

# A national survey of Italian emergency medicine residents: it's time to stay and play

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## Abstract

At the end of October 2023, CoSMEU (Italian Society of Emergency Medicine Residents) conducted an electronic survey among the Italian Emergency Medicine (EM) residents. Technical skills, lecture programs, research, and types of employment have been investigated. 421 (21.5%) residents from all the 34 Italian EM schools responded. Great heterogeneity of training and the lack of opportunities in research about EM topics are reported. The

importance of research in EM was recognized by half of those surveyed, but only one-third are actively engaged in the EM scientific community. While one-third of EM residents have accepted a job contract, nearly all of them are against contracts with Calabria Decree from the 2nd year of residency. The ideal workplace is a combination of in-hospital and pre-hospital settings, and almost all of the EM residents believe that the most frightening part of being an EM doctor is the hard-working condition.

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## Introduction

The five-year Italian Emergency Medicine (EM) program was established in 2009 to enable residents to master the diagnostic, procedural, and multidisciplinary liaison skills required to become an EM physician. CoSMEU (Italian Society of Emergency Medicine Residents) is the national association of Italian EM residents, that was founded in 2017 to promote standardized training, protect the interests of EM physicians in training, develop opportunities, and formalize specific academic pathways.<sup>1</sup> In our last survey, published in 2022, EM residents complained about a lack of training and possibilities for practical application to finish their training as scheduled. This was due to the lack of simulations, certificates, and standardized training programs across EM schools.<sup>2</sup> As well as the goals of technical skills and academic lessons, this new survey focuses on the nature of EM residents' works (e.g., Calabria Decree or Schillaci Decree) and the topic of EM research during the residency program.<sup>3,4</sup> In addition to the basic skills learned by the EM residents, this survey looked at the more personal and emotional components of the residents, exploring fears and doubts about their residency journey and their future.

## Materials and Methods

An anonymous electronic survey was provided to all Italian EM residents during the academic year 2021-2022, mainly via social media (Instagram, Facebook) and email. The survey was based on multiple-choice and open-ended questions, including demographics, year of specialty, personal and professional satisfaction, and number and type of rotations. We collected data on the educational framework, including teaching and certifications provided, with a focus on the simulations' opportunities and a new section about research in EM. We surveyed senior EM residents to find out how confident they felt about performing emergency procedures and managing surgical and medical issues. We also looked at the type of contract that residents signed during their residency program (e.g. Calabria and Schillaci Decrees) and their opinion of them. Finally, to understand whether Italian EM residents would

prefer to work in an Emergency Department (ED) and/or in the pre-hospital setting, we investigated aspects related to their future professional careers.

### Statistical analysis

The median and interquartile range were used for continuous variables. Categorical variables are expressed as counts and proportions.

## Results

### EM residents in Italy: an overview

Out of 1954 EM residents, 421 (21.5%) from all the 34 EM schools responded to the survey. Trainees in the various years were

distributed as follows: 42 (10%) first year, 83 (19.7%) second year, 174 (40%) third year, 74 (17.6%) fourth year, and 48 (11.4%) fifth year (Table 1). Three hundred (71%) residents stated that EM was their first choice, while 89 (21%) acknowledged that EM had not been their first choice but had changed their minds and were now fervently and convincingly in favor of EM. Eighty-seven percent (365) of the interviewed residents declared they were strictly convinced about their decision to pursue this specialization.

### Rotations

All the interviewed residents attended a period of residency in the internal medicine ward, EM department, and cardiology ward. Anesthesiology is not included in the training plan in 101 (25%) of cases, pre-hospital care in 47 (11%), emergency care ward in 73 (17%) and ICU in 13 (3%) (Table 1).

