

THE EPIDEMIOLOGY OF ACCELERANT RELATED BURNS IN THE NT: A 9-YEAR RETROSPECTIVE COHORT STUDY

Guy Stanley, David Jacinto, Dr Jodie-Kate Williams FRACS

Email: guy.stanley@nt.gov.au

Introduction

An accelerant is used intentionally or accidentally to cause a fire or flash, resulting in a burn. We analyzed the trend at the Royal Darwin Hospital (RDH) after observing a seasonal pattern with these burns.



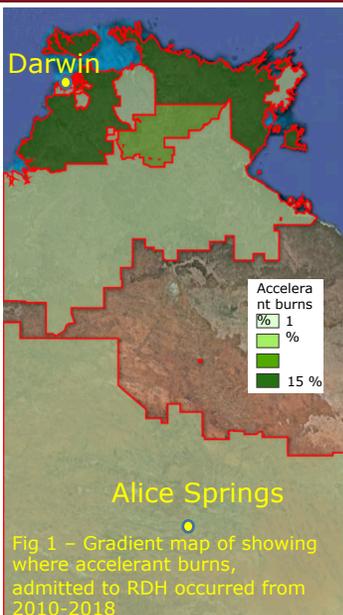
Methods

- 9 year, 2010-2018 retrospective cohort study.
- Data from BRANZ and NT Burns Registry.
- BRANZ data of national accelerant burns 2010-2018

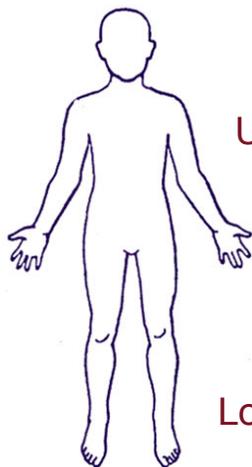
Epidemiology

- **208 (15.4%)** of burns were caused by accelerants (1351 burns in total).
- Petrol was most commonly used (**66.8%**) compared to **52.9%** nationally.
- Accelerant burns were most common for **males**, in the **20-29** year age group.
- **SEVERITY**: multiple (BRANZ) body area more likely (**risk ratio 1.36**). Increase in TBSA (**Median 6%** vs non-accelerant related burns **Median 2%**). Increased chance of needing interstate transfer to a larger burns unit (**risk ratio 5.1**).
- **GEOGRAPHY**: Tend to occur in **rural postcodes** (see Figure 1) .
- **TIMING**: tend to occur during the **November → May 'Wet' Season** (1.3 risk ratio).

Geography



Injuries



Face **38%**
Upper limb **49%**
Trunk **26%**
Hands **37%**
Lower limbs **61%**

Fig 2 – Accelerant burns with a burn to an area of the body

A worrisome subset?

- The most common activity was '**bushfire / campfire / burn off**' (**45%**) for all accelerant burns.
- The majority (**88.3%**) involved petrol.
- Most occurred in the **Wet** season of **November → May (65%)** vs **Dry** season (**35%**)
- Most occurred in rural postcodes, most commonly the **0836** code (22%)
- These burns have the longest **length of stay (median 8.3 days)** of all accelerant burns.
- Alcohol and or drugs were involved in **25%** of these cases.

Discussion / Conclusion

The NT's warm climate permits outdoor camping and allows relatively easy burning of verdant material. Due to storms, vegetation growth and the strict ban on burning during the dry season, there is an apparent increase in burns during the wet season. Conditions during the Wet season can be waterlogged and clearing wet, verdant material may require accelerants to start fires. Burns mostly occurred in rural areas often with an added burden and cost of transporting the patients to/from these locations. During the wet season, assessment and permission from the local fire service is required prior to burning. The extra effort may deter people from conducting regulated burns and hence use accelerants in an unsafe manner to clear storm waste.

Successful harm reduction measures have decreased the number of firework associated burns from the Territory 'Firework' Day every July. We advocate working with local volunteer fire safety groups to reduce the number of accelerant burns with public safety information prior to and throughout the wet season.