

ORIGINAL RESEARCH

## Current landscape of ESMO/ASCO Global Curriculum adoption and medical oncology recognition: a global survey

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**Background:** With the implementation of multidisciplinary treatment and development of multiple novel anticancer drugs in parallel with expanding knowledge of supportive and palliative care, a need for separate training and specialisation in medical oncology emerged. A Global Curriculum (GC) in medical oncology, developed and updated by a joint European Society for Medical Oncology/American Society of Clinical Oncology (ESMO/ASCO) GC Task Force/Working Group (GC WG), greatly contributed to the recognition of medical oncology worldwide.

**Material and methods:** ESMO/ASCO GC WG carried out a global survey on medical oncology recognition and GC adoption in 2019.

**Results:** Based on our survey, medical oncology is recognised as a separate specialty or sub-specialty in 47/62 (75%) countries participating in the survey; with a great majority of them (39/47, 83%) recognising medical oncology as a standalone specialty. Additionally, in 9 of 62 (15%) countries, medical oncology is trained together with haematology as a specialty in haemato-oncology or together with radiotherapy as a specialty in clinical oncology. As many as two-thirds of the responding countries reported that the ESMO/ASCO GC has been either fully or partially adopted or adapted in their curriculum. It has been adopted in a vast majority of countries with established training in medical oncology (28/41; 68%) and adapted in 12 countries with mixed training in haemato-oncology, clinical oncology or other specialty responsible for training on systemic anticancer treatment.

**Conclusions:** With 75% of participating countries reporting medical oncology as a separate specialty or sub-specialty and as high as 68% of them reporting on GC adoption, the results of our survey on global landscape are reassuring. Despite a lack of data for some regions, this survey represents the most comprehensive and up-to-date information about recognition of medical oncology and GC adoption worldwide and will allow both societies to further improve the dissemination of the GC and global recognition of medical oncology, thus contributing to better cancer care worldwide.

**Key words:** medical oncology, medical oncology recognition, Global Curriculum, Global Curriculum adoption

### INTRODUCTION

Global care of patients with cancer is constantly improving. Whereas the incidence rates are still rising, the mortality

rates for many cancers are declining, with major improvements observed in the survival rates of most cancers including some of the most common cancers, such as breast and colorectal cancer.<sup>1,2</sup> There are three major pillars of cancer therapy, i.e. surgery, radiation therapy and systemic therapy, all of which have contributed substantially to improved cancer control over the last decades. With the implementation of multidisciplinary treatment strategies and team-based cancer care, all these disciplines flourished and gained an important independent place in multidisciplinary cancer care.<sup>3</sup> With the development of multiple novel anticancer drugs and improved understanding of

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their mechanisms of action and pharmacology in parallel with ever expanding knowledge of supportive and palliative care, it became obvious that a separate structured training and specialisation in medical oncology is necessary for ensuring safe and efficient anticancer systemic therapy worldwide.<sup>4</sup>

Medical oncology has been established as a new subspecialty of internal medicine in the USA, already in 1965.<sup>5</sup> Although some European countries were among the pioneers in establishing essential principles in systemic anticancer treatment and medical oncology as an independent specialty, the legislation process of full recognition of medical oncology took a bit longer in the European Union (EU)<sup>6</sup> and other parts of the world. Europe has a long history of heterogeneity in medical oncology training in terms of the curriculum and duration of training in medical oncology, as well as recognition of medical oncology as a separate specialty.<sup>7</sup> Some countries still prefer a mixed type of oncology training and specialties like haemato-oncology or clinical oncology. While the political support for the recognition of medical oncology as a separate specialty in line with the European directive on the recognition of professional qualifications (Directive 2005/36/EC)<sup>8</sup> has been increasing, it became clear that a standardisation of the minimal training period and curriculum in medical oncology is needed.

