Global Health Learning - Are Students Demonstrating Insights Through Short Essays?

Ann Wylie[2], Sarah Elsabagh[3]

Corresponding author: Dr Ann Wylie ann.wylie@kcl.ac.uk
Institution: 2. King's College London, 3. King's College, London
Categories: Assessment, Curriculum Planning, Medical Education (General)

Received: 22/08/2016
Published: 23/08/2016

Abstract

Background Aim: Learning outcomes (LO) for Global Health (GH) in medical curricula were developed by consensus. This discipline however is challenging to deliver. In one medical school we explored evidence of learning following symposia, by qualitatively analysing essays and data from student feedback.

Methods: A purposive sample of 14% (N=58) GH essays, from senior medical students, were analysed for content, as they related to these LOs, the critical insights and arguments around GH. Free text student feedback data was analysed for student acceptability of the assignment, given that this contributes to students’ final ranking.

Results: A synthesis of themes were identified suggesting good awareness of the interconnectivity of health issues, such as health care systems and social determinants of health. A minority of students restricted themselves to descriptive essays. A quarter of students explicitly linked their essays to their forthcoming elective placement enabling them to feel well informed about local health issues regardless of whether they were going to a resource poor setting or not. Many students valued this assignment, but a minority disliked the lack of prescriptive directive.

Conclusions: These approaches to GH teaching and assessment demonstrated learning for most students, and good scholarship in many essays, for this essential but emerging discipline.

Keywords: Global Health; medical education, essays and assessment

Introduction

Medical education and medical curricula need to meet the needs of qualifying doctors, who may have a medical career for 40 years or more. Guidance about content and standards is provided by national regulatory bodies such as the General Medical Council in the UK (GMC) (General Medical Council, 2009).
Global health (GH) has had increasing prominence in medical curricula (Peluso, Encandela, Hafler, & Margolis, 2012) and GH is now required to be embedded in curricula to ensure competencies "….in a wider variety of diseases and diverse cultures" (Lumb & Murdoch-Eaton, 2014). In addition, other papers about medical and health education including such influential papers by Frenk et al and Bhutta et al (Bhutta et al., 2010; Frenk et al., 2010) argue that new educational approaches should recognise changing patterns of health determinants, population movements, technological advances, and health systems innovations, better address the pressing needs for global awareness and local sensitivity. Teaching approaches for GH, and how and where to locate this in the current medical curriculum are being explored and evaluated but equally there is a responsibility to assess students' learning (The Bellagio Global Health Education Initiative, 2015). What could be recognised as defined learning outcomes (LOs) and how are they demonstrated? Six Themes and sub sections were suggested by Johnson et al (Johnson et al., 2012), to guide curricular developers and teachers, see Table 1. The Global Health Education Consortium (Peluso et al., 2012) have also looked at definitions of GH to guide curriculum and the development of LOs which align well to Johnson et al.

Lumb and Murdoch-Eaton (Lumb & Murdoch-Eaton, 2014) linked GH to the preparation for the elective experience, a pragmatic and logical option. Approximately 60-70% of UK medical students undertake an overseas elective, and the majority of these in low or middle income settings or resource poor settings (Hastings, Dowell, & Eliasz, 2014). However, not all will have an explicit GH element. GH if it is embedded in curricula needs therefore to have explicit and distinct learning outcomes, independent of the elective placements and experiences, but potentially complementary. There is understandably paucity in the literature about approaches to assessment for GH and whether assessment can demonstrate learning given the variables that can influence learning per se and specifically this emerging discipline of GH.

There are a range of assessment modalities used throughout a medical programme, often linked to specific purpose such as demonstrating a skill, managing complexity in clinical context, accuracy for prescribing and differential diagnostic processes. Given the large cohorts at many medical schools, the need for measurable robustness and parity of assessment, objectivity, validity and reliability of assessment, the more subjective approaches of essays are rarely a mainstream modality (Schuwirth & Vleuten, 2005). The LOs in Johnson et al GH paper (Johnson et al., 2012) suggest students’ need to be able to discuss, examine, recognise, describe and respect, for which arguably an essay is most appropriate or should be considered. GH also has complexity, a range of research paradigms from various disciplines, student choice about their learning and interests, how to apply or demonstrate critical thinking and whether students want to link their GH essay to their elective experiences pre or post; all of which were contributing factors to the decision by one large medical school to assess GH by essay modality. This assessment has been acceptable to protagonists for 5 years. In addition, the essays and student feedback have become a valuable and rich data source for researchers and for the faculty to revise, not only on content of GH curriculum, but style and level of teaching. Since the 2009-10 cohort, who had had limited GH interest and teaching, the recent cohort has experienced generic exposure to GH teaching, curricular content and topically related issues per se, as well as more travel experience both for leisure and for learning, enabling improvements, amendments and additions to GH teaching.

