

Chapter 3

Medical education and training in Italy

This chapter considers how effective Italy's medical education system, and in particular the continuing medical education system, are for securing a high quality workforce of health professionals. The relatively good results that Italy's health system is delivering suggest that the medical workforce is, in general, providing care of a high quality. Looking to secure this high performance for the decades to come, and push back against any regional disparities in quality and outcomes, Italy has also been taking important steps towards ensuring nationally cohesive workforce training programmes. However, going forward, good medical education and nationally standardised continuing medical education may not be enough to secure a high quality, high performing medical workforce. There is scope to look to the scientific literature, and the experiences of other OECD countries, to try to maximise the impact of medical education, from the undergraduate level and beyond.

This chapter suggests that Italy could promote workforce quality when selecting future medical professionals prior to undergraduate education, and ways to improve the quality of undergraduate medical teaching. There are also opportunities to maximise the positive impact of Italy's existing continuing medical education programme, and this chapter suggests that there is a need for Italy to eventually develop more modern models of workforce quality insurance, including a move to continuing professional development, and using data to encourage health professionals to reflect on their practice.

The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

3.1. Introduction

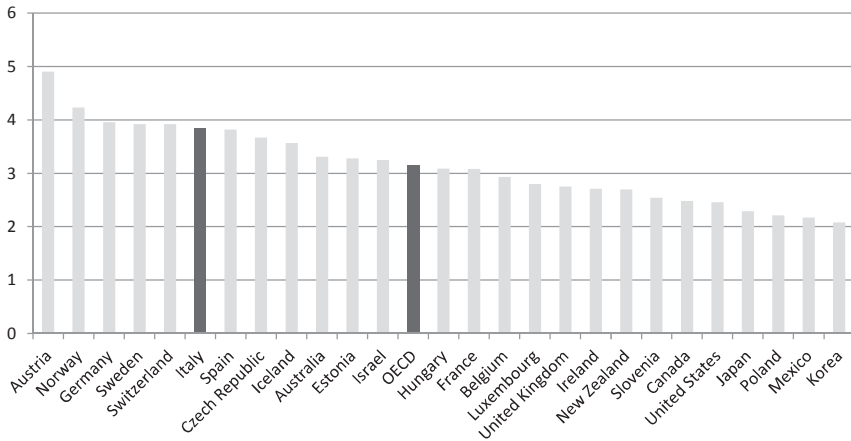
To assure high quality care and good outcomes in the health system, Italy needs a highly skilled and competent medical workforce. To help secure this, quality of medical education needs to be kept high. The generally good quality outcomes observable for Italy likely speak to the proficiency of Italian health professionals. Steps have been taken in recent years – standardising accreditation for providers of continuing medical education nation-wide, a change to the admissions process to specialist schools – which have the potential to support this high quality further. Nonetheless, going forward there are areas in which Italy could take further steps to help build a high quality medical workforce through education and training. This chapter considers the current workforce picture in Italy, and draws on examples and findings from international scientific literature and other OECD countries to make recommendations on ways in which Italy might consider strengthening the quality of medical education and training.

This chapter begins by describing the shape of Italy’s medical workforce, both in terms of the rates and ratios of medical professionals, and the governance systems around planning and monitoring the medical workforce. The chapter then explores how Italy’s undergraduate and specialist medical education system prepare medical trainees for their careers in the health system. This section points out some ways in which educational approaches in Italy could be strengthened, and the quality of education delivered could be improved. The last part of this chapter, in Sections 3.5 and 3.6, considers how quality can be kept high throughout the long career of medical professionals. Section 3.5 assesses Italy’s continuing medical education (CME) system, and suggests that there is potential for this existing system to have a greater positive impact on medical competency and skills even with some relatively small changes. Section 3.6 suggests that in the years to come Italy should be taking steps towards a more modern, rigorous system of quality assurance, and suggests OECD examples from which Italy could learn.

3.2. The shape of Italy’s medical workforce

In Italy practicing doctors per 1 000 population in 2011 were high compared to the OECD average, at 4.0 compared to 3.2 (OECD Health Statistics, 2013); 26% of physicians in Italy in 2010 were categorised as generalists, compared to an average 31% across the OECD (generalists per capita are just below the OECD average) (*ibid*).

Figure 3.1. Practising doctors per 1 000 population in Italy and OECD countries, 2012 (or nearest year)



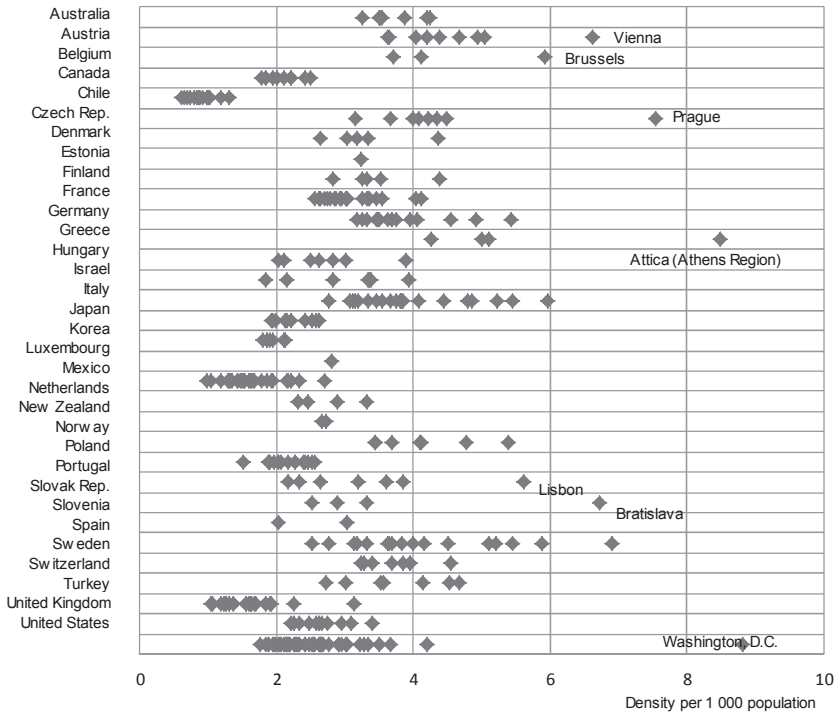
Source: OECD Health Statistics 2014, <http://dx.doi.org/10.1787/health-data-en>.

There appear to be some regional differences in workforce numbers, in the distribution of all physicians, and for some specialities for example for general practitioners and paediatricians. In most OECD countries the number of doctors per capita varies widely across regions, and Italy is no exception. Density of physicians in Italy varies from 6 per 100 000 population to below half that, at 2.8 per 100 000 (Figure 3.2).

The latest available data for 2012 reported that the mean number of GPs per 100 000 resident population in Italy was 0.76, a little higher than the OECD average of 0.7 (OECD, 2014). Although the number of GPs among regions does not differ dramatically, a slightly higher number of GPs per population can be noted in central regions. According to regional data for 2010 the autonomous province of Bolzano had the lowest number of GPs per 100 000 population (0.54).

In 2010 the average basic number of paediatricians per 100 000 residents between 0 and 14 years old was 0.91, with some variation between regions (ISTAT, 2013; Ministry of Health, 2011). The rate of paediatricians per population varied between regions, with a high of 0.11 personnel per 100 000 population aged 0-14 in Sardegna, and the lowest in the autonomous province of Bolzano (0.07). A specific study on paediatrician turnover is advising that a higher number of contracts should be given to medical schools for specialisation in paediatrics.