Development of a Global Curriculum (GC) in Medical Oncology by a joint European Society for Medical Oncology/American Society of Clinical Oncology (ESMO/ASCO) GC Task Force, which was later extended to a permanent GC Working Group (GC WG), has greatly contributed to the recognition of medical oncology as a separate professional qualification by the EU in March 2011.<sup>6,9</sup> The curriculum defined a minimum training period of 5 years, divided into at least 2-3 years of internal medicine and 2-3 years of medical oncology.<sup>10-12</sup> The first edition of the ESMO/ASCO GC was originally published simultaneously in the *Annals of Oncology* and *Journal of Clinical Oncology* in 2004.<sup>10,11</sup> It was updated in 2010<sup>12</sup> and followed by a completely new edition in 2016.<sup>13</sup> Each of those editions introduced updated information and skills that medical oncologists need to know and be trained in, to be able to best implement them in their everyday clinical practice. With a comprehensive and updated list of objectives, knowledge, awareness and skills in a wide field of diagnostics and treatment of solid tumours, as well as haematological malignancies, the ESMO/ASCO GC represents a very useful educational tool to be implemented into national training programmes. It provides a platform that supports the recognition of medical oncology worldwide.

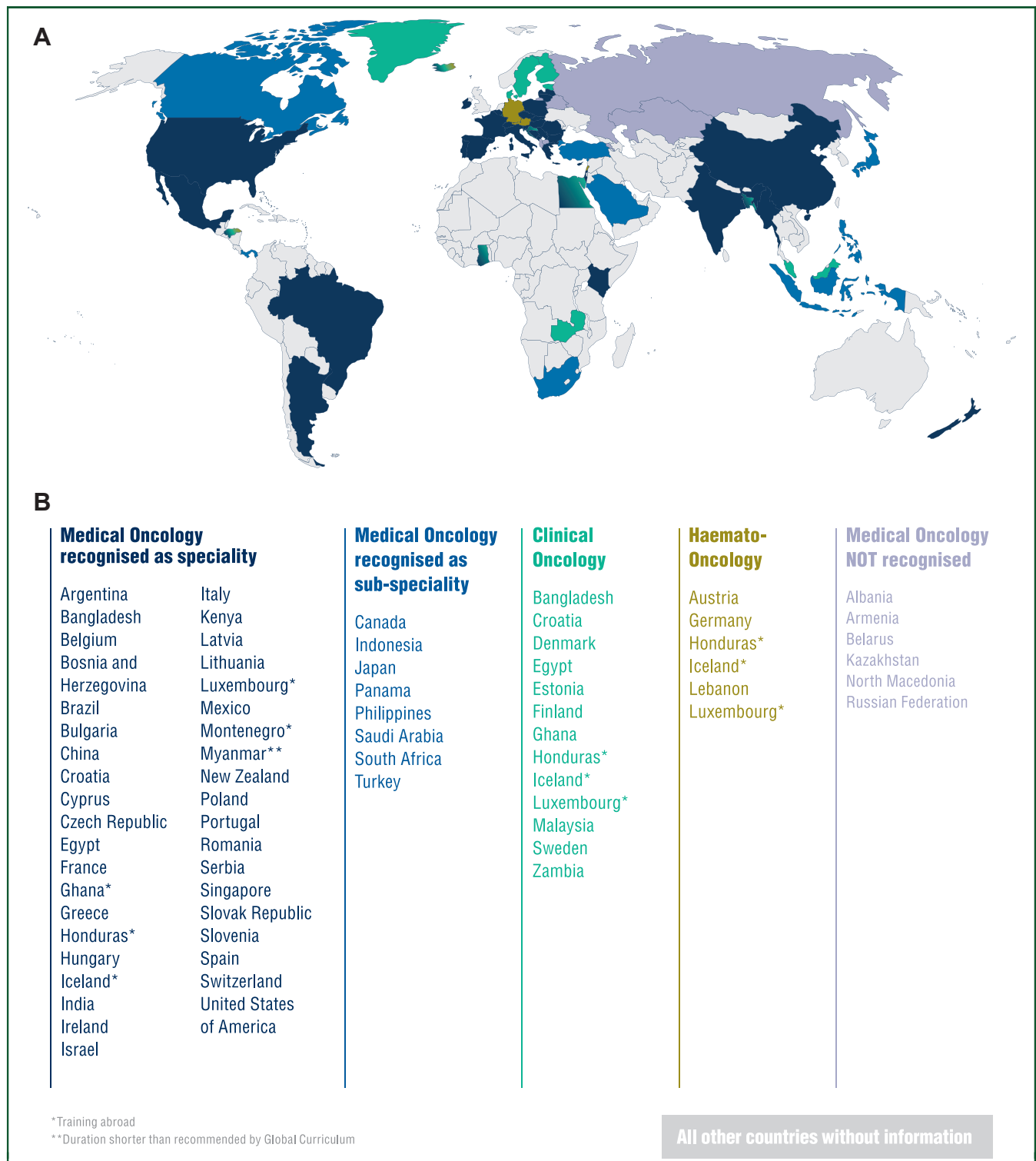
The previous survey on medical oncology recognition and ESMO/ASCO GC adoption was carried out in 2013 at the European level.<sup>7</sup> The aim of our current survey carried out at the end of 2018 was to obtain a worldwide picture of medical oncology training and recognition, ESMO/ASCO GC adoption as well as a snapshot of global workforce in medical oncology, which might serve as a tool for internal societies planning.