The Research

This paper specifically relates to data from 2014-15 cohort and builds on data from earlier years during the research period (2012-2015). The aim was to explore evidence of GH learning from the set assignment, this being the 2000 word essay, and the optional student feedback about this core task.
Ethical approval

This was part of a wider evaluation action research project, using mixed methods and ethical approval was given by King's College London. Students were informed about this component of the study and a requirement to opt out if they did not want their essay included. No students opted out.

Sampling

A total of 430 essays were submitted for marking, shared between 20 markers. These essays, after marking, were anonymised and the awarded mark was not available to the researchers, although all had achieved a minimum pass mark for inclusion. Three essays from each markers batch were selected randomly and a total 58 were qualitatively analysed, using NVivo Version 10 with a focus on themes from Johnson et al (Johnson et al., 2012). Two students’ essays were excluded for analysis as they subsequently were accused of misconduct and given a zero mark. The approach to data analysis was informed by Robson (Robson, 2011).

Student feedback is compulsory through Likert Scale scores but all have the option to provide free text, which 127 students did. These were analysed for themes.

Results

A sample of 58 essays were selected and analysed. The majority of the essays were well written and focussed on a particular global health topic within low, middle or high income countries and synthesised this in relation to a number of Johnson et al LOs. Around 17% of the sample did not focus on a particular country and chose to discuss global health themes within more general terms with a smaller minority only focussing on one country. There was a wide selection of countries mentioned, with the majority of lower income countries discussed focussing on Africa and the most common high income countries discussed included the UK and the USA. The vast majority of the essays made comparisons between more than one country; most frequently low/middle income countries (LMIC) compared to high income countries, with many students choosing to make comparisons between LMIC to their own healthcare system in the UK. A minority of students chose to compare a global health issue between different high income countries, for example Ireland and the USA. The majority of students used this short essay to discuss GH as directed rather than restricting themselves a summary of their elective, only 13 students explicitly limited themselves to this approach. It should be noted that all students are required to submit an elective portfolio with their detailed elective plans and preparation separate to the GH essay.

Global Health Learning Outcomes

The majority (around 67%) of the essays included a definition of global health and specifically referred to Koplan et al (2009). There was good coverage of most of the global health themes from Johnson et al (Johnson et al., 2012) LOs with the majority of essays synthesising more than one and often multiple themes. The most frequently covered LOs were Global burden of disease; Socioeconomic and environmental determinants of health; Cultural diversity and health; Global health governance and Health systems. Only a minority (approximately 23 %) of the essays from this sample were descriptive, limiting the topic to one LO only or focussing on the biomedical aspect of a disease or epidemic without considering the wider interplay of the issue between cultural, environmental or socio-economic factors.

See table 2 for Quotes
Global burden of disease

Within the LOs of Global burden of disease there was a wide coverage of global epidemics and diseases including both communicable and non-communicable diseases. Popular examples included HIV and AIDS, malaria, dengue fever, polio, obesity, malnutrition, female genital mutilation (FGM), ageing and multi-morbidity. Recurring themes in the sub section of ‘Discuss causes and controls of global epidemics’ were provision of clean water and immunisation in preventing disease spread. Some essays also discussed the practice of open defecation in India, focussing on the cultural determinants and its impact on disease spread. Some students covered the impact of migration on morbidity specifically, and to some extent mortality, in the UK, with explicit links to FGM, HIV and TB as a result of immigration.

Socio-economic and environmental determinants of health

There was a wide coverage of non-clinical determinants of health across the essays which included discussion of environmental, social, cultural, educational and gender factors. The theme of women as a vulnerable group with particular health needs in LMIC was a recurring theme, particularly with regard to FGM, reproductive health and increased vulnerability to contracting HIV. Many of the essays focussed on the interaction between environment and health, for example the impact of urbanisation on the spread of communicable and non-communicable diseases as well as the effect of climate change on production of crops and the consequences for a country's economy.

