the research was entirely independent of the care received and that the treating physician would not receive any information about the interview. All participants gave written and oral informed consent.

We obtained ethics approval from both the Netherlands Association for Medical Education (NVMO: file number 1031) and the ethics committees of the two participating hospitals (MEC Maastricht azm/UM: file number 2018-0479; and MEC-Catharina ziekenhuis Eindhoven: file number nWMO-2018.56).

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APPENDIX I. INTERVIEW PROTOCOL

Project: Patients' role in evaluation of physician performance

Time of interview:

Date and place:

Interviewer:

Interviewee:

Position of the Interviewee:

(study aim) Thank you for taking the time today to talk to me about your potential role as a patient in evaluation of physician performance. As described in the information letter, I would like to understand patients' role in performance evaluation better. I am specifically interested in how important you think evaluation of physician performance is, whether you as a patient envisage a role for yourself in physician evaluation and what this role could look like. It is not my intention to judge you, nor your physician. There are no right or wrong answers. I am primarily interested in your opinion.

(procedure) Please feel free to tell me how you think about it. We will start with some general questions about evaluation of physician performance and its importance to you, and then go into your role within the system. You do not need to tell me the name of your physician, as this research concerns the role of patients in evaluation of physician performance in general. I will audio record the interview so that I can concentrate on what you say. It will also enable me to listen back to it later and to transcribe it.

(anonymity) As described in the information letter, all the information and data concerning you, including everything you tell me, will remain strictly confidential. Moreover, as we will replace your name by a code, you will remain anonymous.

Do you have any questions left that the information sheet did not answer?

If you agree, I will now start the recording. We can stop the recording anytime you wish.



Opening:

For this research, we are interested in your opinion as a patient on how we can encourage pulmonologists to continue to learn how to provide good care, and what role you can play in this.

Introductory questions:

- How would you describe a 'good' respiratory specialist?
- Have you been asked before to give your opinion on your respiratory specialists? How? With which aim? How did you experience that?
 - You could compare it with a satisfaction survey in an online store or your supermarket.
- Do you have an idea about how doctors can continue to learn? How can they demonstrate that they provide good care? Do you know that revalidation aimed to promote lifelong learning by medical specialists exists? Do you know what it entails?
- Doctors must always continue to learn and develop. There are so many new developments that they must keep abreast of. In the Netherlands, respiratory specialists (and other medical specialists) must demonstrate every 5 years that they have continued to develop themselves, so that they are equipped with up-to-date knowledge and skills to deliver good care. We call this revalidation.
- What do you think of this? Which important points do you feel physicians could or should learn? If you could give advice, what would you recommend?

Core questions:

- Would you consider it important for doctors to undergo re-registration?
 - If so, why?

Providing feedback to support the learning process of doctors

Doctors receive information about their functioning in a variety of ways, from which they can learn. How would you feel if you were asked to give your opinion as a patient about the performance of your doctor? ... (the level of knowledge, the way of talking, cooperation, etc.)

- Would you like to be asked? Why? What could this look like?

- What do you expect from your doctor?

Assessing how to support the learning process of doctors

- How would you like it if you were asked to evaluate your physician?
- Do you think you could play a role in your physician's evaluation?
 - What would this role look like?
 - Which role could you play? Why?
 - Which role would you want to play? Why?
 - What would you expect your physician to learn from that?
- Would you like to discuss this with your attending physician?

Final question:

- Are there any other aspects that you would like to discuss or share?

Thank you for participating. I have a small token of appreciation for you.

Note: For purposes of enhanced coherence and legibility, quotes and interview protocol have been subject to light editing before journal submission. The authors, however, based their analysis on the original, untidied-up transcriptions and protocol.



APPENDIX II. SIMPLIFIED VERSION OF FINAL TEMPLATE FOR DATA ANALYSIS

1. Patient perspective
 - a. Complacent
 - b. Pro-active
 - c. Outsider
 - i. Deliberate
 - ii. Unintentional
2. Feedback
 - a. Preferred way of communicating feedback
 - i. Anonymous
 - b. Reasons to provide feedback
 - i. For physician's insight and reflection
 - ii. Complaint
3. Doctor-patient relationship
 - a. Hierarchy
 - b. Role patient
 - i. Capability

APPENDIX III. COREQ (CONSOLIDATED CRITERIA FOR REPORTING QUALITATIVE RESEARCH) CHECKLIST

A checklist of items that should be included in reports of qualitative research.

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?	97
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	98
Occupation	3	What was their occupation at the time of the study?	98
Gender	4	Was the researcher male or female?	n/a
Experience and training	5	What experience or training did the researcher have?	n/a
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	n/a
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	97 +Appendix I
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	n/a
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	96
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	96
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	97
Sample size	12	How many participants were in the study?	97
Non-participation	13	How many people refused to participate or dropped out? Reasons?	n/a



Appendix III. Continued

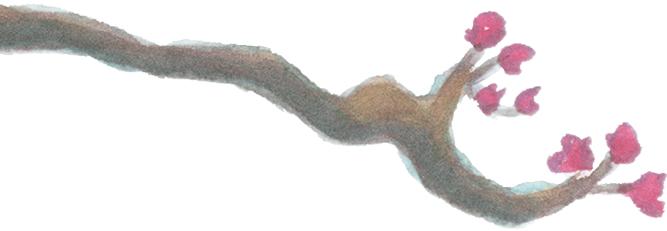
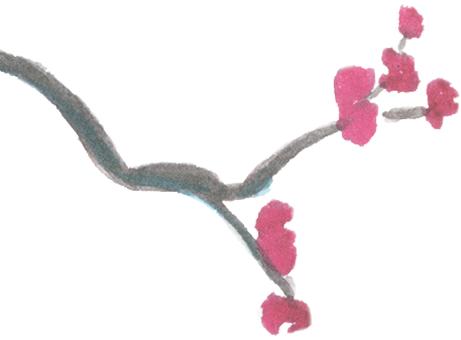
Topic	Item No.	Guide Questions/Description	Reported on Page No.
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	97
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	n/a
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	96-97
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	97 + Appendix I
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	n/a
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	Appendix I
Field notes	20	Were field notes made during and/or after the inter view or focus group?	n/a
Duration	21	What was the duration of the inter views or focus group?	97
Data saturation	22	Was data saturation discussed?	97
Transcripts returned	23	Were transcripts returned to participants for comment and/or correction?	98
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	98
Description of the coding tree	25	Did authors provide a description of the coding tree?	Appendix II
Derivation of themes	26	Were themes identified in advance or derived from the data?	98
Software	27	What software, if applicable, was used to manage the data?	98
Participant checking	28	Did participants provide feedback on the findings?	98
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	99-102
Data and findings consistent	30	Was there consistency between the data presented and the findings?	99-104

Appendix III. Continued

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Clarity of major themes	31	Were major themes clearly presented in the findings?	99
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	99-104

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





Chapter 6

General Discussion

This thesis aimed to better understand how to ensure physicians' professional competence as well as support their lifelong learning by investigating formal recertification systems, informal learning and patients' role in physicians' learning. For this end, we examined various types of recertification systems across Europe, their use and incorporation of assessment criteria (Chapter 2). We explored physicians' perceptions regarding the goal and effectiveness of different recertification systems by investigating how these systems support competence assessment for purposes of lifelong learning (Chapter 3). We researched how physicians learn from informal feedback in and from daily practice. In doing so, we specifically focused on how they developed their communication repertoire, and how this learning and development can be supported by formal recertification systems (Chapter 4). In Chapter 5, we delved into patient perceptions regarding their preferences and role within assessment of and assessment for physicians' learning.

This thesis investigates formal recertification systems, informal learning and patients' involvement in physicians' lifelong learning, addressing four main research questions:

1. How is recertification organized in different countries, and how are performance assessment criteria incorporated in recertification?
2. How and to what extent do recertification systems support physicians' lifelong learning?
3. How do physicians informally learn in and from the workplace, and how can formal recertification systems support informal learning?
4. Which role can patients play in physician performance assessment and lifelong learning?

CRITICAL CONSIDERATIONS OF FINDINGS

In the following paragraphs, we reflect on the dilemma most recertification systems face: balancing between regulating and supporting professional development to feature and bridge any gaps between actual and required performance.

Assessment of professional competence

With growing calls from the public for accountability and transparency, various countries have implemented recertification systems to ensure quality of care and patient safety.¹ Our findings show that physicians share the understanding that a system is required to improve and assess competence. However, they question current formal recertification systems'

meaningfulness and effectiveness to regulate professional competence, because of perceived misalignment between the systems' requirements and physicians' daily practice.^{2,3}

Our findings indicate significant variability in recertification procedures and requirements across countries, ranging from voluntary participation in professional development modules to mandatory collection of multiple performance data in a competency-based portfolio. What stands out from these results is that most systems substantially rely on self-assessment with a limited focus on performance evaluation by other stakeholders (Chapter 2). When used without guidance, self-assessment has often been shown to be unreliable as it often reflects self-confidence or insecurity instead of competence. Findings from our studies may raise questions about recertification systems that solely rely on physicians' unguided self-assessment.⁴⁻⁶ Self-regulated learning based on unguided self-assessment bears certain undesirable consequences concerning lifelong learning. Our findings in Chapter 3 further strengthen existing evidence, by showing that learning activities are often chosen based on convenience (proximity, timing) or number of allocated continuing professional development (CPD) credits, instead of individual learning needs.⁷ It therefore should not come as a surprise that some scholars even criticise collection of credits as part of recertification as "surrogate measure of competence".⁸⁻¹¹ Although independent accreditation bodies oversee and accredit CPD activities, this does not ensure that chosen learning activities align with the learner's learning needs. It does neither guarantee a change in practice to occur, as a change would require organisational and collegial support as well as regular follow-ups, as our findings portray.

