

Cool Runnings: A national smartphone-delivered, burn prevention and first aid treatment education campaign

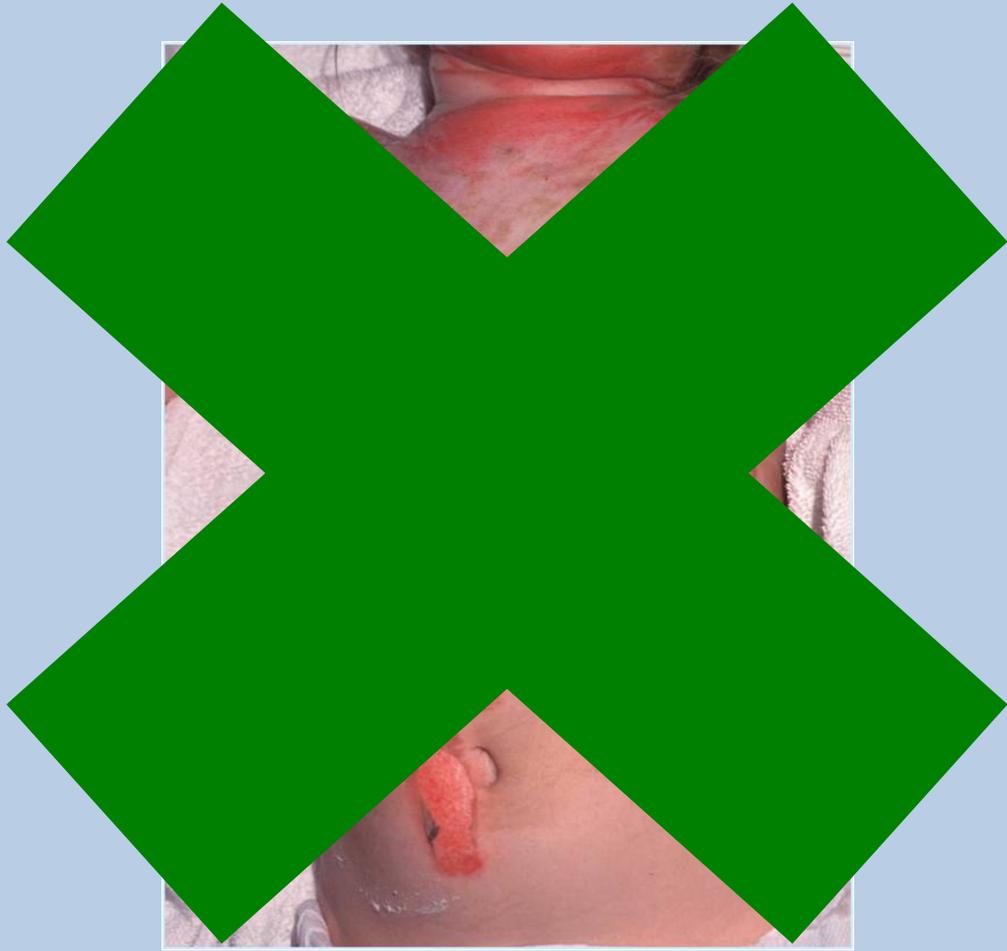
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Cate Cameron, Steve Huff, Roy Kimble, **Leila Cuttle**

Centre for Children's Burns and Trauma Research
Centre for Children's Health Research and Lady Cilento Children's Hospital





