



Contents lists available at ScienceDirect

American Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/ajem

What we learned from the 2019–2020 Australian Bushfire disaster: Making counter-terrorism medicine a strategic preparedness priority

With over 46 million acres burnt, 5900 buildings destroyed, and over \$100 billion in damage and economic costs, the Australian bushfire season of 2019–2020, also dubbed the “Black Summer”, is estimated to be the costliest natural disaster in the country to date, and put an unprecedented strain on response systems [1]. In light of the strain caused by the concurrent global COVID-19 pandemic, the uniquely vulnerable Australian healthcare system is highly susceptible to strategic, asymmetrical terrorist attack, which has been threatened by some radical extremist organizations [2].

The Australian bushfires stretched the surge capacity of our fire and emergency services almost to the breaking point, and exposed weaknesses in the national healthcare system [3]. The bushfires demonstrated the significant health impacts of climate change-related disasters, that in this case included short term rises in cardiac and respiratory emergency department visits and hospital admissions [4,5].

The longer-term morbidity and mortality impact resulting from fine particulate matter and environmental pollutant exposure is still being examined, with the subsequent societal repercussions not yet well understood. Additionally, there are concerns that Australia does not have a national health and climate change strategy or plan. The 2019 bushfires further exposed the lack of a coordinated multidisciplinary health services approach to disaster management. The exclusion of primary care health services in the various phases of the disaster cycle, and in particular in disaster response is a significant shortcoming [2].

It is well established that natural disasters have resulted in long term mental health consequences in affected communities. It was estimated that 80% of Australians were directly or indirectly affected by the 2019 bushfires. The end of the bushfire devastation in March 2020 coincided with the beginning of the COVID-19 pandemic, further placing immense strain not only on Australia's health care sector, but that of the international community [6]. As of August 2020, over 2500 Australian healthcare workers in the state of Victoria alone have tested positive for Covid-19 [7].

2020 has been an extraordinary year in Australia, as it has been around the world, not just because of COVID-19, but due to the myriad of overlapping events that have strained our response capacity. This experience has demonstrated that to function effectively, healthcare systems must balance the response to cyclical natural disasters and seasonal viral outbreaks, while also managing the daily acute and chronic traumatic and medical conditions. This leaves little room to surge in the event of a large-scale manmade disasters such as a terrorist attacks, which could be timed to exploit healthcare systems and emergency services under duress.

Terrorist attacks in Australia are relatively rare, with 37 documented attacks (over 70% were incendiary attacks targeting buildings and vehicles) in the decade between 2009 and 2019, however, the ongoing Covid-19 pandemic is presenting new opportunities for terrorists. Extremist groups engaging in anti-social activities are increasingly susceptible to radicalization while under lockdown [8]. A rise in anti-government attitude, distracted counter-terrorism personnel and, as previously mentioned, a dramatically stretched healthcare and emergency system require a strategic pivot to promote resiliency and innovative decision making.

The recent call to arms by the Islamic State (ISIS) encouraging their followers to engage in bushfire terrorism is a major concern [2]. Leveraging climate change and other natural events to inflict a complex manmade disaster in a cost effective, hard to detect, and difficult to prevent way would be ideal as a terrorist methodology. A well-timed, coordinated “attack” could be unmanageable from a firefighting and emergency services perspective, and could result in significant long-term psychosocial, health and financial impacts to our society.

One of the main objectives of counter-terrorism medicine as a disaster medicine subspecialty is to consolidate the healthcare response to terrorism and be forward looking in anticipating novel methodologies that could lead to significant healthcare impacts [9]. The current Covid-19 pandemic and the recent bushfires have taught us valuable lessons in multi-agency coordination and disaster response, requiring us to be pro-active in anticipating future events. For terrorist events in particular, the potential cost of a reactive-only disaster response is unacceptably high and may be at the expense of preventable deaths.

References

- [1] Read P, Denniss R. With costs approaching \$100 billion, the fires are Australia's costliest natural disaster [Internet]. The Conversation. [cited 2020 Sep 20]. Available from: <http://theconversation.com/with-costs-approaching-100-billion-the-fires-are-australias-costliest-natural-disaster-129433>; 2020 Jan.
- [2] Zimmerman A. Jihad by fire? Spect Australia. 2020 Jan;29.
- [3] Cousins S. Bushfires expose weaknesses in Australia's health system. Lancet. 2020 Jan; 395(10219):175–6.
- [4] Walter CM, Schneider-Futschik EK, Knibbs LD, Irving LB. Health impacts of bushfire smoke exposure in Australia. Respirology. 2020;25(5):495–501.
- [5] Vardoulakis S, Marks G, Abramson MJ. Lessons learned from the Australian bushfires: climate change, air pollution, and public health. JAMA Intern Med. 2020 May 1;180(5):635.
- [6] Summer of crisis[report [Internet]. Climate Council; 2020 [cited 2020 Sep 20]. Available from: <https://www.climatecouncil.org.au/resources/summer-of-crisis/>.
- [7] newsGP - Why are so many Victorian healthcare workers contracting COVID-19? [Internet]. NewsGP; 2020 Aug 21 [cited 2020 Sep 20]. Available from: <https://www1.racgp.org.au/newsGP/clinical/why-are-so-many-victorian-healthcare-workers-contr>.
- [8] Ackerman Gary, Peterson Hayley. COVID-19 and terrorism. Perspect Terror. 2020 Jun; XIV(3):60.
- [9] Court M, Edwards B, Issa F, Voskanyan A, Ciotton G. Counter-terrorism medicine: creating a medical initiative mandated by escalating asymmetric attacks. Prehospital Disast Med. 2020 Aug;14:1–4.

Derrick Tin

Department of Emergency Medicine, Beth Israel Deaconess Medical Centre,
Boston, Massachusetts, USA

Department of Emergency Medicine, Harvard Medical School, Boston,
Massachusetts, USA

Corresponding author at: Beth Israel Deaconess Medical Center and
Harvard Medical School, Boston, MA, USA.

E-mail address: derrick@tacmedaustralia.com.au

Attila J. Hertelendy

Department of Emergency Medicine, Beth Israel Deaconess Medical Centre,
Boston, Massachusetts, USA

Department of Emergency Medicine, Harvard Medical School, Boston,
Massachusetts, USA

Department of Information Systems and Business Analytics, College of
Business, Florida International University, Miami, FL, USA

Gregory R. Ciottone

Department of Emergency Medicine, Beth Israel Deaconess Medical Centre,
Boston, Massachusetts, USA

Department of Emergency Medicine, Harvard Medical School, Boston,
Massachusetts, USA

25 September 2020

Available online xxxxx