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Research paper

## New horizons in geriatric medicine education and training: The need for pan-European education and training standards

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ABSTRACT

The ageing population ought to be celebrated as evidence for the efficacy of modern medicine, but the challenge that this demographic shift presents for 21st century healthcare systems, with increasing numbers of people living with multi-morbidity and frailty, cannot be ignored. There is therefore a need to ensure that all healthcare professionals grasp the basic principles of care of older people. In this paper, we make a case for the development of pan-European education and training standards for the field of geriatric medicine. Firstly, the challenges which face the implementation and delivery of geriatric medicine in a systematic way across Europe are described – these include, but are not limited to; variance in geriatric medicine practice across Europe, insecurity of the specialty in some countries and significant heterogeneity in geriatric medicine training programs across Europe. The opportunities for geriatric medicine are then presented and we consider how engendering core geriatric medicine competencies amongst nongeriatricians has potential to bridge existing gaps in service provision across Europe. Finally, we consider how work can proceed to teach sufficient numbers of doctors and health professionals in the core knowledge, skills and attitudes required to do this. To safeguard the future of the specialty across Europe, we contend that there is a need to strive towards harmonisation of post-graduate geriatric medicine training across Europe, through the establishment of pan-European education and training standards in the specialty.

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1. Introduction

The global population is rapidly ageing and, whilst this should be celebrated as evidence of the efficacy of modern medicine, one consequence is an increase in those living with multi-morbidity and frailty [1]. The resultant impact on health and social care systems is well recognised. The recent World Health Organisation (WHO) Report on Ageing and Health called for changes to health policies for ageing populations [2], specifically for health systems to align themselves to the older population that they now serve and for long-term care systems to be developed. There is compelling evidence from large systematic reviews [3,4] that Comprehensive Geriatric Assessment (CGA) is the most effective way to provide healthcare services for this population. CGA has been shown to increase patients' likelihood of being alive and in their own homes after an emergency admission to hospital.

CGA can be defined as a “multidimensional interdisciplinary diagnostic process focused on determining a frail older person's medical, psychological and functional capability in order to develop a coordinated and integrated plan for treatment and long-term follow-up” [5]. Geriatricians are medical specialists with expertise in the healthcare of older people, and have a key role in delivery of CGA – central to this is geriatricians' ability to manage multi-morbidity [6]. The essence of managing multi-morbidity is having the awareness that older people require a different type of care to their younger, more physiologically robust counterparts. Clinical and biological signs of disease are different in older people with frailty. Diseases are often revealed by non-specific presentations, or via atypical presentations due to abnormal physiological responses to acute illness – a thorough clinical assessment is therefore mandated. CGA is not just a detailed clinical assessment performed by a geriatrician – it moves beyond identification of the patient's needs to the delivery of a multifaceted intervention that seeks to restore wellbeing, participation in activities and independence, and to ameliorate disability and distress. Despite the existence of high-quality evidence surrounding CGA, there remains disparity between what we should be doing and what we are doing. The reasons for this ‘know-do’ gap are likely to be manifold but a failure to generate and spread expertise has been recognised as a likely barrier to implementation [7].

This paper aims to make a case for the development of pan-European education and training standards for the field of geriatric medicine. Whilst we acknowledge that ageing presents healthcare

systems with challenges on a global scale, and that geriatric medicine may offer potential solutions [8], this paper will consider Europe specifically. The free movement of doctors within the European Union and the collaboration of medical specialties to develop common training standards through the Union of European Medical Specialties (UEMS) provide both a need and an opportunity to better standardise training pathways in geriatric medicine across Europe. Against this background this paper aims to make a case for the development of pan-European education and training standards in geriatric medicine. This should not be seen as discrete from, or in competition with, attempts to develop better international consensus in this arena.

In this paper, we start by describing the substantial challenges, which face the implementation and delivery of geriatric medicine in a systematic way across Europe by outlining the differences in how geriatric medicine and general internal medicine are structured and delivered. We then go on to describe the opportunities for geriatric medicine, and how a better understanding of core competencies in geriatric medicine amongst non-geriatricians, has potential to bridge existing gaps in service provision across the continent. Finally, we consider how work can proceed to teach sufficient numbers of doctors and health professionals in the core knowledge, skills and attitudes required to do this.

