

Research and education in thoracic surgery: the European trainees' perspective

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Abstract: Thoracic surgery training within Europe is diverse and a consensus may help to harmonise the training. Currently, training for thoracic surgery compromises thoracic, cardiothoracic and aspects of general surgical training. The recognition of specialist degrees should be universal and equal. Between different nations significant differences in training exist, especially in general surgery rotations and in the role of oesophageal surgery. The European board examination for thoracic surgery is one of the key ways to achieve harmonisation within the European Union (EU) and internationally. Further support and encouragement may be beneficial to promote diverse and engaging fellowships and clinical exchange programmes between nations. International fellowships may even benefit young residents, in both clinical and academic settings. Many studies currently would benefit from multi-centre and multi-national design, enhancing the results and giving better understanding of clinical scenarios. Educational content provided by independent organisations should be more recognised as an integral part in both resident training and continuing development throughout surgeons' careers. During annual society meetings, trainees should have some sessions that are aimed at enhancing their training and establishing networks of international peers.

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Many faces of thoracic surgical training

General thoracic surgery is a speciality with a strong heritage, but has been associated with training in other specialities like cardiac, vascular and general surgery. Currently, especially in academic and tertiary surgical centres it is commonly regarded as an independent speciality and some nations in the European Union (EU) have established it as an independent speciality. Despite the recent addition of European board certification, national legislation may still have significant impact on the recognition and employment of young thoracic surgeons within Europe and internationally. Also, there is no centralised European institutional registry to evaluate training programs or fellowships. Independent evaluations are needed to establish a coherent network for centres

of excellence in thoracic surgery training. Currently, the European Society of Thoracic Surgeons (ESTS) has a general quality certification programme but it doesn't directly take into account each training program.

Lack of uniform guidelines to train cardiothoracic or thoracic surgeons within Europe is a significant disadvantage for the trainee. Recent suggestions of forming a more uniform cardiothoracic training have been published (1) which would take into account trainees' future subspecialisation within training, while retaining cardiothoracic surgery as a uniform degree. One of the greatest debates is the amount of basic surgical skills required before entering a cardiothoracic or thoracic training program, and there is great variability between programs in different European countries. Basic surgical skills training serves mainly as a maturation process for

future training and also to accommodate the needs of nations with sparse population. Training may also involve other specialities than surgery, like service as a general practitioner in Finland or as a foundation doctor in United Kingdom (UK).

One of the main issues is the recognition of general thoracic surgeons as a specialist in countries where only cardiothoracic training is provided, like Sweden and Finland. As a general rule of thumb cardiothoracic surgical training may be more widely acknowledged internationally than general thoracic training.

Board certification, why and when?

Union Européenne des MédecinsSpécialistes (UEMS) was established in 1958 and currently has 37 countries participating and over 1 million specialists in 50 specialities. In 1984 the first European diploma for a medical speciality was created and currently 30 disciplines have their own certification process. The Council for European Specialists Medical Assessment (CESMA) is the advising body for UEMS to promote board examination in different medical specialities.

Currently for thoracic and cardiothoracic surgeons there are certification processes: “thoracic surgery” and “cardiothoracic surgery”. The governing boards are European Board of Thoracic Surgery (EBTS) and European Board of Cardiothoracic Surgery (EBCTS). EBTS examination consists of following processes: pre-examination interview, discussion of a paper, clinical case discussion and oral examination. EBCTS examination consists of an oral examination for the following topics: Cardiac Surgery Clinical Cases; Cardiac Surgery Topics; and Principles of Thoracic Surgery and Applied Physiology & Critical Care. The fee for the process is 400 euros for EBTS and 500 euros for EBCTS. Currently examinations take place once a year, for EBTS June/July 2015 and EBCTS October 2015.

The objectives for this process are to promote free movement and harmonisation of the specialist training process. Following residency, objective measurement of competency is crucial and should be regarded as good way to benchmark knowledge. However, between different medical speciality board examinations, there is significant variability in both structure and content. The European Board of Vascular Surgery also requires skill tests in both open and endovascular procedures. However, national legislature may still mandate other examinations for applicants outside of the EU even if applicant has passed

UEMS board examination.

In order to participate in the board examination, the candidate must be established as a qualified specialist by a national medical council. Besides national documentation, you may also need a training log book and letters of recommendations from mentors. Also, sufficient oral English skill is mandatory.

Postgraduate training

Since the days of William Halsted in the 1890's, little has been changed in the structure of the surgical training to become a specialist registrar. However, one to two year fellowship positions are often available after graduation especially in United States. This practice is advantageous for variety of reasons. Firstly, you are able to visit other institutions where you may get insights to other practises. Secondly, it can serve again as a maturation process. Thirdly, institutions offering fellowships usually have special skills that maybe facilitated to the specialist home unit.

One of the most significant hurdles that we have in the EU is the lack of a uniform channel whereby institutions can offer fellowship positions. Also, the conditions for fellowship positions are diverse. These obstacles may include language, funding and accommodation.