Scholars advocate that professional competence can best be judged through a combination of different assessment methods that target different relevant competences (e.g. clinical audits, chart review, or multisource feedback).¹² Likewise, assessment formats such as multi-source feedback should collate input from multiple key stakeholders including colleagues or patients.^{9,13-17} Chapter 3, however, depicts that a collegial culture and behavioural norms often prevail, which seems to overemphasize positive feedback and politeness rather than constructive and honest feedback. This behavioural code among peers might hinder learning from formal feedback and peer learning.

Our findings, furthermore, show that, although stakeholders involved in recertification processes vary, patient involvement was limited to two of the countries investigated in Chapter 2. As stated by Rowland and colleagues, involving patients in the evaluation of physician performance, demands attention to questions around power and vulnerability.¹⁸ This statement resonates with our findings on power dynamics, trust and prolonged



relationships in Chapter 5. Patients can and rightfully should have the opportunity to play a role in physicians' lifelong learning and recertification but it requires a neutral and safe environment, equal power dynamics in the doctor-patient relationship and respect for individual preferences. This is, some but not all patients may want to provide performance feedback on, for instance, physicians' communication or professionalism. For recertification, this implies to include patient feedback in physician performance evaluation in different ways, in combination with performance evaluations from co-workers.¹⁹⁻²¹

Our outcomes make clear that there is no perfect system to adequately assess physicians' performance and to support their learning, while satisfying all stakeholders involved. Physicians' perceptions underline the underlying dilemma of balancing assessment of and assessment for learning. Despite physicians' doubt regarding the effectiveness of recertification to detect malpractice, our participants, physicians as well as patients, agreed that it is beneficial to have a national recertification system in place provided that it is authentic, aligned with daily practice, and allows individual ownership.^{2,22,23} Even in the UK system, which from afar appears to be the most advanced assessment system, participants raised concerns and voiced scepticism regarding its effectiveness in improving practice and detecting malpractice (Chapter 3). When asked to indicate areas in which revalidation¹ has effect on physicians, one of our British participants in Chapter 3 reflected on the system's capability of reaching the intended aim to safeguard quality of care by detecting malpractice:

"I honestly don't think it does, but we and I, I mean my colleagues and me have discussed this. The whole process started [with] doctor Shipman, who obviously killed a lot of patients. I think if I was doctor Shipman at the moment, I would be passing the re-validation with flying colours. (...) because doctor Shipman was a great doctor, people loved him. And he would have, he would have then made sure what he was doing, would have passed the revalidation. And, that if he was killing patients, he would be able to kill the patients without, without failing the revalidation process. So, he would have learned some other way of doing them." (Chapter 3, Participant 1, UK)

As reflected by this quote and as we have learned from our findings in Chapter 3, physicians feel that most systems would fail to detect malfunctioning individuals. The Shipman case severely impugns the 'effectiveness' of national recertification systems to assess day-to-day performance and continuing learning. Although this case came to the public eye before the implementation of revalidation in the UK, it sheds light on wide agreement

¹ The term 'revalidation' is chosen here, as it derives from the UK context

that recertification is not always capable of detecting individual malfunctioning, challenging anew its summative function.

In a similar vein, this introduces the question why these rare cases are not detected before causing harm. The quote above hints at three possible explanations. First, cases of severe malfunction as Shipman or others may rather be attributed to psychopathic behaviour than incompetence and are very rare. At the same time, our findings underscore that patients generally trust their physician, and physicians trust their peers.²⁴ Second, even in a system where multisource feedback is used as an evaluation tool, individuals as Shipman might deceive people by camouflaging their behaviour with collegial, professional or personal commitment. Furthermore, a collegial culture of mutual trust and hierarchy might hinder speaking up on patient safety issues, or confronting a colleague on irregularities or reporting incidents, especially if these would concern a more senior colleague.^{25,26} Third, due to the complexity of healthcare (i.e. pace and brevity of doctor-patient contacts, work in interdisciplinary teams, contextual and system factors etc.), we can hardly allocate incidents back to one individual in a chain of events and people involved. Surely, individuals need to be held accountable for their actions, but we need to strike the right balance between punishing and improving, as punishing individuals for mistakes made might rather lead to concealing errors than reporting and learning from them.²⁷

These considerations generally open doors for a question of principle on the primary aim of recertification: picking out the few “bad apples” or supporting physicians’ learning and development. The dilemma in recertification of balancing between external regulation to safeguard quality of care and physicians’ self-regulatory professional development resembles with dilemmas within remediation. With ensuring quality of care being the overarching purpose of recertification, a struggling physician might face remediation when shortcomings in the delivery of care are detected.^{28,28} Physicians who struggle with care delivery often fall short in self-regulation or have lost insight into their own performance and their learning needs.³⁰⁻³² When shortcomings in professional competence are identified, the respective physician may lose the right to practice. In a mainly excellence- and performance-oriented culture, losing this privilege has tremendous psychological as well as professional impact (e.g. reputational damage, career development) on an individual. The repercussions are reinforced by the underlining stigma of failure, its perceived punitive character and the prevailing performance culture among healthcare professionals.³⁰ A common lack of compassion or sympathy towards those struggling or underperforming, often results in externalising or “othering”. Othering may lead to exclusion of the respective individual from the community of practice which potentially impairs learning even more.^{30,31} Remediation following from recertification, therefore, should be re-conceptualized as offering



support to struggling or underperforming individuals.^{33,34} Acknowledging that remediation outweighs an educational gap, Bourgeois-Law, Teunissen and Regehr (2018) underline its positioning on the lifelong learning continuum, and suggest a reconceptualization of remediation as ‘change of practice’.³¹ For a change of practice to occur, physicians need to further develop their professional identity, collaborate and build communities of practice pointing to the fact that providing healthcare professionals with additional knowledge alone will not lead to a change in practice. Probably, both remediation and recertification, should accentuate guiding physicians in their lifelong learning to prevent shortcomings in professional competence, and support those struggling.

Assessment for lifelong learning

Building on the considerations around the summative function of recertification, in this section, we reflect on the research findings and the question how recertification systems support assessment for learning.

Many recertification systems struggle with reaching their intended aim.^{35,36} Our overall findings clearly indicate that there is a discrepancy between how recertification systems are designed and described on paper, and what happens in real life. Regular performance assessments, the collection of peer and patient feedback for the purpose of assessment for learning are often deficient in recertification (Chapter 2). Although most formal recertification systems aim to guide physicians’ learning, they are predominantly knowledge-based and require a minimum number of CPD credits for educational activities. Already in 2000, Bouley called for a “shift away from credit counting towards a process of self-accreditation and reflection, recording learning that has occurred and applying it to practice.”³⁷ Our research made clear that most systems have not yet fully succeeded in making this shift in the past two decades.

Different groups have investigated the effectiveness of CPD in terms of changing attitudes, behaviour, knowledge and skills.³⁸⁻⁴⁰ Our findings show that credit-based systems are often being perceived as “tick box exercises” with limited stimulus for practice change. The restricted impact calls for a more qualitative, holistic evaluation of how CPD activities affect a physician. Allen, Palermo, Armstrong, Hay⁴¹ made an attempt to categorize the broader impact of CPD activities: 1) knowledge, 2) practice change, 3) skill, ability, competence and performance, 4) confidence, 5) attitudes, 6) career development, 7) networking, collaboration and relationships, 8) user outcomes, 9) intention to change, 10) organisational change, 11) personal change, and 12) scholarly accomplishments. Based on the findings from our studies (chapters 3 and 4), we can only agree with this proposed shift in how to measure impact of CPD, which emphasizes the importance of lifelong learning beyond maintaining levels of knowledge. Hence, we suggest moving

away from solely knowledge-based activities and credit collections towards a broader approach to recertification, for instance by also acknowledging informal learning.

Building on broadening the concept of continuous professional development, we unravelled the importance of workplace-based learning as well as organisational and collegial support for physicians' lifelong learning (Chapter 3), and investigated the role of informal learning. In doing so, we aimed to obtain an in-depth understanding on how physicians learn in and from their daily practice in Chapter 4. We explored how physicians use and learn from informal feedback cues in daily interactions with their patients to develop and adjust their communication repertoire. Our findings illustrate different degrees of the extent to which physicians recognized and used informal feedback from daily practice as learning opportunities and cues for learning. A growing awareness of what constitutes learning cues afforded by the workplace might help to make informal learning more explicit and meaningful for continuing development. Our findings stress previous research findings that effective lifelong learning should be engaging and collaborative, in environments that facilitate and support provision and seeking of feedback as well as engagement in deliberate practice.^{40,42}

Patient involvement in physicians' lifelong learning

Expanding on the limited patient involvement in recertification as revealed in Chapter 2, and the importance of workplace-based learning in Chapters 3 and 4, Chapter 5 aimed to explore patient perspectives on their role in the evaluation of physician performance and physicians' learning. Patients may play a role in evaluating the delivery of healthcare service, and equally in the continuing training of healthcare professionals through formative approaches. Particularly, patient feedback on physicians' communication and collaboration can help physicians to set learning goals and to ultimately improve patient care. It may furthermore guide physicians in gauging their patients' views, to understand whether and how they wish to provide this feedback. Considering that patients are the main reason that healthcare exists, and healthcare professionals are trained to practice, we would even call patient involvement a moral obligation and ethical responsibility.