2. Postgraduate geriatric medicine training across Europe

The number and density of geriatricians differs widely across Europe [9] and in some countries, geriatricians simply do not exist [10]. Recent surveys have demonstrated wide variability in postgraduate geriatric medicine training [11–13]. Firstly, in 5 of the 31 countries surveyed, geriatric medicine was not recognised as a specialty or a sub-specialty [11]. Two thirds of European countries did recognise geriatric medicine as an independent postgraduate specialty, with the remainder viewing it as a sub-specialty, mainly of internal medicine [11]. Nearly all the countries offering postgraduate training in geriatric medicine have written, competency-based curricula covering different learning domains [11]. For those countries that do recognise geriatric medicine as a distinct specialty, there is considerable variability in the length of postgraduate training [12]. Currently, the minimum length of training required by the European Directive on medical specialty training is 4 years post-qualification from medical school [12]; the length of geriatric medicine specialty training programmes across

Europe ranges between 4 and 9 years. We contend that 4 years of postgraduate training is insufficient to become a specialist in geriatric medicine. It is important to highlight the limited time dedicated to geriatric medicine topics in undergraduate medical education and also its variability across Europe [10,14]; these findings add weight to the argument for the need for consensus on postgraduate training length, since the baseline competencies of new trainees is likely to be variable. There is also notable variety in the regulatory bodies that are responsible for postgraduate geriatric medicine training across European countries – these include national medical associations, health ministries and universities. Barriers to recruitment to a career in geriatric medicine have also been identified. Trainees, although identifying with the intellectual challenges and the “mission” of geriatric medicine, cite financial and status-related issues as deterrents to a career in the specialty [15,16]. In some countries, a perceived lack of research opportunities in ageing and clinical research has also been identified as a deterrent to a career in the specialty.

Some reviews of medical training programmes have highlighted the central role of general (internal) medicine (G(I)M) training, with focus on the recognition and management of older people living with frailty and functional dependency [17]. A further barrier is the progressive sub-specialisation of single-organ/system specialists with the argument that the needs of patients with multiple pathologies would be best served by ensuring they have access to a variety of super-sub-specialists [17], and that to maintain their sub-specialist skill-set, ongoing participation in the acute, unselected medical take is not viable, since the demands of continued involvement would interfere with delivery of their sub-specialism. The upshot of these arguments is the assertion that generalism is the preserve of hospitalists, acute physicians, G(I)M physicians, geriatricians and general practitioners [18]. Commitment to the general medical on-call rota and the associated burden of service provision is, however, perceived by some trainees as leading to reduced academic and training opportunities – this was considered an important downside to a career in the specialty [16]. In some countries, the progressive sub-specialisation of single-organ specialists has resulted in the formation of a service gap, which has subsequently been filled by newly conceived specialties, such as acute medicine [19]. At best, these specialties

have recognised the knowledge and skill-sets required to care for older patients, and are up-skilling appropriately. At worst, there is failure to acknowledge and integrate the evidence-based method of providing care for older people with frailty (CGA) into their clinical practice, and failure to work collaboratively across boundaries between specialties. Given the scale of the challenge that ageing presents, a pragmatic approach is required – clinicians looking after older people must be fully trained to do so. Enabling non-geriatricians to develop competencies outlined in the curriculum may enable the workforce to become more ‘geriatricianly’ and may result in better care of older people.

### 3. The scope of geriatric medicine practice across Europe

In recent years, geriatric medicine has diversified and become increasingly sub-specialised [20] (Fig. 1).

#### 3.1. Hospital

##### 3.1.1. Acute geriatrics

There has been progressive integration of geriatricians into acute hospital environments, such as emergency departments [21], acute medical units [22] and acute frailty units [23]. The extent to which this model (‘interface geriatrics’) has developed varies across Europe – in many countries (e.g. Germany, Norway, France), most geriatricians have partial roles within acute care, in some (e.g. Belgium), geriatricians are almost entirely within acute care [24]. Belgium’s “Care Programme for the Geriatric Patient”, introduced in 2007, is notable for mandating CGA for all patients over 75 years admitted to hospital with a ‘geriatric profile’, determined by an admission screening tool. Such initiatives allow earlier recognition of frailty, enabling timely initiation of CGA. Such approaches have shown reductions in mortality [25] and bed occupancy, without affecting readmission rates or requiring additional resources [23].