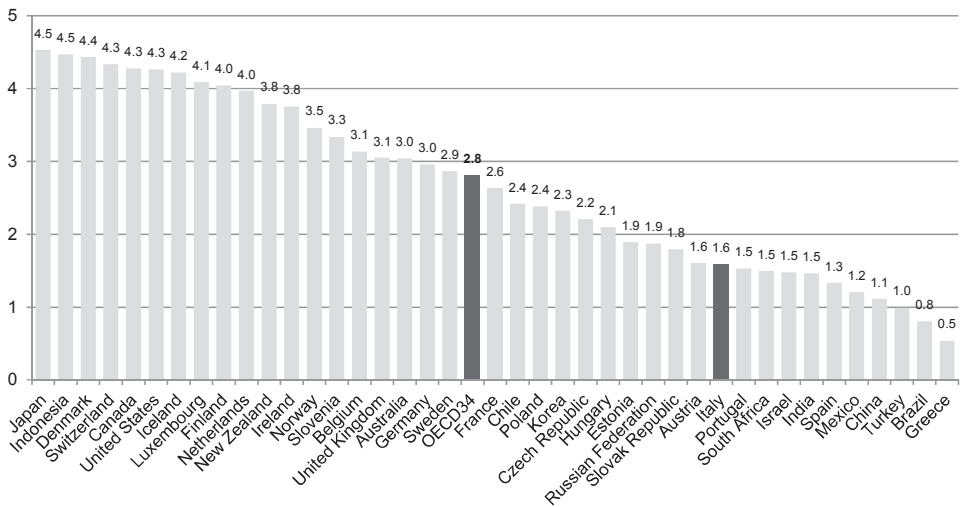
Figure 3.2. Geographic distribution of doctors, physician density per 100 000 population by Territorial Level 2 regions, 2011 (or nearest year)



Source: OECD (2013), *Health at a Glance: OECD Indicators*, Paris, OECD Publishing, Paris, <http://dx.doi.org/10.1787/888932918586>.

The number of practicing nurses in Italy is lower than the OECD average; the ratio of nurses to physicians in Italy is quite significantly lower than the OECD average, but rose slightly in the years preceding 2011. In terms of hospital nurses per 100 000 population, Italy has historically had one of the lowest rates among a cohort of comparable EU countries, with the rate remaining fairly stable from the mid-1990s until 2005, when a rise occurred, most probably due to policies aimed at allowing foreign-trained nurses to practise in Italy and other measures to promote the profession. Even in 2011 after this rise, the number of practicing nurses per 100 000 population in Italy was 6.3 compared to the OECD average of 8.8 (OECD Health Statistics, 2012). The rate of nurses compared to physicians in Italy is also low, at 1.6 nurses per physician, compared to the OECD average of 2.8 (see Figure 3.3).

Figure 3.3. Ratio of nurses to physicians in Italy and other OECD countries, 2011 (or nearest year)



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>.

Concerns about shortages of nurses did lead to a large increase in university-level nursing education programmes in Italy starting around 2000, with the number of newly graduated nurses more than tripling between 2000 and 2007 (OECD, 2013a). There are 28 000 non-Italian trained nurses in Italy, who are subject to different verification criteria. Nonetheless, nursing graduates in Italy are low compared to the OECD average, both when measured against the population (18.8 nursing graduates per 100 000 population compared to the OECD average of 42.9) or against total nurses (29.6 nursing graduates 100 000 nurses compared to the OECD average of 53.1). Contracting salaries are also an area of some concern for nurses; remuneration of hospital nurses in Italy fell by -0.5% in nominal terms between 2005 and 2011 (OECD, 2013a).

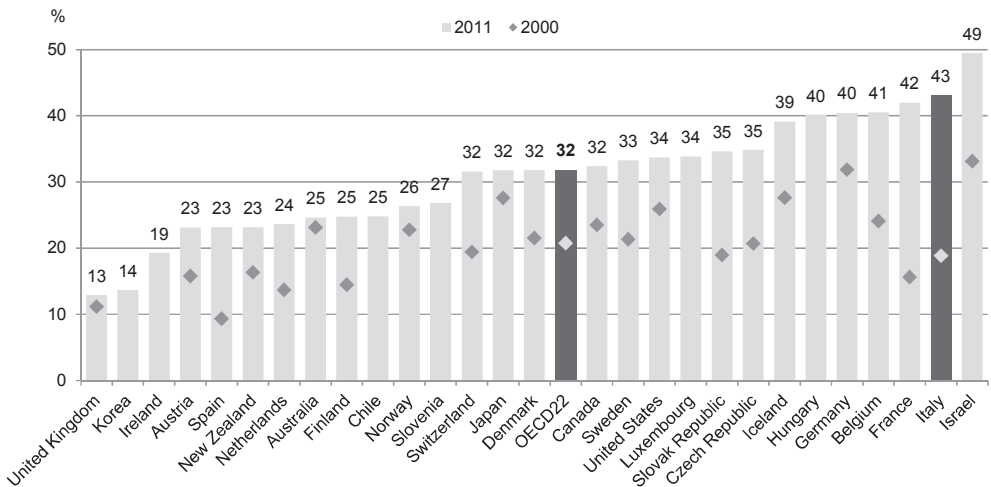
There is some discussion around the expansion of nursing specialties, and the introduction of nurse practitioners, which has been introduced with some success in other OECD countries such as Australia, New Zealand, the United Kingdom and the United States. However, the low density of nurses and relatively high density of doctors may slow any such development (Irdes, 2005).

Workforce planning

In Italy there is a bottom-up approach to NHS human resources planning (national needs overall are established based on regionally reported needs) and there is a top-down data check by the Ministry of Health. Primary responsibility for health workforce planning is therefore at the regional level, with information then fed back to the Ministry of Health, which brings together the data and forecasts from the regionals, and analyses and validates the results to make appropriate recommendations to the Ministry of Education concerning entry to medical, nursing and other health-related education programmes. The main objective of the health workforce planning in Italy is ensure a suitable number of health care professionals in order to satisfy demand and to avoid workforce imbalances in the National Health Service, and so that the Ministry of Health and the regions can agree on the number of students to enter related education and training programmes.

The Italian Ministry of Health also takes part in the EU Joint Action on Health Workforce Planning, which started in April 2013. This project is a platform for collaboration and exchange between member states to prepare the future of the health work force. The Italian Ministry of Health, in partnership with AGENAS, leads Work Package Number 5, “Exchange of good practices in quantitative planning methodologies”.

Figure 3.4. Share of doctors aged 55 years and over, 2000 and 2011 (or nearest year)



Source: OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>.

There has been a concern in Italy about the number of doctors, and the number of doctors approaching retirement; Italy has a very high percentage (42.2%) of doctors aged over 55 (see Figure 3.4). As such, Italy has introduced some policies that might help to prolong the working time of physicians, such as incentives for postponing retirement. Given the importance that Italy is putting upon increasing primary care coverage some increase in general practitioners may be needed in coming years. There are also shortages among some specialisations, for example paediatrics.

3.3. Building a high quality workforce

Medical education

Medical education in Italy is regulated by the Italian Ministry of Education, University and Research, meaning that teaching uniformity is secured all over national territory (Lo Scalzo et al., 2009). Medical education is also consistent with the EU directive on medical education allowing free movement of medical professionals within Europe (Directive 2005/36/EC). Physicians trained in Italy follow an undergraduate programme which lasts at least six years, during or after which students must work within a hospital ward for at least six months. The educational format is typically three years of basic medical and scientific education, followed by continued courses alongside clinical experience in a medical (usually hospital) setting, but can vary between educational institutions as Italian universities are autonomous bodies. Admission to medical school is based on a national exam, and application portfolio. The national examination is primarily a scientific exam, covering biology, physics, chemistry and maths, as well as a logic and general culture component.