By conducting interviews with respiratory patients, we were able to reveal three predominant patient perspectives: the "proactive perspective", the "restrained perspective" and the "outsider perspective". Notably, the organisation into three broad perspectives is by no means intended to take away from the importance of each individual patient's uniqueness. As argued by Rowland and Kumagai (2018), patients cannot be considered a collective but should rather be seen as a category they find themselves in, bound by context and time.⁴³ With our findings, we accentuate patients' unique voices, together with the need to recognize patients' individual differences



and preferences for being involved in physician performance evaluation. Our findings further underline the question Rowland and Kumagai (2018) rightfully raise on whether selected patient voices are 'sufficiently diverse to represent the complex cultural, social and economic complexions of contemporary society'.⁴³

The three pre-dominant perspectives we present differed with respect to perceived power dynamics in the relationship with their physician. In line with the recommendation of Nimmon, Stenfors-Hayes,⁴⁴ our research reflects on patients' perceptions of power in doctor-patient interactions, and gives further insight into dependency issues.⁴⁵ Many patients, particularly those who we describe as "outsiders", placed themselves within a hierarchy and at the lower level of the relationship with their physician. This resulted in feelings of vulnerability, dependency and power imbalance, which affected the extent to which patients would be willing to provide feedback, or feel accepted or capable of evaluating physicians' performance.⁴⁶ These findings are in line with Tazzyman et al.'s work on historically developed power differences and hierarchy, as well as a lack of common language between patients and physicians.⁴⁷

Altogether, I would like to include a final note on the proposed language used when addressing patient involvement in physician performance evaluation. Literature occasionally refers to "using" patients in educational interventions.⁴⁸ One may consider the term "use" inappropriate considering that patients should rather be *invited* to be involved, instead of being considered as a means to an end (as the term "use" might suggest). To underline that patients should also benefit from such an involvement, the terms "collaborate", "work with" or "consult" might be more dignifying and better acknowledge the desirable power balance between patients and physicians.

STRENGTHENING A CULTURE OF (INFORMAL) LEARNING

In this paragraph, we address our findings on informal learning, and how they can give impetus for a cultural change towards acknowledging lifelong learning at work.

Educational theory and empirical research demonstrate that physicians' continuous development is largely based on informal, self-regulated and experiential work-based learning.⁴⁹ Engaging physicians in lifelong learning requires a culture which encourages reflection on formal and informal feedback, and which recognizes the tension between performance and continuous learning.⁵⁰⁻⁵² Moving away from a performance orientation towards stimulating a growth mind-set among physicians could facilitate a

culture of learning, as we conclude in Chapter 4. Creating an environment in which physicians feel comfortable to ask for feedback and dare to share errors made, requires support from individuals as well organisations.³⁴ It demands a safe space for constructive feedback and a culture of mutual respect, psychological safety and confidentiality, which may stimulate physicians to show vulnerability in front of patients, and medical and non-medical colleagues. Openly discussing shortcomings or incidents can be beneficial for coping, learning and avoiding similar incidents in the future. Creating 'educational alliances' between physicians, or between physicians and their patient, may help to create a culture of co-regulation.⁵⁴ Co-regulation may help turning recertification into an opportunity for need-based learning, enhanced support, critical and guided reflection on one's learning needs and use of feedback to promote continuing development and growth.^{50,54} Such a form of collaborative learning may create a culture of shared responsibility and safety, while maintaining high levels of accountability.^{2,55} In what Dekker describes as "just culture", practice improvement is then emphasised, and medical professionals are jointly accountable and responsible for patient safety.^{27,56-58} It implies moving away from attributing performance deficits to an individual towards a shared responsibility, taking into account system and contextual factors that may affect performance. The remediation literature equally calls for more focus on development, change in practice and learning in the organizational context rather than on individual education.⁵⁹ These findings tie in neatly with our conclusion regarding assessment of learning and assessment for learning in the context of recertification. Recertification should particularly focus on supporting personal and professional development and guiding lifelong learning to create a culture of learning.

In consequence, we need to move away from a shaming culture towards acknowledging that all physicians are human beings, and humans make mistakes. Most patients, we have interviewed for Chapter 5, signalled their understanding and acceptance for circumstantial shortcomings or mistakes being made, as long as the respective healthcare professionals would acknowledge the shortcoming, would hold themselves accountable and learn from it.

PRACTICAL IMPLICATIONS

Following the critical considerations of our findings and scientific implications, this paragraph concerns practical implications for supporting physicians' formal and informal lifelong learning. We give practical recommendations for policy makers and CPD providers by addressing alternative approaches for CPD and recertification, and we focus on how organisations and employers can support physicians' lifelong learning.



With our research, we explored future possibilities around CPD. Our findings highlight the importance of reflecting on how educational activities or assessment data may contribute to a physicians' competence development and help to formulate a purposeful, meaningful development plan, instead of counting credits. Here, we reflect on guided self-assessment, various performance data and informal feedback from patients or peers, presented in Chapters 2 and 4. It remains important to note that there is no 'one size fits all solution' in terms of activities followed or courses taken, if alignment with individual learning needs is taken seriously, acknowledging differences across medical specialties and level of expertise.¹² That is, engaging in any educational activity can be beneficial for an individual, if the respective learning activity meets learning needs. Although our results support criteria for "the CPD of the future" and highlight the potential benefit of leaving the workplace to attend conferences or courses, we plea for a stronger re-integration of performance evaluation and learning into daily practice so that physicians can assess and improve their own performance.⁹ This has implications for the design of recertification systems.

Overall, the empirical findings of this PhD thesis may function as a stimulus for (re-)designing systems to assess and support physicians' lifelong learning. First and foremost, policy makers should refrain from designing systems that are overly bureaucratic or formalized. Lifelong learning should be embedded in daily practice as much as possible to counteract high administrative burdens of recertification.^{60,61} After all, clinical education is rooted in experiential learning and physicians learn from daily practice, exchange of experience and tactic knowledge with peers, and interaction with patients (Chapter, 3, 4 and 5). To increase authenticity, national physician organizations and national regulatory bodies could join efforts to adapt recertification requirements in a way that workplace-based learning is acknowledged as meaningful learning; a learning activity that could potentially serve as evidence for recertification processes. As we allude to in our findings, physicians may use learning cues from the workplace as informal feedback to deliberately monitor, reflect on and learn from their performance and to develop adaptive expertise, preconditioned that they have become or been made aware of their learning needs through any form of assessment.^{62,63}

From an organizational perspective, it remains paramount to offer sufficient resources, including financial means and time allocation for professional development, as well as follow-ups during performance appraisals.⁴¹ Regular follow-ups and a dedicated dialogue (as in the British appraisal system discussed in Chapter 2 and Chapter 3) where dedicated appraisers and physicians jointly discuss and reflect on feedback received, the physician's personal development plan and chosen learning activities, could also be beneficial for quality control. This also underlines that

professional development is a collective effort, which promotes reflection and supports learning.

Employers need to allocate sufficient clinical cover and allow educational leave for their staff so that physicians can dedicate time on professional development, as lack of time and funding are perceived as main barriers for learning activities.¹² Healthcare organization could also offer different in-house activities to reduce travel time. At the same time, offering collaborative learning activities and allowing healthcare staff to engage in learning during working hours, symbolizes that the organization values professional development and encourages its staff.⁴¹ New developments in recertification may investigate how to incorporate inter- and multidisciplinary activities as part of workplace-based learning and to avoid tick-box exercises.

Recertification alone should not be expected to detect serious cases of malpractice such as the Shipman case. Therefore, in a (re-)design of recertification systems, it should be underlined towards physicians, as well as to the public, that recertification particularly aims to support learning and development instead of detecting malpractice. Medical authorities in charge for regulation of recertification (e.g. regulatory bodies, medical societies) should design systems with a formative character to stimulate learning, including feedback and performance assessment. Knowledge acquisition and maintenance of competence could best be complemented with physicians' performance evaluation to address both assessment of and assessment for learning. Some kind of recertification remains necessary, provided that current systems adapt towards emphasising learning and creating an open culture to discuss shortcomings and cases of remediation. Although some demand an annual knowledge test, as well as case reviews, mental and physician examination for practicing physicians above 65 years of age, this might be too farfetched and unfeasible considering the logistics involved.⁶⁴ A similar approach would become unnecessary once a just culture with shared feeling of responsibility and accountability is established.