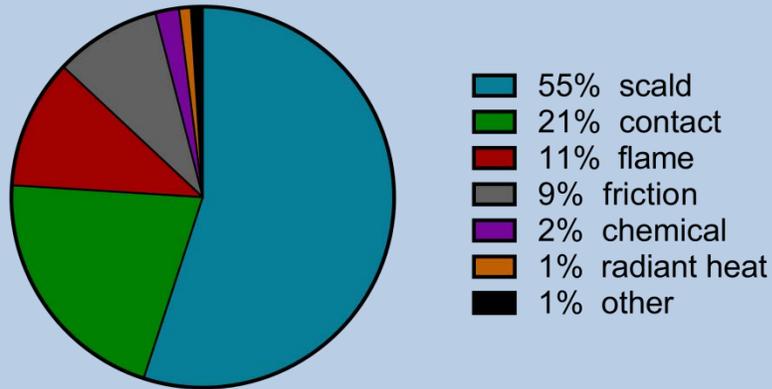
Prevention and acute treatment of burns





Burn injuries are different for children and adults¹

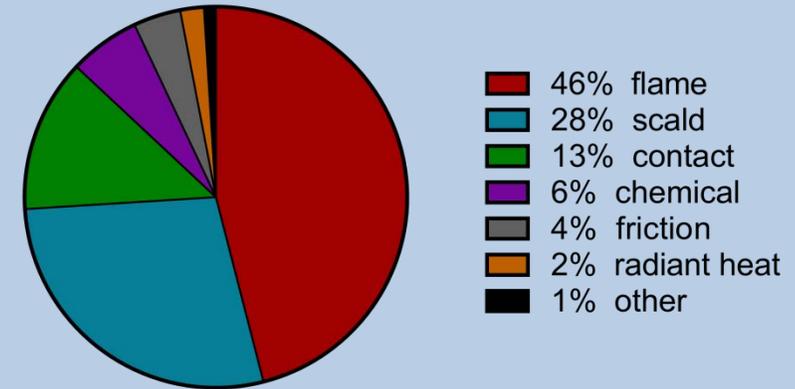
Children



Top 3 Causes:

| | | | |
|----|--|-----|---------|
| 1. | Hot beverages | 21% | (scald) |
| 2. | Water from saucepan/kettle/jug/billy/urn | 14% | (scald) |
| 3. | Food – liquid or solid | 9% | (scald) |

Adults



Top 3 Causes:

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| 1. | Campfire/bonfire/burn-off | 15% | (flame) |
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1. Burns registry of Australia and New Zealand (BRANZ) annual report 2015



Correct first aid will enhance burn wound healing

- Porcine data:
 - cool running water, rather than cold compresses or ice^{1,2},
 - applied at 2-15°C², for 20 min duration^{3,4} immediately^{4,5} after the injury
 - significantly improves healing and reduces scarring
- BRANZ Data (Wood *et al*, 2016) of 2320 patients:
 - significantly decreased skin grafting operations
 - reduced admission to intensive care
 - shorter hospital length of stay



1. Yuan et al (2007) Assessment of cooling on an acute scald burn injury in a porcine model. *J Burn Care Res.* 28:514-20
2. Cuttle et al (2008) The optimal temperature of first aid treatment for partial thickness burn injuries. *Wound Repair Regen.* 16(5):626-634.
3. Bartlett et al (2008) Optimal duration of cooling for an acute scald contact burn injury in a porcine model. *J Burn Care Res.* 29:828-34
4. Cuttle et al (2010) The optimal duration and delay of first aid treatment for deep partial thickness burn injuries. *Burns.* 36:673-9
5. Rajan et al (2009) Delayed cooling of an acute scald contact burn injury in a porcine model: is it worthwhile? *J Burn Care Res.* 30:729-34
6. Wood et al (2016) Water first aid is beneficial in humans post-burn: Evidence from a bi-national cohort study *PLoS One.* 11(1):e0147259



Public burn first aid knowledge is poor

- A NSW population-based survey¹ reported:
 - 82% would cool a burn with water
 - 9% would cool for 20 minutes
- Similar levels or worse are reported for:
 - Burn patients in QLD², population in WA³, burn patients in New York⁴, families in Turkey⁵, high risk groups in Vietnam⁶, hospital workers and non-medical students in the UK⁷
- People are using treatments other than cool, running water
- Many people (~30%)¹ find their first aid information on the internet, but that information is often incorrect⁸