Cultural diversity and health

Cultural diversity and health was explored through a range of topics including FGM, migrant populations within Western society and the reliance on traditional healers versus Western medicine in certain LMIC.

Global Health Governance

Many of the essays were able to demonstrate an awareness of the complexity of global health governance and mentioned the roles of international organisations. In particular, there was mention of the Millennium Development Goals (MDG) in many of the essays. Some of the essays made a specific reference to global health and its importance to undergraduate medical education.

Health systems

Many of the essays focussed on the issue of poor access to healthcare in LMIC, focussing on the aspiration of universal health care for all. The influencing factors were linked to sub-optimal healthcare systems, resources and/or financial barriers to accessing healthcare by citizens. Students recognised that these differences between healthcare systems were determinants of poor health in LMIC compared to high income countries. A minority of the essays made a comparison of public versus private healthcare systems between high income countries. These focussed on the themes of efficiency versus expenditure between the two systems and variable outcomes, often linked to morbidity and mortality data, in different aspects of public and private systems.

What was missing?

A minority of the Johnson et al LO and sub sections were not possible to demonstrate through essay format; namely the Cultural diversity and health sub sections of ‘Communicate effectively with people from different ethnic backgrounds’, ‘Work effectively with colleagues from different ethnic backgrounds; the Human rights and ethics sub section of ‘Respect the rights and equal value of all people without discrimination’. Generally the Human rights and ethics LO was not as well covered in the essays as the other 5 LOs, with only the sub-theme of ‘Describe the
particular health needs of vulnerable groups and migrants’ being addressed in some of the essays. These focussed on health inequalities in vulnerable groups such as women and children LMIC and minority migrant populations within high income countries.

Although many of the essays mentioned the World Health Organisation (WHO), they did not expand on this or specifically discuss the role of WHO as an international representative of national governments for health. Equally none of the essays addressed the sub topics of ‘Discuss the essential components of a healthcare system’ or ‘discuss the implications that the NHS has an international workforce and the impact of this in the UK and overseas’.

Student Feedback

Free text feedback from 127 students was analysed, with emerging themes being mixed between positive, neutral and negative. More than third of these students (46) were very positive about the assignment, which they had found useful, interesting and had enjoyed the essay format of the assessment. Most were positive and some students indicated there should be more global health teaching in the curriculum and a few felt that the word limit had been too restrictive to write an insightful essay with any depth. A minority of students felt that the assignment had been a distraction from clinical learning.

Discussion

This research has demonstrated that an essay assignment is an appropriate means for assessing a wide range of global health learning outcomes as described by Johnson et al. However, a minority of themes are not easily assessed by essay format and demonstrate the importance of diverse learning methods for students to achieve all global health competencies. For example, LOs such as ‘Communicate effectively with people from different ethnic backgrounds’ and ‘Work effectively with colleagues from different ethnic backgrounds’ would be achieved through practical activities, such as the elective placement itself, however as this was a pre-elective assignment it was not possible to assess these practical and communication skills within its remit. Although not formally assessed in the elective placement, these outcomes would be implicit in the overall experience of students undertaking their elective placement.

Strengths and Limitations

The data was coded independently, without any knowledge of the student cohort, their awarded marks and neither has the researcher attended any symposia, although she had access to the materials. Historical analysis of the cohorts from 2012-2014 and presentations at conferences relating to the previous work was shared with her.

This is a large medical school so a rich and varied student cohort, with their own varied learning trajectories, life experiences and aspirations, enabling students to draw on a broad base to complement symposia. This is a relatively high stakes assignment as it contributes to the final ranking for graduate job applications (Foundation year 1 and 2 in UK), and failure in this component could result in lack of progression for some students. This may be a strength in that students endeavour to gain a competitive grade in this assignment.

Equally with data from one school, and therefore a single institution focus, what the implications are for a wider uptake of short essay writing on GH needs to be tested. At The Bellagio Global Health Initiative meeting in June 2015 the authors argue that assessment should be linked to what students have learnt rather than what was taught and some form of reflection could enhance learning, as well as provide evidence of student development (The Bellagio Global Health Education Initiative, 2015).
This paper focused just on the one cohort of medical students as it was not feasible or practical to combine all the data, in part because the symposia content and pedagogy evolved over time. It focuses on an assignment but details of symposia content and process are not described.