##### 3.1.2. Specialty wards

The evidence base for CGA is strongest for specialty ward-based care [3,4] where the majority of published studies have described geriatrician involvement. A Cochrane review of such interventions

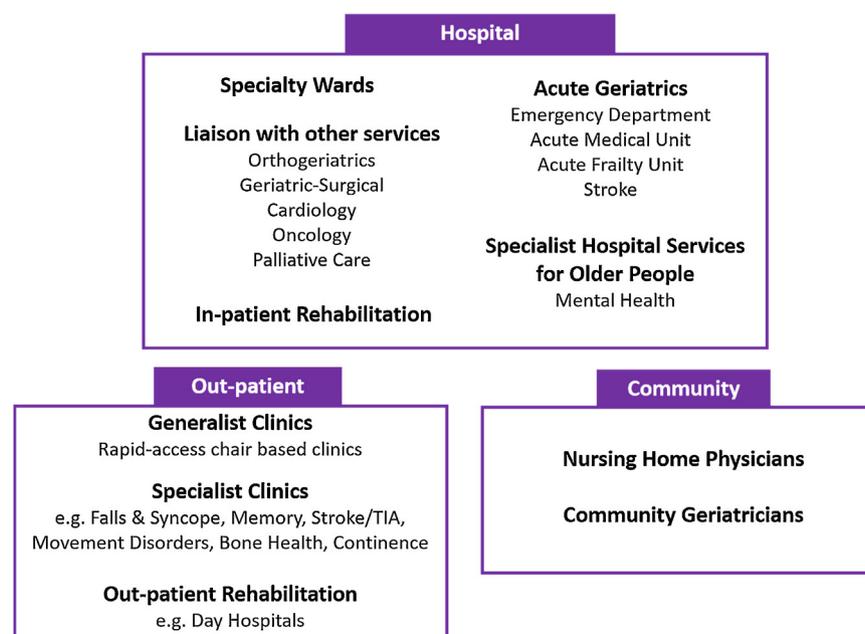


Fig. 1. The scope of geriatric medicine practice across Europe.

showed that patients who underwent CGA were more likely to be alive and in their own homes, less likely to die or experience deterioration and more likely to experience improved cognition [26]. Care in specialist environments may also incur lower total inpatient costs when compared to 'usual' care [27].

### 3.1.3. Specialist hospital services for older people

Geriatricians have led on the development of specialised delirium units, which have resulted in shorter duration of delirium and reduced length of stay [28]. Many geriatricians work alongside mental health liaison services for older adults with some evidence of positive outcomes, although provision of such services remains highly variable [29].

### 3.1.4. Rehabilitation

Many of the concepts underpinning the rehabilitation process overlap with the principles of CGA, hence geriatricians across Europe often provide the medical expertise within a multidisciplinary rehabilitation team. Inpatient rehabilitation, specifically designed for older patients, has been shown to improve outcomes related to function, discharge destination and mortality [30]. Delivery of outpatient rehabilitation is also seen and has been demonstrated to be efficacious [31,32].

### 3.1.5. Liaison with other services

A number of models of orthogeriatric care exist, but the joint care model (between geriatrician and orthopaedic surgeon on a dedicated orthogeriatric ward) has been shown to reduce inpatient mortality and decrease length of stay [33]. Recent work in Sweden [34] with a hip fracture patient cohort demonstrated significant reductions in mortality and readmission rates and provides compelling 'real-world' evidence for the efficacy of geriatric care at the healthcare system level.

In contrast to orthogeriatrics services, geriatrician collaboration with surgical teams is in its infancy, tending to be reactive, focussing on emergency cases, and lacking CGA as the guiding principle [35]. Meta-analysis of data to establish the efficacy of preoperative CGA is not yet available, but in older patients undergoing elective surgery, preoperative CGA has a positive impact on postoperative outcomes, such as medical complications and length of stay [36].

Collaborative working between geriatricians and cardiologists is increasingly seen, such as coordinated care of heart failure patients and CGA provision pre-invasive interventions [37]. Links between oncology and geriatric services are developing at pace, and are becoming increasingly prevalent and relevant across Europe. Evidence exists demonstrating that variables considered within CGA can predict morbidity and mortality in older patients with cancer [38], but the potential mortality benefit of CGA has not yet been demonstrated. Many geriatricians have interest and skills in palliative care due to the frequency with which end of life care is encountered in a geriatric medicine setting.

### 3.2. Outpatient

Increasingly, European geriatricians offer rapid-access, 'chair-based' clinics for older people, equivalent to ambulatory care clinics typically provided by acute medical teams. This model can prevent older patients being referred to emergency departments and may lead to a reduction in emergency, unscheduled admissions.