1. Harvey et al, Med J Aust 2011
2. Cuttle et al, Burns 2009
3. Wallace et al, Burns 2013
4. Taira et al, J Burn Care and Res 2010

5. Kuraoz et al, J Emerg Nurs 2010
6. Lam et al, Burns 2017
7. Tay et al, Burns 2013
8. Burgess et al, Burns 2016





Previous burn prevention and first aid campaigns

- In 2011, we ran a Queensland first aid campaign where posters, brochures and magnets were mailed to: schools, child care centres, hospitals, GP clinics
 - We're not sure who actually saw it, it cost \$34,000 and we weren't able to measure a positive effect



- In 2016, Jacqui Burgess used the Cool Runnings app for her Queensland hot beverage scald burn prevention campaign
 - She was able to advertise to 65,268 people in 29 days, with 1,161 app downloads, it cost \$6,500 and participant knowledge increased after engaging with the app



Smartphones – a new public health tool



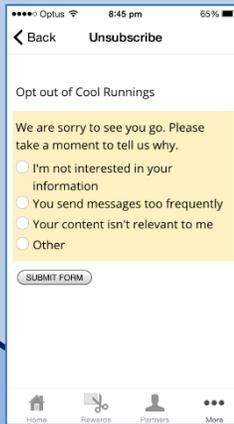
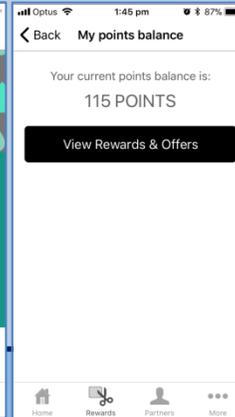
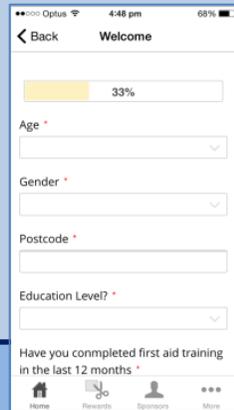
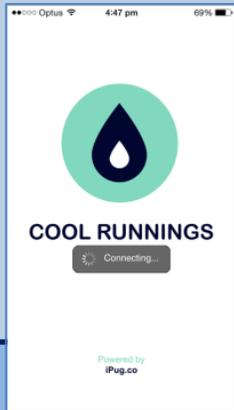


Aims

- Provide burn prevention and first aid information to 1 million Australians over a 1 year period
- Improve participants burn prevention and first aid knowledge
- Hopefully encourage positive burn prevention and first aid behaviours
- Disseminate the education materials through our partner organisations globally for free use



Cool Runnings national campaign



Participant sees Facebook or Instagram ad to download Cool Runnings app

Participant downloads app

Initial survey of demographic and knowledge questions

6 week intensive campaign
Every week participants receive:

- 1 animation
- 1 infographic or motion graphic
- quiz questions
- activity

Participants can win points or prizes for viewing the content, answering the quiz questions correctly and completing the activity the best (1 winner every week!)