Currently, there is a map of EU countries on the ESTS web page where you may search for regent representatives. Within the ESTS web page there is also an exchange program for 2 to 4 weeks in different institutions.

While these programs will help young doctors to aid their postgraduate training, these serve only as a surrogate to comprehensive fellowship programs, which would be available to physicians in the EU. Through these comprehensive fellowship programs, a foundation for centres of excellence would emerge and would also attract international attention.

Challenges in research

There is no doubt in many surgeons' minds that conducting high quality thoracic surgical research is important. However, surgery is regarded as a complex intervention in clinical trials (2) and presents a number of challenges to both experienced surgeons and trainees.

Training

It is recognized that formal training can be of great benefit

for those who intend to carry out full time surgical research. However, maintaining a balance between surgical clinical training and formal research training can be a challenge. A recent ESTS survey of trainees demonstrated that they rated their clinical training highly. Whilst it still received a median rating of 6/10 (with 1 being poor and 10 being excellent) “research training” featured slightly less highly than other aspects of thoracic training (3). Further such surveys may determine ways in which this aspect of training could rate more highly, however it remains imperative that the excellence of clinical training shouldn't be compromised.

Resources

Equally for those who aren't employed or funded to carry out formal research, there can be a challenge to gain exposure to clinical trials and academic activities. Whilst not every trainee must carry out research, an understanding of the methodology required to conduct high quality studies can be useful in maintaining an evidence-based practice. Discussion and critique of academic papers can be useful in developing these skills. Interestingly, in the ESTS trainee survey the median rating of how much discussion of the latest papers featured in respondents' training was 3 (1= not featured, 5= significantly) (3).

Participation and recruitment

For those who are in full time research the challenge of recruitment can be very real. With rare conditions it can pose even greater challenges. International research collaboration can assist with these issues and has been used in multiple specialties for many years. ESTS have taken a lead on collaboration with members contributing to an international database. This also allows surgeons who are not full-time academics to contribute to meaningful research. Equally, trainees are increasingly seeking collaborative research opportunities. Of those who responded to the ESTS trainee survey, there were 21 countries represented. A total of 23% described a collaborative specifically for thoracic trainees in their country (3). In the same way the ESTS database allows surgeons to contribute to meaningful research, such collaborative work allow trainees who are not formally employed to conduct research to participate in large-scale, well-designed research, but with a shared-workload. Interestingly, 94% of respondents to the trainee survey also stated that they would be keen to participate in such a

collaborative at an international level (3).

Benefits of co-operation

Surgical trainees across the globe have taken a lead by developing collaborative links (4). With better international communication, collaboration at a national and international level to improve education and training has become easier. In Europe this has been seen in both education and research in a number of different ways.

Sharing experience

2014 saw the first Trainees Symposium at the European Society of Thoracic Surgeons' annual meeting in Copenhagen. The ethos of this annual session is to facilitate debate and discussion on important issues facing thoracic surgical trainees internationally. The session has an exciting mix of both clinical and research topics facilitated by consultants and trainees. Platforms such as these provide dedicated time for trainees to share their experience. The exchange of ideas and the facilitation of debate help trainees to gain a valuable broad perspective on the specialty and begin to make links across the continent that may be of benefit to their education or future practice.

International consensus

The past year has seen the introduction of another new venture: the ESTS international trainee survey. This is an example of trainees expressing their viewpoint as a group. It ultimately showed that trainees across the continent were benefiting from training that they were satisfied with, but has been useful in determining areas in which ESTS may be able to provide further experience and education (3). The advantage of international consensus is that it acts towards validating training across the continent whilst also giving an insight into how to best channel resources and funding to benefit as many trainees as possible.

Education

ESTS international courses continue to be of benefit to trainees. The strength of working together and pooling resources is demonstrated by the wide range of courses and educational activities available. ESTS courses have focused on number of different areas aimed at developing trainees' knowledge, skills and academic ability. With courses such as

the medical writing course ESTS are encouraging trainees to strive for excellence in research. Other activities such as the itinerant expert courses allow trainees to develop skills from experienced thoracic surgeons in centre of excellence.

Future perspectives

From current trainees' perspectives thoracic surgery faces multiple opportunities over the coming years.

With the growth of technology comes the ease of international collaboration and educational experiences. Streaming via the internet of educational videos to demonstrate interesting surgical cases or specialized techniques is just one way that surgical education is becoming more international. There remains further scope for the use of internet technology to develop more training resources.

Further opportunities lie in the collaboration on writing papers with a group of international trainees as well as the ability to conduct international research. Indeed, this paper is one humble example of the benefit of collaboration and trainees working together internationally.

With the increased opportunity for surgeons to move within Europe there also lies future potential for more harmonization of training and European-wide surgical exams are steps towards that. Indeed in the ESTS trainee

survey 62% of trainees expressed an interest in working in a different country to that in which they were currently training.

Overall, there remain bright opportunities for thoracic trainees and scope for further growth of international teamwork and pooling of resources.

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