Finally, it is beneficial to consult and involve patients as co-decision-makers or equal partners in physicians' learning and recertification processes to prevent tokenism and to strengthen outside scrutiny.^{46,65} Policy makers cautiously need to avoid turning patient involvement into a tick-box exercise but rather include patients and collaborate from the planning of these systems onwards. We further suggest that patient organisations provide feedback training to their members to educate patients and foster patient awareness, thereby nurturing a proactive attitude.⁶⁶ The overarching aim of patient involvement in recertification, and medical education in general, should be to achieve a coordinated and sustainable involvement and partnership. Noteworthy, this may take time and requires building trusting relationships.⁶⁷ As such, Chapter 5 may place a *call to action* for patient and



public involvement in recertification so that we can move one step closer towards a system of greater transparency, accountability and agency.^{2,22,23} Building on this, we give suggestions for future research on patient voices and physicians' learning in the next paragraph.

IMPLICATIONS FOR FURTHER RESEARCH

From our findings, the question remains how to make use of feedback from patients for physicians' lifelong learning. Considering the critical reflections on existing research, particularly on how to use patient feedback, this section addresses implications for future research.

First, we devote attention to one potential source of patient feedback, which has been widely discussed: online physician rating platforms. Online physician rating platforms have received increased media publicity and continue to gain scientific interest based on their potential relevance for physicians' lifelong learning.⁶⁸⁻⁷³ Online ratings may generate insight into patients' perspective on how physicians perform which physicians could use as informal feedback to, for instance, reflect on their communication or workflow and ultimately to improve their performance and patient care.⁷⁴⁻⁷⁶

In an era of patient empowerment and social networks, patients are increasingly seeking information online before deciding on healthcare services.^{77,78} Similar to other service industries, patients use online media to educate themselves, to connect and to share experiences with others.⁷⁹⁻⁸¹ Patients also progressively use their voice to evaluate their physicians on online physician rating platforms, which consequently have internationally expanded in popularity and use.⁸²⁻⁸⁴ Ratings stretch from global statements describing physicians' professionalism to specific evaluations of physician's performance covering interpersonal manner and technical competence, as we presented in our findings. Patients however often confuse physicians' performance with system issues (staff, waiting time, location), reporting their intent to return or negative sentiment without justification, which may reduce credibility and hence physicians' willingness to accept the online feedback.⁷⁴ Literature on feedback has extensively shown that the feedback providers' characteristics, status and experience enhance credibility and usefulness of feedback.^{53,62,85-87} Marginal attention has, however, been spent on how information from online rating platforms may stimulate physicians' reflection and further professional development.⁸⁸ Future research could therefore investigate how physicians perceive online rating platforms and the online information's usefulness for their learning.

Next to researching the use of patient feedback on online physician rating platforms, other topics might be equally worthwhile investigating

through further research. These include, but are not limited to, looking into the design of recertification systems more closely to understand how to combine the summative and formative approach, and whether it is feasible to detect underperforming individuals. When the aim of recertification is to detect malpractice, the question remains how this can be achieved in a way that is safe for all stakeholders involved. To support those struggling with performance, researchers can further explore how to cast remediation as a consequence of recertification. We would further recommend exploring how to best guide physicians' lifelong learning, may that be through workplace-based learning, feedback or educational activities. All in all, physicians' lifelong learning and its effect on quality of care delivered or patient safety are an underexplored area of research, where there remains much to gain in terms of insight and best practice. It is yet to be continued...

LIMITATIONS

Throughout the course of this PhD trajectory, we needed to make concessions in the study design which might have had implications on our research. We are addressing our considerations and choices made in this paragraph and discuss how this might have affected our interpretations of findings.

Even though we compared characteristics of different systems and user perceptions across systems in Chapter 2 and Chapter 3, we decided to focus on one country for Chapter 4 and Chapter 5. Some might argue that this reduces generalisability towards other contexts. Yet, individual differences will always prevail, independent of their setting. This is, when aiming to understand individual voices, perceptions and preferences, the differences across people are likely to be independent of the country they reside in. Notwithstanding, our interpretation of data might have been coloured by our understanding of the Dutch healthcare system. However, as our research team consisted of people with different nationalities, we were able to reflect on our data from different perspectives and could compare our interpretations against other contexts.

The research was furthermore performed in the context of respiratory medicine, as one of the largest specialities, which deals with acute as well as chronic patients. Even though all Chapters focus on respiratory care, our research findings are, however, presumably transferrable to and relevant for other medical specialties and disciplines. The transferability particularly concerns the fact that, independent of speciality, physicians have to engage in lifelong learning and/or recertification. Recertification as a means to assure levels of competence is also common for other healthcare professionals such as nurses or physiotherapists, and in other professions (for example pilots or actuaries).^{89,90} Therefore, the findings of



this doctoral thesis are not only relevant for respiratory specialists but also for other professions such as nurses or allied healthcare professionals, or even outside the medical field.

Most importantly, we did not look into the complex topic of quality of care and how physicians' lifelong learning affects the care delivered. Another limitation is that we did not explore whether certain learning activities had a direct impact on physicians learning in terms of long-term behavioural or practice change. Although it does not cover the full breath of how physicians learn and how their learning affects their care delivery, we did make an attempt to observe physicians' learning in clinical practice (Chapter 4). As touched upon in previous sections, unravelling a causal relationship between participation in lifelong learning activities and quality of care delivered is hardly tangible. This might require using big data to untangle individual patient outcomes to actions of individual physician.

Our reflections on patient involvement in physician performance evaluation and lifelong learning add to the conceptual understanding of patient involvement and simultaneously clarifies patients' role in medical education.^{47,91} Noteworthy, Chapter 5 regards providing feedback as patient involvement, which admittedly concerns a lower level of patient involvement when considering involving patients in medical education.^{91,92} Involving patients and giving them a voice in physician performance evaluation, however, is a very timely and relevant approach. Our research findings indicate how to flesh out patient involvement in physician's lifelong learning and performance evaluation.

THE WAY FORWARD

As a final reflection of the research presented in this thesis, this journey would not have been possible without embracing cultural differences, engaging and listening to others' voices, learning from daily work and with the support of colleagues. Throughout this PhD trajectory, I have engaged in my own learning trajectory, embracing the field of medical education and increasingly comprehending the importance of combining assessment of learning with assessment for learning. This research has most certainly shaped and refined my ideas about how to support physicians' lifelong learning, embedding learning into daily practice and engaging all stakeholders involved. It has further increased my awareness of physicians' and patients' roles as well as the power dynamics in their relationship.

After obtaining my doctorate degree, I will continue this journey of lifelong learning and professional development as a researcher and member of the Taskforce for educational quality assurance of the Faculty of Health, Medicine

and Life Sciences of Maastricht University. The insights gained through the research conducted and the understanding that medical students are trained to become lifelong learners, will guide me in this endeavour.

To be continued...



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Summary

Different countries around the world have implemented national recertification systems for physicians to improve processes and outcomes of patient care, as introduced in **Chapter 1**. Although coined differently across countries, the overarching purpose of these systems is to ensure quality of care through supporting lifelong learning and periodically assessing physicians' professional performance in their field.

Facilitated cross-border recognition of qualifications make us question the fitness of national policies for safeguarding patient care and the accountability of doctors. Also, the impact of formal recertification systems on physicians and their performance remains unclear, which in the same instance raises questions regarding how physicians learn informally through daily practice. The same holds true for the role patients can play in physicians' lifelong learning and their performance assessment.

Therefore, the primary aim of this PhD project has been to understand how recertification is organised, and how it supports medical specialists in remaining competent professionals. For this end, we have examined various types of recertification systems across Europe and explored stakeholders' perceptions regarding the effectiveness of and their roles within recertification processes. We addressed four main research questions:

1. How is recertification organized in different countries and how are performance assessment criteria incorporated in recertification?
2. How and to what extent do recertification systems support physicians' lifelong learning?
3. How do physicians informally learn in and from the workplace, and how can formal recertification systems support informal learning?
4. Which role can patients play in physician performance assessment and lifelong learning?

Chapter 2 describes key characteristics and effective components of 10 different European recertification systems, exploring similarities and differences in terms of assessment criteria used to determine process quality. National recertification systems differ substantially with regard to the criteria they apply to assess doctors' competence, their aims, requirements, assessment formats, and patient involvement. In light of professional mobility and associated demands for accountability, the article recommends including patient perspectives in physician performance assessment, and to share recertification practices internationally to enhance transparency. This can help to facilitate cross-border movement, while guaranteeing high-quality patient care.

The effectiveness of recertification systems is determined by physicians' acceptance of and commitment to the system. **Chapter 3** therefore explores physicians' perceptions and self-reported acceptance across 3 different recertification systems in Europe: Germany, which has a mandatory, credit-based system oriented to continuing professional development; Denmark, with mandatory annual dialogues and ensuing, non-compulsory activities; and the UK, with a mandatory, portfolio-based 'revalidation' system. Factors that influence acceptance are the assessment's authenticity and alignment of its requirements with clinical practice, physicians' beliefs about learning, perceived autonomy and organisational support. To support lifelong learning effectively, recertification systems must be carefully designed and integrated into daily practice. Involving physicians in their design may render systems more authentic and improve alignment between individual ambitions and the systems' goals, thereby promoting acceptance.

