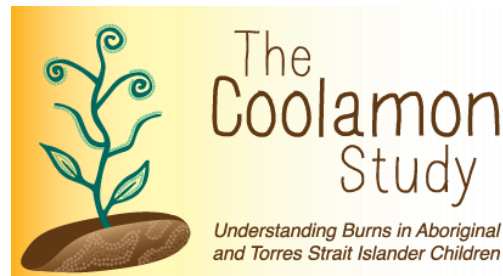


# Burden of Burns in Australian Children

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# Acknowledgement of Country

We acknowledge and respect the traditional lands of all Aboriginal people, we respect all Elders past, present & future. We ask all people that walk, work & live on traditional Aboriginal lands, to be respectful of culture & traditions and work together as one to better Aboriginal Health.

## Scar Wars

*“For the first month, every time I closed my eyes at night, I saw it. I saw the burn over my grandchild’s body. This image will never leave me”*

Grandparent  
Out-of-Pocket Healthcare Expenditure  
Coolamon Study



# Methods

## •Source & Participants

- Burns Registry of Australia & New Zealand
- July 2009 – July 2016, 7 years of data
- Australian Ethnicity, < 16 years, acute burns admission

## •Methodology – Interface Weaving

### *Western Methods*

Descriptive Statistics  
Correlation –  $X^2$   
Cox Regression  
Equity



### *Indigenous Methods*

Decolonisation  
Nyari Kari  
Yuri Ingarnithii  
Indiginist Research

## •Data Analysis

- Stata Version 15.1

# ● Results

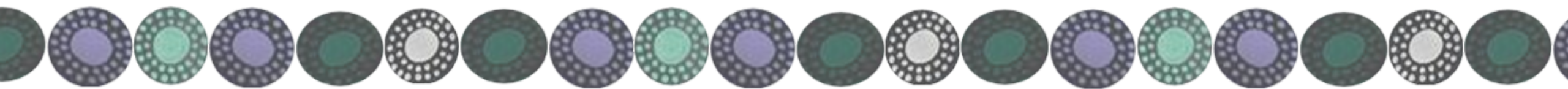
## Data Considerations

### Data Limitations

- Patient Identification
- 7 years of data, most recent 2016
- Some data missing

### Data Interpretation

- Caution when reading research outcomes
- Strength based approaches
  - *Deficit vs resilience & Interrogation vs understanding*
- Inequity impacts
  - *Clinical presentation, burn outcomes*



Patient Demographic Profile							
Variable	Aboriginal & Torres Strait Islander	%	Other Australian	%	Total	%	$\rho$
Population	516	11.0	4156	89.0	4672		
Gender							0.87
Female	195	37.8	1635	39.3	1830	39.2	
Male	321	62.2	2519	60.6	2840	60.8	
Age							< 0.001
< 1 Years	30	5.8	481	11.6	511	10.9	
1- 4 Years	277	53.7	2202	53.0	2479	53.1	
5 - 9 Years	112	21.7	699	16.8	811	17.4	
10 - 15 Years	97	18.8	774	18.6	871	18.6	
<b>Regional Area Index</b>							< 0.001
RA1 City	125	24.2	2681	<b>64.5</b>	2806	60.1	
RA2 Inner	63	12.2	831	20.0	894	19.1	
RA3 Outer	148	<b>28.7</b>	483	11.6	631	13.5	
RA4 Remote	96	18.6	103	2.5	199	4.3	
RA5 V Remote	77	14.9	43	1.0	120	2.6	
<b>Index of Relative Socio-Economic Advantage and Disadvantage</b>							< 0.001
Low: 1-3	316	<b>61.2</b>	1322	31.8	1638	35.1	
Medium: 4-7	143	27.7	1740	<b>41.9</b>	1883	40.3	
High: 8-10	49	9.5	1073	25.8	1122	24.0	

