



Original Research

Burning questions: Exploring the impact of natural disasters on community pharmacies

Pey Wen Mak, B.Pharm. (Hons.)^a, Judith Singleton, B.Pharm., M.B.A. (Hons.), Grad.Cert.Acad.Prac.^{b,*}

^aSchool of Pharmacy, University of Queensland, Brisbane, Australia

^bSchool of Clinical Sciences, QUT, Brisbane, Australia

Abstract

Background: The past decade has seen a rapid change in the climate system with an increased risk of extreme weather events. On and following the 3rd of January 2013, Tasmania experienced three catastrophic bushfires, which led to the evacuation of several communities, the loss of many properties, and a financial cost of approximately AUD\$80 million.

Objective: To explore the impacts of the 2012/2013 Tasmanian bushfires on community pharmacies.

Method: Qualitative research methods were undertaken, employing semi-structured telephone interviews with a purposive sample of seven Tasmanian pharmacists. The interviews were recorded and transcribed, and two different methods were used to analyze the text. The first method utilized Leximancer[®] text analytics software to provide a birds-eye view of the conceptual structure of the text. The second method involved manual, open and axial coding, conducted independently by the two researchers for inter-rater reliability, to identify key themes in the discourse.

Results: Two main themes were identified – ‘people’ and ‘supply’ – from which six key concepts were derived. The six concepts were ‘patients,’ ‘pharmacists,’ ‘local doctor,’ ‘pharmacy operations,’ ‘disaster management planning,’ and ‘emergency supply regulation.’

Conclusion: This study identified challenges faced by community pharmacists during Tasmanian bushfires. Interviewees highlighted the need for both the Tasmanian State Government and the Australian Federal Government to recognize the important primary care role that community pharmacists play during natural disasters, and therefore involve pharmacists in disaster management planning. They called for greater support and guidance for community pharmacists from regulatory and other government bodies during these events. Their comments highlighted the need for a review of Tasmania’s three-day emergency supply regulation that allows pharmacists to provide a three-day supply of a patient’s medication without a doctor’s prescription in an emergency situation.

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Keywords: Bushfire; Community pharmacy; Pharmacists; Medication management pathway; Medicines; Medications; Medicines supply; Natural disasters; Emergency supply; Disaster management; Disaster planning

* Corresponding author. Discipline of Pharmacy, School of Clinical Sciences, Faculty of Health, QUT Q Block – Level 9, Gardens Point Campus, Brisbane, Q 4000, Australia. Tel.: +61 7 3138 1826.

E-mail address: judith.singleton@qut.edu.au (J. Singleton).

Introduction

The past decade has seen a rapid change in the climate system, with an increased risk of extreme weather events.^{1–5} These include coastal flooding, tsunamis, earthquakes, prolonged duration of heatwaves, and severe bushfires.^{1–3} The impacts of climate change contributed to the extreme heatwaves and catastrophic bushfire conditions experienced in Australia during the summer of 2012/13 – termed the ‘Angry Summer’ by the Australian Climate Commission.² On and following the 3rd of January 2013, Tasmania experienced three major bushfires at Lake Repulse, Bicheno and Forcett. The Forcett fire was the most severe of the three, and led to the evacuation of several communities, the loss of many properties, and a financial cost of approximately \$80 million, affecting both local residents and visiting tourists.⁶

Whilst the whole community is affected when a natural disaster strikes, elderly people, and particularly those with multiple co-morbidities, such as cardiovascular disease, diabetes and cancer, are particularly vulnerable. Over 80% of Australians aged 65 years and over were reported as having three or more chronic diseases in the Australian 2007–2008 National Health Survey.⁷ Additionally, nearly everyone within this age group suffered from one long-term chronic condition.⁷ It was reported that approximately 70% of elderly women and 60% of elderly men take at least four medications (prescription and non-prescription) daily.⁸ These statistics highlight the vulnerability of elderly patients to interruptions in continuity of care, and access to essential medications during a natural disaster. It is therefore imperative that health care policymakers develop adaptive, climate change-resilient, health care systems.^{3–5,9,10}

Natural disasters such as bushfires impact on patients’ continuum of care, and subsequently impact on population health. The exact nature of this impact can be better understood by examining the Medication Management Pathway (MMP) Model (Fig. 1) and identifying the points in the pathway that could be potentially disrupted by an emergency event.¹¹ The MMP model describes nine cognitive and physical steps and three background processes involved in the use of medicines, with a particular focus on the patient. Understanding this pathway, and all the factors that influence each stage of the pathway, enables pharmacists to use medications safely, judiciously, appropriately and efficaciously (the four tenets

of the ‘Quality Use of Medicines,’ which is one of the pillars of Australia’s National Medicines Policy).^{11–13} Natural disasters may impact medication supply logistics, for example by impeding modes of transportation, and consequently affect the ‘distribution’ component of the MMP model. The urgency of an emergency situation may also affect the ‘prescribing’ stage the reviewing and issuing of the medication order and the effective provision of medicines’ information. There are many ways in which natural disasters and other emergency situations can interfere with the Medication Management Pathway, resulting in a negative impact on the medication continuum and ultimately on patients’ health outcomes. Therefore, understanding the challenges faced by community pharmacists during bushfire events has the potential to inform future disaster management planning, and the primary health care sector’s response to affected populations’ health care needs, including uninterrupted access to medicines.

There is very little in published literature on the effects of natural disasters on community pharmacies’ operations and the role that pharmacists play during these situations. A literature search of the databases PubMed, EMBASE and Google Scholar yielded several peer-reviewed journal articles that investigated the impacts of Hurricane Katrina in the US and the role that pharmacists played during this disaster.^{14–18} This specific search strategy failed to yield any peer-reviewed journal articles relating to community pharmacy operations in Australia during a natural disaster. However, there were a limited number of articles in non-peer-reviewed pharmacy trade magazines related to the role of pharmacists during natural disasters (see Burton K.^{19–22} and Waterman C.²³). Having identified this gap in the peer-reviewed literature, the aim of this study was to explore the impacts of the 2012–13 bushfires in Tasmania, Australia on community pharmacy operations, and medication continuance in the affected population.

Method

Study design and participant recruitment

For this study, qualitative research methods were employed to gain insight into the impacts of the Tasmanian bushfires on the community pharmacy sector. Semi-structured interviews with seven Tasmanian community pharmacists were

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