

Physician revalidation in Europe

Sherry Merkur, Elias Mossialos, Morgan Long and Martin McKee

ABSTRACT – Despite the increasing attention on patient mobility, there remains a lack of European-level interest in assuring the sustained competence of health professionals. Specifically, the existing European legal framework fails to recognise the introduction of periodic revalidation and requirements to participate in continuing professional development in some countries. This study shows that the definitions and mechanisms of revalidation vary significantly across member states. While some countries, eg Austria, Germany and Spain, look to continuing medical education as a means to promote recertification and quality of care, other countries, eg Belgium, France and the Netherlands, also incorporate peer review. In the UK the proposed revalidation scheme would include elements of relicensure through appraisal and feedback as well as physician recertification. Divergence between countries also exists in monitoring and enforcement. The European Commission should explore the implications for professional mobility of the diversity in the regulation of the medical profession.

KEY WORDS: continuing medical education, continuing professional development, Europe peer review, recertification, relicensure, revalidation

Introduction

A number of high profile cases have placed the movement of patients within the European Union firmly on the political agenda.^{1–3} Somewhat less attention has been paid to the movement of health professionals.⁴ This is not because there are no concerns about the latter but rather that they are less often voiced in public. Professional mobility is based on the mutual recognition of professional qualifications, which assumes that someone registered to practice in one member state is competent to do so in all others. This is consistent with the principle, enshrined in successive European treaties, that barriers should be no more than is absolutely necessary, lest they inhibit free movement. Yet there have long been concerns that existing European standards, based on the completion of initial training, are no longer consistent with the concept of lifelong learning. Specifically, the existing European legal framework fails to recognise the intro-

duction, in a number of countries, of periodic revalidation and requirements to participate in continuing professional development (CPD). Progress has been limited to a statement at a 2006 meeting of the High Level Group on Health Services and Medical Care that the group plans to consider, ‘European and global issues of continued professional development’,⁵ but European Commission staff have let it be known that a new directive on health professionals is not presently on the agenda.

Revalidation, which aims to ‘demonstrate that the competence of doctors is acceptable’, is attracting increasing interest in Europe, drawing on the experiences of the USA, Canada, Australia and New Zealand.^{6,7} However, the practice of revalidation in different countries varies. In its most basic form, it involves participation in continuing medical education (CME), designed to keep physicians up-to-date on clinical developments and medical knowledge. The broader concept of CPD includes CME along with the development of personal, social and managerial skills. More demanding methods incorporate peer review, external evaluation, and practice inspection.

Motivation for revalidation

There are three main objectives of professional regulation: to provide a system of professional accountability; to ensure that basic standards of care do not fall below acceptable standards; and to promote continuing improvements in quality of care.^{8,9} A number of factors have led to a challenging of the status quo, in which the acquisition of a qualification, perhaps many years previously, was seen as sufficient. The Bristol and Shipman inquiries in the UK have challenged trust in physicians in a climate of more general loss of public trust in professionals.^{10–12} At the same time, there has been a growing number of studies on the scale of medical errors^{13–15}; while these have focused largely on system failures, they have contributed to concerns about physician competence. There is also increasing recognition that some skills decline over time, an effect found to be present in a number of aspects of care.¹⁶

In the UK, these developments have given rise to a situation where the majority of the public, as well as family doctors, believe that physicians should be assessed regularly to ensure their knowledge and skills are up-to-date.¹⁷ Similar views have been

Sherry Merkur

BSc MSc, Research Officer in Health Policy, LSE Health, London School of Economics and Political Science

Elias Mossialos

BSc MD PhD, Brian Abel-Smith Professor of Health Policy and Director of LSE Health, London School of Economics and Political Science

Morgan Long

MSc, Graduate of MSc International Health Policy, London School of Economics and Political Science; Senior Health Care Consultant, Fleishman Hillard

Martin McKee

CBE FRCP FRCPI FFPH FMedSci, Professor of European Public Health and Co-Director of the European Centre on Health of Societies in Transition (ECOHOST), School of Hygiene and Tropical Medicine, London

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reported in the USA, where the public feel that it is important that doctors have high success rates for the conditions they treat most often and periodically pass a written test of medical knowledge.¹⁸ While some commentators, most notably Onora O’Neill in her 2002 Reith lectures, have argued cogently that overzealous regulation could actually erode trust even further, it is now apparent that, for the present, there is a climate favouring some form of revalidation in a number of countries.¹⁹

These developments have important consequences for Europe. The right to free movement by health professionals has led to calls for greater coherence internationally on how doctors are trained, registered and continually assessed.²⁰ There is, however, surprisingly little understanding of how these systems work in different member states. This paper begins to address this

issue by examining how revalidation diverges in different settings, who the regulators are, what methods of regulation are used, and how revalidation is implemented (Table 1).