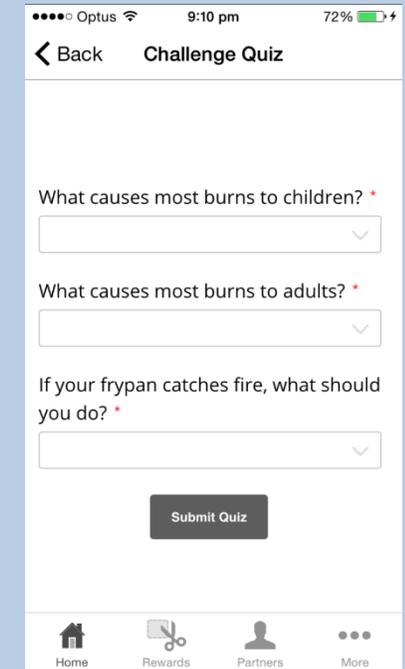
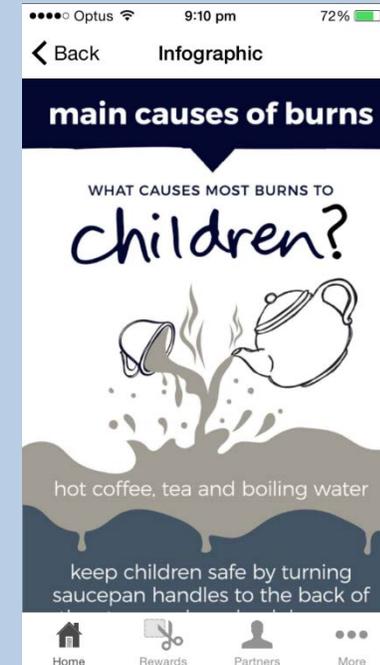
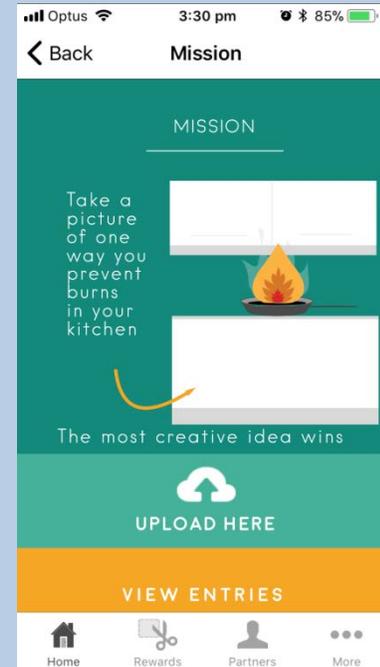
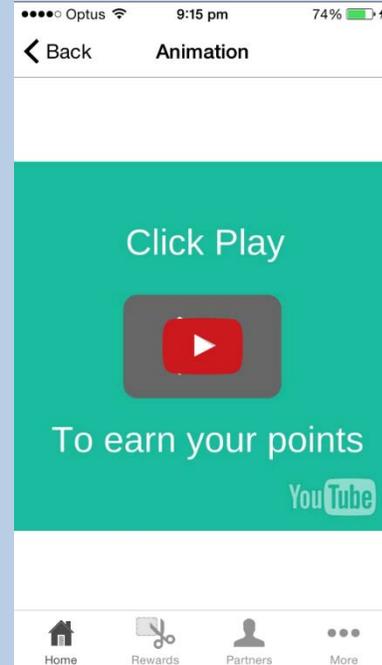
6 week follow up survey of knowledge and behaviour questions

Additional infographics/memes delivered weekly for the rest of the year at particular times

6 month follow up survey of knowledge and behaviour questions for anyone who hasn't deleted app