After medical school, graduates must pass a national examination so as to be placed on a national physician register and be allowed to practise. The license issued is valid for the whole of Italy, and is of unlimited duration.

Following licencing, physicians can choose among various professional paths depending on the kind of postgraduate specialisation programme they attended. Specialisation consists of a four to six year course at a chosen specialist school, and is required for physicians to work in the hospital sector. The process by which newly qualified doctors apply to specialist schools has recently been changed. Previously, students applied to the specialist departments of individual hospitals, where they may have been previously doing an internship as part of their undergraduate training, or after graduating, and also sat a local examination to be eligible to access specialist schools in their geographical vicinity. Under the new system, under Ministerial Decree No. 105 of June 30, 2014 signed by the

Minister Giannini, which came into force on 8 August 2014, allocations to specialist schools are determined by the results of a national examination. Those who pass the examination are then given the opportunity to select from available places at specialist schools according to their ranking in the test. This approach is seen as a more meritocratic and transparent way of attributing specialist training places, and may encourage hospitals to improve their performance and quality in order to become more attractive to the “best” candidates. For general practitioners, Legislative Decree No. 256/1991, which implemented the EU directive on GP training, made participation in this three-year course compulsory to practice family medicine.

A degree in nursing is obtained after a three-year course of studies and the acquisition of 180 credits, and immediately enables the degree holder to practice as a nurse, following registration with the Professional Board of Nurses and Midwives, in the public sector as well as in the private sector (Lo Scalzo et al., 2009).

There is recognition of medical qualifications from EU member states under Directive 2005/36/EC which are automatically allowed in Italy, but practitioners – both doctors and nurses – who have received their training outside of the European Union are subject to further scrutiny. If the medical diploma does not meet the requirements of EU regulation on medical training, detailed evaluation of the training carried out by the applicant is needed, to make a comparison with the training performed in Italy to get the same qualification. This to verify whether medical training meets the required standards, and to bridge the possible gap in competency, a compensative measure can be applied, usually a practical adaptation period or an aptitude test.

Introducing further quality measures to medical education and pre-admission to medical school

With medical education already regulated nation-wide by the Italian Ministry of Education, University and Research, and a national test at the end of the university period, standardisation of the medical curriculum and teaching is already relatively secure. This type of standardisation of undergraduate medical education is relatively common, and while there may be scope to push for further quality improvements – for example a quality framework similar to that used by the United Kingdom’s independent regulator for doctors the Greater Medical Council, discussed briefly below – one area that Italy could explore is further and more diverse “quality checks” pre-entry into medical education. While Italy and indeed many other OECD countries rely predominantly on end-of-school qualifications

and/or a national examination – in Italy’s case a predominantly scientific examination – to assess admission to medical school, a number of other countries take slightly different approaches to selecting the country’s future doctors, which may have a positive effect on the overall quality of the workforce in the long term.

Additional aptitude tests for admission to undergraduate medical education

Many countries’ medical schools rely predominantly on a core set of qualifications, often end-of-school qualifications or exam results. Indeed, such qualifications appear to be quite a good predictor of success at medical school (Ferguson, 2002; Lumb and Vail, 2004). However, some countries have introduced aptitude testing specific to medical degrees to try to identify candidates who would have a particular aptitude for medical education, and to assess the potential of students even with different qualifications. Aptitude tests are standardised tests which are designed to predict *future* performance by measuring an individual’s performance across a range of fields. Fields typically measured in medical aptitude tests are problem solving, data analysis, logic and reasoning, and application of prior knowledge. Some medical aptitude tests also include a knowledge component.

A number of universities in the Netherlands, the United Kingdom, and Singapore have introduced the BioMedical Admissions Test (also known as BMAT) as part of their admissions process to undergraduate medical education. The UK Clinical Aptitude Test (UKCAT) is also used in a number of universities in the United Kingdom. In the United States the Medical College Admissions Test (MCAT) has been used in various forms as part of assessment of admissions to graduate medical education since 1924, and has been revised repeatedly since then. Medical schools in Australia and New Zealand use the Undergraduate Medicine and Health Sciences Admission Test (UMAT), while the Graduate Australian Medical School Admissions Test (GAMSAT) is used for admission to graduate medicine programmes in Australia, the United Kingdom and Ireland. Some private universities in Italy are already using the International Medical Admissions Test (IMAT).

Some reviews of aptitude tests suggest that their particular strength is in widening access, and identifying students with potential to perform well, but who may have under-performed at school-level education (Lumsden et al., 2005; Cleland et al., 2012). Some aptitude tests may also predict performance at medical school better than traditional selection criteria. The UKCAT, for example, was found to be a modest predictor of performance in

the later years of medical school, giving supporting evidence to UKCAT's inclusion in selection criteria at some UK medical institutions (Husbands et al., 2014). Another review, again addressing UKCAT, found that the test had predictive validity as a predictor of medical school outcome, although confirmed the validity of using all the existing measures of educational attainment in full at the time of selection (school exam results, personal statement/application letter, interview) (McManus et al., 2013).

While evidence certainly does not suggest that existing admissions criteria for medical education should be replaced entirely by an aptitude test, there is some weight to the argument that aptitude tests are a useful additional predictor of success in medical education. Aptitude tests may also help improve access to the medical profession from less represented groups, for example ethnic minorities or poorer socio-economic groups. Support for the introduction of such a test in Italy has already been set out by some scholars (Lia and Cavaggioni, 2013), who note that Italy already uses psychological and aptitude testing in the selection of personnel to the police force. The introduction of a clinical aptitude test to medical admissions in Italy would certainly be worth serious consideration.

Improving the quality of undergraduate education

Medical universities in Italy are self-governing, but the didactic system of the degrees in medicine and surgery and in nursing existing in the individual universities must comply with national system established by the Italian Ministry of Education, University and Research. In complying with the national system, teaching uniformity should be guaranteed across Italy. Medical students must also pass a national examination before being qualified as doctors, further encouraging uniformity in medical teaching, as the curriculum is shaped towards this national exam.

Keeping the quality of undergraduate medical teaching high can be assumed to contribute to workforce quality, and the competency of newly graduated doctors and nurses. However, understanding of what high quality education should be, or how to improve quality, is relatively limited both in the scientific literature and in policy making in OECD countries. Some practices do appear, from available research, to have a positive influence on undergraduate achievement, and diverge from the traditional didactic curriculum-based teaching:

- A “student-centered” or “learner-centered” approach to medical education has been supported by some studies. A student-centered approach means a shift in emphasis towards students and what they learn, and demands a fundamental change in the role of the educator from that of a didactic teacher to that of a facilitator of learning

(Spencer and Jordan, 1999). This approach encourages students to be active participants in learning, and was suggested by Spencer and Jordan (1999) based on available evidence to be the “the educational strategy most likely to produce doctors prepared for lifelong learning and able to meet the changing needs of their patients”. Such an approach could include problem-based learning (Azer et al., 2013), and approaches such as peer-tutoring, self-reflection, regular feedback, application of knowledge to new problems, and “learning by doing” as an alternative to an emphasis on memorisation of factual knowledge, and written examinations.