## MATERIALS AND METHODS

The online survey was developed by the ESMO/ASCO GC WG based on the previous edition, with some additional questions incorporated. The survey link was sent to the ESMO national representative, national society or the leader of the training programme in 91 countries with whom either ESMO or ASCO had official relations at the time of survey. Despite repeated requests, 22 countries did not respond at all, whereas 7 countries provided too little data to be included in the analysis, resulting in a final list of 62 participating countries. The survey started online in the last quarter of 2018 and was followed by a series of in-person interviews with the responders in 2019. After >1 year of intensive work on collecting and clarifying the data, we present here the status of global medical oncology recognition and ESMO/ASCO GC adoption in 2019.

### Medical oncology recognition

Based on our survey, medical oncology is recognised as a separate specialty or sub-specialty in 47/62 (75%) of participating countries, with a great majority of them (39/47, 83%) recognising medical oncology as a specialty (Figure 1). In all but one country, the duration of training in medical oncology fulfils the recommended minimal duration of 5 years.<sup>13</sup> Whereas medical oncology has been established as a specialty in the USA, all South American as well as Western and Central-Eastern European countries, it is recognised as a sub-specialty in Canada and the vast majority of Eastern Mediterranean and South-East Asian countries that participated in our survey (Figure 1). In addition, in 9 of 62 (15%) countries, medical oncology is trained together with haematology as a specialty in haemato-oncology or together with radiotherapy as a specialty in clinical oncology (Figure 1). Haemato-oncology is recognised as a separate specialty in Austria, Germany and Lebanon. Of note, several months of training in haematology is foreseen within medical oncology specialisation or subspecialisation in most countries. In addition, systemic anticancer treatment is trained in the frame of a separate haematology programme in many countries around the world. However, standalone haematology training should be clearly distinguished from the training model in haemato-oncology. In the majority of Nordic countries, clinical oncology is still considered as the most appropriate training model for oncologists providing systemic anticancer therapy, whereas in many big academic centres, clinical oncologists become dedicated early on during their career to either systemic anticancer treatment or radiotherapy. In some countries, like Bangladesh, Croatia, Egypt and Ghana, both medical oncology and clinical oncology are recognised as a standalone specialty. Based on our survey, the remaining 6/62 (10%) countries still do not recognise either medical oncology or haemato-oncology or clinical oncology as a separate specialty or sub-specialty. In all those countries, systemic anticancer treatment is trained in the frame of a broad specialisation in oncology. This is specific mostly for countries from the former Soviet Union or close



**Figure 1. Recognition of medical oncology.**

The map (A) and the list (B) of countries.

<sup>a</sup> Training abroad.

<sup>b</sup> Duration shorter than recommended by Global Curriculum.

neighbourhood. Some of those countries reported problems, such as availability of limited resources for transforming the current training model in oncology or prolonging otherwise short oncology training due to logistical and financial issues, but some countries like Kazakhstan

reported on work in progress in establishing medical oncology as a separate specialisation.