Burn Characteristics							
Variable	Aboriginal & Torres Strait Islander	%	Other Australian	%	Total	%	p
Population	516	11.0	4156	89.0	4672		
Primary Burn Cause							< 0.001
Scald	186	36.0	2165	52.1	2351	50.3	
Contact	174	<b>33.7</b>	887	21.3	1061	22.7	
Flame	103	20.0	516	12.4	619	13.2	
Anatomical Location							
Head & Neck (T20X)	78	15.1	892	21.5	970	20.8	
Trunk (T21X)	117	22.7	1245	30.0	1362	29.2	
Shoulder & Upler Limb (T22X)	102	19.8	1096	26.4	1198	25.6	
Wrist & Hand (T24X)	119	23.1	1009	24.3	1128	24.1	
Ankle & Foot (T25X)	68	13.2	520	12.5	588	12.6	
Total Body Surface Area %							0.1930
< 10%	453	87.8	3627	87.3	4080	87.3	
10-19%	41	7.9	371	8.9	412	8.8	
> 19%	12	2.3	117	2.8	129	2.8	
Length of Stay							< 0.001
< 1 day	37	7.2	1010	24.3	1047	22.4	
1 day	41	7.9	764	18.4	805	17.2	
2-7 days	217	<b>42.1</b>	1529	36.8	1746	37.4	
8-28 days	194	<b>37.6</b>	737	17.7	931	19.9	
> 28 days	25	4.8	106	2.6	131	2.8	

**NOTE:** Length of Stay **7.81 days longer** for Aboriginal and Torres Strait Islander Children



Burn Related ICD10-AM							
Variable	Aboriginal & Torres Strait Islander	%	Other Australian	%	Total	%	p
<b>Bacterial Infection (B95X)</b>	92	<b>17.8</b>	468	11.3	560	12.0	< 0.001
Streptococcus	35	6.8	57	1.4	92	2.0	
Staphylococcus	57	11.0	411	9.9	468	10.0	
<b>General Anaesthesia (92514XX)</b>	207	40.1	2057	49.5	2264	48.5	< 0.001
<b>Sedation (92515XX)</b>	44	8.5	531	12.8	575	12.3	0.006
<b>Dressing (3001XX)</b>							0.003
< 10% Body Surface Area	59	11.4	704	16.9	763	16.3	
≥ 10% Body Surface Area	20	3.9	196	4.7	216	4.6	
<b>Debridement (9068600, 300XXXX)</b>							0.0934
Nonexcisional	24	4.7	203	4.9	227	4.9	
< 10% Body Surface Area	52	10.1	440	10.6	492	10.5	
≥ 10% Body Surface Area	9	1.7	85	2.0	94	2.0	
<b>Split Skin Graft (454XXXX)</b>							0.006
< 3% Body Surface Area	46	8.9	595	14.3	641	13.7	
3-6% Body Surface Area	42	8.1	283	6.8	325	7.0	
<b>Allied Health Intervention (9555XXX)</b>							0.132
Dietetics	79	15.3	633	15.2	712	15.2	
Social Worker	193	<b>37.4</b>	1265	30.4	1458	31.2	
Occupational Therapy	111	<b>21.5</b>	536	12.9	647	13.8	
Physiotherapy	160	<b>31.0</b>	952	22.9	1112	23.8	