- Promoting communication skills, and effective interaction with patients, have been made an increasing priority in the United Kingdom in recent years. In 2003 a statement of guiding principles related to communication skills in pre-registration and undergraduate education for health care professionals was jointly agreed and published by the Department of Health and the health regulatory bodies including the General Medical Council (GMC) and Universities UK. This message had been previously supported in papers by the GMC, which registers all doctors practicing in the United Kingdom, in “Tomorrow’s Doctors” (GMC, 2009 and 2010), and the Department of Health’s policy paper on medical schools in 2004 (Department of Health, 2004). This prioritisation of communication builds on a consensus statement developed with input from all UK medical schools giving guidance on including clinical communication, one of the central components of undergraduate medical education, in medical curricula (von Fragstein et al., 2008). Undergraduate medical education would include teaching clinical communication and role play with actors or volunteers acting as patients, and may be included in assessments at universities. From 2013 access to and choice of placement (location) during the “foundation programme” following qualification as doctor, has been determined by a tailored Situational Judgement Test (SJT) – where applicants are presented with a set of hypothetical work relevant scenarios and asked to make judgements about possible responses. “Effective communication” and “Patient focus” are two of the five professional attributes that this test is designed to assess (Patterson et al., 2012), further supporting the importance given to clinical communication in undergraduate training.
- Team-based learning is an approach that some research has supported as part of medical education for a range of medical professionals. Organisation of students into small groups, who are

supervised by a teacher, can improve student outcomes (Koles et al., 2010; Freeman, 2012; Park et al., 2014), and improve verbal communication and teamwork skills (Elmore et al., 2014; Park et al., 2014). Institutional characteristics and typical teaching style were found to affect uptake of team-based learning, and its sustainability as a pedagogic method (Thompson, 2007; Freeman, 2013).

A balance needs to be struck between encouraging innovation by medical schools that could contribute to quality gains, and maintaining standards nationally. One criticism of undergraduate medical education in France, for example, is that the need to prepare students for a demanding national examination by which they are ranked – in the first year, in order to be admitted into the second year, and also at the end of the final year, in order of which students can choose their speciality – does not encourage development of innovative practices.

In the United Kingdom, where medical schools are independent and there is no national medical examination for qualification (with the exception of the SJT, discussed previously), standardisation of quality of medical education is nonetheless a major concern. Quality assurance is the responsibility of the General Medical Council (GMC), which follows a Quality Improvement Framework (QIF), which is available publicly. Quality assurance is carried out across four domains: approval against standards, shared evidence, visits (including checks) and responses to concerns (GMC, 2010).

In the United Kingdom there has been some reflection on how to improve quality assurance, and how to match quality assurance to desired outcomes from the medical education system. For example, following the 2010 merger of two bodies responsible for overseeing medical education (the GMC and the PMETB (Postgraduate Medical Education Training Board)), a review of Education and Training Regulation was carried out. Partly influenced by the wake of a number of high profile scandals within the NHS in the late 2000s, involving serious breaches of health care quality, this review asked both whether it was possible to achieve greater coherence and consistency across the undergraduate and postgraduate arenas and whether the regulator should focus less on assuring processes and more on the quality of individual trainees produced by those processes. Following the review the GMC responded with its own review of the approach to the quality assurance of medical education and training, and set out a range of steps that will be introduced to improve the quality assurance process, including new approaches to standards, sanctions, and annual specialty reports, working across regulators, and transparent and accessible reporting

showing risk profiles of organisations and how evidence has used to form quality assessment judgements (GMC, 2014).

3.4. Keeping workforce quality high: Maintaining and improving professional standards through continuing medical education

Continuing medical education in Italy

Continuing medical education (CME) in Italy includes the acquisition of new knowledge, skills and approaches considered useful for developing competent and experienced medical practice. Legislation covering medical workers – all physicians and nurses, around 9 000 health personnel – sets out the ethical obligation of health care professionals to keep their practice up-to-date, and to possess the skills useful in daily practice to respond to patients’ needs, and skills needed to meet the demands of the NHS, and their own professional development. According to the current legislation all health care professionals must obtain 50 CME credits per year, but there are no formal sanctions if credits are not completed; the only consequence to non-completion of CME is inadmissibility from a Head of Department post. Nonetheless, in the years 2011-13 the majority – 67% – of health care professionals for whom CME is mandatory (physicians, nurses) completed their CME requirements.

CME credits in Italy are assigned by accredited CME providers to the educational programme, according to hours of training activities, the type and characteristics of the programme. There are approximately 1 100 national CME providers, providing a total of 167 849 CME events in 2011-13. CME providers may be funded by sponsors in their training activities, with agreements between the parties, or provide a registration fee for each training event following specifications set by the Ministry of Health. Health care professionals can be sponsored by pharmaceutical companies for up to a maximum of 1/3 CME credits per year. The CoGeAPS, an organisation that gathers the National Federation of the Orders, Colleges and Associations of health care professionals participating in the programme of continuing medical education, has the role of manager of the national register of credits.

Keeping the quality of CME high

To help play a role in securing a high quality medical workforce, Italy’s CME system for health care professionals needs to be functioning well. At present, it is not possible to link CME activities to quality outcomes, or variations in quality, in a meaningful way. There are a number of checks in place to regulate CME activities, either at the national or regional level. The

primary means of assuring the quality of continuing medical education is through the accreditation of providers. Provider accreditation is awarded by the national body the National Commission for Continuous Education (*Commissione Nazionale Formazione Continua*), or for around 10% of providers accreditation is given by R&AP. Accreditation by R&AP only allows providers to operate only within the given region.

The National Commission for Continuous Education is chaired by the Minister of Health, and composed of 35 members who are appointed by the Ministry of Health, the R&AP, the professional orders and associations. Accreditation should recognise that the provider is active and appropriately skilled to provide CME, and qualified to organise training, and following a core set of requirements. These requirements include certain structural, organisational and qualitative requirements, for example CME providers have to provide evidence of an appropriate scientific committee, economic and financial solidity, informatics structure, and follow a quality manual which describes the procedures that providers put into practice to ensure quality of training.

Whether or not CME providers are meeting core requirements is assessed by the accrediting bodies using documentation and site visits. The National Commission for Continuous Education and the R&AP, as accrediting bodies, have responsibility checking the providers that they have accredited, as well performing screening checks of CME activities that take place within the territory. Planned annual verification visits are made to at least 10% of providers, as well as visits whenever there is evidence of violations. If there is evidence of violation of requirements, including around financing (e.g. illegitimate acceptance of sponsorship), sanctions are arranged, ranging from a warning, through to the withdrawal of accreditation temporarily or permanently, depending on the severity of the violation. The National Commission for Continuous Education makes use of experts AGENAS for scrutiny of the documents of the requirements that providers must have for accreditation, and site visits that are planned for all providers by accreditation 24 months after.

Some positive additional steps have been taken towards introducing a layer of quality assurance for CME. From the 1st January 2008 all *administrative* functions for CME were passed to AGENAS (from the National Commission for Continuous Education) as part of an attempt to harmonise different standards for CME provision in different regions, in particular through improving information collection. AGENAS has already signed specific agreements with ten regions around CME standards, involving the implementation of the programme for the accreditation of regional providers, which requires the use of the software needed for administrative tasks. For nationally accredited CME providers, which make

up the majority of providers, a series of biennial administrative checks – staffing, building infrastructure, checks by a scientific committee – are carried out by the National Commission for Continuous Education, which can be followed up with unplanned inspections. AGENAS can also push providers to provide CME that meets some of the key challenges of the health care systems (further detailed in the following text) – for example maternal health, or sexual health – but take-up of CME relies upon professional choice.

Maximising the impact of Italy's CME system

There are some ways that Italy could look to maximising the impact of the existing CME system, even without making significant changes to the structure of CME delivery, or surrounding requirements and legislation. To have a real impact on care quality, CME should match with identified shortcomings in the health system, as well as helping to address areas of weakness of individual health professionals, and should be delivered in such in way so as to maximise positive impact.