Some small European countries, i.e. Iceland and Luxembourg, do not provide training in medical oncology, but they do recognise it as a speciality, and medical

oncologists trained abroad are recognised as certified medical oncologists in their countries. The same situation exists in some non-European countries like Ghana and Honduras. Montenegro stated that part of their training programme in medical oncology is taking part abroad in the frame of the training programme in Serbia, while basic training is carried out in the academic centre in Montenegro.

Encouraging enough, there is a widespread recognition of medical oncology around the globe. In a vast majority of countries that participated in our survey, medical oncology is recognised as a specialty or sub-specialty. Actually, all participating countries from the region of America and the majority of the Asian and African countries reported having established training in medical oncology. It has to be noted, however, that only a small number of African countries participated in the survey. When comparing the status of medical oncology recognition in Europe now with earlier reports, there has been no major improvement since 2013. This might be explained partly by the fact that already in 2013, two-thirds of the European countries recognised medical oncology as a separate specialty, and it is not so easy to reach the remaining countries where significant obstacles seem to be present. Obviously in some European regions there is still a belief that a mixed training of medical oncology with haematology or radiation oncology under specialisation in either haemato-oncology or clinical oncology provides optimal education for their specialists providing systemic anticancer therapy. The Euro-Asian region still has important unmet needs in establishing medical oncology as a separate training programme and specialty, and requires our additional support and efforts.

### GC adoption

As many as two-thirds of 61 participating countries reported that the ESMO/ASCO GC has been either fully or partially adopted or adapted in their curriculum (Figure 2). Only for one responding country we were not able to retrieve the status of the GC adoption, in particular for Switzerland, which in our previous survey reported that the GC is applicable, but not adopted.<sup>7</sup> For countries recognising medical oncology as a separate specialty or sub-specialty, a full or partial adoption of GC in medical oncology was considered, while for the countries with mixed training in haemato-oncology or clinical oncology, the adaption of their curriculum in systemic anticancer treatment on the basis of the GC has been reported.

In most countries with medical oncology recognised and trained as a specialty or sub-specialty (28/41; 68%), the ESMO/ASCO GC has been adopted into training programmes. In the majority of countries, the GC has been adopted partially, due to a predominant approach of responding countries to stick to their national curriculum. As stated during the interviews, such a policy allows them to better tailor the curriculum to local needs and resources. The existence of the national curriculum was reported for as many as 42/62 (68%) countries participating in the survey.