Who regulates revalidation?

The regulators of revalidation in many Western European countries are professional medical bodies, which may be accountable to government ministries. However, in others, insurers may take the lead in requiring physicians contracted with them to fulfil specific requirements. In most cases, a combination of several stakeholders takes responsibility for ensuring that standards are maintained.

Austrian physicians are primarily regulated by the Austrian

Table 1. Revalidation of the medical profession in selected European countries. Data sourced from country questionnaire.

Country	Time frame (years)	Types of revalidation		Compulsory	Penalty/reward	Lead regulator	Other authorities
		CME/CPD	Peer review				
Austria	3	Yes	Yes	Yes	Legal requirement	Austrian Medical Chamber (PB)	Federal Ministry of Health and Women (G); Austrian Academy of Physicians (PB)
Belgium	3	Yes	Yes	No	Financial incentive (increased salary by about 4%)	Minister of Public Health (G) and INAMI/RIZIV (IF)	NA
France	5	Yes	Yes (EPP)	Yes	Law suit by Regional Council of the Physicians' Order (not monitored)	National Councils for CME (PB)	Regional Councils for CME (PB), Regional Council of the Physicians' Order (PB), High Health Authority (IA)
Germany	5	Yes	Yes	Yes (GPs and specialists contracted by SHIF)	Non-compliance results in reduced reimbursement; then after two years withdraw of accreditation	Regional Chambers of Physicians (PB)	State Ministry of Health or Social Affairs (G), Regional Associations of SHIF Physicians (PB), Federal Association of SHIF-Physicians (PB)
The Netherlands	5	Yes	Yes (visitatie)	Yes (specialists)	Removed from medical registrar	Central College of Specialists (PB)	Central Information Centre for Professional Practitioners in Healthcare (G)
Spain	NA	Yes (9 of 17 regions)	NA	No	Varies between regional commissions	Spanish Medical Association (PB)	Ministry of Health and Education (G), Medical Colleges (PB); Commission of Continuing Education of Health Professionals; Accreditation Council for CME (PB)
United Kingdom	5	Yes	Yes (360-degree feedback exercise)	Pending: GPs and specialists	Failure will result in practice supervision	Department of Health (G)	General Medical Council (PB), Royal Colleges (GPs, specialists) (PB)

CME = continuing medical education; CPD = continuing professional development; EPP = Evaluation of Professional Practices; G = government; IA = independent authority; IF = insurance fund; NA = not applicable; NHS = National Health Service; PB = professional body; SHIF = Social Health Insurance Fund.

Medical Chamber, a professional body that is, however, accountable to the Federal Ministry of Health and Women; although it remains unclear how this accountability works in practice. The Austrian Academy of Physicians advises the medical chamber on content and methods of the CME system.²¹

The voluntary system of CME in Spain is conducted under the auspices of the medical colleges (*colegios de médicos*) and the Spanish Commission of Continuing Education of Health Professionals, which was established in 1997. In 2002, the Spanish Ministries of Health and Education commissioned the Spanish Medical Association to implement a CME accreditation system under the supervision of the commission. The resulting Spanish Accreditation Council for CME is seeking to integrate the multitude of CME activities.

In Germany, although physicians receive their licence to practise from the *Länder* (state) Ministries of Health, specialist training, accreditation and continuing education are regulated by the Regional Chambers of Physicians (professional bodies). The Regional and Federal Associations of Social Health Insurance Physicians monitor compliance with CME among those physicians contracted with them.

Revalidation requirements in France are set by three professional bodies, the national councils for CME (*Conseils nationaux de formation médicale continue*) – for ambulatory care doctors, self-employed ambulatory care doctors, and hospital doctors. However, only the council for self-employed doctors working in the ambulatory care sector had defined CME requirements at the time of writing. In addition, medical audit is promoted by the High Authority on Health (*Haute Autorité de Santé*), an authority accountable to parliament, along with hospital medical committees. Regional councils for CME (*Conseils régionaux de formation médicale continue*) are responsible for ensuring that doctors fulfil the requirements, and if not, the Regional Council of the Order of Physicians (*Conseil régional de l'ordre des médecins*) is meant to take appropriate action.