In terms of providing CME that matches with identified shortcomings in the health system some efforts are already in place in Italy. The educational objectives, national and regional, defined by the National Commission, are used to guide some of the content of continuing education programmes offered to health professionals. These objectives have to be traced back to health and social care activities related to essential levels of care (LEA) (see Chapter 1), and have to take account of health programmes as defined by the *Patto per la Salute*, in addition to promoting the improvement of professional skills in specific technical areas and promote and maintain the knowledge and the skills necessary and appropriate to improve the standards of effectiveness, appropriateness, safety and quality of services. For example, in 2013 the educational objectives were centered around maternal health, sexual health, and preventative health, on which providers had to offer a certain percentage of their training events. However, there is no national requirement for health professionals to follow particular training courses, and CME uptake relies mostly on individual professionals' choice, although in some local contracting of health professionals there is a requirement to demonstrate the attendance or completion of some specific training events linked to career progression. There may be scope to incentivise the uptake of certain CME activities which are judged to meet the health system's needs, for example by increasing the number of CME credits attributed to these activities.

At present there is no link between individual health professionals' performance evaluation, either systematic self-evaluation or evaluation by peers, and CME accreditation. Across Europe, assessment of standards of care, by either self-assessment, by peer review or by more systematic

analysis or audit of activities, is increasingly seen as an essential part of CME. Systematic reviews of practice can disclose weaknesses or educational needs, which can then be used to target CME uptake more effectively. Italy may want to explore ways of rewarding physicians who undertake training in areas of identified weakness in their practice, giving preferential weighting to certain credits, or some other incentive, to CME programmes which encourage more active evaluation of quality performance and care provision. In general, tools that facilitate physician self-evaluation and reflection upon practice should be further encouraged, and have already been as part of some CME practice, for example within the general practitioners' scientific society *Società Italiana di Medicina Generale* (SIMG). Such approaches should also be promoted for nurses' CME.

In local contracting agreements with health care professionals there is already sometimes a need for demonstration of having done some specific training events to link to career progression, and this could be pushed further. Individual physician contracts could also be used more actively to encourage quality improvement, and push physicians towards following CME that matches well with areas for improvement in their practice or knowledge. Contracts could also be sensitive to the particularities of the given health care setting, patient group or physician specialism. For example, the contract of a nurse who will be working with low income communities and children could be required to take a CME programme on health promotion or prevention of obesity or childhood obesity, issues that are growing concerns in Italy and known to be associated with poorer income groups.

Improving the quality of CME offered

There is some evidence which suggests that – as for undergraduate education, discussed above – certain ways of delivering CME are more effective than others. In a comprehensive review of evidence on the effectiveness of various forms of CME, Bloom (2005) found that interactive ways of delivering CME – audit/feedback, academic detailing/outreach, and reminders – were the most effective in terms of changing physician care, and patient outcomes. Marinopoulos et al. (2007) suggest that multiple techniques be combined. Didactic presentations and the distribution of printed information were found to have little or no beneficial effect. Other research has also found that traditional lectures and presentation-based CME is largely ineffective in changing the performance of health professionals and in improving patient care, and interactive forms of CME to be more effective (Davis et al., 1999; Macy Foundation, 2007).

Some of these more interactive forms of improving medical knowledge and skills are sometimes distinguished from traditional learning forms with

the description of continuing professional development, which is discussed in more depth in Section 3.5.

Different forms of CME are recognised and eligible for award of credits in Italy, including some of those judged by academic studies to be more or most effective, for example interactive platforms and feedback. Efforts could be made to encourage these types of CME which are understood to be more effective. This could mean weighting such programmes with more CME credits, but could also include supporting and encouraging such efforts in other ways. It may be possible to provide support, for example in the form of grant funding, for CME providers looking to develop more interactive models of CME, especially if backed up by evidence of efficacy, or with an evaluation process built-in or planned. Internet- and computer-based methods of learning have also been gaining popularity, and can be a good way of making effective models of CME available even in more isolated areas, or even to the health workforce at-large. Time pressures and expense are often anecdotally reported as obstacles to completing CME activities, and computer – or internet-based learning methods could offer health professionals greater flexibility in following CME programmes which they may find valuable.

3.5. Focus on continuing professional development: International experiences and examples

The basics of good quality improvement mechanisms for Italy’s medical workforce appear to be in place, and functioning well, even if more could be done to maximise the impact of existing education and continuing medical education systems. However, Italy may not be keeping up with other OECD countries in taking steps towards a more modern, rigorous system of workforce quality assurance. Internationally, there is a growing realisation that the historical organisation of the medical professional, and reliance upon self-governance and individual physician integrity and responsibility, is not sufficient or appropriate for new models of health care delivery, and medical practice, and additional checks and standards need to be introduced. There are some areas in which Italy could take action – drawing on examples from other OECD countries – and in doing so drive improvements in the quality of care delivered by medical professionals.

Changing approaches to quality assurance mechanisms for the medical profession

A distinction is often made between more traditional instruments of quality assurance for the medical profession – for instance education, disciplinary procedures, or audits imposed upon doctors by insurance companies – and newer approaches to quality insurance, including peer review or medical audit (van Herk et al., 2001).

Box 3.1. “Modern” approaches to self-regulation of the medical profession

Peer review or medical audit

Often used interchangeably, these instruments review and address the clinical practice style of a physician by a peer group. These reviews can use implicit criteria, e.g. read through patient records and provide feedback on the diagnostic and therapeutic approach, or explicit ones, e.g. apply criteria that reflect standard medical practice and check for compliance. Assessment and recommendations are usually provided, based on the review results.

Recertification

Rather than maintaining a physician’s licensure status indefinitely or until incompetence is proven, professional institutions may require regular renewal of the license and base renewal on set requirements, for example obtaining a certain number of CME credits and maintaining a minimum practice volume.

Confidential use of quality indicators and benchmarking

Quality indicators are measures for the technical quality of medical care and mainly reflect compliance with medical standards (process indicators) and success of treatment (outcomes indicators). In internal quality improvement, indicators are usually reported back to clinicians and compared to a peer group as benchmark. Full confidentiality is maintained. This process can be regarded as automation of medical audit based on explicit criteria.

Confidential reviews of incidents and perceived problems

Review and discussion of isolated care problems, or patterns of such problems, have a long tradition in medical care, for example in Morbidity & Mortality Conferences. Incident review is a formalised approach which builds on this tradition. Sometimes referred to as root cause analysis, it employs a structured investigation to determine the immediate and underlying causes of a problem. The goal is usually not to place blame on an individual but to identify and correct systems failures that lie at the heart of the observed problem, and to avoid further mishaps. Because of the sensitive nature of these events, and the risk that punitive approaches might discourage reporting, there is a tendency for governments not to interfere with these proceedings.

Source: Adapted from: Mattke, S. (2004) “Monitoring and Improving the Technical Quality of Medical Care: A New Challenge for Policy Makers in OECD Countries”, *Towards High-Performing Health Systems: Policy Studies*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264015609-en>.

The 2004 OECD publication *Towards High-Performing Health Systems* detailed the traditional forms of professional self-regulation: standards of codes and ethics, education, training and knowledge dissemination; licensing and registration; arbitration panels and medical court; guidelines and clinical pathways; and decision support systems (either passive systems which make information readily available upon request, such as internet-based journal search, or active systems are embedded in the workflow and provide real-time decision support, such as reminders and alerts) (Mattke, 2004). More recent developments include peer review or audit,

recertification, confidential use of data and benchmarking, and confidential use of reviews of incidents and problems (see Box 3.2).

Mattke (2004) suggests that the development of structural standards for care and external supervision both mark a watershed in monitoring and improving care. These are instruments that involve an external authority imposing or supporting agreed standards of practice, in various forms. Such approaches include external practice review and audit, external incident investigation, and release of quality indicators and benchmarking results to regulators or purchasers.