**Table 1.** Emergency medicine (EM) residency programs in Italy. National data, curriculum, and teaching.

Survey participants N=421	
<b>Year of residency program</b>	
First-year, n (%)	42 (10)
Second year, n (%)	83 (20)
Third year, n (%)	174 (41)
Fourth year, n (%)	74 (17)
Fifth year, n (%)	48 (11)
Number of school programs	34
EM program as first choice, n (%)	300 (71)
Still firmly convinced of the choice of EM, n (%)	365 (87)
<b>Teaching</b>	
Frontal lessons $\geq$ once a month, n (%)	325 (78)
Topics inherent to emergency medicine, n (%)	262 (62)
Journal club, n (%)	206 (49)
Certifications granted, n (%)	153 (36)
<b>Research in EM</b>	
Existence of a research team, n (%)	185 (44)
Active participation in the EM scientific community, n (%)	139 (33)
Believe in the importance of EM research, n (%)	229 (54)
<b>Active research topics</b>	
Sepsis, n (%)	147 (35)
Cardiovascular emergencies, n (%)	113 (27)
Trauma, n (%)	93 (22)
Respiratory emergencies, n (%)	99 (23)
Covid-19, n (%)	66 (16)
<b>Simulations</b>	
No possibility of simulations, n (%)	96 (23)
Simulation center regularly used, n (%)	124 (29)
Simulation center but not regularly used, n (%)	154 (36)
Simulation despite the absence of a dedicated center, n (%)	47 (11)
<b>Curriculum</b>	
<b>Not included in the training plan</b>	
Anesthesiology, n (%)	101 (24)
Pre-hospital care, n (%)	47 (11)
Emergency care ward, n (%)	73 (17)
ICU, n (%)	13 (3)

## Teaching and simulations

A total of 325 (77%) residents reported that face-to-face teaching was at least once a month and that 62% of these lessons covered EM. A total of 206 residents (49%) reported attending journal clubs. Certifications, such as ACLS, ATLS, and PALS, were only awarded to 153 (36%) of the residents (Table 1). Simulation centers were used regularly in 124 (29%) cases; 154 (36%) residents reported that their university had a simulation center, but that it was not used regularly. Despite the lack of a dedicated simulation center, 47 residents (11%) reported that they were nevertheless able to carry out simulations by organizing themselves with the few resources available. Ninety-six residents (23%) did not have any option to perform simulations.

According to 325 (77%) residents, one of the most important reasons that discourage young doctors from choosing EM is the great heterogeneity of training at different universities.

## Research

One hundred and eighty-five (44%) of the junior doctors had a research team in their specialty school. Sepsis is the most important research topic for 147 (35%) residents, followed by cardiovascular emergencies for 113 (27%) trainees, respiratory emergencies for 99 (23%), trauma for 93 (22%), and Covid-19 for 66 (16%) (Table 1). Fifty-four percent (229) of respondents believed in the importance of EM research, but only 139 (33%) were actively involved in the EM scientific community.

## Medical skills

Looking at fourth- and fifth-year EM residents (122 total), 84 (68%) reported being confident with electrical cardioversion, 69

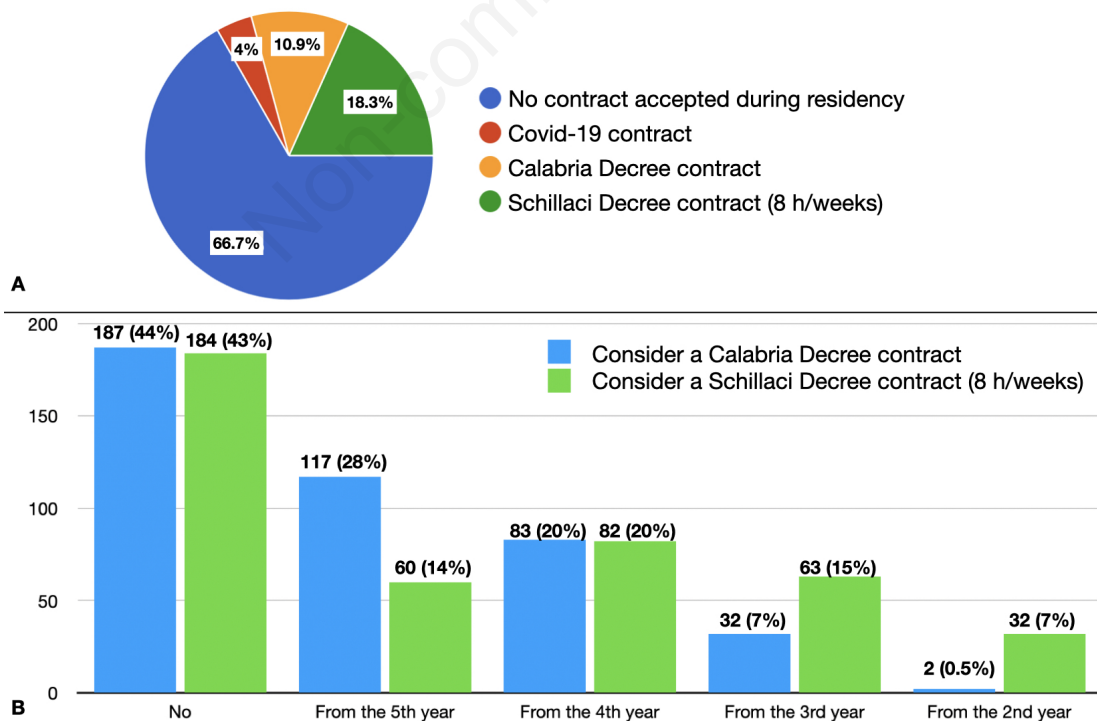
(56%) with periprocedural sedation, and 65 (53%) with central line placement. Only 36 (29%) felt confident in endotracheal intubation (ETI) and 28 (23%) in chest tube placement. The lowest levels of autonomy are in the areas of cast application and birth assistance. 115 (94%) and 107 (88%) residents do not consider themselves to be able to carry out these tasks, respectively (Table 2). Only 169 (40%) of the interviewed are aware of the existence of a European core curriculum for emergency doctors (5) and 103 (24%) are aware of a European examination certifying emergency medicine skills.

