

THE WINSTON CHURCHILL MEMORIAL TRUST OF AUSTRALIA

RACHEL KIRBY – 2007 CHURCHILL FELLOW

The Bob and June Prickett Churchill Fellowship to study preparedness for mass burn casualty situations.

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Signed
Rachel Kirby

Dated

Index

Page 2	Index
Page 3.....	Introduction and acknowledgements
Page 4.....	Executive Summary
Page 5	Programme
Page 6, 7, 8... ..	Main Body
Page 9... ..	Conclusions
Page 10.....	Recommendations and implementation

Introduction and acknowledgements

The Bob and June Prickett Churchill Fellowship provided me with the invaluable opportunity to undertake a review of Emergency Preparedness Strategies for mass burn casualty situations at major United States Burn Centers.

As a clinical nurse specialist in the field of burns management, I have developed an interest in the optimization of health system responses to multiple casualties. Recent events faced by Australian burns units such as the Bali Bombings (2002) and the Jakarta plane crash (2007), continue to highlight the importance of establishing coordinated responses amongst advanced care teams, local staging and tertiary retrieval hospitals and associated emergency personnel.

The United States are prominent in the field of disaster management and response to mass casualty situations, sadly as a result of their own national experiences including the events of September 11th (2001), the Rhode Island night club fire (2003) and the BP Texas gas explosion (2005).

My fellowship afforded me the chance to visit major burn centers throughout the United States, study their disaster management strategies and establish collegiate networks with their staff, many of whom have had personnel experience in managing mass casualty situations.

A secondary benefit of my fellowship was the ability to extend my review to evaluate the specifics of each unit's burn management techniques and the outcomes they achieve.

I wish to thank the Churchill Memorial Trust of Australia for awarding me a 2007 Churchill Fellowship; the opportunities that they afford are truly wonderful. My most sincere thanks to Mr Dusty Bob Prickett whose generosity and that of his late wife June has led to the establishment of the Bob and June Prickett Churchill Fellowship of which I am truly honored to be a recipient.

My gratitude extends to all the people that I have met and spoken with throughout my travels and to my colleagues within the Australian burns community for their support.

EXECUTIVE SUMMARY

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Burns Clinical Nurse Specialist

The Bob and June Prickett Churchill Fellowship: Preparedness for mass burn casualty situations

Project description:

A review of management strategies for mass burn casualty situations by specialist United States Burn Centres. Major US Burn Centres were visited over a period of five weeks. At each centre I met with key personnel to discuss their strategies for disaster response and measures employed to maintain a state of readiness for rapid response to future events.

Highlights

- Washington – observing a large scale disaster preparedness exercise.
- The many contacts made and networking opportunities provided by undertaking this Churchill Fellowship.
- Meeting leading burns clinicians in each of the units that I visited.

Major Conclusions

- Preparedness for response is imperative for ensuring optimal system function during mass casualty situations.
- Preparedness needs should be met at the legislative, systems operations, hospital and individual unit levels.
- Regular training including mock exercises is essential for maintaining operational readiness.
- A collective collaboration with our international colleagues is important to generate a cohesive approach to disaster management.

Implementation and dissemination

I will continue to work with my colleagues in the Australian burns community to support current disaster preparedness initiatives by:

- Involvement where possible in disaster management and mass casualty response planning.
- Active involvement in unit education and staff training.
- Propagating awareness of the need to support such initiatives.

I aim to disseminate knowledge gained during my Churchill Fellowship through:

- Presentations at appropriate forums.
- Written reports and contributions to the medical and nursing literature.
- Maintaining an ongoing commitment to training and education through involvement with unit and hospital programmes.

