

## STRENGTHS AND SHORTCOMINGS OF MEDICO-LEGAL EDUCATION IN ITALY: A NATIONAL MULTI-CENTRIC SURVEY

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### ABSTRACT

Recent legal developments regarding the reorganization of and accreditation processes for specialization schools in the healthcare sector has led to a profound didactic transformation that has brought inevitable repercussions on the activities and training of post-graduate doctors. The National Board of Young Medico-legal Experts in Italy (*Consulta dei Giovani Medici Legali Italiani*) proposed a multi-centric survey of the current state of the profession and on the perceived quality of schools of legal medicine in Italy. Data was collected by means of a dedicated questionnaire in relation to the various areas of the training process, skill-development processes, and the actual didactic activities carried out in legal medicine specialization schools in Italy. The results of the survey have prompted various observations and proposals for improving the quality of forensic and legal medicine programs in Italy.

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## 1. Introduction

### 1.1 The Regulatory Framework for Specialization Schools in the Healthcare Sector

Numerous regulatory changes to the training path for doctors have been enacted in the past fifteen years. The first and most important regulatory changes came into effect with the Ministerial Decree of August 1, 2005 [1] and the Ministerial Decree of March 29, 2006 [2]. The first, replacing the previous Ministerial Decree of July 3, 1996 [3], categorized each specialization school into three areas: medical, surgical, and services, and in so doing established specialist profiles, training objectives and related educational paths (Arts. 1 and 2). The second set out for the first time "general standards which all specialist facilities must meet and specific standards relating to the individual specialties" (Art. 1), in addition to "general qualification requirements for the training network and specific requirements for the individual specialties" (Art. 2).

In more recent times, Interministerial Decree No. 68 dated February 4, 2015 [4] brought about the reorganization of the structure of specialization schools, reducing the overall number of university training credits (CFU) to be obtained. It also restructured the distribution of such credits in accord with the various activities ("basic, core, associated, finals preparation and other activities"), and established, as it relates to this article, that:

- Schools of forensic and legal medicine belong to the public health category along with schools of hygiene and preventive medicine, occupational medicine, health statistics and biometrics.
- Specialists in forensic and legal medicine must satisfy the medico-legal needs of the National Health Service, the technical collaboration requirements of the administration of justice and of forensic operators.

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- Integrated training objectives (of a similar branch) must be achieved, including skills in medical statistics, hygiene, legal medicine, occupational medicine, epidemiology and labor law.
- Basic training objectives must be achieved: tools for legislation and jurisprudence, as well as for comparative public and private law.
- Training objectives regarding the type of school must be attained, including the methodological and technical elements for the examination of corpses and assessment of injuries for the performance of social insurance services.
- There are also some mandatory professional activities concerning forensic medicine, social medicine, civil medicine, etc.

Finally, the above-mentioned decree contains an additional noteworthy innovation regarding the concept of “*progressive responsibility assumed by the trainee specialist throughout the training course, which derives from the skills acquired and certified by their tutors*” and the related presence of “*teachers with tutorial functions who are responsible for certifying the skills acquired by the student on behalf of the School Council and for the gradual assumption of responsibility*” (Arts. 4 and 5). These activities, as specified by law, are to be recorded in a dedicated logbook.

More recently, in June 2017, an Interministerial Decree [5] was issued concerning the requirements regarding the training and care activities of specialization schools in the healthcare sector pursuant to Art. 3, clause 3, of Ministerial Decree No. 68/2015. In effect, this decree initiated a progressive process of compliance of specialization schools with the contents of the law (school accreditation process) and subsequent verification thereof thus introducing, on the basis of the national watchdog’s previous observations, a system of quantitative and qualitative assessments for specialization schools in Italy. The same decree also set down the minimum requirements and standards, divided into general and specific, for each type of school, as well as indicators for the necessary training and care activities for the individual facilities that constitute the training network. These training networks, consisting of accredited headquarters and affiliated facilities, were created with the objective of ensuring the completeness of specialist training courses. In order to be included in the training network, socio-healthcare facilities must undergo an accreditation process, that is, verification by the Ministry to confirm the existence of the socio-medical resources required in compliance with Art. 43 of Legislative Decree No. 368/1999 [6], as well as the ability to plan, organize and deliver the necessary activities for instructing doctors in specialist training. To qualify for such accreditation, schools must meet the minimum general and specific standards as regards the structural, technological, medical, administrative and organizational aspects. The national watchdog has the additional duty of monitoring training and care activities carried out in the individual schools by means of specific performance indicators.