In light of workplace-based learning, **Chapter 4** discerns how physicians use cues related to how they communicate with patients to adjust and learn from these daily interactions. We described different degrees of the extent to which physicians recognized and used informal feedback from daily practice as cues for learning and learning opportunities. In light of our findings, we reflected on deliberate practice and the development of adaptive expertise, and how recertification can aid in this.

To answer increasing calls to include patients' voices in quality assurance, **chapter 5** explores patients' perspectives on physician performance evaluation and their role in these processes through formal and informal feedback. It describes how power dynamics affect and form different patient perspectives. With patient involvement and patient empowerment gaining momentum, this timely project underlines the variations of perspectives to be considered in physicians' development and performance evaluation.

Chapter 6 begins with a recap of the background for this PhD thesis. It introduces the concept of lifelong learning and recertification, and critically reflects on each chapter in light of scientific literature. Within this reflection, we particularly zoom in on assessment of learning and assessment for learning, as well as patient involvement therein. Considering the discovered misalignment with recertification systems and physicians' daily practice as well as the importance and opportunities of informal learning, we plea for a cultural change towards stimulating a growth mindset and collaborative learning at the workplace. We call for increased patient involvement in recertification, give some practical implications for redesigning recertification and suggest further research into online physician rating platforms, as additional source of informal feedback.



Samenvatting

Artsen worden geacht competente zorgverleners te zijn en te blijven. We verwachten dat artsen levenslang en zelfgestuurd blijven leren en zich blijven ontwikkelen, om hun professionele competenties te behouden. Het gezegde 'oefening baart kunst' suggereert dat de kwaliteit van de beroepsuitoefening van artsen verbetert naarmate ze meer praktijkervaring opdoen. Er zijn echter aanwijzingen in de wetenschappelijk literatuur dat de kennis en vaardigheden van artsen in de loop van de tijd achteruit kunnen gaan. De toenemende en snel veranderende complexiteit van de gezondheidszorg, de klinische werkomgeving en patiëntpopulaties vraagt echter van zorgprofessionals dat zij op de hoogte blijven van nieuwe ontwikkelingen teneinde kwalitatief goede zorg te kunnen blijven leveren. Om de professionele competentie van zorgprofessionals te waarborgen en het levenslang leren te ondersteunen, worden in toenemende mate activiteiten voor Continuïng Professional Development (voortdurende professionele ontwikkeling) georganiseerd en aangeboden, en zijn daarnaast in veel landen herregistratiesystemen geïmplementeerd, zoals beschreven in **hoofdstuk 1** van dit proefschrift.

Herregistratiesystemen zijn wereldwijd geïmplementeerd om zorgprocessen en uitkomsten van patiëntenzorg te verbeteren. Hoewel de gebruikte terminologie nogal verschilt per land, is het overkoepelende doel van herregistratie vaak hetzelfde het waarborgen van kwaliteit van zorg door het functioneren van artsen regelmatig te evalueren en hen te ondersteunen in het levenslang leren. Het is echter onduidelijk of, en zo ja welk effect formele herregistratie systemen op het functioneren van individuele artsen hebben. Deze onduidelijkheid roept ook vragen op over hoe artsen daadwerkelijk leren en zich blijven ontwikkelen, en welke rol hun dagelijkse werkervaringen hierin spelen. Daarop aansluitend kan de vraag gesteld worden welke de rol patiënten kunnen spelen bij het levenslang leren van artsen en het evalueren van hun functioneren.

Het doel van dit promotieproject was om te komen tot een beter begrip van hoe herregistratie is georganiseerd en hoe herregistratiesystemen medisch specialisten in hun levenslang leren ondersteunen. Daarbij hebben we expliciet aandacht besteed aan de rol van leren van ervaringen in de beroepspraktijk en de rol van patiënten. We hebben herregistratie systemen in verschillende landen binnen Europa in kaart gebracht en de percepties van belanghebbenden (zoals artsen en patiënten) met betrekking tot de effectiviteit van herregistratieprocessen onderzocht, en welke factoren daarop van invloed zijn.

In dit proefschrift worden vier empirische studies gepresenteerd, die elk vanuit een ander perspectief antwoord proberen te geven op bovenstaande vragen: het organisatie- en regelgevend perspectief, het arts perspectief

en het patiënt perspectief: De volgende vier onderzoeksvragen stonden daarbij centraal:

1. Hoe is herregistratie in verschillende landen binnen Europa georganiseerd en in hoeverre zijn algemeen geaccepteerde kwaliteitscriteria voor toetsing vertaald in herregistratieprocedures?
2. Hoe en in welke mate ondersteunen herregistratiesystemen het levenslang leren van artsen?
3. Hoe leren artsen informeel van hun werkervaringen, en hoe kunnen formele herregistratiesystemen informeel leren ondersteunen?
4. Welke rol kunnen en willen patiënten spelen bij het beoordelen van artsen?

In **hoofdstuk 2** beschrijven we hoe we door middel van documentanalyse en semigestructureerde interviews verschillende herregistratiesystemen in Europa en de mate waarin de herregistratieprocedures voldoen aan kwaliteitscriteria voor toetsing van professionele competentie, hebben onderzocht. Het hoofdstuk presenteert de belangrijkste kenmerken en componenten van 10 verschillende Europese herregistratiesystemen, en identificeert overeenkomsten en verschillen op basis van algemeen geaccepteerde kwaliteitscriteria voor toetsing. Onze bevindingen tonen aan dat nationale herregistratie systemen aanzienlijk van elkaar verschillen met betrekking tot hun doelstellingen evenals wat betreft de procedures en criteria die zij toepassen om de competentie van artsen te beoordelen (d.w.z. vereisten, toetsvormen en betrokken beoordelaars, waaronder patiënten). Mede gezien de toenemende druk op medisch specialisten om maatschappelijke verantwoording af te leggen over hun handelen, bevelen we aan om patiëntperspectieven op te nemen in de beoordeling van het functioneren van artsen, om de transparantie van herregistratieprocedures te verhogen. Deze aanbevelingen kunnen helpen om hoogwaardige patiëntenzorg op nationaal en internationaal niveau te garanderen.

De effectiviteit van herregistratie systemen wordt bepaald door de acceptatie en betrokkenheid van artsen aan het systeem. **Hoofdstuk 3** onderzoekt daarom met behulp van semigestructureerde interviews de perceptie van artsen over en zelf gerapporteerde acceptatie van drie verschillende herregistratiesystemen in Europa:

- a) Duitsland, dat een verplicht, op punten-gebaseerd systeem hanteert dat gericht is op voortdurende professionele ontwikkeling;



b) Denemarken, met een systeem van verplichte jaarlijkse gesprekken en daaruit voortvloeiende, niet-verplichte bij- of nascholingsactiviteiten; en

c) het Verenigde Koninkrijk, met een verplicht, op een portfolio-gebaseerd 'revalidatie' systeem. Factoren die de acceptatie beïnvloeden zijn de ervaren authenticiteit van de evaluatie en beoordeling, de afstemming van de herregistratie eisen op de klinische praktijk, de opvattingen van artsen over leren, en de ervaren autonomie en ondersteuning door de organisatie. Onze conclusie is dat herregistratiesystemen zorgvuldig moeten worden ontworpen om levenslang leren daadwerkelijk effectief te ondersteunen, en procedures en eisen moeten zo goed als mogelijk aansluiten bij, en ingebed zijn in de dagelijkse praktijk. Het betrekken van artsen bij het ontwerp kan helpen om systemen authentiek te maken en de afstemming tussen individuele leerbehoeftes en ambities enerzijds en de doelen van het systeem anderzijds te verbeteren, waardoor acceptatie verder wordt bevorderd.

Voortbouwend op de belangrijke rol die werkplekleren inneemt in de professionele ontwikkeling van artsen, hebben we observaties in combinatie met semigestructureerde interviews gebruikt om te onderzoeken hoe artsen van informele feedback in de dagelijkse praktijk leren of kunnen leren. **Hoofdstuk 4** beschrijft hoe artsen signalen in het dagelijkse werk (of 'informele feedback cues') gebruiken om hun communicatie met patiënten aan te passen en van dagelijkse arts-patiëntinteracties te leren. We hebben ons specifiek gericht op hoe artsen hun communicatie repertoire door informeel leren op de werkplek ontwikkelen, en hoe formele herregistratiesystemen kunnen helpen om dit informeel leren te stimuleren. Hoofdstuk 4 maakt duidelijk hoe artsen van elkaar verschillen in de manier waarop en de mate waarin ze leermogelijkheden in de dagelijkse praktijk herkennen. We beschrijven verschillende gradaties in de mate waarin artsen informele feedback uit de dagelijkse praktijk herkennen en voor hun leren gebruiken, beïnvloed door contextuele, persoonlijke en interpersoonlijke factoren. In het kader van deze bevindingen bediscussiëren we hoe artsen principes van 'deliberate practice' in de praktijk toepassen en hun adaptieve expertise ontwikkelen, en hoe herregistratie hierbij kan helpen.