Apart from the demands of marking, such as time, standard-setting, coping with diversity of content, both the markers and students found this acceptable and not onerous. The constraints of timeframes, including the 4 week turnaround for markers during the Easter break, was a concern but that said, informal feedback from the markers indicated that they found the work interesting and their batch size acceptable, knowing they were to refer to the organiser if there were low marks or concerns about content, grammar, scholarship and plagiarism.

These are the technicalities rather than the academic value but nonetheless need to be an integral part of curriculum management. Students live and work in diverse settings, with populations from many backgrounds, particularly in urban settings and conurbations such as capital cities in Western Europe and North America. Regardless of elective plans it will be important to prepare junior doctors to deal with individual clinical patient needs and to appreciate how management plans will be implemented in the patient context, to possibly be advocates for patients and to be aware of the local health needs of the population in which they work. GH, an emerging epistemology, is likely to have increased content and dedicated time in future curricula but it will be important to have clarity about rationale, level, content, learning outcomes and assessment. There should be ongoing reviews about assessing learning needs as GH becomes more explicit in various other aspects of curricula and reviewed for pragmatic reasons such as the student load, crowded curricula, the faculty demands as well as providing an appropriate curriculum to prepare junior doctors.

It is self-evident that those students with a sound public and global health knowledge base and skill set are, per se, potentially valuable contributors to their elective hosts, while they also gain in experiences and insights (Elsabagh, Bennett, & Wylie). At the time Elsabagh et al did their funded elective project in Vanuatu they were already aware of the challenges emerging about malaria prevention generally and specifically in that local area and able to design and conduct a pragmatic and context specific study. Not only did they prepare their proposals, conduct the study but additionally were able to publish their work. Being able to write well is a skill all graduates should have, especially when articulating the complex concepts associated of GH.

**Conclusion**

Our experiences have shown that public health and social sciences are essential and may be the basis of GH teaching. GH is not international health (Peluso et al., 2012) nor tropical health although they contribute, neither is GH all about LMIC health care needs in non-English speaking tropical regions but more linked to Koplan’s definition (Koplan et al., 2009), the WHO aims, and formally the UN MDGs, now been replaced now the Sustainable development goals (SDG)3G.

The Johnson et al themes (Johnson et al., 2012) however remain valuable in guiding curricular development and writing LOs and, we argue, lend themselves to be assessed in an essay or similar format.

**Take Home Messages**

- Global Health has increased in medical curricula and the scope for content is wide
- An emerging and dynamic epistemology rather than a discipline
Assessment needs to be relevant, pragmatic and linked to Learning Outcomes
Short Essays with a marking guide may demonstrate depth of learning and related critical insights and informed argument

Notes On Contributors

Dr Ann Wylie has led on core Global health teaching and health promotion in King's undergraduate medical curriculum for many years, is deputy director of the community medical undergraduate curriculum and senior teaching fellow. She has presented related research at many international conferences.

Dr Sarah Elsabagh is a third year GP trainee at Guy’s and St Thomas' Hospital scheme. She did her undergraduate medical degree at King’s College London and is still involved in teaching at the medical school.

Acknowledgements

The authors would like to thank Professor Yuko Takeda, MD PhD FACP MSc, Division of Medical Education, Juntendo University School of Medicine, Hongo 2-1-1, Bunkyo-Ku, Tokyo 113-8421, Japan, for her earlier work on this project and comments on this paper.

Bibliography/References

Bhutta, Z. A., Chen, L., Cohen, J., Crisp, N., Evans, T., Fineberg, H., . . . Zurayk, H. (2010). Education of health professionals for the 21st century: a global independent Commission. The Lancet, 375(9721), 1137-1138.  
http://dx.doi.org/10.1016/S0140-6736(10)60450-3

Elsabagh, S., Bennett, V. A., & Wylie, A. Public awareness and prevention of malaria in Vanuatu. Public Health, In Press, Corrected Proof.  
http://dx.doi.org/10.1016/j.puhe.2010.02.010

Frenk, J., Chen, L., Bhutta, Z. A., Cohen, J., Crisp, N., Evans, T., . . . Zurayk, H. (2010). Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. The Lancet, 376(9756), 1923-1958.  
http://dx.doi.org/10.1016/S0140-6736(10)61854-5

General Medical Council. (2009). Tomorrow's Doctors (3rd Edition ed.). London: General Medical Council.