PROGRAMME

Programme	Travel Dates 12th March – 14th April
Baltimore, Maryland	Johns Hopkins Burn Centre Rowena Orosco – Clinical Nurse Specialist
San Francisco, California	Saint Francis Memorial Hospital Burn Centre – San Francisco Angela Gates – Patient Care Manager
Galveston, Texas	Blocker Burn Unit, Galveston Texas Shriners Hospital Burn Centre Galveston Texas Odette Comeau – Clinical Nurse Specialist
Washington DC	Washington Hospital Centre Susan Eckert – Disaster Coordinator
New York City, New York	New York Presbyterian Hospital Nicole Alden – Disaster Coordinator

In the current climate in which we live, there is a constant threat of potential burns disasters. These take the form of events such as bushfires, factory explosions, gas explosions and fires in suburban dwellings. Sadly in our current political climate, an additional threat we face is that of increased terrorist activity. Inherent to such attacks is the potential for mass casualties, a significant number of which are likely to sustain burn injuries as a result of the incendiary and explosive devices that are often employed.

Burns (thermal) disasters can be characterized as events in which there are significant casualties resulting in fatalities and extensive injury with high rates of mortality and potential long term disability.

Burn disaster preparedness is of vital importance to health system planning and operation. The establishment of specialist services, trained staff and coordinated response protocols are a priority for ensuring optimal patient management in mass casualty situations. This has become increasingly apparent in the wake of recent burn disasters faced by Australian burns services, such as the Bali Bombings (2002) and the Jakarta plane crash (2007), and high profile incidents faced by our international colleagues such as the World Trade Centre attack (2001).

Disaster planning requires a comprehensive approach covering all aspects of care, including incident prediction and prevention strategies in addition to acute response protocols.

Disaster plans focusing on mass burn casualty situations must include:

- Training of appropriate personnel to perform a rapid initial evaluation of the disaster and ascertain the magnitude of response required.
- Infrastructure and personnel to affect an immediate response both in support of emergency services and local facilities, and at the receiving units in preparation for incoming casualties.
- Coordination of patient triage, acute patient care and patient transport to appropriate treatment centres.
- Establishment of effective communication lines to coordinate services and liaise with adjunct emergency services, such as police, ambulance services and the fire brigade.
- Measures to ensure protection of response personnel and patients under their care.
- Measures to sustain function of receiving burn units with respect to both incoming patients and current patients whose care must also be ensured.

Above all else, one of the most fundamental aspects of disaster preparedness is having a plan that has been rigorously tested. This process has been given priority attention by burns services within the United States. My Churchill Fellowship offered me the opportunity to visit a number of major United States burn centres and review their approach to burn management and disaster preparedness in general.

The ability to review US strategies for validation and rehearsal for disaster management plans was of significant interest to me. Such exercises are of course crucial to maintaining peak readiness for response. I was fortunate enough to be invited to attend a large scale mock disaster exercise during my visit to the Washington Hospital Centre Burn Unit. This involved a real time response of emergency and hospital services with input from the military and security services to a simulated mass casualty situation. 100 volunteers were recruited to act as patients for this exercise as staff responded to a spontaneous explosion scenario. Such was the preparation and scale of this exercise that experts in disaster management from the United Kingdom were also in attendance to observe and learn from this process. Following completion of the drill I was invited to attend to the review and debrief session where key personnel analysed the efficacy of their response and identified areas of need and approaches to addressing these. And to reinforce the importance of fostering international working relationships, I have since been interviewed for the Washington Hospital Centre newsletter.

The areas that I have visited have given me access to a diverse cross section of potential disasters affecting these areas and I have been able to see how their thinking when planning for such events differs.

California experiences the threat of Bushfires, known as Wildfires in the United States. This means that in the hotter and windier months there is potential for a mass casualty situation to arise, particularly given the population density residing within these areas. By comparison, oil refineries represent a major industry in Texas and despite significantly improved safety measures the potential for industrial fires and mass casualty situations remains an important consideration to burns clinicians in these areas.

In Galveston I had the opportunity to examine a different aspect of burns disaster planning. Galveston Island, the home of the Blocker Burn Unit and the Shriners Burn Unit lives under the constant threat of hurricanes. This was of particular interest to me when studying their disaster planning as a large proportion of their experience lies in the logistics of evacuating existing burn inpatients in the event that the hospital is evacuated by threat of a hurricane. In 2007 these hospitals were evacuated as a result of a category five hurricane warning. This involved moving all of the burn patients to units outside of the threatened area. This is an interesting facet of burns disaster planning, because although the disaster itself does not inherently risk new burn victims, the threat of a natural disaster in the form

of a hurricane still calls for burns disaster plans to accommodate a more general response.

