



Lara Prisco
Katia Donadello
Stephen J. Shepherd

Intensive care medicine curricula in Europe: *docendo discimus*

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All authors contributed equally to the manuscript.

L. Prisco
University of Cambridge and Cambridge University Hospitals NHS
Trust, Cambridge, UK

K. Donadello
Dipartimento ad attività integrata di emergenza e terapie intensive,
U.O.C. Anestesia e Rianimazione Borgo Roma,, Azienda
Ospedaliera Universitaria Integrata (AOUI) di Verona, Verona,
Italy

S. J. Shepherd
London Academy of Anaesthesia and Intensive Care, London, UK

L. Prisco · K. Donadello · S. J. Shepherd
NEXT Committee, European Society of Intensive Care Medicine,
London, UK

S. J. Shepherd (✉)
Barts and the London School of Anaesthesia, Royal London
Hospital, Whitechapel Road, London E1 1BB, UK
e-mail: sj.shepherd@nhs.net
Tel.: 00447701056417

“Competence means keeping your head in a crisis, sticking with a task even when it seems hopeless, and improvising good solutions to tough problems when every second counts. It encompasses ingenuity, determination and being prepared for anything.”

Chris Hadfield, CSA Astronaut

Until recently, intensive care medicine (ICM) was recognised as an ‘independent’ specialty (i.e. with direct access to training and accreditation) in only Switzerland

and Spain. In much of the European Union (EU), ICM remains a ‘subspecialty’ whose complementary qualification is obtained along with another ‘primary’ specialty. In most countries this requirement to develop additional expertise has resulted in the development of common training programmes for specialists from anaesthesia, surgery, internal medicine (and subspecialties) and paediatrics [1]. Although ICM is increasingly multidisciplinary, anaesthesia remains the most common parent specialty in Europe and around the globe.

However, this landscape is changing. As ICM becomes established as a specialty, many envision future intensivists who practice exclusively on the intensive care unit (ICU) and care for patients whatever their underlying condition [2]. In 2010, direct access to training in ICM became possible in the UK and Ireland [3]. In other regions ICM can be recognised as a ‘particular set of competencies’ for those who have completed the appropriate training. Hence, the specification of an ‘intensivist’ across the Union differs.

It is no surprise that local differences exist in the minimum knowledge, skills, duration of training and non-technical behaviours which define an intensivist (see Table 1). Competency-based training is an outcome strategy rather than a didactic process and previous attempts have been made to address these requirements. The Competency-Based Training in Intensive Care Medicine in Europe (CoBaTrICE) programme was established in 2003 as a Europe-based but worldwide collaboration of national training organisations to create core competencies for ICM using consensus methodology [4].

The NEXT Committee of the European Society of Intensive Care Medicine (ESICM) constructed an online survey of ICM trainees and intensivists within 5 years of completion of training (European Training Survey, <https://www.surveymonkey.com/s/esicmnextcommittee>). The areas of interest were demographics, education and

Table 1 Summary of ICM training across the European Union. Updated and adapted from [2]

Country	Type of speciality	Total years of ICM	Final qualification	Foreign experience	Research	CobaTRICE adopted	EDIC mandatory
Austria	Multi-subspecialty	1–6	Joint	No	Voluntary Clinical Translational	No	No
Belgium	Supraspecialty	2	Joint	Voluntary	Voluntary Clinical Translational	No	No
Bulgaria	Multi-subspecialty	Variable	Joint	No	No	No	No
Croatia	Multi-subspecialty	2	Dual	Voluntary	No	No	No
Cyprus	Multi-subspecialty Standalone	2	Dual	No	UK	Yes	No
Czech Republic	Supraspecialty	5	Dual	No	UK	Yes	No
Denmark	Single subspecialty	2–7	Dual	Voluntary	Mandatory Clinical	Yes	Part 1
Estonia	Single subspecialty	UK	Dual	UK	UK	No	No
Finland	Single subspecialty	1–4	Dual	Voluntary	Mandatory Clinical	No	Part 1
France	Supraspecialty Single subspecialty Primary speciality	3–5	Dual	Voluntary	Voluntary Clinical Translational	Yes	No
Georgie	Supraspecialty	UK	Dual	UK	UK	No	No
Germany	Supraspecialty Single subspecialty Primary speciality	1–4	Dual	Voluntary	Voluntary Clinical Translational	No	No
Greece	Supraspecialty	2	Dual	UK	Voluntary Clinical Translational	Partially	No
Hungary	Supraspecialty	2–5	Joint	No	n/a	No	No
Iceland	Single subspecialty	2–7	Joint	Voluntary	Mandatory Clinical	Yes	Yes
Ireland	Supraspecialty Primary speciality	1–6	Dual	Voluntary	Voluntary Clinical Translational	No	No
Italy	Single subspecialty	2	Joint	Voluntary	Voluntary Clinical Translational	No	No
Latvia	Single subspecialty	1–4	Joint	Voluntary	Mandatory Clinical	No	No
Malta	Single subspecialty	5	Diploma	Voluntary	n/a	Yes	No
Monaco	Supraspecialty	3–5	Joint	Voluntary	Voluntary Clinical Translational	No	No
Netherlands	Multi-subspecialty	2–7	Dual	Voluntary	Voluntary Clinical Translational	No	Yes
Norway	Single subspecialty	4–5	Dual	Voluntary	Mandatory Clinical	Yes	Part 1
Poland	Supraspecialty Single subspecialty	2–5	Joint	No	n/a	No	No
Portugal	Supraspecialty	2	Dual	Voluntary	Voluntary Clinical Translational	Yes	No
Romania	Supraspecialty	5	Dual	No	n/a	No	No
Russia	Supraspecialty	2	Dual	No	n/a	No	No
Serbia	Multi-subspecialty	4	Base	Voluntary		No	No
Slovakia	Joint	n/a	Joint	No	n/a	No	Yes
Slovenia	Supraspecialty	n/a	Dual	n/a	n/a	No	No
Spain	Primary speciality	1–5	Dual	Voluntary	Voluntary Clinical Translational	Yes	No
Sweden	Supraspecialty Joint Standalone	2–7	Joint	Voluntary	Mandatory Clinical	Yes	Part 1