Hastings, A., Dowell, J., & Eliasz, M. K. (2013). Medical student electives and learning outcomes for global health: A commentary on behalf of the UK Medical Schools Elective Council. Medical Teacher, 36(4), 355-357.  
http://dx.doi.org/10.3109/0142159X.2013.849330

Johnson, O., Bailey, S. L., Willott, C., Crocker-Buque, T., Jessop, V., Birch, M., . . . Yudkin, J. S. (2012). Global
health learning outcomes for medical students in the UK. The Lancet, 379(9831), 2033-2035.

http://dx.doi.org/10.1016/S0140-6736(11)61582-1

Koplan, J. P., Bond, T. C., Merson, M. H., Reddy, K. S., Rodriguez, M. H., Sewankambo, N. K., & Wasserheit, J. N. (2009). Towards a common definition of global health. The Lancet, 373(9679), 1993-1995.

http://dx.doi.org/10.1016/S0140-6736(09)60332-9

Lumb, A., & Murdoch-Eaton, D. (2014). Electives in undergraduate medical education: AMEE Guide No. 88. Medical Teacher, 36(7), 557-572.

http://dx.doi.org/10.3109/0142159X.2014.907887

Peluso, M. J., Encandela, J., Hafler, J. P., & Margolis, C. Z. (2012). Guiding principles for the development of global health education curricula in undergraduate medical education. Medical Teacher, 34(8), 653-658.

http://dx.doi.org/10.3109/0142159X.2012.687848

Robson, C. (2011). Real World Research (third ed.). West Sussex UK: Wiley.

Schuwirth, L., & Vleuten, C. v. d. (2005). Written Assessments. In Dent.J & Harden.R (Eds.), A Practical Guide for Medical Teachers (4th Edition ed., pp. 311-322). New York: Elsevier Churchill Livingstone.

The Bellagio Global Health Education Initiative. (2015). A Universal Curriculum for Global Health. Bellagio, Italy Rockefeller Foundation.

Appendices
| TABLE 1: PROPOSED GLOBAL HEALTH LEARNING OUTCOMES FOR MEDICAL STUDENTS |
|-------------------------------------------------------------|
| **GLOBAL BURDEN OF DISEASE** | |
| 1. Discuss communicable and non-communicable disease at the global level. | |
| 2. Discuss the impact of international travel and migration on the diseases seen in the UK. | |
| 3. Discuss the causes and control of global epidemics. | |
| **SOCIO-ECONOMIC AND ENVIRONMENTAL DETERMINANTS OF HEALTH** | |
| 4. Demonstrate awareness of the non-clinical determinants of health, including social, political, economic, environmental and gender disparities. | |
| 5. Examine how health can be distributed unequally within and between populations in relation to socially-defined measures. | |
| 6. Describe how the environment and health interact at the global level. | |
| **HEALTH SYSTEMS** | |
| 7. Discuss the essential components of a health system, using the WHO model. | |
| 8. Recognise that health systems are structured and function differently across the globe. | |
| 9. Recognise that the NHS has an international workforce and explain the impact of this within the UK and overseas. | |
| 10. Examine the causes and scale of inequalities in health workforce distribution. | |
| **GLOBAL HEALTH GOVERNANCE** | |
| 11. Demonstrate awareness of the complexity of global health governance, including the roles of international organisations, the commercial sector and civil society. | |
| 12. Discuss the role of the WHO as the international representative body of national governments for health. | |
| 13. Discuss how health-related research is conducted and governed globally. | |
| **HUMAN RIGHTS & ETHICS** | |
| 14. Respect the rights and equal value of all people without discrimination and provide compassionate care for all. | |
| 15. Examine how international legal frameworks impact on health care delivery in the UK. | |
| 16. Discuss and critique the concept of a right to health. | |
| 17. Describe the particular health needs of vulnerable groups and migrants. | |
| 18. Discuss the role of doctors as advocates for their patients, including the importance of prioritising health needs over other concerns and adhering to codes of professional conduct. | |
| **CULTURAL DIVERSITY AND HEALTH** | |
| 19. Demonstrate understanding that culture is important and may influence behaviour, while acknowledging the dangers of assuming that those from a particular social group will behave in a certain way. | |
| 20. Communicate effectively with those from different ethnic, religious and social backgrounds, where necessary using external help. | |
| 21. Work effectively with colleagues from different ethnic, religious and social backgrounds. | |
| Global burden of disease | The dramatic increase in accessibility through primary healthcare has most certainly been one of the main contributing factors in the control of TB in Cambodia.