Er bestaat een toenemende vraag naar meer patiëntbetrokkenheid in de zorg en kwaliteitswaarborging. Patiënten kunnen een belangrijke bijdrage leveren aan de beoordeling van artsen, met name als het gaat om competenties als communicatie of professioneel gedrag. **Hoofdstuk 5** onderzoekt daarom welke rol patiënten willen spelen bij het evalueren van het functioneren van artsen, door het geven van formele en informele feedback. Door middel van kwalitatief onderzoek en interviews met patiënten, hebben we ons verdiept in de percepties van patiënten over hun rol in de beoordeling van artsen. Het hoofdstuk beschrijft hoe machtsdynamiek in de arts-patiëntrelatie de patiëntperspectieven vormt en beïnvloedt. Op basis van de data hebben we

drie dominante patiëntperspectieven geconstrueerd, die gekenmerkt worden door verschillende percepties van en ervaringen met de machtsdynamiek binnen de arts-patiëntrelatie, de zelf-ervaren effectiviteit van patiënten in het geven van feedback en hun bereidheid om het functioneren van hun arts formeel of informeel te evalueren. Niet elke patiënt is bereid om een rol te spelen bij het evalueren van zijn/haar behandelend arts. Gegeven het feit dat de betrokkenheid van patiënten in de zorg steeds groter zal worden, is het belang van ons onderzoek dat het benadrukt dat er een variatie aan patiëntperspectieven bestaat waarmee rekening gehouden moet worden bij het ontwerp van herregistratiesystemen en procedures t.b.v. evaluatie van artsen. Hoofdstuk 5 kan daarom worden gezien als een oproep voor meer, maar zeker ook zorgvuldiger gecoördineerde en op het individu afgestemde betrokkenheid van patiënten bij herregistratie. Op deze manier kunnen we niet alleen een grotere transparantie bereiken in de evaluatie van en herregistratie van artsen maar ook een hogere mate van eigenaarschap in partnerschap – zowel bij artsen als bij patiënten.

Hoofdstuk 6 begint met een samenvatting van de achtergronden bij dit proefschrift. We beschrijven het concept van levenslang leren en herregistratie, en reflecteren kritisch op elk hoofdstuk in het licht van wetenschappelijke literatuur en eerder onderzoek. Binnen deze reflectie focussen we vooral op het beoordelen van leeruitkomsten en het leerproces, evenals patiëntbetrokkenheid daarin. Omdat herregistratiesystemen vaak niet goed zijn afgestemd op de dagelijkse praktijk van artsen, en het belang van informeel leren vaak onvoldoende wordt (h)erkend, pleiten wij voor een verandering naar een cultuur van levenslang leren waarbij het leren in het werk wordt gestimuleerd en geëxpliciteerd. Daarbij houden we een pleidooi voor meer patiëntbetrokkenheid, en geven we enkele praktische implicaties voor het ontwerp van herregistratiesystemen waarin levenslang leren centraal staat. Aansluitend stellen we verder onderzoek voor naar manieren om patiëntbetrokkenheid te verhogen. Een voorbeeld is onderzoek naar bruikbaarheid van online platforms waarop patiënten hun zorgverleners beoordelen als bron van feedback voor leren en competentie-ontwikkeling. Eveneens reflecteren we op mogelijke beperkingen in ons onderzoeksdesign, zoals bijvoorbeeld de eenzijdige focus op longartsen, de Nederlandse setting en het feit dat we niet naar het effect van herregistratie op kwaliteit van zorg hebben gekeken. Hoofdstuk 6 eindigt met een persoonlijke reflectie op levenslang leren en kijkt op de toekomst van de PhD kandidaat zelf.



Zusammenfassung

Wir erwarten von Ärzten, dass sie ihren Beruf kompetent und verantwortungsbewusst ausüben. Wir erwarten, ebenso dass sie ihr Lernen selbst regulieren und selbst steuern, um ihre berufliche Kompetenz aufrecht zu erhalten und sich kontinuierlich weiter zu entwickeln. Frei nach dem Sprichwort „Übung macht den Meister“ könnte man davon ausgehen, dass diejenigen mit mehr Erfahrung bessere Ärzte sind. Es gibt jedoch Hinweise darauf, dass das Fachwissen sowie manche Fähigkeiten von Ärzten im Laufe der Zeit abnehmen können. In dem sich kontinuierlich (weiter-) entwickelnden Bereich der Medizin, in dem das Gesundheitswesen, das Arbeitsumfeld und die Patientenpopulationen immer komplexer werden, müssen Ärzte mit verschiedenen Entwicklungen Schritt halten. Um das lebenslange Lernen zu fördern und fachliche Kompetenz zu gewährleisten, wurden Rezertifizierungssysteme¹ eingeführt und zunehmend Weiterbildungsmaßnahmen angeboten.

Weltweit haben verschiedene Länder Systeme zur Rezertifizierung eingeführt, um die fachliche Kompetenz von Ärzten zu sichern und somit die Patientenversorgung zu verbessern, wie in **Kapitel 1** beschrieben. Obwohl diese Systeme von Land zu Land unterschiedlich aufgebaut sind, besteht das Ziel dieser Systeme überwiegend darin, die Qualität der medizinischen Versorgung sicher zu stellen und die Gesundheitsfürsorge zu gewährleisten, in dem Ärzte in ihrem lebenslangen Lernen unterstützt werden und ihr fachliches Handeln regelmäßige beurteilt wird.

Auch wenn berufliche Qualifikationen in Europa grenzüberschreitend anerkannt werden, bleibt die Frage ob nationale Systeme der Qualitätssicherung ausreichend sind, um eine Rechenschaftspflicht der Ärzte und hohe Standards von Patientenversorgung zu sichern. Die Auswirkungen offizieller Rezertifizierungssysteme auf das Praktizieren von Ärzten sind nach wie vor unklar. Es stellt sich die Frage, wie Ärzte sich durch ihre tägliche Arbeit weiterbilden (können). Welche Rolle Patienten beim lebenslangen Lernen und bei einer Leistungsbeurteilung von Ärzten spielen können ist ebenfalls unklar.

Darum war das Ziel dieser Doktorarbeit um zu verstehen, wie Rezertifizierung organisiert ist und wie Fachärzte bei ihrer Weiterbildung unterstützt werden können um kompetent zu bleiben. Zu diesem Zweck haben wir verschiedene Arten von Rezertifizierungssystemen in Europa untersucht und die Wahrnehmung und Meinung verschiedener Interessenvertreter hinsichtlich ihrer Rolle und der Wirksamkeit von Rezertifizierungsprozessen untersucht.

¹ Rezertifizierung beschreibt die verpflichtende Weiterbildung von Ärzten und kann Teil der beruflichen Weiterbildung sein. Der Begriff kommt aus dem Englischen: Recertification

Wir haben vier Forschungsfragen untersucht:

1. Wie ist Rezertifizierung in verschiedenen Ländern organisiert und wie werden Kriterien zur Leistungsbewertung in dem Rezertifizierungssystem mit einbezogen?
2. Wie und in welchem Umfang unterstützen Rezertifizierungssysteme das lebenslange Lernen von Ärzten?
3. Wie lernen Ärzte in und durch ihre tägliche Praxis und wie können formelle Rezertifizierungssysteme das informelle Lernen unterstützen?
4. Welche Rolle können Patienten bei der Leistungsbeurteilung von Ärzten spielen?

In **Kapitel 2** werden die wichtigsten Merkmale und Komponenten von 10 verschiedenen europäischen Rezertifizierungssystemen beschrieben. Dabei werden Ähnlichkeiten und Unterschiede in Bezug auf die Bewertungskriterien untersucht. Die untersuchten Systeme unterscheiden sich erheblich in Bezug auf die Kriterien zur Leistungs- und Kompetenzbeurteilung, der Ziele, Anforderungen und Beurteilungsformate der Systeme sowohl wie die Patientenbeteiligung in diesen Prozessen. In Anbetracht der zunehmenden grenzüberschreitenden Mobilität von Fachpersonal und die immer größer werdende Rechenschaftspflicht die Ärzte tragen, empfiehlt das Kapitel Patientenperspektiven mit in die Leistungsbeurteilung von medizinischen Fachpersonal einzubeziehen und die Verfahren zur Rezertifizierung international auszutauschen, um die Transparenz zu verbessern. Dies kann dazu beitragen eine qualitativ hochwertige Patientenversorgung zu gewährleisten.

Die Wirksamkeit von Rezertifizierungssystemen wird durch die Akzeptanz und das Engagement der Ärzte innerhalb des Systems bestimmt. **Kapitel 3** befasst sich daher mit der Wahrnehmung und des beschriebenen Akzeptanzniveaus von Ärzten in drei verschiedenen Rezertifizierungssystemen in Europa: Deutschland mit einem verpflichtenden Punkte System, das sich an der beruflichen Weiterentwicklung orientiert; Dänemark mit einem verpflichtendem jährlichen Gespräch und anschließenden freiwilligen Aktivitäten; und in Großbritannien mit einem verpflichtenden, auf einem Portfolio basierten „Revalidierung System“. Die Ausrichtung der Anforderungen an die klinische Praxis und die Authentizität der Leistungsbeurteilung, die generelle Einstellung der Ärzte gegenüber Fort- und Weiterbildungen, die wahrgenommene Autonomie und die Unterstützung von dritten beeinflussen ob Ärzte das nationale Rezertifizierungssystem akzeptieren und es als nützlichen Bestandteil ihrer Weiterbildung erfahren. Um lebenslanges Lernen und Weiterbildung effektiv



zu unterstützen, müssen Rezertifizierungssysteme sorgfältig entworfen und in den täglichen Alltag integriert werden. Um die Authentizität von Systemen zu verbessern kann es helfen Ärzte beim Entwurf und der Entwicklung von Rezertifizierungssystemen mit ein zu beziehen. Dies kann auch dazu beitragen eine bessere Abstimmung zwischen den Anforderungen des Systems und individueller Wünsche von Ärzten zu verbessern und somit deren Akzeptanz zu steigern.