# Cox Regression Model – Exploring Length of Stay

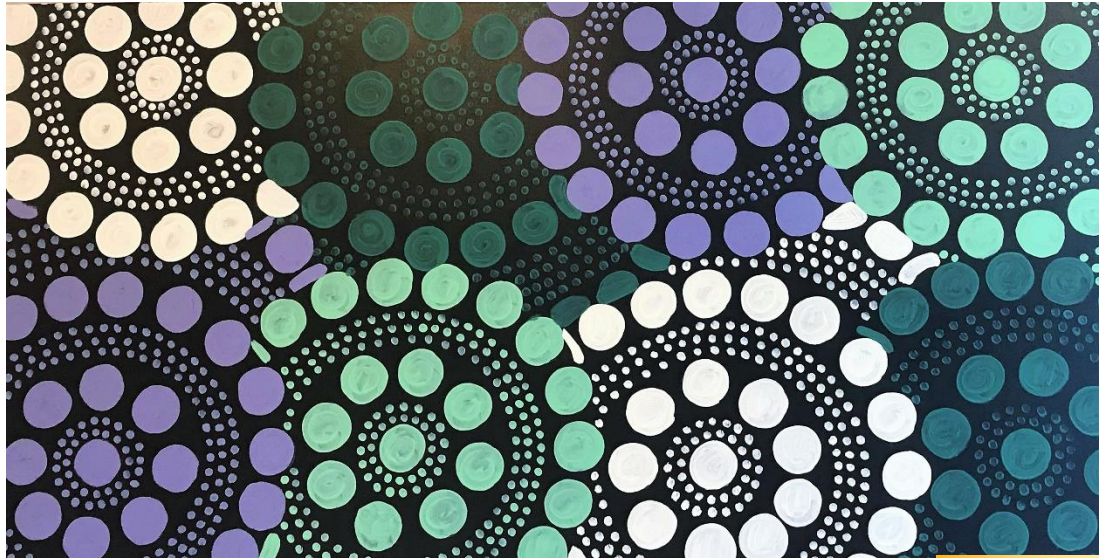
Variable	Children: Aboriginal & Torres Strait Islander			Other Australian		
	Discharge Ratio	95% CI		Discharge Ratio	95% CI	
Gender (male)	1.12	0.92	1.37	0.93	0.87	1.00
<b>Age</b>	<i>Note: &lt; 1 year reference value</i>					
1-4yrs	1.12	0.74	1.70	1.00	0.89	1.12
5-9yrs	1.04	0.67	1.63	1.06	0.93	1.22
10-15yrs	1.06	0.67	1.68	1.07	0.93	1.23
<b>Remote Area Index</b>	<i>Note: Major City is reference value</i>					
RA2 - Inner Regional	0.89	0.61	1.28	1.09	1.00	1.20
RA3 - Outer Regional	1.26	0.95	1.68	1.32	1.18	1.48
RA4 - Remote	1.84	1.35	2.50	1.52	1.23	1.88
RA5 - Very Remote	<b>1.85</b>	<b>1.32</b>	<b>2.60</b>	1.67	1.22	2.29
<b>Index of Relative Socio-Economic Advantage and Disadvantage</b>	<i>Note: High (8-10) IRSAD is reference Value</i>					
Low: 1-3	1.05	0.74	1.47	1.01	0.93	1.10
Medium: 4-7	0.87	0.69	1.10	1.01	0.92	1.12
<b>Primary Burn Cause</b>	<i>Note: Scald is reference value</i>					
Contact	1.12	0.89	1.41	0.97	0.88	1.07
Flame	<b>1.50</b>	<b>1.14</b>	<b>1.98</b>	1.13	1.00	1.28
Friction	0.95	0.57	1.58	1.01	0.87	1.18
Other	<b>1.63</b>	<b>1.02</b>	<b>2.59</b>	0.94	0.79	1.11
<b>% Total Body Surface Area</b>	<i>Note: &lt; 10 TBSA% is reference value</i>					
10-19%	1.73	1.19	2.50	1.82	1.62	2.05
> 19%	2.32	1.12	4.84	2.31	1.78	3.00
<b>Bacterial Infection (B95X)</b>	1.24	0.96	1.60	<b>1.54</b>	<b>1.38</b>	<b>1.73</b>
<b>Theatre Procedure</b>	<b>1.74</b>	<b>1.38</b>	<b>2.18</b>	1.04	0.96	1.12

# Conclusion

- Higher proportion of burn injury in Aboriginal and Torres Strait Islander Children
- Suggestions of a social gradient for burn injury
- Remoteness, flame burns and theatre procedures are indicative of longer lengths of stay in Aboriginal and Torres Strait Islander children

## **FUTURE DIRECTION**

- Securing full BRANZ data set
- Further cox regression exploration



*Artwork by Zachary Bennett-Brook, artist and owner of Saltwater Dreamtime, a Torres Strait Islander contemporary artist born and raised in Wollongong (Dharawal Country).*

*Artwork by Kylie Cassidy  
Native Zests Bush food,  
Art & Culture*