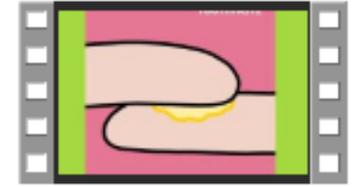
Week 1





6 Week intensive campaign

Animations



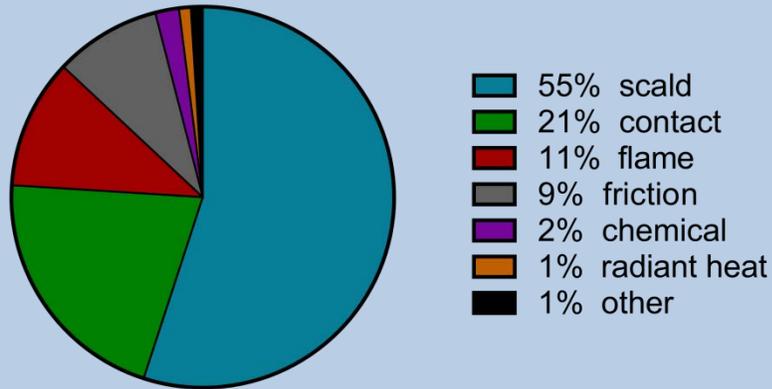
Infographics





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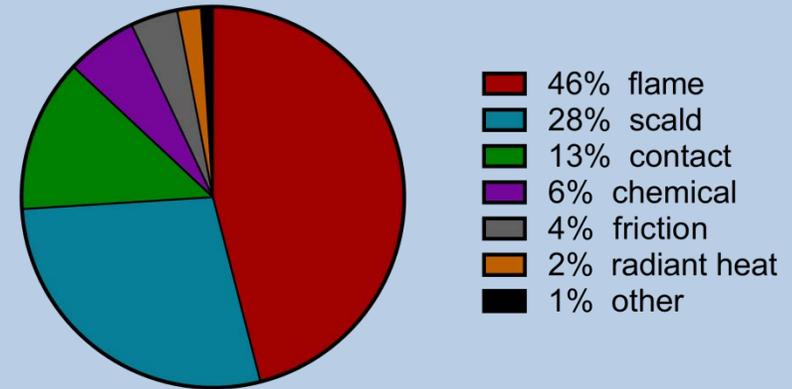
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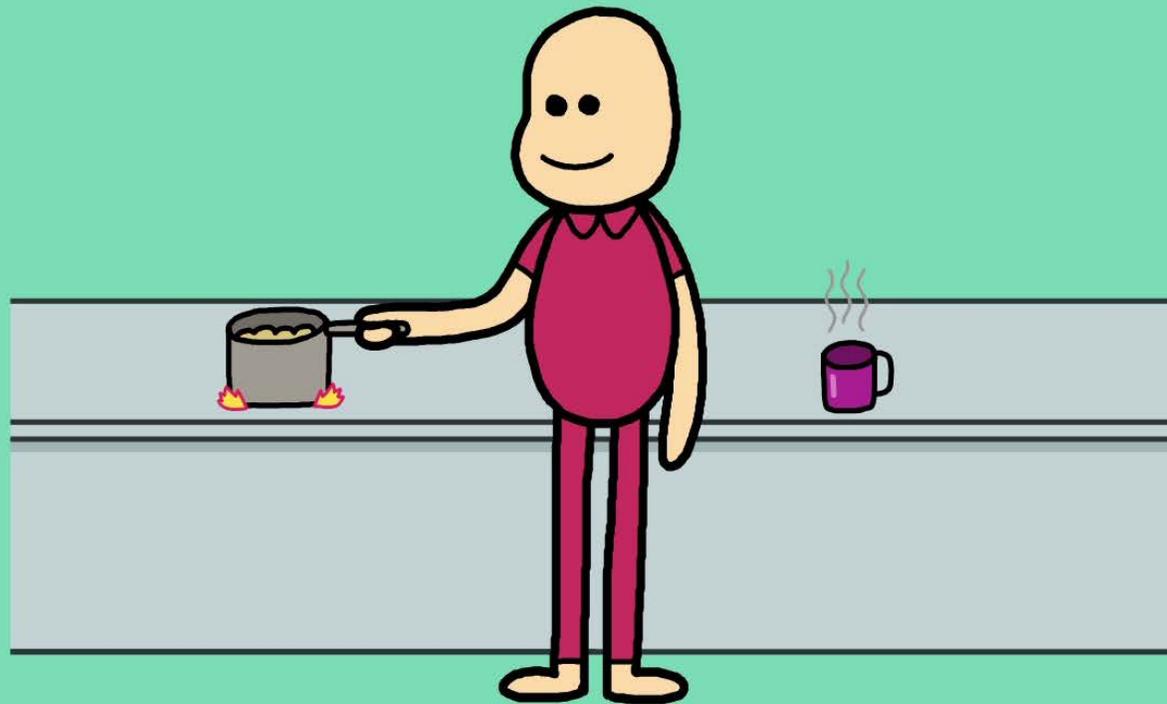
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Week 1 animation