Table 1 continued

Country	Type of speciality	Total years of ICM	Final qualification	Foreign experience	Research	CobaTRICE adopted	EDIC mandatory
Switzerland	Primary speciality	3–6	Alone	Voluntary	Voluntary Clinical Translational	Yes	No
Turkey	Supraspecialty	4	Joint	No	Voluntary Clinical Translational	No	No
Ukraine	Supraspecialty	2	Joint	No	n/a	No	No
UK	Multi-subspecialty Primary speciality	1–9	Alone	Voluntary	Voluntary Clinical Translational	Yes	No

n/a not applicable

working conditions, research, mentoring, international experience/mobility and the relationship with ESICM. Contact details were obtained from the ESICM Trainee Member database and of 1500 recipients there was a 32 % response rate. This showed that a competency-based approach is clearly defined in most European ICM training programmes (65 %); however, there is wide variation in the coverage, patient population and procedural skills required. For example, there is often no set number for any of the frequently performed procedures such as endotracheal intubation, central venous catheterisation or chest tube placement, all of which are important in the day-to-day management of the critically ill.

Competencies evolve at the pace of changing scientific knowledge and clinical evidence and imply regular revision of the CoBaTriICE syllabus. This has recently included skills such as basic ultrasound, echocardiography, leadership and communication. ICM is a ‘cutting edge’ speciality in terms of technology and this relentless advance must be matched by appropriate training in how to best to deploy it. An increasing number of training programs now include high-fidelity simulation as a method of teaching procedures and critical resource management. Furthermore, many ICUs now utilise sophisticated electronic patient records and medical devices, bringing again a need for education in order to fully utilise the wealth of this informatics resource.

Many regions operate an apprenticeship model; the presence of senior intensivists to act as mentors appears highly desirable, yet formal mentoring relationships were only identified in the careers of one-third of European trainees. This seems lacking in both clinical and academic settings and young intensivists may be inadequately supported in terms of research training, funding or supervision (26 % of research-active respondents).

Standards of assessment are also not uniform. Whilst ESICM has attempted to address this with the European Diploma of Intensive Care Medicine (EDIC), a two-part examination involving tests of knowledge and clinical acumen in a realistic setting. Some countries have incorporated EDIC in the development of their local

curricula, but this is neither widespread nor mandatory in many regions.

But why is harmonisation important? Part of the answer lies in migration: the number of young specialists on the move has increased exponentially in recent years partly as a consequence of the economic crisis and local scientific resources. Mutual recognition of ICM as a speciality has proven an issue in part due to inadequate legislation. The majority of young intensivists foresee a period of training abroad (89 %) but only two-thirds of training programmes are able to offer this opportunity. The ability to travel may sometimes be a necessary requirement to develop skills otherwise not reachable at home. Given these factors, it seems that a European common training framework and core curriculum for multidisciplinary ICM are deeply warranted.

Thankfully this process has begun. The first steps taken with CoBaTriICE identified a roadmap towards a training framework taken forward by the European Board of Intensive Care Medicine. The common training framework defines the training requirements for the Core Curriculum of Multidisciplinary Intensive Care Medicine and was recently ratified by the European Union of Medical Specialists (Union Européenne des Médecins Spécialistes, UEMS), a non-governmental organisation which represents national associations of medical specialists at the European level (<http://www.uems.eu>). The UEMS has “committed itself to the development of European standards in the different medical disciplines in order to harmonise training so that no matter in which medical institution doctors are trained across the EU, the core competencies would be the same.”

How can trainees help shape the future of ICM? Many national and international societies have incorporated trainee representation within their organisational structure. Trainee representatives provide valuable perspective and act as intermediaries between societies and their younger members facilitating a two-way communication. Through participation on committees and panels, trainee representatives develop intense and wide often multi-professional networks, monitoring programmes and shape new

initiatives. It is important that all young intensivists feel able and willing to contribute to the running of their specialty. We must ensure that the needs of young intensivists are met both for trainee and trainer... and that what makes an intensivist a professional is both defined and understood by all across our diverse and special Union.

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