In the UK, participation in CPD has long been a condition of employment in the NHS and, more recently, for continued participation in the royal colleges. The Department of Health (DH) has outlined its commitment to the introduction of a compulsory system of revalidation that will include all physicians, in whatever setting they practice.²² Physicians will be required to renew a licence to practise every five years. The royal colleges will have a role in supporting physician recertification, while the General Medical Council (GMC) will be responsible for ensuring quality in the appraisal process for relicensure.

Professional regulation in the Netherlands covers practitioners working in hospital and independent practice and is overseen by a coalition of government (Central Information Centre for Professional Practitioners in Healthcare) and professional bodies (Central College of Specialists).

In Belgium, physicians receive their licence to practise from the Minister of Public Health; however, receipt of this licence only grants physicians the right to use the title of general practitioner (GP) or specialist. They must further apply to the National Institute for Insurance Against Disease and Invalidity

(INAMI/RIZIV) if their patients are to be reimbursed for treatment, with the option to seek further accreditation that will allow them to earn higher fees.

Professional self-regulation is standard in the USA, where the American Board of Physician Specialists (ABPS) has made great strides in requiring assessment and CME of their members. While not mandatory to practise, board certification is increasingly required by payers, hospitals and patients. In 2002, more than 85% of licensed physicians in the USA held a valid certificate.²³ A systematic review of published studies between 1966 and 1999 found that the majority demonstrated a significant positive association between certification status and good clinical outcomes.²⁴

Thus, the groups responsible for regulating physicians differ among countries, as do the nature of their schemes, a reflection of differing contextual factors. Professional self-regulation predominates, sometimes entirely independent of government and other times subject to government oversight or involvement, as is the case in Austria and the Netherlands. There seems to be widespread acceptance that self-regulation is more willingly accepted, reducing the incentive for opportunistic behaviour and non-compliance.

Methods of revalidation

Regulatory authorities in Europe have taken various steps to validate the knowledge and skills of physicians. The following section presents examples of revalidation efforts currently in existence. For simplicity, the revalidation programmes reviewed have been divided into two categories – formal and informal.

Formal revalidation

Currently, only Germany and the Netherlands have formal revalidation systems in place. Since 2005, Dutch physicians have had to undertake CME and undergo a visit by peers every five years. Revalidation is a condition of being on the medical register. The visits, by a team of three other doctors, including one recently visited and one about to be, involve a comprehensive assessment of practice, with ongoing discussions on monitoring adherence to clinical guidelines and patient input.

While physicians in Germany receive their licence to practise from regional ministries and are regulated through their regional chambers (professional associations), the 2004 Social Health Insurance (SHI) Modernisation Act introduced revalidation requirements for physicians at the federal level. Germany's revalidation scheme requires physicians to fulfil CME requirements every five years (250 credit points of approximately 45 minutes each). Physicians contracted with the SHI funds and working in ambulatory care are not subject to detailed regulations on the topics that must be covered by CME. In contrast, specialists working in hospital have to show that 70% of their vocational training has been on topics concerning their specialty. Radiologists are subject to an additional recertification procedure if they read mammograms. These programmes are voluntary for purely private physicians. In the event of non-compliance, the regional associations of social health insurance

physicians can reduce reimbursement rates after one year by 10% and after two years by 25%. If the CME certificate is not achieved within two years after the due date, accreditation may be withdrawn. All regions, except for one (Baden Wurttemberg), have implemented a computer-based registration system for CME. At the end of June 2009, the CME system will be reviewed for the first time. It is expected that participation in CME should be combined with quality assurance systems, thus promoting a broader system of CPD.

In the UK, the GMC has proposed that physicians would have to prove their fitness to practise. The Royal College of Physicians has argued for a system of independent, professionally led, publicly accountable regulation, while, in July 2006, the Chief Medical Officer for England initiated a public consultation on several options for revalidation.²⁵ He proposed that revalidation should be broken down into two requirements – relicensure to permit practice as a medical practitioner, and in addition, recertification to practise as a GP or specialists.²⁶ Relicensure would take place every five years, based on a revised model of appraisal used in the NHS, but applied to all doctors wherever they work, incorporating the GMC's generic and specialty standards as well as views of patients and colleagues (360-degree feedback exercise). Recertification would be according to procedures developed by each royal college. Physicians who fail in either process would spend a period of time in supervised practice.