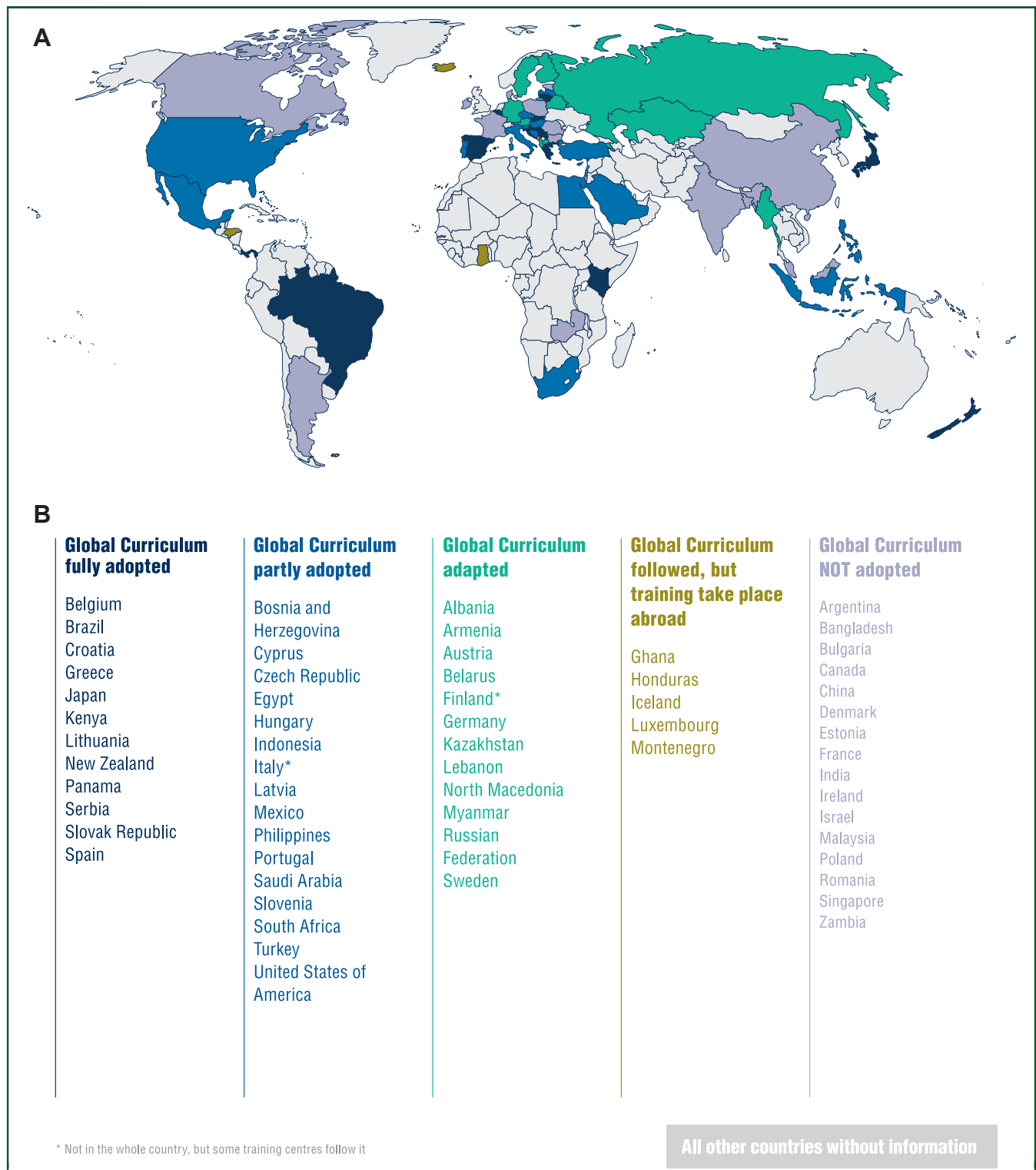
In most countries, the latest version of the GC from 2016 has been adopted, which is good in the light of rapidly evolving knowledge in medical oncology. For some countries, like Italy, it was reported that the GC has been adopted in some training centres, but not in the whole country. Despite the fact that about one-third of countries with recognised medical oncology as a specialty or sub-specialty still did not adopt the GC formally, it is reassuring that almost all respondents commented that the GC could be applicable in their countries, at least partly. There are some countries with large populations among them, such as Canada and China. Only a few of them expressed some concerns related to the country language issues, complexity of the GC, as well as administrative barriers. For some countries, like France, it was reported that they are in the process of adapting their training according to the GC.

The ESMO/ASCO GC has been adapted into the curriculum of mixed training in haemato-oncology in all three countries where haemato-oncology is a recognised specialty (i.e. Austria, Germany and Lebanon). Both Austria and Germany achieved the GC adaptation between the time of our earlier survey in 2013 and 2018. In countries with clinical oncology or any other specialty responsible for training on systemic anticancer treatment, however, the rate of incorporation and adaption of GC into their curricula is lower. Only one out of six countries (i.e. Sweden) with clinical oncology as a recognised training for systemic anticancer therapy reported on adaption of GC into their curriculum.

Notably, the ESMO/ASCO GC has been either adopted or adapted in multiple countries across all continents. There are no major differences in GC adoption between the world regions (Figure 2). Self-evidently, the GC adoption is seen only in the countries and regions with medical oncology recognition, whereas in the other regions GC has been adapted. It is reassuring that even in the low- and middle-income countries with limited resources, such as Kenya and South Africa, the GC has been adopted; with respondents from these countries reporting about no major challenges in adopting our GC. When comparing the status of GC adoption/adaption in Europe in the current global survey with the status reported in 2013,<sup>7</sup> improvement is seen in Central and Southern Europe with Austria, Germany and Spain having adopted/adapted the GC since the previous European survey. But there are still regions in all continents in which awareness about the GC still needs to be spread out.