In Anbetracht der Tatsache, dass ein Großteil der Weiterbildung von Ärzten am Arbeitsplatz stattfindet, wird in **Kapitel 4** erläutert, wie Ärzte Hinweise aus ihrem Klinikalltag verwenden können, um ihre Kommunikation mit Patienten anzupassen und daraus für die Zukunft zu lernen. Diese täglichen Interaktionen und Hinweise können als informelle Feedbackquelle dienen. Wir beschreiben verschiedene Abstufungen wie Ärzte informelles Feedback aus ihrer täglichen Praxis als Lernmöglichkeiten und Anhaltspunkt zur Weiterentwicklung erkennen und nutzen. Vor dem Hintergrund unserer Erkenntnisse haben wir über bewusstes Handeln („deliberate practice“) und die Entwicklung von adaptivem Handeln von Fachärzten nachgedacht und darüber, wie eine Rezertifizierung Ärzten bei ihrer Weiterbildung unterstützen kann.

Kapitel 5 beschreibt welche Rolle Patienten in der Leistungsbewertung von Ärzten spielen können und wollen, und welche Rolle formelles und informelles Feedback hierbei spielt. Diese Fragestellung wurde untersucht im Rahmen der zunehmenden Forderungen nach Einbeziehung von Patientenstimmen in die Qualitätssicherung. Dieses zeitnahe Forschungsprojekt unterstreicht die unterschiedlichen Perspektiven, die bei der Entwicklung und Leistungsbewertung von Ärzten zu berücksichtigen sind. Wir beschreiben, wie sich die Machtverhältnisse in der Arzt-Patient Beziehung auf verschiedene Patientenperspektiven auswirken und diese ausbildet. Nicht jeder Patient oder jede Patientin möchte die Leistung seines/ihres Arztes beurteilen. Wir unterscheiden zwischen drei unterschiedlichen, wiederkehrenden Perspektiven: der pro-aktiven Perspektive, der zurückhaltenden Perspektive und der Außenstehenden Perspektive. Alle drei Perspektiven sind zeitlich gebunden und können sich während eines Krankheitsverlaufs verändern.

Kapitel 6 beginnt mit einer kurzen Zusammenfassung von dem Hintergrund dieser Doktorarbeit. Es beschreibt das Konzept des lebenslangen Lernens und der Rezertifizierung. Die Resultate jedes Kapitels werden kurz im Lichte der wissenschaftlichen Literatur zusammengefasst und untersucht. Im Rahmen dieser Überlegungen wird insbesondere auf die Bewertung des Lernens und der Weiterbildung sowie die Einbeziehung der Patienten eingegangen. In Anbetracht der unzureichenden Abstimmung von Rezertifizierungssystemen und der täglichen Praxis der Ärzte, sowie der Bedeutung und der Möglichkeiten des informellen Lernens plädieren wir für

einen kulturellen Wandel, um eine Weiterentwicklung und gemeinschaftliches Lernen am Arbeitsplatz zu fördern. Wir fordern eine stärkere Beteiligung von Patienten an der Rezertifizierung. Dabei geben wir einige praktische Implikationen für die Neugestaltung von Rezertifizierungssystemen und schlagen weitere Untersuchungen zu Online-Bewertungsplattformen für Ärzte als zusätzliche Quelle für informelles Feedback vor.



Knowledge valorisation

This chapter summarizes and reflects on how the knowledge created by the research presented in this doctoral thesis can be made suitable for use outside the academic field. We discuss the impact of our scientific findings for the public, for medical societies and other professional organisations interested in medical education. Thereby, we reflect on the societal relevance of our research, and discuss activities performed and future plans.

Overall, the empirical findings of this PhD thesis may function as stimulus for designing and/or re-designing systems to assess and support physicians' lifelong learning. We call for regular performance evaluations from multiple stakeholders, and for integration of physicians' learning in daily practice. After all, clinical education is rooted in experiential learning as physicians learn from daily practice, interactions with patients and exchange of experiences and knowledge with peers, (Chapter, 3, 4 and 5). Therefore, recertification systems and lifelong learning need to be aligned with physicians' daily practice as much as possible, to increase systems' authenticity and their ability to support learning from experience, feedback and reflection. Otherwise, the recertification may turn into ineffective tick-box exercises with limited learning and change in performance to occur.

This doctoral thesis furthermore dedicates a chapter to a timely topic: patient and public involvement in physician performance evaluation (Chapter 5). Findings of this thesis have shown that patients are rarely involved in recertification processes. While answering increasing calls to include patients' voices in quality assurance, our work may place a call to action for patient and public involvement in recertification.

MEDICAL SOCIETIES

In addition to re-designing recertification, more steps towards dissemination and implementation of this research are possible. There is an opportunity for medical societies and professional organisations to impact physicians' continuing professional development through offering formal educational activities as well through influencing and supporting healthcare professionals' informal learning at their workplace. There are a few examples medical societies could jump on. Overall, diversification of educational activities is advisable to all medical societies to cater the wide range of learning needs across its membership. Here, it is important to withhold from offering more formal training or courses. Instead it would be worthwhile to consider how learning can be facilitated with minimal resources, which could help physicians on a day to day basis.

Medical societies could furthermore support their members in raising awareness and making implicit learning more explicit. This does not

necessarily have to be traditional classroom-based learning. In fact, other approaches have been shown to be more effective, such as creating networks and facilitating peer-to-peer learning through direct observation or discussing difficult cases of communication with patients, and/or sharing stories with a 'what would you do' scenario. Likewise, scientific societies can serve as a community for professional development, where physicians are stimulated to share their learning with peers or other healthcare professionals. Moreover, there may be some specific toolkits or reflection charts that could be developed and shared with physicians to help them to better recognize learning cues, thus helping physicians to build a personal yet evidence-based and deliberately developed performance repertoire.

EUROPEAN RESPIRATORY SOCIETY

As most of this research has been located in the field of respiratory medicine, we are going to exemplify the impact based on the case of the European Respiratory Society (ERS). ERS funded this PhD project to understand how Continuing Professional Development (CPD) is organized on an international level, and how it supports medical specialists in remaining competent professionals. Since ensuring quality of care is a core mission of the ERS, the objective was to use the research findings of this doctoral thesis to reflect and refine ERS educational activities in order to match respiratory physicians' training needs.

With the majority of the societies' members being trained health care professionals, it may be understandable why so many members become frustrated with bureaucratic recertification systems. With an international membership, the ERS may share the research findings on recertification systems with its members, particularly those residing in the countries examined in this doctoral thesis, and seek ways to support countries in re-designing recertification systems to maximally support assessment of and for learning.

Although ERS members may be considered self-directed and self-regulated learners, they may greatly benefit from receiving support in their continuing professional development. The ERS has a chance to diversify the educational activities and to offer educational activities outside the annual congress and courses; for example with additional courses to support their members in their continuing professional development. Given continuous requirements for accreditation of activities mostly through the European Specialty Board for Accreditation in Pneumology (EBAP) for all possible ERS activities, there remains room to investigate possibilities to recognize and accredit informal activities.



PUBLIC RELEVANCE

This research reinforces that learning also occurs informally, but physicians may need specific tools to assist them in better recognizing and using these learning opportunities. It might be worthwhile to implement practical tools which can help physicians in becoming more aware of what cues constitute potential learning opportunities. This may particularly concern physicians' communication with patients. Patients' concerns about healthcare professionals' skills are mainly linked to communication skills (more empathy, easy vocabulary, involvement of patients in decision-making process) rather than about their medical knowledge or technical skills.

From the perspective of patients, if we are to follow a patient centred care model, patients may have very different views, beliefs and expectations of their physicians. Our findings indicate that many physicians fail to deliberately adapt their communication to different patient encounters. Medical education is not just about acquiring expert knowledge or skills, but also about developing key competencies such as communication, collaboration, and professionalism. Our research clearly highlights the need for more formal learning for physicians in these domain areas, which could be facilitated by scientific societies who can offer dedicated continued training on communication skills, collaboration or professionalism in co-construction with patients.

One potential additional idea to enhance patient engagement in medical societies could be to invite interested patients or patient representatives to screen and select abstract submissions for scientific congresses, and to invite them as chairs of educational sessions or research paper presentations. ERS and European Lung Foundation (ELF) have been collaborating for many years to include patients in ERS activities, through expert patients, testimonials, feedback on content and should most definitely seek possibilities to continue this collaboration.

The results of Chapter 5 will be distributed in a plain language summary to the research participants and wider patient groups. We have shared our research findings with the European Lung Foundation as well as the Dutch Lung Foundation, as a first step. Although the scientific manuscript was shared after publication with those participating in the research and other patients who showed interest, we aim to write a plain summary in English and in Dutch to make our findings more accessible to a wider audience. This plain language summary could be shared on the website or the newsletter of ELF, the Dutch Lung Foundation or the Dutch Patient Federation.