## Work opportunities for EM residents: present and future

A total of 281 (66%) EM residents did not accept any employment contract, 17 (4%) worked with a Covid-19 contract, 46 (11%) with a Calabria Decree contract, and 77 (18%) with a temporary contract (8 hours/week) under the Schillaci Decree. For 178 (42%) EM residents these contracts are just means of making up for staff shortages and they do not offer any training advantage, while 118 (28%) believe they are a good idea but could be handled differently. However, 90 people (21%) believe that they offer a chance for the trainees' employment and growth.

Among the residents interviewed 187 (44%) and 184 (43%) were against accepting a job under the Calabria and Schillaci decrees, respectively. Most EM residents who are contemplating employment under the Calabria Decree are nearing the end of their training (Figure 1).

The most desirable place of work for 265 (63%) is a combination of ED and pre-hospital setting, for 86 (20%) of them ED alone, for 51 (12%) ED and ICU, for 9 (2%) pre-hospital setting



**Figure 1.** Distribution of EM residents' employment contracts during residency and their opinions about Calabria and Schillaci Decrees.

alone, and emergency physician abroad for 10 (2%) (Table 2).

Eighty-five (20%) of the residents stated that they would like to start a new residency program after their EM specialty. Their preferred specialties are anaesthesiology for 35 residents (41%), cardiology for 18 residents (21%), general practice for 11 residents (13%), and internal medicine for 2 residents (2%).

A total of 363 (86%) residents believe that the most frightening part of being an EM doctor is the hard-working conditions after residency and that represents the most important reason that discourages young doctors from choosing EM.

## Discussion

The present report is based on the data generated by the second survey conducted on the Italian emergency medicine trainee by CoSMEU. Consistently with the previous survey,<sup>2</sup> most of the responding residents were attending the third year of specialty, reflecting the increasing number of residency positions available in the academic year 2019-2020 (Table 1). A lack of adequate training in several fields specific to emergency medicine and a lack of uniformity in training across Italy were identified as key issues.

Around one-quarter of respondents missed the chance to train on sedation protocols and intubation maneuvers in the operating theaters, which are considered the most adequate environment to

learn these skills that are part of ECCEM (European Core Curriculum for Emergency Medicine).<sup>5</sup> Indeed, access to work in the prehospital setting, a central role for EM doctors, is precluded without solid skills in intubation. This is in contrast with the views of 63% of residents (54% in the previous survey), for whom the most desirable employment is a combination of emergency room and pre-hospital setting.<sup>2</sup> The lack of adequate training in emergency care, including invasive procedures and intubation, is indeed reflected in the low percentage of senior residents who consider themselves autonomous in these areas (Table 2). On a positive note, participation in lectures at least once a week increased from 48% to 78% as compared to the previous survey, and in most cases, these lectures concerned specific EM topics. Interestingly, 11% of trainees found a way to conduct simulations despite the lack of dedicated facilities, although simulation centers are used regularly in less than half of the cases. It is encouraging that more than half of trainees consider research in EM to be important, but there is still a long way to go as there are still too few EM research groups at different universities and too few young doctors actively involved in the EM scientific community.<sup>6</sup> Considering the new regulations on the employment of residents in hospitals, many EM residents were contracted in their hospitals even if one out of three think that Calabria and Schillaci Decrees should be structured differently. Almost half of the residents do not commit to accepting job contracts during the residency and 99.5% judge negatively the possibility of signing a contract from the 2nd year of the residency

