Surgical implications of global warming

To the Editor: There is international recognition of the substantial threat that global warming presents to human health and of the challenges that it poses to health service delivery. The World Health Organization has estimated that global warming and climate change-related natural disasters account for over 60 000 deaths globally per year.[1] Global warming will also have implications for surgery and surgical practice.

The Victorian "Black Saturday" bushfires of February 2009 saw 414 people presenting to hospital emergency departments, stretching hospital resources,[2] and 173 deaths were attributed to the bushfires. Nineteen patients were admitted to the Alfred Hospital (Melbourne's burns service) with burns to more than 30% of their bodies. The care of severe burns victims is complex and highly labour-intensive, often with a patient–nurse ratio of 1 : 1.

There would have been even more burns victims if the fire had been less ferocious and had not resulted in such a high loss of life.[3] In other words, there were fewer injuries because this intense fire killed people outright; a less intense fire may kill fewer people but leave more injured. The extreme weather that led to the fires is an example of the type of event that may become more frequent as global warming increases.

The Garnaut climate change review predicts more frequent extreme wind, rain and intense tropical cyclones, and predicts that category 3–5 storms are likely to increase in intensity by 60% by 2030, and by 140% by 2070.[4] Increasing population densities along the northern Queensland coast will also expose more people to the risks of floods, storms and cyclones. These natural disasters often produce wounds which are highly contaminated, and primary wound care services may face increased demand.

One of the practical implications of research in the field of surgery and climate change will be the need for modelling of future demands for surgical intervention in Australia. The range of trauma impact due to climate change needs to be defined, and the incidence with which this is likely to occur needs to be determined, based on climate change modelling. With this information, models of future demand for surgical interventions can be determined.

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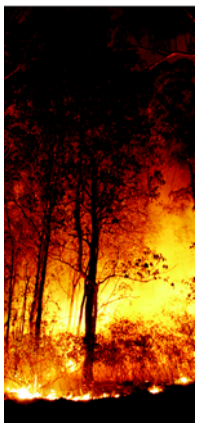

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2 Teague B, McLeod R, Pascoe S. 2009 Victorian Bushfires Royal Commission: final report. Melbourne: Government Printer for the State of Victoria, 2010. http://www.royalcommission.vic.gov.au/Commission-Reports/Final-Report (accessed Aug 2011).

3 Cameron PA, Mitra B, Fitzgerald M, et al. Black Saturday: the immediate impact of the February 2009 bushfires in Victoria, Australia. *Med J Aust* 2009; 191: 11-16.

4 Garnaut R. Garnaut climate change review: final report. Melbourne: Cambridge University Press, 2008: 117. http://www.garnautreview.org.au/index.htm (accessed Aug 2011). ❑

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