The DH's White Paper of February 2007 endorsed this two-stage approach.²² Evidence to support recertification can come from various sources (depending on specialty), including clinical audit, knowledge tests, patient feedback, employer appraisal, CPD or observation of practice.²⁷ The GMC will be charged with ensuring the quality of the process.

Informal revalidation

Informal methods of revalidation exist in Austria, Belgium, France and Spain. These programmes are heavily dependent upon participation in CME as the mechanism to maintain physician competence. Belgium and France also take revalidation a step further by including peer review.

In 1995, the Austrian Medical Chamber introduced a voluntary CME programme, *Diplom-Fortbildungs-Programme* (DFP), for licensed medical doctors (GPs and specialists) and dentists. The chamber believes that CME should be independent, internationally competitive, meet high scientific standards, and be free from economic interests.²¹ Through this programme, physicians are encouraged to acquire 150 CME credits every three years. Within this total, a minimum of 120 points have to be acquired through specialty-related, certified CME programmes, with a minimum of 40 points in the physician's particular specialty. CME points can also be accumulated for undergoing peer review. Since 2001 a new medical law has made participation in CME mandatory, with legal responsibility residing with the Austrian Medical Chamber.

In Belgium, GPs and specialists are legally obliged to comply with certain standards and have financial incentives to pursue further accreditation. Licences to practise are granted by the

Minister of Public Health, and GPs must fulfil specific criteria, such as maintaining patient files, participating in the local on-call service, ensuring continuity of care, undertaking at least 500 consultations each year, and regularly developing and maintaining their knowledge, skills and medical performance.²⁸ Accreditation can serve as proof of this last criterion; alternatively, the doctor must provide evidence of 20 hours of CME per year, recognised by the Licensing Committee of General Practitioners. Specialists must preserve and develop their competence through practical and scientific activities throughout their career.²⁹

Accreditation is granted by the INAMI/RIZIV if the physician meets additional requirements, including participation in CME and peer review. While accreditation is not required, it enables physicians to charge higher reimbursable fees to patients, boosting a physician's annual salary by about 4%.³⁰ Accreditation lasts for a period of three years. To renew accreditation, specialists and GPs must obtain 200 CME credits and participate in at least two peer reviews per year. Hospital physicians are required to participate in the peer-review process, regardless of whether they seek accreditation.

France has introduced a scheme with components that resemble revalidation, with the specific intention of containing costs caused by inefficient variations in the provision of care. CME and medical audit (known as the evaluation of professional practices (EPP)) were introduced independently in 2004.^{31,32} Both CME and EPP are intended to be compulsory and should be validated every five years. However, both systems have come under criticism by the Inspector General of Social Affairs, as neither system is monitored. Moreover, some challenges have been identified, including: a lack of information on the clinical practices of doctors; the cost and maintained financing of CME activities; conflicts of interest in the management of the system; and weaknesses in the conceptual foundation as well as the management of the system.³³ Furthermore, because the legal status of institutions responsible for the regulation of CME and EPP requirements are not the same, EPP has been difficult to implement and enforcement has been delayed. As the introduction of compulsory CME in 1996 did not lead to an increase in physician participation, many doubt whether physicians' behaviour will change unless there are enforcement mechanisms.

In Spain, CME is reported as fragmented but there is growing interest in developing certification and recertification schemes in the regions, which are responsible for the provision of healthcare. However, there is growing interest in developing certification and recertification schemes in the regions, which are responsible for the provision of healthcare. National legislation has identified the need for both certification and recertification.³⁴ The medical colleges have established voluntary CME systems. The Spanish Commission of Continuing Education of Health Professionals initiated a nationwide continuing education system in 1998, based on Catalonia's experience with a 'comprehensive CME accreditation system for doctors'.³⁵ However, as of 2005, only nine of the 17 regional commissions had implemented it.

As this summary demonstrates, there is significant variation regarding what is required of physicians and if and how revalidation is enforced. These differences reflect the diversity of traditions (such as the concepts of liberal professions, norms on the role of the state, the degree of devolution to regional bodies, and the role of payers, such as social insurance funds).