On completing the 6-year study course, medical and surgical students attain a medical degree, and, after passing the mandatory internship, can apply for a medical license as registered physicians.

At that juncture, these students can register for the national specialization schools admissions test where all participants, having answered the same questions, see their performance rankings and choose the type of specialization and the city in which they wish to attend.

In Italy there are fewer places than graduates, so some doctors may not be able to attend a specialization school at all [7].

Without doubt, the current method ensures meritocracy and prevents nepotism, but it does not provide the opportunity for young doctors to concentrate on their specialization of choice and its related career prospects, since attendance prior to enrollment in the chosen facility is not counted toward student rankings.

Despite the copious regulations, the parameters used for evaluating each individual school were quantitative rather than qualitative, which creates an issue for all medical specialization schools as it affects the choices made by young doctors who, currently, have only these evaluations and online reviews to rely on, the reliability of which is often difficult to assess.

### 1.2 Training Young Medico-legal Specialists

It is a well-known fact that medico-legal specialists in Italy are often required to play an important yet delicate role in the public and private sector in relation to the protection of health, the insurance and social security sector, and the administration of justice. It is therefore essential that, in the course of their specialist training, they be equipped with the theoretical and practical expertise needed to enable them to operate properly in the various professional environments once they become qualified specialists [8].

The National Board of Young Medico-legal Experts in Italy, a scientific and cultural association which includes virtually all doctors in specialist training in schools of legal medicine and many newly qualified specialists in Italy, conducted a multi-centric survey on its members. The objective was to evaluate the quality of training offered by the various legal medicine specialization schools in Italy as it regards the skill of writing medico-legal expert reports in civil liability cases, including assessing damages in the field of healthcare liability and other fields. The survey focused on the evaluation of the autonomy acquired by specialists in handling insurance claims and civil law in general. The authors prepared a series of targeted questions to assess whether the skills acquired by trainee doctors are in line with the learning criteria and requirements set out by the current regulations.

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## 2. Material and Methods

On October 1, 2019, all members of the above-mentioned association were sent the questionnaire and allowed two weeks to complete and submit it anonymously. In 2019, the association had 357 members and represented over 75% of doctors in training from 32 university healthcare facilities in Italy. 45% (161) of the members from 27 different schools accepted the invitation to participate in the survey. Only complete questionnaires were included.

The questionnaire contained 22 questions divided into the following 5 sections, based on the topics covered concerning medico-legal expertise in the context of civil law:

- Knowledge of evidence, training and access to scientific sources: the objective was to assess the availability of scientific biomedical and jurisprudential sources at each university, paying particular attention to knowledge of Evidence Based Medicine and the distinct forms of scientific evidence taken into consideration when writing expert reports.
- Analysis, evaluation and drafting of medico-legal reports: the objective was to investigate to what extent trainee doctors are

mentored while writing medico-legal reports, from the preliminary analysis of the documentation to the study of scientific sources, and the drafting and subsequent correction of the report with their tutors. Trainee doctors were asked to evaluate to what extent and in what manner their tutors are present throughout the various report writing stages and to assess the import of their tutors' contribution not only to the production of reports, but primarily to the doctors' education.

- Comparison-discussion meetings: the objective was to verify whether regular and systematic comparison-discussions meetings for didactic purposes are conducted with all the medico-legal experts at the same school in order to discuss the most deserving cases and to potentially standardize the structure of medico-legal reports.
- Methodological approaches used: the objective was to evaluate the methodological and evaluative approaches used and to determine the degree of study/analysis dedicated to reports in the areas of civil and professional liability.
- Self-assessment: the aim was to assess the students' perception of their progressive implementation of expertise in the drafting of expert reports as a result of the various training sessions in place within the specialization school.