Box 3.2. Towards external supervision of quality for the medical profession

External practice review and medical audit

Similar to the profession-driven medical audits, such reviews entail assessment of care decisions, usually based on reviews of medical records, but the assessment is provided by external reviewers on behalf of regulators or purchasers. For example, utilisation reviews look at appropriateness of indications for procedures and quality reviews investigate whether certain key quality criteria have been met. In an extension of the audits to check compliance with regulatory standards, inspections can be applied to clinical care processes as well. This is usually done through site visits combined with staff interviews, and reviews of medical records and other documents. Inspectors can, for instance, look at compliance with treatment guidelines.

External incident investigation

While the external practice review and medical audit are used routinely to assure quality of care, incident investigation is event-driven. Incidents of a defined severity, like wrong site surgery, trigger a comprehensive external review of procedures and practice patterns.

Quality-based contracting

Providers write quality provisions into their contracts with providers, for example that a hospital has to decrease its infection rate by a certain percentage in a year. Contract terms can address structural requirements (equipment, staffing requirements) or explicit quality targets.

Release of quality indicators and benchmarking results to regulators or purchasers

Regulators or purchasers may require the reporting of measures for quality of care that reflect processes and outcomes. Similarly, league tables rank providers according to their performance along a particular measure of quality. Scoring methods group providers into several categories of relatively homogeneous performance levels. This approach is more amenable to incorporating descriptive information than ranking methods, such as league tables.

Source: Adapted from: Mattke, S. (2004) “Monitoring and Improving the Technical Quality of Medical Care: A New Challenge for Policy Makers in OECD Countries”, *Towards High-Performing Health Systems: Policy Studies*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264015609-en>.

At present, Italy is mostly relying on the traditional forms of quality assurance for the medical workforce – standards of codes and ethics, education, training and knowledge dissemination, licensing and registration, arbitration panels and medical court, guidelines and clinical pathways. It would be valuable for Italy to consider introducing some of the more modern approaches to quality assurance in a widespread way, and there are a number of OECD countries from which Italy could draw inspiration.

Beyond CME: Re-licensing and the shift to CPD

Moving beyond a strengthening of the existing CME system, Italy would do well to consider the experiences of countries which have introduced re-certification or re-licencing protocols for physicians. The link between demonstration of continuing professional development and revalidation or reaccreditation is variable, although is becoming formalised in an increasing number of countries, with the aim of consistently assuring the public of a clinician's fitness to practice. Revalidation has been in place in Australia, Canada, New Zealand and the United States for some time, and has been increasing in Europe (Merkur, 2008).

Re-licencing is increasingly seen as an important workforce quality assurance measure, backed by the argument that the awarding of a licence to practice at the end of medical education is not sufficient to ensure high quality care across a career of 50 years or more, particularly considering the rapidly changing nature of health care delivery (for example changing evidence bases for treatments, pharmaceuticals, new technologies). Revalidation is a way of checking that the competency of health professionals is up to the required standards, and a way of promoting continuing improvements in practice. In some cases moves towards additional regulation of health care professionals have been triggered by political or social changes or events. In the United Kingdom a number of high profile scandals involving health professionals challenged public trust in physicians, providing some of the back drop to the introduction of a system of physician revalidation and peer review.

In a number of countries completion of CME activities has been linked to relicensing as a means of enforcing CME participation. For Italy, interesting examples are found in the Netherlands and in the United Kingdom, where highly comprehensive systems of re-licencing have been introduced. These re-licencing procedures include more rigorous appraisal aspects such as comprehensive peer review, the requirement that physicians have reflected upon and changed their practice through training activities, and that physicians can demonstrate that they have reflected upon feedback from patients and colleagues. Such systems could be seen as examples for Italy to learn from and follow in coming years (Boxes 3.3 and 3.4).

Box 3.3. Re-licensing and peer review in the United Kingdom

In the United Kingdom, a system of five-yearly revalidation has recently been introduced. Participation in CPD activities has long been required for doctors working in the United Kingdom, a condition of employment in the NHS and later a condition of participation in the royal collages (speciality schools) for physicians (Merkur, 2009). In September 2013 the Nursing and Midwifery Council also committed to introducing a system of revalidation by the end of 2015.

In 2010 the Department of Health set out that a system of revalidation, which had previously been proposed by the General Medical Council (GMC), should be in place from 2012. This revalidation covers all physicians working in all fields. The royal colleges have a role in supporting recertification, as they have traditionally been responsible for setting standards within their field and for supervising the training of doctors. The GMC is responsible for quality control of over the appraisal process for relicensing.

Revalidation involves the appraisal of a doctor's performance in the workplace, against national standards set by the GMC, across a range of domains (for example, knowledge, skills and performance; safety and quality; communication). Evidence required in doctors' portfolios differs across domains, and may include proof of training or assessment of skills, continuing medical education, audit (a quality improvement process), or validated tools for feedback about doctors' practices and anonymous records (Villanueva, 2010).

Doctors are required to submit an annual portfolio of evidence showing how they meet these professional standards, have changed their practice through CPD activities and have reflected upon feedback from patients and colleagues. The portfolio is appraised by a peer – a senior doctor, typically working within the same organisation – and five successful appraisals lead to revalidation of a doctor's entry on the medical register with approval from the GMC.

Source: Merkur, S. et al. (2008), "Physician Revalidation in Europe", *Clinical Medicine*, Vol. 8, No. 4, pp. 371-376; General Medical Council (2012), *Ready for Revalidation: Supporting Information for Appraisal and Revalidation*, available at: www.gmc-uk.org/Supporting_information_for_appraisal_and_revalidation.pdf 48977650.pdf, accessed 20 August 2014; Nursing and Midwifery Council (2013), "Background to Revalidation", website of the Nursing and Midwifery Council, available at: <http://www.nmc-uk.org/Nurses-and-midwives/Revalidation/Background-to-revalidation/>, accessed 20 August 2014; Villanueva, T. (2010), "Revalidation Wave Hits European Doctors", *Canadian Medical Association Journal*, Vol. 182, No. 10.

Box 3.4. Physician re-licensing in the Netherlands

In the Netherlands, physicians must undergo revalidation every five years in order to maintain their place on the medical register. Revalidation is for both GPs and specialists, and is led by the Central College of Specialists together with the government organisation the Central Information Centre for Professional Practitioners in Healthcare. Supervision of revalidation was previously split for GPs and hospital specialists, but now both are overseen by a combined committee of the Central College of Specialists together with the government organisation the Central Information Centre for Professional Practitioners in Healthcare.

Requirements for revalidation include participation in continuing medical education (CME) and other training activities, a minimum level of participation in peer review activities, and an assessment by a visiting team of three doctors. To meet the requirements of doctors must have completed a minimum number of hours of accredited training activities in the period prior to revalidation, and doctors are free to choose CME according to their personal interests, and not necessarily gaps in their knowledge and skills. Moving beyond this requirement, though, there has been an emphasis on continuing professional development (CPD) as a more deliberate approach to maintaining and improving competence, and a range of “competence-based training” is offered in the Netherlands (Schäfer et al., 2010). The Central College of Medical Specialists (Centraal College Medische Specialisten, CCMS) is responsible for the national roll-out of competence-based training for all specialties, and the range of required competences is defined by the National Federation of Academic Medical Centres and is based on standards set by the Royal College of Physicians and Surgeons of Canada. The review visit prior to revalidation would include discussion of these activities, of competencies, and reflection on how the doctor’s practice has changed as a result of CME or CPD activities.

If doctors fail to comply with loan requirements they can be struck off the registry, although this is reported as generally unusual (Villanueva, 2010). If doctors fail to comply with revalidation requirements, there is also the option for physicians to re-educate themselves, either by working as a trainee again, or working under the supervision of another physician. Some serious cases may end up in legal action, and being settled in court.