New York City lives under a different threat profile. The population in this city is so large and city planning is such that the majority of residents reside within multiple story apartment buildings housing hundreds of occupants. This results in a constant threat of building fires. A potential inability to evacuate efficiently can therefore result in a significant casualty burden.

In Australia we must give similar consideration to local requirements in planning our burns disaster management services. In the heavily bushed areas, fires are a significant threat particularly during our summer months. High density populations such as the inner cities of Sydney and Melbourne must consider apartment building fires, whilst one of the largest mass casualty risks is that of major industrial accidents. Australia too, lives under the threat of terrorist activity. One of the ways that Australian burns disaster planning is unique to the United States models is our proximity to South East Asia and the Pacific Islands. We are uniquely positioned to provide expert burn care to our regional neighbors should the need arise. Our sense of international obligation has already been demonstrated by the Australian response to mass casualty incidents that have occurred in these areas.

I was fortunate to meet with the Nicole Alden one of the nurse specialists who has been heavily involved in the New York burns disaster planning that has followed the World Trade Centre attacks. Significant resources have been invested in disaster management planning throughout the United States and most notably in New York following this significant incident. The New York City Hospital Preparedness Task Force for patients with burns has developed a tiered burn triage and treatment protocol that allows for the treatment of up to 400 adult and paediatric patients. Of particular interest to me is the inclusion of training modules for personnel in second and third tier hospitals. In addition to specialist burns services, inclusion of these hospitals in burns disaster planning is crucial, particularly if casualties exceed the number of acute burns beds available. The coordinated involvement of these services also allows for the accommodation of established patients being cared for by specialist burns units during these times of crisis. As a consequence it remains important to ensure appropriate upskilling of personnel and provision of infrastructure to these services. Nicole was delightfully accommodating and it was a privilege to have the opportunity to discuss her extensive experiences of burns disaster planning.

Advanced response teams are of particular importance in the response to mass burns disasters. Research shows that having a team of burns clinicians at the staging area (usually a local hospital close to the disaster site) is beneficial to patient care. Although basic life support can be carried out by all medically trained personnel, trained burns personnel are able to provide appropriate attention to the burn injury and have a detailed understanding of the implications that the burn

wound can have on life preservation. In Australia this is of particular importance given the potentially restrictive geographic size of our country.

During my fellowship I had the opportunity to review the US approach to the deployment of advanced management teams. Burns centres across the US are divided into response regions with each having a designated acute burns management team that is able to be deployed at short notice. These teams are structured to function as mobile field units to be stationed at the disaster site or local staging area in coordination with base teams at the nearest major burns centre. The dispatch of burns clinicians to disaster sites or staging areas is imperative and the United States has a well planned model.

Conclusions

This trip provided an extremely valuable insight into the operations of United States burn units and their disaster preparedness strategies. Continued information sharing and documentation of all experiences will support a universal approach to disaster management. One of the most important things that this trip has highlighted for me is that fostering working relationships, promoting networks and prioritizing information sharing will allow for the most informed and tested plans, working to ensure the best responses possible.

Recommendations

Following my time visiting these burn units and examining disaster preparedness, I would recommend:

- Continued collaboration between burn units internationally to promote information sharing.
- Writing up experiences as disasters occur – publish lessons learned
- Disaster drills on as large a scale as is possible – expending significant resources to implement this.
- Continuing to promote awareness of the need to support disaster planning initiatives.

Dissemination

Upon my return to Australia, the information gained throughout this fellowship will be disseminated by:

- Presentations at appropriate forums.
- Written reports and contributions to the medical and nursing literature.
- Maintaining an ongoing commitment to training and education through involvement with unit and hospital programmes.

Finally, I would again like to acknowledge the wonderful contribution of Bob and June Prickett and the Churchill Foundation, who continue to provide Australians such exceptional opportunities.