The questionnaires, completed and submitted anonymously, were subsequently processed in aggregate form.

#### Statistical analysis

The questionnaires contained closed questions only. No other data concerning the characteristics of the participants were collected as they are part of a previously selected group and representative of the population of medico-legal experts in Italy. All data was processed with strict anonymity, without collecting data on the participant of origin through Excel. The results have been expressed as a percentage, using the total number of respondents as the total (161).

### 3. Results

The answers provided by the study participants are summarized below (Table 1).

In the section dedicated to the "Knowledge of evidence, training and access to scientific sources", all respondents replied that they knew the meaning of "evidence-based medicine", due to having participated in scientific events on the subject which, in approximately one-third of cases, were organized by their school.

Approximately two-thirds of the trainee doctors interviewed reported that they have suitable methods of consulting biomedical and jurisprudential scientific sources at their disposal, mostly by means of information search engines (Pubmed is used in 81% of cases). 75% stated they knew the different levels of evidence, so much so that, for their own arguments, they rely on meta-analyses and reviews.

From the answers provided in the "analysis, evaluation and drafting of medico-legal reports" section, 76% of doctors in specialist training are mentored by a tutor in the various stages of writing expert reports and 66% participate in comparison-discussion meetings with their respective teachers, during which 62% reported that the bibliographical references were revised/modified.

In 14% of cases, the trainee doctor just receives the corrected report by e-mail. More than half of the trainee doctors reported that they had not received any feedback in relation to their written work (62%) and/or had the feeling that their work was not marked by their tutor at all (57%).

With regard to the section dedicated to "comparison-discussion meetings", the questionnaires show that in 90% of cases there is no systematic organization of such meetings to compare individual cases or to harmonize the reports. Furthermore, approximately half of the interviewees reported that, even after collective discussion/re-evaluation, no significant changes were made to the reports (52%). The methodological approach used in the various cases in the field of civil and professional liability appears to be inconsistent and, in like manner, scientific analyses vary from case to case.

With regard to their personal perception of their ability to write an expert report, most participants believe that their ability has progressively improved over the period of the training course (81%).

SECTIONS	QUESTIONS	Yes	No
<i>Knowledge of evidence, training and access to scientific sources</i>	Do you know what is meant by Evidence Based Medicine (EBM) as applied to forensic and legal medicine?	100%	0%
	Have you ever participated in conferences / training events related to EBM in reference to forensic and legal medicine?	67%	33%
	Are there any events / lessons / training meetings related to EBM applied to forensic and legal medicine in your office?	32%	67%
	In your office, do you have free access to all the bibliographic sources necessary to handle the cases that are entrusted to you?	68%	32%
	Do you know the different levels of source evidence?	69%	31%
	Where do you usually search for literature?	81% Pubmed 19% Scopus, UpToDate or books	
<i>Analysis, evaluation and drafting of medico-legal reports</i>	What kind of support source do you mainly look for (case report, meta-analysis, review ...)?	75% meta-analysis and/or reviews	
	In the analysis, evaluation and drafting of a case, are you supported by a tutor in charge of the case?	76%	24%
	Does correction take place in a face-to-face meeting with the teacher?	67%	33%
	Is correction / revision of the work done only by sending the written product electronically?	15%	85%
	Has there ever been a time when you received no feedback on a written paper?	62%	38%
	During correction, is a review / analysis also carried out on the bibliographic sources included in the document?	62%	38%
	Have you ever had the feeling that your work was not, in fact, marked?	57%	43%
<i>Comparison-discussion meetings</i>	How long does it take, on average, between delivery and correction?	38% days; 38% weeks; 22% months e 2% more than six months	
	Are there scheduled / systematic discussion meetings to harmonize the documents leaving your office?	10%	90%
<i>Methodological approaches used</i>	Did the discussion involve the modification of the previously produced product?	52%	48%
	Is the methodological approach used in Civil Liability also utilized in other cases (Automotive or Medical Liability)?	43%	57%
<i>Self-evaluation</i>	Do you think it is right to use the same methodological approach and the same level of scientific analysis in all cases that fall within the scope of Civil Liability?	43%	57%
	Do you think that your ability to draw up a technical document has progressively improved over the training course?	81%	19%

**Table 1. Questions and answers as percentages provided by the study participants.**

### 4. Discussion

The recent regulations on the reorganization and accreditation of specialization schools in medicine focus on the common objective of providing courses in both the theoretical and practical aspects. This is to be done through the identification of minimum objectives to be achieved and participation in training activities in facilities included in the training network.