ACTIVITIES AND FUTURE PLANS

Research results have been presented at national and international congresses for medical education and CME as well as for respiratory medicine. All articles included in this doctoral thesis have been published (see Dissemination). Additional non-academic publications have been published for instance in *Breathe*, the clinical educational journal from the ERS. *Breathe* aims to distribute educational material to a wide audience and published our summaries of ERS educational meetings and events, such as the ERS Education Research Seminar or the Educational Forum during the ERS Congress. A symposium that was held with an international and interdisciplinary group of experts on CME and CPD at the AMEE congress 2017, was equally followed by a conference report published in the *European Journal of CME*.

Based on my research on international differences in recertification approaches, the European CME Forum invited me to present the research findings at their annual meetings in 2017 and 2018. The European CME forum brings different European and global CME stakeholders together, with the overall aim to advance quality of CME. With a wide audience including CME providers, medical societies, physician chambers and accreditation bodies as well as patient advocacy groups, I was able to disseminate my findings widely.

Furthermore, the Royal College of Veterinary Surgeons has invited me as a consultant for advice on CPD and to present the research findings on formal recertification systems and informal learning. I gave a talk on “Learning through reflection at work” and engaged in a discussion on an outcome-based approach to CPD with the education council. As a consultant of the CPD working group, I discussed reflective learning, maximising learning impact and impacting physicians’ practice, while avoiding creating an overly bureaucratic system.

This complete doctoral thesis will eventually be shared among national (Dutch) regulatory bodies such as the Dutch Association of Medical Specialists (Federatie van Medisch Specialisten), the Royal Dutch Medical Association (Koninklijke Nederlandsche Maatschappij tot bevordering der Geneeskunst), as well as international bodies such as the European Union of Medical Specialists (UEMS), and its Council for European Medical Specialist Assessments.

The author will further continue the research, as suggested in Chapter 6, as future research into online physician rating platforms as additional feedback source.



Dissemination

THIS THESIS

Sehlbach, C., Govaerts, M. J., Mitchell, S., Rohde, G. G. U., Smeenk, F. W. J. M., Driessen, E. W. **Doctors on the move: a European case study on the key characteristics of national recertification systems.** *BMJ Open.* 2018; 8:e019963-e019963. <https://dx.doi.org/10.1136%2Fbmjopen-2017-019963>

Sehlbach C, Govaerts MJB, Mitchell S, Rohde GGU, Smeenk FWJM, Driessen EW. 2018. **Box-ticking and Olympic high jumping – physicians’ perceptions and acceptance of national physician validation systems.** *Med Teach* 2018. 1-6. <https://doi.org/10.1080/0142159X.2018.1470320>

Sehlbach, C., Teunissen, P.W., Driessen, E.W., Mitchell, S., Rohde, G.G.U., Smeenk, F.W.J.M., Govaerts, M.J.B. **Physicians’ learning in workplace settings: the role of informal feedback cues in daily practice.**

Sehlbach, C., Govaerts, M.J.B., Mitchell, S., Teunissen, T.G.J., Smeenk, F.W.J.M., Driessen, E.W., Rohde, G.G.U. **Respiratory patient perceptions on physician performance evaluation - a qualitative study.** *Health Expec.* 2019. <https://doi.org/10.1111/hex.12999>

OTHER PROJECT-RELATED PUBLICATIONS

Sehlbach, C., Thomson, C., Bennett, J., Perez de Llano, L., Smeenk, F. W. J. M., Yokoyama A, Horváth I, Driessen E, Rohde G. 2017. **Re-certification of respiratory professionals: Current practice and the future – educational forum report.** *Breathe.* 13(2):77-80. <https://doi.org/10.1183/20734735.001817>

Sehlbach, C., Balzan, M., Bennett, J., Prior Filipe, H., Thinggaard, E., Smeenk, F. W. J. M. **“Certified ... now what?” On the Challenges of Lifelong Learning: Report from an AMEE2017 Symposium.** *J Eur CME.* 2018, 25;7(1):1428025. <https://doi.org/10.1080/21614083.2018.1428025>

Sehlbach, C., Farr, A., Allen, M., Guiral, J. G., L.M.L. Wielders, P., Stolz, D., Rohde, G. **ERS Congress highlight: educational forum on continuing professional development.** *Breathe.* 2018; 14:e12-e16. <https://doi.org/10.1183/20734735.020918>

Mitchell, S., Sehlbach, C., Driessen, E., Farr, A., Grant, J., Konge, L., Pannetier, C., Schut, S., Stolz, D., Rohde, G. **Meeting challenges in delivery of patient care: a reflection on the involvement of ERS in continuing professional development of respiratory physicians.** *Breathe.* 2019. <https://doi.org/10.1183/20734735.0172-2019>

PRESENTATIONS

NVMO Conference 2017

Oral presentation

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

AMEE Conference 2017

Oral presentation

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

ERS Education Seminar 2017

Oral presentation

How does CPD differ across countries? Current perspectives for CPD and recertification

ERS Congress 2017

Oral presentation

Continuing Professional development of respiratory professionals

CME Forum 2017

Invited speaker

OUTWARD: Listening to others –Doctors on the move: a European case study on the key characteristics of national recertification systems

EBMA Conference 2017

Oral presentation

Box-ticking and Olympic high jumping – physicians' perceptions and acceptance of national physician validation systems

Ottawa Conference 2018

Oral presentation

Box-ticking and Olympic high jumping – physicians' perceptions and acceptance of national physician validation systems

AMEE Conference 2018

Oral presentation

Box-ticking and Olympic high jumping – physicians' perceptions and acceptance of national physician validation systems

ERS Congress 2018

Poster presentation

“Who am I to evaluate my doctor?” Patients' role in physicians' lifelong learning and validation



CME Forum 2018

Oral presentation and Poster presentation

“Who am I to evaluate my doctor?” Patients’ role in physicians’ lifelong learning and validation

AMEE Conference 2019

Oral presentation

Patient voices in physician validation- a qualitative study

ERS Congress 2019

Poster presentation

“Who am I to evaluate my doctor?” Patients’ role in physicians’ lifelong learning and validation

Oral presentation

Physicians’ learning in workplace settings: the role of informal feedback cues in daily practice

Royal College of Veterinary Surgeons 2019

Invited speaker

Learning through reflection at work

NVMO Congres 2019

De rol van patiënten bij het beoordelen van artsen – wat is het patiënten perspectief?

Oral presentation

Price “best research paper”

WORKSHOPS & SYMPOSIA

Symposium AMEE 2017

“Certified ... now what?” On the Challenges of Lifelong Learning

Sehlbach, C., Balzan, M., Bennett, Prior Filipe, H., Thinggaard, E., Smeenk, F.

Workshops AMEE 2018

Continuing Medical Education: Innovative Approaches to Putting Theory into Practice for Curriculum Development

Jirasevijinda, T. J., Sehlbach, C., Thomas, D. C

Making workplace-based assessment work; leveraging tensions in assessment for learning

Teunissen, P.W., Driessen, E. W., Govaerts, M. J., Schut, S., Wijbenga, M., Sehlbach, C., Bransen, D.

Workshop NVMO 2019

**Laten we een kijkje in de spiegel nemen – zelfevaluatie en groepsreflectie
als middel voor docentprofessionalisering van werkplekbegeleiders**
van Lierop, M., Sehlbach, C., Stalmeijer, R. E.



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About the author

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Carolin Sehlbach was born on 17th April 1991 in Wuppertal, Germany.

Having been intrigued by health and life sciences, foreign languages and small group learning, she chose to move to Maastricht in 2010 to study Health Sciences at Maastricht University. She learned Dutch and started her Bachelor's with a specialization in Biology and Health. Next to her studies, she took part in the formerly formal Honours Programme in Medical Education. As part of the European Erasmus programme, she spent one semester abroad at the University of Southern Denmark, where she took courses in Public Health and engaged in a culture and language exchange.

After graduating with her Bachelor's degree in 2013, she enrolled in the Health Sciences Research Master, with a focus on Clinical Epidemiology. She was selected for the prestigious interdisciplinary, project-based PREMIUM programme; Maastricht University's Honours programme.

Towards the end of her Master's programme, in 2015, she was granted the opportunity to start a PhD position at the School of Health Professions Education (SHE) at Maastricht University, based on a PhD grant from the European Respiratory Society. During her PhD, she collaborated with ERS staff and gained insight into educational management of an international medical society. She further represented the PhD community of SHE in the departmental management team and the Faculty PhD committee (FPC). During the course of her PhD, she further developed as a researcher by conducting international interviews with policy makers, clinicians and patients and published scientific articles. In the final year of her PhD, she won the price for the best research paper on her research on patient's role in physician performance evaluation at the congress of the Netherland Association for Medical Education (NVMO) in 2019 in Rotterdam. As a non-native speaker, winning this price represented a scientific achievement as well as a personal accomplishment to her.

During the last half year of her PhD, she combined her research with a position as lecturer at the taskforce Programme Evaluation at the Faculty of Health, Medicine and Life Sciences (FHML) at Maastricht University. She will continue her work with the Task Force as an Assistant Professor, where she will continue her own journey as lifelong learner by teaching and conducting research.



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