### DISCUSSION

Based on our global survey, medical oncology is currently recognised as a specialty or sub-specialty in all continents and at least in 47 countries all around the world. The ESMO/ASCO GC which played a pivotal role in setting up the medical oncology training has been adopted in a substantial majority of medical oncology training programmes worldwide. It has also been incorporated into mixed training programmes for haemato-oncology and clinical oncology.



**Figure 2. Global curriculum adoption and adaptation.**

The map (A) and the list (B) of countries.

<sup>a</sup> Not in the whole country, but some training centres follow it.

With 75% of participating countries reporting medical oncology as a separate specialty or sub-specialty and as high as 68% of them reporting on GC adoption, the results of our current survey on global landscape are comparable to the European landscape in 2013, which is reassuring; especially

since the current global survey included many more countries with limited resources and less developed systems of education and specialisations.

More concretely, the results of our previous European survey revealed that two-thirds of European countries

recognised medical oncology as a distinct specialty or subspecialty and that the ESMO/ASCO GC has been adopted or adapted in 14/46 participating countries.<sup>7</sup> It is encouraging that the overspread of countries that recognise medical oncology as a standalone specialty or sub-specialty in our global survey is almost at the same level, not just in American, but also in South-East Asia and Western Pacific regions. In addition, the current survey carried out at the global level found even higher rates of GC adoption, which shows that despite being breadth and complex, the ESMO/ASCO GC remains highly applicable at the global level. We believe that a major contributing factor for such a situation is that it has always been updated based on suggestions from colleagues working on medical oncology training programmes worldwide. Many of them contributed as co-authors or editorial board members of updated ESMO/ASCO GC versions.<sup>12,13</sup> In this way, not only have novel therapeutic approaches been introduced, but also elementary chapters, such as supportive and palliative care, have been constantly updated. Additionally, it should be considered that the global survey was carried out 5 years after the European one, thus giving countries more time for the GC adoption.

Despite the in-depth work on collecting global data, followed by >1 year of intensive efforts to clarify the data through multiple in-person interviews and communications, our results are subject to several limitations. When looking into data, it should be considered that due to the long-lasting above-mentioned efforts, the landscape status might have changed even before being published. From our interviews with the survey respondents, however, we have learned that changes at the national level are rather a subject of lengthier legislative procedures. As in any survey, the responders may not be representative of all providers in the system and in some larger countries, of all regions. The information provided by the respondents was also not checked by the national authorities, although they have been contacted for participation in this survey by a representative entity in their respective countries. Our survey results are further limited by the lack of responses from some countries. For example, we are missing responses from some large countries, such as Australia. Of note, our WG had very fruitful previous collaborations and discussions with Australian colleagues about GC implementation, thus being aware of all their efforts and activities related to the recognition of medical oncology and implementation of a high-level training programme in their country. The GC WG even modelled the first ESMO/ASCO Global Core Curriculum for Training in Medical Oncology Log Book based on Australian experience.<sup>14,15</sup> We emphasise the importance of monitoring the implementation of the GC by recommending the use of the ESMO/ASCO Global Curriculum Log Book, which is considered as a supplement for recording the various aspects and parts of the medical oncology training programme.<sup>15</sup> In addition, low-income countries have the lowest number of responders in our survey, indicating difficulties in reaching medical oncologists in these countries. There is a lack of data on education and training in oncology

for most of the African countries. Due to a continuous increasing burden of cancer in those countries,<sup>2</sup> we will continue our efforts for closer collaboration with medical doctors and health authorities in the region and offer them support in establishing medical oncology training programmes tailored to their needs and resources, but still in line with global recommendations.

### Conclusions

These data represents the most comprehensive and up-to-date information about recognition of medical oncology and adoption of the ESMO/ASCO GC worldwide. They provide an excellent platform for our further and more expanded activities on global medical oncology recognition. By conducting multiple interviews, a good connection with local societies and leaders in medical oncology has been established which will certainly boost our common activities in the future. We also received valuable suggestions on how to prepare the updated version of the ESMO/ASCO GC to maximise its global applicability and adoption. The important data and experiences gained by conducting this global survey will allow ESMO and ASCO as leading oncology societies to further improve dissemination of the GC and global recognition of medical oncology, thus contributing to better care of cancer patients worldwide.

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## DISCLOSURE

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