Discussion

While there is no obviously superior revalidation programme, there is considerable unrealised scope to learn from experience in other countries. Methods for revalidation are still evolving. However, only a few countries have, or are moving closer to having, systems in place for ensuring that physicians' knowledge and skills are up to date, with incentives to engage physicians in the process often weak. Self-regulation has been the traditional method to ensure fitness to practise. For various reasons, there is pressure in some countries to move to shared regulation between professional bodies and statutory bodies or payers. This is seen as allowing for greater transparency and stronger accountability to external authorities.²⁶ In some countries, moves to separate bodies undertaking licensing from those hearing complaints reflect concerns about protectionism.

There is widespread acceptance that revalidation should be transparent but non-punitive, to respect the rights of patients and physicians, with efforts focused on professional development and the identification of the few 'bad' physicians who may pose a risk to patients.³⁶ For example, Belgium encourages, rather than mandates, revalidation by rewarding physicians who participate with the potential to earn higher wages. In France, however, despite a legal obligation, many physicians do not participate in CME, most likely because of a combination of lack of incentives (neither reward nor punishment) for compliance, combined with an absence of monitoring. Thus, the way in which a policy to enhance quality is enforced seems to contribute significantly to its effectiveness.

To return to the reason for undertaking this study, even this limited review of a few countries reveals considerable variation in practice. In a Europe where the right to professional mobility is enshrined in law, on the basis that all member states have in place effective systems to ensure quality of care, diversity on this scale creates obvious problems. Perhaps the most worrying aspect of this study has been the difficulty in obtaining even the most basic information on how systems work. This suggests that the European Commission should commence a debate on the regulation of the medical profession, recognising that the existing system, based on the acquisition of a qualification many years ago, is no longer acceptable. The task will not be easy. There is remarkably little evidence of the effectiveness or cost-effectiveness of different models.^{37,38} Identifying costs is especially difficult as much activity is not costed, although it clearly has a substantial opportunity cost in terms of time. In some countries, especially with self-regulatory systems, physicians pay membership fees to their respective licensing body. In other countries, such as the Netherlands, the government subsidises the cost of revalidation. This patchwork of funding methods

makes it very difficult to determine and compare the true costs.

Furthermore, many commentators have argued that, for example, no system will ever be able to prevent the emergence of another Harold Shipman. This is especially important given both the enormous cost of some systems, making it important to avoid the diversion of large numbers of physicians into monitoring activities at a time when many countries are facing physician shortages, as well as the possibility of unintended consequences, such as the creation of barriers to innovation. Systems should, therefore, incorporate recognition of the value of individuals who challenge perceived wisdom. It is also important, in situations where physicians are competing with one another, that revalidation does not become a vehicle for personal animosities. These considerations will be especially important in some of the new EU member states, where many examples exist of controls on the medical profession being abused during the communist era. The greatest challenge will be to find a solution that takes account of the considerable organisational and cultural diversity within European healthcare. A useful beginning would, however, be to assemble a detailed inventory of evidence about what is already happening and how it is working.

Submission information

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References

- 1 European Commission. *Consultation regarding community action on health services*, SEC (2006) 1195/4. Brussels: European Commission, 2006.
- 2 Rosenmøller M, McKee M, Baeten R (eds). *Patient mobility in the European Union. Learning from experience*. Copenhagen: World Health Organization on behalf of the Europe 4 Patients project and the European Observatory on Health Systems and Policies, 2006.
- 3 European Commission. *Report of the high level process of reflection on patient mobility and healthcare developments in the European Union*. At: http://europa.eu.int/comm/health/ph_overview/co_operation/mobility/patient_mobility_en.htm
- 4 European Commission. Directive 2005/36/EC on the recognition of professional qualifications of 30 September 2005 OJ L 255:22–143.
- 5 DG Health and Consumer Protection. *Report on the work of the High Level Group in 2006*, HLG/2006/8 Final. Brussels: European Commission, 2006.
- 6 Southgate L, Pringle M. Revalidation: revalidation in the United Kingdom: general principles based on experience in general practice. *BMJ* 1999;319:1180–3.
- 7 Irvine DH. Everyone is entitled to a good doctor. *Med J Aust* 2007;186: 256–61.
- 8 Sutherland K, Leatherman S. Does certification improve medical standards? *BMJ* 2006;333:439–441.
- 9 Brennan TA, Horwitz RI, Duffy DF *et al*. The role of physician specialty board certification status in the quality movement. *JAMA* 2004;292:1038–43.
- 10 Bristol Royal Infirmary Inquiry. *Learning from Bristol: the report of the public inquiry into children's heart surgery at the Bristol Royal Infirmary 1984–1995*. London: Stationery Office, 2001.
- 11 The Shipman Inquiry. *Safeguarding patients: lessons from the past, proposals for the future*. London: Stationery Office, 2004:1023–1176.
- 12 Hyerman J, Lember M, Rusovich V, Dixon A. Changing professional roles in primary care education. In: Saltman RB, Rico A, Boerma W