Geriatricians are frequently involved in the delivery of specialist outpatient services, including falls clinics [39], memory clinics, transient ischaemic attack clinics, Parkinson's disease (PD) services [40], bone health clinics [41] and continence care

[42]. Across Europe variation is seen in how such services are delivered. PD services, for example, are often neurology-led, yet the multi-system nature of the condition means an approach analogous to CGA may be preferable for older PD patients living with frailty. Stroke physicians can train via a variety of different routes, with geriatric medicine and neurology being the most common – again, there is variation across European countries in what constitutes the 'usual' training route.

### 3.3. Community

Geriatricians are increasingly working across the boundary of primary and secondary care; some work solely in the community, but the majority have commitments in both settings. In the UK, community geriatricians now constitute the largest group of traditionally hospital-based consultants working within the community [43]. There is appetite across Europe for greater emphasis on the recognition of frailty in the community setting and for the implementation of community-based interventions. The efficacy of CGA in community settings has been demonstrated in a large systematic review [44], although a review of CGA at the interface between community and acute care did not show clear benefit [45]. The challenge here is separating absence of evidence, from evidence of absence and considering what alternative model one would propose to health and social care sectors hungry for solutions, if not one which is informed by expertise, is multi-domain and multi-professional in approach, and is coordinated and iterative [7]. Nuanced understanding of the health needs and requirements of older people is essential to this debate and this is a profound argument in favour of expanding training in care of older people.

Care home residents are recognised as being frail, dependent and vulnerable, with high levels of multi-morbidity and complexity [46]. Long-term care services may be provided in a variety of settings and a wide range of national arrangements and national labels exist. Wide variation in European nursing home practice and long-term care is seen, which may in part be explained by a lack of training amongst care home staff and medical staff [47]. Regular input from geriatricians into nursing homes can reduce emergency admissions [48] and in the Netherlands, care home medicine has developed into an established medical specialty [49] – however, barriers to implementation exist across Europe, including insufficient geriatricians and sometimes, resistance from other healthcare professionals to geriatrician involvement.

## 4. The need for pan-European geriatric medicine education and training standards

Despite the evidence base that underpins the specialty there is wide variance in European geriatric medicine practice [12]. We acknowledge that the process of translating the entire suite of geriatrician-led interventions into standard practice across Europe is challenging, and is likely to evolve differently in countries depending on historical workforce concerns, models of healthcare provision and prevailing attitudes amongst doctors, policymakers and society at large. In European countries where geriatric medicine is less well established, a lack of understanding of what geriatricians can add to patient care has contributed to insecurity of the specialty. The significant heterogeneity in geriatric medicine training programs across Europe is likely to further compound this insecurity. Efforts are underway to better understand the similarities and differences between training across Europe, through the recent development (using a modified Delphi procedure) of a geriatric postgraduate education assessment

instrument [50]. We contend that the heterogeneity seen in both service provision and postgraduate training in geriatric medicine are inextricably linked, and argue that to safeguard the future of the specialty across Europe, there is a need for harmonisation of postgraduate training.