**Table 2.** Emergency medicine residents' skills, current employment, and future perspectives.

	N=122
<b>Complete autonomy in the invasive procedure (only for the residents of the last 2 years of the program)</b>	
Periprocedural sedations, n (%)	69 (56)
Chest drainage, n (%)	28 (23)
Central lines, n (%)	65 (53)
Endotracheal intubation (ETI), n (%)	36 (29)
Electric cardioversion, n (%)	84 (68)
Childbirth, n (%)	8 (6)
<b>Current employment</b>	
Employment contract with Calabria Decree, n (%)	46 (11)
Employment contract with Covid-19 funds, n (%)	17 (4)
Employment contract with Schillaci Decree (8h/week)	77 (18)
No willingness to accept contracts during the residency, n (%)	187 (44)
Residents against the contract with Calabria Decree from 2nd year, n (%)	419 (99.5)
<b>Desired workplace</b>	
EM department + pre-hospital care, n (%)	265 (63)
Emergency room, n (%)	86 (20)
EM ward/critical care, n (%)	51 (12)
Foreign, n (%)	10 (2.4)
Pre-hospital care, n (%)	9 (2)
<b>Willing to start a new residency program after EM</b>	
N = 85	
Anesthesiology and ICU, n (%)	35 (41)
Cardiology, n (%)	18 (21)
General practice, n (%)	11 (13)
Internal medicine, n (%)	2 (2)
Other, n (%)	19 (23)

program according to Calabria Decree (Figure 1). This indicates once more that the great majority of residents prioritize receiving appropriate and thorough training.<sup>6</sup> Again, the fact that trainees are often used to fill the staff shortages typical of ED comes to the forefront, especially in the open-ended questions of the survey. Often the residents themselves, even though the new regulations allow them to work from the second year of their specialization, do not feel confident and ready for such a demanding role because they are not yet adequately trained and because they could not complete their training program. This is another reason why less than 1% of trainees would accept a Calabria Decree contract already in their second year and that the majority of residents who take a job offer are in their final year of the program. The number and heterogeneous nature (from second to fifth year) of those who have agreed to work with the various decrees further increase disparities and differences in training courses between institutions.

About 20% of trainees are considering starting a new training program after a first specialty in EM, a percentage that has remained relatively constant from the prior survey. The primary concerns regarding the decision to become an emergency physician were the working environment after the residency program and the perception that patients and other medical professionals still do not completely recognize the role of the emergency physician.<sup>6,7</sup> However, the problems reported are not unique to EM, as they are likely to be similar to those described in other specialties. Lack of adequate training is a particular concern also for trainees in surgical specialties,<sup>8</sup> where attrition rates are relatively high, with women more likely to drop out of training than men. Trainees in surgical programs often change specialties after the first post-graduate year due to lifestyle issues.<sup>9</sup> However, we have no real comparison with other specialties in Italy as these data are mainly from other countries.

Considering the aforementioned considerations, as well as the nascent state of EM training programs in Italy, it is imperative to conduct periodic surveys to monitor the data. This is a task that CoSMEU has been engaged in for an extended period and plans to continue.<sup>1,2</sup>

## Limitations

The main limitation of our study is the sample size, which only accounts for 21.5% of the Italian EM residents. Nevertheless, because every official representative of all EM schools was included, we consider this as evocative data. Another limitation is that the subgroup of residents who agreed to be interviewed is likely to be more critical of their training. The sample of residents satisfied with their training may be under-represented.

## Conclusions

EM specialty remains one of the most controversial issues in Italy. The great disparity in training and research, as well as the uncertain future of the working conditions, are reasons for concern and possible renunciation for young EM doctors. Nonetheless, there remains the desire and optimism to make new achievements and to find a position in the world of emergency medicine. Consequently, it is time for the young EM doctors to stay and play.

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