- (eds), *Primary care in the driver's seat? Organizational reform in European primary care*. New York: Open University Press, 2006.
- 13 Brennan TA, Leape LL, Laird NM *et al*. Incidence of adverse events and negligence in hospitalized patients. *N Engl J Med* 1991;324:370–6.
 - 14 Kohn L, Corrigan J, Donaldson M. *To err is human: building a safer health system*. Washington DC: National Academy Press, 1999.
 - 15 Wilson RM, Harrison BT, Gibberd RW, Hamilton JD. An analysis of the causes of adverse events from the quality in Australian health care study. *Med J Aust* 1999;170:411–5.
 - 16 Choudhry NK, Fletcher RH, Soumerai SB. Systematic review: the relationship between clinical experience and quality of health care. *Ann Intern Med* 2005;142:260–73.
 - 17 MORI. Attitudes to medical regulation and revalidation of doctors research among doctors and the general public. Research study conducted for Department of Health, 2005.
 - 18 The Gallup Organization. Awareness of and attitudes toward board-certification of physicians. Research for the American Board of Internal Medicine, August 2003.
 - 19 O'Neill O. *A question of trust: the BBC Reith lectures 2002*. Cambridge: Cambridge University Press, 2002.
 - 20 Pringle M. *John Fry Fellowship lecture: revalidation of doctors: the credibility challenge*. London: Nuffield Trust, 2005.
 - 21 Österreichischen Ärztekammer. *Guideline of the Austrian Medical Chamber on CME*. Vienna: OAK, 2004.
 - 22 Department of Health. *Trust, assurance and safety – the regulation of health professionals in the 21st century*. London: DH, 2007.
 - 23 Horowitz SD, Miller SH, Miles PV. Board certification and physician quality. *Med Educ* 2004;38:10–1.
 - 24 Sharp LK, Bashook PG, Lipsky MS *et al*. Specialty board certification and clinical outcomes: the missing link. *Acad Med* 2002;77:534–42.
 - 25 Royal College of Physicians. *Doctors in society: medical professionalism in a changing world*. Report of a Working Party of the Royal College of Physicians of London. London: RCP, 2005.
 - 26 Donaldson L. *Good doctors, safer patients: proposals to strengthen the system to assure and improve the performance of doctors and to protect the safety of patients*. London: Department of Health, 2006.
 - 27 General Medical Council. Revalidation. *GMC today* 2007:8–9.
 - 28 Arrêté ministériel fixant les critères d'agrément des médecins généralistes (21 February 2006).
 - 29 Arrêté ministériel fixant les critères généraux d'agrément des médecins spécialistes, des maîtres de stage et des services de stage art (30 April 1999).
 - 30 Peck C, McCall M, McLaren B, Rotem T. Continuing medical education and continuing professional development: international comparisons. *BMJ* 2000;320:432–5.
 - 31 Art 98-1, Law 2004-806 (LOI 2004-806 du 9 août 2004 relative à la politique de santé publique) (9 August 2004).
 - 32 Art 14, Law 2004-810 (LOI 2004-810 du 13 août 2004 relative à l'assurance maladie) (13 August 2004).
 - 33 D'Autume C, Postel-Vinay D. *Mission relative to legal, administrative and financing organization of medical and paramedical professionals* (in French). Paris: Inspection Générale des Affaires Sociales, 2006.
 - 34 Ley de ordenación de las profesiones sanitarios (ley 44, 21 November 2003).
 - 35 Gual A, Pales J, Pardell H *et al*. Doctors in Spain: an old country, old and new structures, and a new future. *Clin Teacher* 2005;2:59–63.
 - 36 Kmietowicz Z. Revalidation must serve doctors and the public. *BMJ* 2005;330:1385–7.
 - 37 Sharp LK, Bashook PG, Lipsky MS, Horowitz SD, Miller SH. Specialty board certification and clinical outcomes: the missing link. *Acad Med* 2002;77:534–42.
 - 38 Brown C, Belfield C, Field S. Cost effectiveness of continuing professional development in health care: a critical review of evidence. *BMJ* 2002;324:652–5.