Source: Schäfer, W. et al. (2010), “The Netherlands: Health System Review”, *Health Systems in Transition*, European Observatory on Health Systems and Policies, Vol. 12, No. 1; Villanueva, T. (2010), “Revalidation Wave Hits European Doctors”, *Canadian Medical Association Journal*, Vol. 182, No. 10.

A distinction is made in some scientific literature, and in some policy documents and guidance, between continuing medical education and continuing professional development (CPD). While the distinction is not universally used, CPD activities generally refer to ways in which the skills and quality of care offered by health professionals are actively improved and built-up, filling in gaps in competence. This can be contrasted with CME, which might be seen as “topping up” or “updating” medical knowledge, rather than developing professional practice (although the reality is that CME varies, and has beyond the traditional medical subjects and knowledge updates) (Chan, 2002; du Boulay, 2000).

Whether considering CME or CPD, it is increasingly recognised that demonstration of continuing medical learning and development must move on from counting points to measuring the impact of continued learning, through more demanding methods incorporating personal reflection and analysis of learning needs, peer review, external evaluation, and practice inspection (Miller et al., 2008; Parboosingh, 2000).

Using information (data) to drive quality improvement for medical professionals

One further challenge that Italy faces, and that medical professionals practicing in Italy face, is a lack of data that tells authorities or individual physicians anything about the quality of care that they are delivering. At present no physician-level quality or outcome indicators are collected. A very small number of physicians are participating in outcome indicator collection as part of initiatives launched by scientific societies or research institutes, as part of which they get feedback on their performance. More widespread collection of physician-level or practice-level quality and outcome indicators would be highly desirable, if challenging to introduce. There are obvious anxieties about ranking of practitioners, and exposure to criticism, blame and legal liability.

There are avenues for Italy to explore in this respect, for example the partial anonymisation of practitioner-level data, or use of data privately but not publically. Whilst physicians may feel anxious about such collections, in other countries – for example a very impressive data collection and benchmarking scheme in primary care in Denmark (see Box 3.5) – doctors have in fact been pleased with the availability of data that allows them to reflect upon their own practice, and compare it to that of their peers. Indeed, availability of outcomes data, and transparency of data, can help practitioners with self-reflection and improvement in their own care.

More comprehensive data collection could benefit both patients and the Italian health system, as a quality improvement measure, but also physicians, if they are encouraged and supported in reflecting on their own results in a productive way.

Box 3.5. Using physician-level outcome data to improve quality of care in Denmark

Denmark has developed a system of automatic data capture from primary care records – DAMD –, which allows GPs to access quality reports from their own practice for over 30 areas. The data include diagnoses, procedures, prescribed drugs and laboratory results. Most data is collected automatically, limiting any additional burden on GPs themselves, although annual data checks and specific research projects may request additional data via occasional pop-up screens. As well as being able to identify individual patients that are sub-optimally treated, the system allows them to benchmark their practice against other practices at municipal, regional, and national levels. DAMD also produces weekly quality reports.

This system was set up voluntarily in 2006, and from April 2011 practice is obliged to start participate in the two years that followed. In 2013 just over 70% of practices were participating. Data are sent to the Danish General Practice Database (DAMD) hosted by the University of Southern Denmark.

Without a control group it is difficult to say whether DAMD has a significant positive effect on care quality, although a smaller randomised trial in one municipality prior to the nation-wide roll-out of DAMD did report a positive impact upon prescribing practices.

Source: OECD (2013), *OECD Reviews of Health Care Quality: Denmark 2013: Raising Standards*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264191136-en>.

3.6. Conclusions

The relatively good results that Italy's health system is delivering suggest that the medical workforce is, in general, delivering care of a high quality. Indicators such as low avoidable hospital admissions for asthma, COPD and diabetes, and lower than the OECD average for mortality following hospital admission for stroke and AMI, and relatively low rates of surgical complications (OECD, 2011), reflect well on the quality of both the primary care and specialist workforce. While there are some workforce shortages, and some regional disparities in workforce supply, these positive indicators likely speak to a well-skilled workforce, and reflect well on Italy's medical education system.

Looking to secure this high performance for the decades to come, and push back against any regional disparities in quality and outcomes, Italy has been taking important steps towards ensuring nationally cohesive workforce training programmes. The recent steps to standardise accreditation for continuing medical education (CME) providers across regions is, in particular, an encouraging move. A recent move to change the entry process for specialist schools could also be an interesting development.

However, going forward, good medical education and nationally standardised CME may not be enough to secure a high quality, high performing medical workforce. There is scope to look to the scientific literature, and the experiences of other OECD countries, to try to maximise the impact of medical education, from the undergraduate level and beyond. There is some evidence about different ways to select entrants into medical school, and in teaching approaches within medical schools, that could provoke further reflection in Italy. There are also opportunities to maximise the positive impact of Italy's existing CME programme, for instance by incentivising the uptake of certain CME activities which are judged to meet the health system's needs, or encouraging more active and interactive forms of CME.

Going a step further, Italy should also look to develop more modern models of workforce quality insurance, pushing practitioners to play a more active role in evaluating their own care – for example, through more active use of data and outcome indicators – and could learn from other OECD countries in developing more pertinent quality assurance mechanisms for the medical workforce. The international models of workforce quality promotion presented in this chapter, for instance of medical recertification, could provide key learning examples for Italy.

Bibliography

- Azer, S.A. (2013), “Enhancing Learning Approaches: Practical Tips for Students and Teachers”, *Medical Teacher*, Vol. 35, No. 6, pp. 433-443.
- Bloom, B.S. (2005), “Effects of Continuing Medical Education on Improving Physician Clinical Care and Patient Health: A Review of Systematic Reviews”, *International Journal of Technology Assessment in Health Care*, Vol. 21, No. 3, pp. 380-385.
- Boulay, C. du (2000), “From CME to CPD: Getting Better at Getting Better?”, *British Medical Journal*, Vol. 320, p. 393.
- Chan, K. (2002), “Medical Education: From Continuing Medical Education to Continuing Professional Development”, *Asia Pacific Family Medicine* Vol. 1, pp. 88-90.
- Cleland, J. et al. (2012), *Identifying Best Practice in the Selection of Medical Students*, General Medical Council, available at www.gmc-uk.org/about/research/25036.asp, accessed 1 August 2014.
- Davis, D. et al. (1999), “Impact of Formal Continuing Medical Education. Do Conferences, Workshops, Rounds, and Other Traditional Continuing Education Activities Change Physician Behavior or Health Care Outcomes?”, *Journal of the American Medical Association*, Vol. 282, No. 9, pp. 867-874.
- Department of Health (2004), *Medical Schools: Delivering the Doctors of the Future*, Department of Health, London.
- Elmore, L., J. Skelley and T. Woolley (2014), “Impact of Adapted Team-based Learning Methods on Student Self-assessment of Professionalism, Teamwork, and Skills in a Self-care Course”, *Currents in Pharmacy Teaching and Learning*, Vol. 6, No. 4, pp. 488-493.
- Ferguson, E., D. James and L. Madeley (2002), “Factors Associated with Success in Medical School: Systematic Review of the Literature”, *British Medical Journal*, Vol. 324, No. 7343, pp. 952-957.
- Fragstein, M. von et al. (2008), “UK Consensus Statement on the Content of Communication Curricula in Undergraduate Medical Education”, *Medical Education*, Vol. 42, No. 11, pp. 1100-1107.

