

Preparing medical graduates for the health effects of climate change: an Australasian collaboration

Building a medical workforce that understands the impact of climate change on health and health services and will create change

The *Lancet* has described action to address climate change as the greatest public health opportunity before us.¹ However, to grasp this opportunity, health professionals, including doctors, must understand the impact of climate change on health and be competent to take action and advocate for change. Otherwise it will be a missed opportunity when an urgent and scaled response to mitigate and adapt to climate change is required if society is to avoid the most harmful consequences. Medical degrees (primary medical programs) in Australia and New Zealand are responsible for preparing doctors for entry into clinical practice and to care for patients and their communities. In response to the health threats posed by climate change, Medical Deans of Australia and New Zealand (MDANZ) has formed a working group, representing medical schools and medical student associations across both countries, to work collaboratively to develop curricula and resources to address this within primary medical programs. This article summarises this initiative.

Climate change already affects the health of millions of people around the world. This is described in the *Lancet* Countdown report on health and climate change,² an international collaboration coordinated by *The Lancet* to track progress on 40 health and climate change indicators. The report was published online immediately before the United Nations Climate Change Conference (COP-23) held in November 2017. An Australian policy brief, prepared jointly by *The Lancet*, the Royal Australasian College of Physicians and the Australian Medical Students' Association (AMSA), presented Australian data for a subset of the indicators.³

There are four main messages in *The Lancet* report:

- the effects of climate change on health are already substantial and unequivocal;
- to date, the national and international responses to climate change have been slow;
- while the momentum of the response has increased recently, this must be expanded and accelerated; and
- health professionals have an essential role to play in addressing climate change.

The need to build the capacity of the health workforce to respond is well recognised and has been emphasised in two recent documents. The World Health Organization Second Global Conference on Health and Climate in 2016,⁴ convened in response to the Paris Agreement on climate change in December

2015,⁵ called for "mainstreaming climate change and health topics into medical and public health training". On 13 November 2017, UNESCO adopted the Declaration of Ethical Principles in Relation to Climate Change.⁶ Article 11 of the Declaration encourages educators to prepare the professions to be informed about climate change and to be able to play their part to engage with the current challenges and build a more environmentally sustainable future.

While educational interventions focusing on environmental sustainability in health systems are being developed, this work is not yet widespread. For example, in the United Kingdom, the General Medical Council consulted widely in the development of sustainability learning objectives,⁷ which have been identified in a recent best-evidence medical education guide⁸ as providing an appropriate framework for health professions' education. An international collaboration developed learning outcomes and activities for an environmentally accountable curriculum, and a recent Delphi study has also developed learning outcomes.^{9,10} Despite this, there are few examples in the literature where climate change and health has been integrated into medical curricula. At workshops convened by the authors in 2017 at the Australian and New Zealand Association for Health Professional Educators Conference and the Global Climate and Health Summit in Bonn, no participant identified a substantial curriculum response by their medical school.

In light of this vacuum, student organisations have taken the initiative to advocate for climate change to be included in medical curricula and have prepared education modules to offer their members. AMSA has developed a short online course on climate health,¹¹ comprising four modules on climate change, the health effects, the impact on vulnerable populations and advocacy for change.

The International Federation of Medical Students' Associations, in collaboration with the World Health Organization and the United Nations Alliance on Climate Change Education, Training and Public Awareness, has developed a training manual on climate and health, designed to enable students and young professionals to understand and act on climate change.¹²

These courses help students who are concerned about climate change and health to become knowledgeable and more confident to respond. However, for all medical students to be adequately prepared for future

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practice, medical schools need to integrate climate change and health into their curriculum. The most efficient and effective way to achieve this is for medical schools to work together.

MDANZ is the peak body for professional medical education in Australasia; membership comprises the deans of the 18 medical schools in Australia and two in New Zealand. One of its responsibilities is innovation and leadership in education and training. In 2016, MDANZ agreed to a proposal from a group of medical schools that, given the serious threat to human health posed by climate change, all medical schools in Australia and New Zealand collaborate in developing curricula and learning resources. MDANZ recently formed its climate change and health working group to facilitate this work.

Knowledge and understanding of climate science and the consequences of climate change for human health, both direct and indirect, have advanced rapidly in the past 25 years (since the UN Framework Convention on Climate Change was established). For example, medical graduates must understand the adverse health consequences of extreme weather effects such as heatwaves and floods, and also the disruption these events cause to health systems. They should learn how encouraging actions and behaviour that are good for the health of patients and communities can also contribute to environmental sustainability — the human health co-benefits of climate change mitigation. The community trusts the medical profession and looks to doctors as role models and change agents; medical schools can prepare students for this advocacy role.

The strengths of the MDANZ initiative are:

- The working group represents all medical schools in Australia and New Zealand.
- It includes student representation from AMSA and the New Zealand Medical Students' Association.
- Pooling resources maximises the opportunity for all medical schools to integrate climate change and health into their curriculum.
- It represents a systematic approach to a global threat, building on work that has already been done in Australasia and internationally.
- In a developing area of practice, working collaboratively enables currency.
- It coincides with the national review of the accreditation standards for medical schools and provides an opportunity to contribute to these.

Australia and New Zealand are signatories to the Paris Agreement⁵ and the UN Sustainable Development Goals.¹³ It is becoming increasingly urgent to transition to a low carbon economy, including within the health sector, to avoid the worst outcomes of climate change.¹⁴ To quote Nelson Mandela, "education is the most powerful weapon which you can use to change the world". Consequently, this innovative and important Australasian collaboration under MDANZ leadership is both timely and welcome.

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