Week 3 animation





Outcome measures

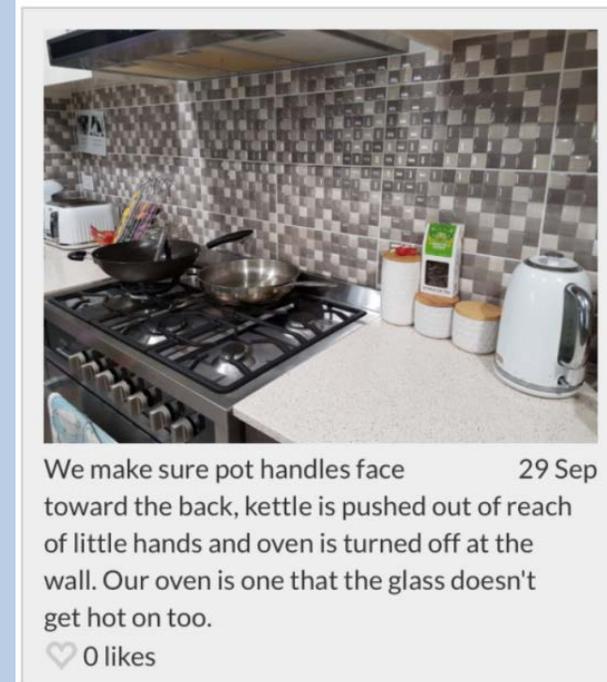
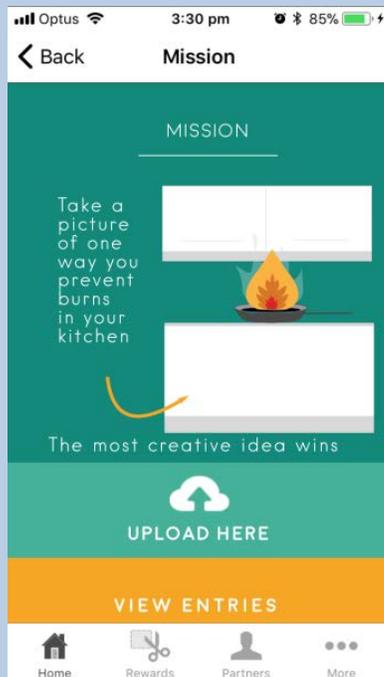
- Downloads, views of content, shares of content
- Number of correct answers in weekly quizzes
- Comparison of survey answers at: baseline, 6 weeks and 6 months with respect to burn knowledge and change in behaviour
- Content will be shared with all partners and others globally





Progress so far...

- Soft launch 29th September to 40 Queenslanders (Previous Cool Running participants).
To date, 18 people have downloaded the app.
- They are viewing the animations and completing the missions and quizzes.





Cool Runnings Pre-survey Data (n=18)

Demographics:

- 61% are iPhone users (39% Android users)
- 78% female
- 39% age 25-29

First aid knowledge:

- 61% are “confident” or “somewhat confident” in their knowledge of burn first aid treatment
- 59% would apply water, 44% would apply water for 20 minutes
- 44% have, or would receive their first aid knowledge from a first aid course
- 89% knew hot drinks are the most common way children get burned



Significance of results

Hopefully, after this national campaign:

- There will be less burn injuries!
- Burn injuries receive correct first aid and heal faster with less scarring
- Decreased health care \$\$\$ burden
- Working globally with burn prevention partners

Please download the Cool Runnings app!



Acknowledgements



Financial support:

- Wound Management Innovation CRC
- NHMRC

Collaborators:

- iPug (Injury Prevention Using Gamification)
- Animations: Nikhil Markale, Infographics: Lulu Creative
- ANZBA (Australian and New Zealand Burn Association)
and the ANZBA Prevention Committee
- Pegg-Leditschke Children's Burns Centre, Lady Cilento Children's Hospital