Malaria is in many ways the archetypal global health issue. It is an infectious disease which does not respect international borders. Its burden is carried disproportionately (indeed, almost entirely) by poor countries.

Aging populations place particular burdens on health care systems, therefore understanding the needs of an older population and in designing appropriate health service provision. We will need to increase dementia care, stroke units, elderly orthopaedics services, geriatric wards and community elderly care services both nationally and internationally.

Socio-economic and environmental determinants of health | Neural tube defects (NTDs) occur early on in pregnancy, rendering later supplementation of little use. This means that in developing countries, where access to pregnancy testing and women’s awareness of how to recognise symptoms of pregnancy are limited, pregnancies may not reveal themselves until later and the chance to supplement is missed.

"Climate change in crop producing countries together with local drought contributed to triggering increased food prices and mass migration causing the poor to become increasingly overcrowded, malnourished [sic] and for health service provision to become strained and indirectly led to social unrest and political instability."

The cause of healthcare inequality in South Africa is multifaceted. Overcoming geographical constraints is one small part of wider social and economic problems. South Africa’s apartheid history continues to shape its healthcare as seen in the urban-rural disparities, involving broader issues of poverty, race, life style and cultural values.

Los Angeles South where 31.7% of people are uninsured, lack of insurance corresponded to double the likelihood of not having a regular physician. Knock-on effects of this lack of medical care include poorer diabetes management with fewer eye and foot examinations. As a community, there are worse health outcomes ranging from higher BMIs, diabetes, and hypertension to teen births, infant mortality, and cancer deaths as compared to the wealthier Los Angeles County.

Health systems | In a number of developed countries there are screening services in place for a number of cancer and a much greater access to better imaging modalities. There are also greater immediate health problems in many developing countries, mostly that of communicable disease.

"In the absence of a sufficient government-led healthcare system, many alternative practices have arisen. A significant traditional healthcare industry exists in Myanmar, using methods like acupuncture, herbal medicine and divination to treat patients who have no access to Western medicine."

"Promoting active ageing (including maintaining mobility) is essential to maintaining a healthy elderly population and reducing burden on healthcare resources. As a community, there are worse health outcomes ranging from higher BMIs, diabetes, and hypertension to teen births, infant mortality, and cancer deaths as compared to the wealthier Los Angeles County."

Global health governance | The concerted efforts of WHO, UNICEF, LANPA, the UN and various other authorities has led to greater awareness of the problem and has caused many governments to pass laws prohibiting PAS.

"Despite increasing research supporting the need for greater investment in surgery, policymakers have been slow to implement such programs. Reasons for the traditional disconnect between surgery and public health include the failure to perceive surgery as a primary preventive intervention as well as the poor recognition of its value in the primary health care needs."

"The field of geriatric medicine is one in which nations can learn from each other’s successes and failures, and it is essential that we are able to do so. Improving global geriatric care through changes in education, legislation, research and acceptance of NGOs and GPs can serve as a model for change in other areas of Global health."

Cultural diversity and health | Studies have shown that indigenous groups are less likely to engage with mental health services as it is therefore vital, when developing strategies to try and target indigenous populations, to recognise the importance of their cultural beliefs and the value that traditional methods of healing can have when used as an adjunct to modern healthcare methods.

"Other reasons for open defecation include lack of education, toilets being located too far away and cultural reasons (for example, in India many view it to be a more natural, healthy and even spiritual compared to the use of a pour-pit toilet)."

"This poses the risk that if people believe a herbal remedy will cure them of HIV, then they may not see the need to practice safe sex. This lack of understanding about HIV/AIDS is one of the crucial reasons why the HIV/AIDS epidemic has escalated out of control and why it is of paramount importance to educate and incorporate traditional healers in HIV prevention schemes."

### Declarations

The author has declared that there are no conflicts of interest.

This has been published under Creative Commons "CC BY 4.0" ([https://creativecommons.org/licenses/by-sa/4.0/](https://creativecommons.org/licenses/by-sa/4.0/))

AMEE MedEdPublish: rapid, post-publication, peer-reviewed papers on healthcare professions’ education. For more information please visit [www.mededpublish.org](http://www.mededpublish.org) or contact mededpublish@dundee.ac.uk.