- Freeman, M. (2012), “To Adopt or Not to Adopt Innovation: A Case Study of Team-based Learning”, *International Journal of Management Education*, Vol. 10, No. 3, pp. 155-168.
- General Medical Council (1999), *Tomorrow’s Doctors: Recommendations on Undergraduate Medical Education*, available at www.gmc-uk.org/Tomorrows_Doctors_1993.pdf 25397206.pdf, accessed 1 August 2014.
- General Medical Council (2009), *Tomorrow’s Doctors: Education Outcomes and Standards for Undergraduate Medical Education*, available at www.gmc-uk.org/Tomorrow_s_Doctors_0414.pdf 48905759.pdf, accessed 1 August 2014.
- General Medical Council (2010), *Quality Improvement Framework for Undergraduate and Postgraduate Medical Education and Training in the UK*, available at www.gmc-uk.org/Quality_Improvement_Framework_0414.pdf 48904974.pdf, accessed 20 August 2014.
- General Medical Council (2012), *Ready for Revalidation: Supporting Information for Appraisal and Revalidation*, available at www.gmc-uk.org/Supporting_information_for_appraisal_and_revalidation.pdf 48977650.pdf, accessed 20 August 2014.
- General Medical Council (2014), *Report of the Review of Quality Assurance of Medical Education and Training*, available at www.gmc-uk.org/06_Report_of_the_Review_of_Quality_Assurance_of_Medical_Education_and_Training.pdf 55154276.pdf, 1 August 2014.
- Herk, R. van et al. (2001), “Medical Audit: Threat or Opportunity for the Medical Profession. A Comparative Study of Medical Audit Among Medical Specialists in General Hospitals in the Netherlands and England, 1970-1999”, *Social Science and Medicine*, Vol. 53, pp. 1721-1732.
- Husbands, A. et al. (2014), “Predictive Validity of the UK Clinical Aptitude Test in the Final Years of Medical School: A Prospective Cohort Study”, *BMC Medical Education*, Vol. 14, No. 88.
- Irdes – Institut de recherche et documentation en économie de la santé (2005), “Questions d’économie de la santé: Issues in Health Economics”, *Health Economics Letter No. 95*, June.
- ISTAT – Italian National Institute of Statistics (2013), *Annuario Statistico Italiano 2013*, Italian National Institute of Statistics, available at www.istat.it/en/files/2013/12/ASI_2013.pdf, accessed 13 August 2014.

- Koles, P.G. et al. (2010), “The Impact of Team-based Learning on Medical Students’ Academic Performance”, *Academic Medicine*, Vol. 85, No. 11, pp. 1739-1745.
- Lia, C. di and G. Cavaggioni (2013), “L’iter di selezione nella Facoltà di Medicina: l’utilità di una valutazione psicoattitudinale” [The selection process in the Faculty of Medicine: the usefulness of a psychological and aptitude assessment], *La Clinica Terapeutica*, Vol. 164, No. 1.
- Lo Scalzo, A. et al. (2009), “Italy: Health System Review”, *Health Systems in Transition*, European Observatory on Health Systems and Policies, Vol. 11, No. 6.
- Lumb, A.B. and A. Vail (2004), “Comparison of Academic, Application Form and Social Factors in Predicting Early Performance on the Medical Course”, *Medical Education*, Vol. 38, pp. 1002-1005.
- Lumsden, M.A. et al. (2005), “Assessment of Personal Qualities in Relation to Admission to Medical School”, *Medical Education*, Vol. 39, No. 3, pp. 258-265.
- Macy Foundation (2007), “Continuing Education in the Health Professions”, Proceedings of a conference sponsored by the Josiah Macy Jr. Foundation, 28 November to 1 December 2007, Bermuda, available at http://macyfoundation.org/docs/macy_pubs/pub_ContEd_inHealthProf.pdf accessed 20.08.2014.
- Marinopoulos, S.S. et al. (2007), *Effectiveness of Continuing Medical Education*, Evidence Report Technology Assessment No. 149, Agency for Healthcare Research and Quality, Rockville, United States.
- Mattke, S. (2004), “Monitoring and Improving the Technical Quality of Medical Care: A New Challenge for Policy Makers in OECD Countries”, *Towards High-Performing Health Systems: Policy Studies*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264015609-en>.
- McManus, I.C. et al. (2013), “The UKCAT-12 Study: Educational Attainment, Aptitude Test Performance, Demographic and Socio-economic Contextual Factors as Predictors of First Year Outcome in a Cross-sectional Collaborative Study of 12 UK Medical Schools”, *BMC Medicine*, Vol. 11, No. 244.
- Merkur, S. et al. (2008), “Physician Revalidation in Europe”, *Clinical Medicine*, Vol. 8, No. 4, pp. 371-376.

- Miller, S.H. (2008), “Continuing Medical Education, Professional Development, and Requirements for Medical Licensure”, *Journal of Continuing Education in the Health Professions*, Vol. 28, No. 2, pp. 95-98.
- Ministry of Health (2011), *Health System Personnel 2011* [Il Personale del Sistema Sanitario Italiano 2011], Direzione Generale del Sistema informativo e statistico sanitario e Direzione Generale delle Professioni sanitarie e delle Risorse Umane del SSN, available at www.salute.gov.it/imgs/C_17_pubblicazioni_2191_allegato.pdf, accessed 13 August 2014.
- Nursing and Midwifery Council (2013). “Background to Revalidation”, website of the Nursing and Midwifery Council, available at www.nmc-uk.org/Nurses-and-midwives/Revalidation/Background-to-revalidation/, accessed 20 August 2014.
- OECD (2013a), *Health at a Glance 2013: OECD Indicators*, OECD Publishing, Paris, http://dx.doi.org/10.1787/health_glance-2013-en.
- OECD (2013b), *OECD Reviews of Health Care Quality: Denmark 2013: Raising Standards*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264191136-en>.
- OECD (2004), *Towards High-Performing Health Systems: Policy Studies*, OECD Publishing, Paris, <http://dx.doi.org/10.1787/9789264015609-en>.
- Parboosingh, J. (2000), “Credentialing Physicians: Challenges for Continuing Medical Education”, *Journal of Continuing Education in the Health Professions*, Vol. 20, pp. 188-190.
- Park, H. et al. (2014), “Effects of Team-based Learning on Perceived Teamwork and Academic Performance in a Health Assessment Subject”, *Collegian*, <http://dx.doi.org/10.1016/j.colegn.2014.05.001>.
- Patterson, F., V. Ashworth and D. Good, (2012), *Situational Judgement Tests: A guide for applicants to the UK Foundation Programme*, Work Psychology Group and Medical Schools Council, available at www.foundationprogramme.nhs.uk/downloads.asp?file=SJT_monograph.pdf, accessed 1 August 2014.
- Schäfer, W. et al. (2010), “The Netherlands: Health System Review”, *Health Systems in Transition*, European Observatory on Health Systems and Policies, Vol. 12, No. 1.
- Spencer, J.A. and K. Jordan (1999), “Learner Centred Approaches in Medical Education”, *British Medical Journal*, Vol. 318, No. 7193, pp. 1280-1283.

- Thompson, B.M. et al. (2007), “Team-based Learning at Ten Medical Schools: Two Years Later”, *Medical Education*, Vol. 41, pp. 250-257.
- Villanueva, T. (2010), “Revalidation Wave Hits European Doctors”, *Canadian Medical Association Journal*, Vol. 182, No. 10.

Database references

OECD Health Statistics 2013, <http://dx.doi.org/10.1787/health-data-en>.



From:
OECD Reviews of Health Care Quality: Italy 2014
Raising Standards

Access the complete publication at:
<https://doi.org/10.1787/9789264225428-en>

Please cite this chapter as:

OECD (2015), "Medical education and training in Italy", in *OECD Reviews of Health Care Quality: Italy 2014: Raising Standards*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/9789264225428-7-en>

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.