The example of trainee, or newly qualified young medico-legal experts, highlights the need not just for theoretical knowledge but in-depth medical-scientific, practical and legal expertise, as was meticulously set out in Ministerial Decree No. 68 of 2015 in the mandatory training objectives.

To that end, the above survey analyzed multi-centric data that captures the current national state of specialization schools in legal medicine, providing useful observations to all professionals who work in university education environments. The results highlight that still too often trainee doctors, although assigned a tutor, are left to their own devices to study for and draft expert reports. Simply having free access to bibliographical, biomedical and legal sources for analyzing cases cannot replace the much-needed teacher-student interaction. While this might serve to increase autonomy and self-management, it may also hinder or even prevent trainee specialists from acquiring the professional skills needed to handle the various cases they encounter in the most appropriate way. In other words, in the absence of specific direction, there is a risk that trainee specialists may not develop the critical approach needed and may not be able to assess cases in a methodologically proper manner.

In addition, the results reveal deficiencies in the revision and correction process, which is characterized by the absence of necessary feedback for professional growth. In effect, the results reveal inflexible and unproductive tutor-student relationships as well as the failure to organize periodic meetings to discuss cases (90%).

Furthermore, the results reveal that the planning of comparison-discussion meetings and conference/training events is sporadic and non-compliant with the provisions set out in the aforementioned regulations. In general, the uniformity of the data suggests that these training deficiencies are ubiquitous and not the result of isolated situations. The possible reasons for this, though varied and often difficult to identify, may be attributed to aspects that are common to schools e.g. the teacher or student body as a whole or the school's organizational system.

In the first scenario, it could be assumed that teachers are not fully participative in the training process due to the constant overload of duties (perhaps due to a shortage not only of medical specialists [9-12] but also of teaching staff) which forces them to limit the time available for teaching. These deficiencies could also be linked to other distractions that lead teachers to dedicate more of their attention to other activities or to a lack of inclination to teach or mentor.

Conversely, it is possible that in some circumstances students passively accept their tutors lack of attention, probably due to a lack of personal initiative or to a tendency to resort to an established routine of self-learning. Lastly, it should be noted that factors outside of the teacher-student training relationship may also be determinants, e.g. the scarcity of facilities available in the training network and the reduction of the activities carried out in single locations, often due to the depletion of academic staff that has occurred in recent years. It could also be associated with the depletion of funds available for research, which means decisions must be made as to how and where to allocate the available resources, thus favoring the areas of the discipline that command the most appeal in regards to international research for purely bibliometric purposes (as required by the Ministry for maintaining quality standards in the university environment and for the possibility of personal growth). As a result, the classic themes of the discipline, of exclusive national interest, are sacrificed as they are closely linked to Italian Law [13-16].

Returning to the results of the study, it is necessary to emphasize that, overall, young medico-legal experts have the perception of gradual improvement in writing reports.

This statistic, which stands out as one of the most positive, seems to contradict the other results obtained. It does, however, indirectly highlight the existence of other aspects that may affect, to a greater or lesser extent, the trainees' progressive acquisition of new skills and their ability to perfect the skill of writing expert reports. In particular, we refer to the acquisition of practical expertise by means of external internships or conferences, as well as to the well-known phenomenon whereby the transmission of knowledge occurs not only vertically, but often horizontally, i.e. from the more experienced trainees to the newer ones. These results confirm the well-known difficulty schools face in fully complying with the regulations. In some cases, this has led to the failure to achieve the minimum standards or to qualify for accreditation and, consequently, closure of the school [17]. The fundamental question we are behooved to ask is to what extent do autonomy and discretionary freedom favor the trainee's personal growth and at what point do they become the unproductive fruit of fragmented and ambiguous teaching methods? The answers that emerge from this particular study, especially regarding the lack of initial direction, correction, post-draft feedback, and discussion meetings, suggest that the latter hypothesis is, at least in some situations, the most likely.