It is vital that clinicians responsible for the care of older people are competent and formal curriculum development is an essential in ensuring competencies and safeguarding high-quality care. Development of such a curriculum may also help to address the variance in training times across Europe. Moving towards outcome-based, rather than time dependent, curricula will mean that decisions about a trainee's competence will be based on what they can do, rather than how much time they have spent in post. This may, in time, enable a more nuanced understanding of what the typical training time ought to be. Curriculum development is critical to effective delivery of postgraduate education in the core knowledge, skills and attitudes required in geriatric medicine. In addition, achieving pan-European consensus on a geriatrician's competencies may help to counter the uncertainty within some nations about the specialty. To advance the evidence base, the specialty does need to train more medical researchers and to encourage more young geriatricians to pursue academic careers [51]. Embedding exposure to research in postgraduate training, through its inclusion in the curriculum, may help drive this process. Consensus on the competencies required within such a curriculum would also enable countries where geriatric medicine is less well established to benchmark their training programmes and to modify the content to a minimum agreed level. Examples of such initiatives do exist in other countries around the world. The American Geriatrics Society/Association of Directors of Geriatric Academic Programs produced a set of 'curricular milestones', to provide clarity about what a graduating geriatric fellow ought to be able to do [52]. In Europe, a collaboration between the European Union Geriatric Medicine Society (EUGMS) education special interest group (SIG), the European Union of Medical Specialists (EUMS)-Geriatric Medicine Section, the European Academy for Medicine of Ageing (EAMA) and the International Association of Gerontology and Geriatrics (IAGG) has started a consensus development process (modified Delphi), as a vehicle for developing the curriculum. However, there are a series of challenges, which must be overcome. Firstly, the variation within European geriatric medicine practice needs to be acknowledged. International variation in health and social care structures is arguably inevitable, but we contend that it brings with it positives too. Undertaking a collaborative curriculum development process with European colleagues forces clinicians and educators to look critically at their own and others practice, and in doing so, unlocks the potential to seed gold-standard training and practice further afield. The feasibility of such a process has previously been demonstrated; recently, an international modified Delphi technique was used to achieve consensus on a European undergraduate curriculum in geriatric medicine [53]. This undergraduate curriculum has now been accepted in principle by all the EU countries and medical schools are being encouraged to map their curricula to this framework. Second, the wide variation in training time must be addressed. If trainees in one country are given less training time than their counterparts in other countries, but are still expected to achieve the same competencies, the curriculum would be devalued and less likely to be implemented. Thirdly, once developed the curriculum needs to be implemented widely; the multi-agency collaboration described above provides a vehicle for achieving this. In addition, the EUMS has previously established a standard procedure for the development and formal approval of European Training Requirements in each specialty field of medicine; such standards can therefore be readily applied to geriatrics.

The development of such a curriculum may also bring wider benefits. [2]. As well as increasing the number of geriatricians, there is a need to ensure that all healthcare professionals grasp the basic principles of care of older people, given the needs of the ageing population and the scale of the challenge facing health services [54]. A degree of non-specialist familiarity with CGA is needed to assist in the proper treatment of non-complex older people and the identification of those that need all the skills of a multi-disciplinary team (MDT) led by a geriatrician. Geriatricians, as educators, have a central role in assisting other professional groups to develop the battery of skills required for effective care of older people. Geriatricians also have a role to play as health care advocates through challenging negative societal preconceptions about older people and by serving as healthy ageing experts. Multi-modal preventive care strategies, or 'healthy ageing' programmes, with geriatrician input have shown great promise amongst healthy older individuals – improved health behaviours and survival benefit have been demonstrated [55].

Whilst it will be used as a road-map for training a specialist geriatrician, a pan-European curriculum for postgraduate geriatric medicine training could also be used to identify selected core competencies required by other professional groups who regularly see frail older people. An example of how geriatric medicine expertise has inculcated postgraduate training in another field can be seen with the pan-European development of a validated curriculum in geriatric emergency medicine [56], through collaboration between geriatric and emergency medicine (led by EUGMS education SIG with support from the EUMS).

Whilst we acknowledge that variability is likely to exist in other specialties across Europe, we contend that this is not at the same level as encountered in geriatric medicine. This is likely due to the relative newness of geriatrics as a specialty, its general nature, which means that many non-geriatricians find it difficult to comprehend where it fits in, and the way in which it has been implemented in response to specific healthcare challenges in different countries. Thus geriatricians, more than most, need to make efforts to achieve consensus around core principles, including those of what needs teaching and when.

## 5. Conclusion

The variance in geriatric medicine training and practice across Europe has been described; in doing so, it is evident that the specialty occupies different roles within different healthcare systems across Europe. In some countries, geriatric medicine is deeply embedded into the workings of the healthcare system and is recognised as adding value to patient care; in others, there is a failure to recognise the potential value that geriatricians can add to patient care. Of concern, is that in some countries the discipline faces an existential struggle for its identity as a distinct specialty. Tackling this problem requires a multifaceted approach that includes engaging and educating senior policy makers, healthcare system coordinators and governments, about the added value that our specialty can bring. A major contributory factor to the insecurity of the specialty in some countries however, is the significant heterogeneity in geriatric medicine training programs across Europe. To counter these threats to the specialty, this paper discusses the breadth, variety and, where available, the evidence base that underpins the specialty's efficacy. To safeguard the future of the specialty across Europe, we contend that there is a need to strive towards harmonisation of postgraduate geriatric medicine training through the establishment of pan-European education and training standards in the specialty. In future, establishing a consensus European curriculum may provide a useful starting point for global discussions about what a worldwide curriculum for geriatricians might consist of.

### Ethical approval

Not required.

### Disclosure of interest

The authors declare that they have no competing interest.

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