If training is not provided in a uniform manner across all Italian universities, how will tomorrow's professionals be able to meet healthcare, insurance and judicial needs to the proper degree? How will they be equipped to produce quality expert reports and conduct productive interactions with each other in all situations on the national level and to perpetuate the scientific activities of the discipline at the international level [18-19]?

It is also evident that the concept of quality in medico-legal services is equivocal and that while some proposals for sharing quality indicators have been made in regard to the area of professional healthcare liability [20], nothing has been proposed for the rest of the civil liability sector. The reasons for this, as mentioned above, lie in the fact that universities, the natural centers for the improvement of the discipline, have been made selectively blind to the problem [21], both due to necessity and to MIUR directives, in that there is no strong national bibliometric reference framework regarding matters closely connected with the legal sector (and consequently of interest only to those who interact with the Italian legal system).

One of the strengths of this study is that it includes a comprehensive overview of the situation of universities in Italy. However, it is appropriate to explain some of the limits imposed by questionnaire anonymity. The first concerns the impossibility of knowing what stage the respondent has reached in his or her training; apart from having limited subject knowledge, first-year specialists may also have limited experience of the school's educational and didactic skills, both because of the paltry number of cases handled and because of not having interacted with all the tutors present in the school. Specialists in their last year will certainly have a more complete understanding of the areas covered.

The second concerns the divergence in their years of specialist experience. The current members of the National Board of Young Medico-legal Experts in Italy, as aforementioned, have been specialists in legal medicine for no more than 5 years or are still in training. This implies that some have completed a 5-year path to obtain their qualification, while others (whether by choice or not) a four-year path, depending on changing government decisions. Logically, a 20% reduction in the training period will have a decisive impact on the expertise a student will have acquired by the end of the course, if nothing else, in terms of actual case study experience.

## 5. Conclusions

Legal medicine represents a national heritage in the healthcare and social sectors, and in the administration of justice precisely because of the contribution it is able to provide in these different contexts. For these reasons, it is imperative that administrators who make economic and managerial decisions allocate this discipline the due time and recognition in terms of personnel and resources. Similarly, the importance of didactic training must be restored to an academic level, especially for aspects of legal medicine that are too often improperly left to students' independent study or experiential acquisition.

Sometimes university research focuses on sub-specializations and activities that have more of an international appeal or tendency to be published, the latter serving as the main index by which scientific work is rated. It is fundamental that legal medicine rediscover the more classic topics in addition to the forensic ones. These form part of the global knowledge of forensic and legal medicine, which would otherwise risk becoming static, founded on ancient cornerstones that are no longer studied and analyzed, as is the case for other areas, to the detriment of medico-legal professionalism. Going beyond the topic of the questionnaire this article has analyzed, this is fundamental not only as it regards the transmission of expertise for drafting expert reports in the civil sector, but also for other classic fundamental activities of the discipline. This includes active participation in hearings, clinical forensic and legal medicine activities such as consultancy services requested by hospital departments, activities to assist healthcare management, proactive clinical risk prevention activities [22-23] and all the activities set out in the ministerial decrees.

With this in mind, the arrival of newly qualified young doctors in academia with specific skills relating to the activities of the National Health Service, the assessment of biological damages, clinical risk management, civil invalidity and the protection of those in need would give new impetus to all the different research branches, qualitatively and quantitatively enhancing training capacity. Only through profound changes in the didactic organization will we see the full growth of the discipline, not just meeting but surpassing the minimum objectives imposed by the law. In addition, all trained specialists will be in a position to meet the daily challenges posed by their practice from a methodological point of view, thus enabling a complete transformation of our discipline [24-26].

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