

# Broken glass as an injury hazard in the Indigenous community of Cherbourg

Richard John Henshaw  
BSc., MHealthProm

Submitted for the fulfilment of the degree of  
Master of Health

University of Southern Queensland  
2011

## **Acknowledgements**

**This research was supported by a full scholarship provided by the Queensland Injury Prevention Council.**

I would like to personally thank the Queensland Injury Prevention Council for their support, which enabled me to gain further education and knowledge within the research field of injury prevention.

All participants of this study are gratefully acknowledged. Thank you to the people of Cherbourg for your time and commitment. The outcomes of this project are a result of your efforts.

I would like to thank the staff at the Centre for Rural and Remote Area Health for their ongoing support throughout the project. In particular, I would like to acknowledge and thank both my supervisors Dr Rob Eley and Professor Don Gorman. I am grateful for their time, patience, understanding and guidance.

I am thankful for the support of the Cherbourg Injury Prevention and Safety Promotion Reference group, with special thanks to Andrew Beckett (Injury Prevention and Safety Promotion Officer) who guided me through the community.

I give thanks to the Cherbourg Aboriginal Shire Council for their role in developing and implementing identified strategies of the project.

I would also like to thank the Queensland Injury Surveillance Unit for their role in developing patient injury forms and analysis of injury data.

Finally, to my family, Reg, Carmel, and my partner Deborah, thank you for your encouragement and support throughout the project and my years of study.

## **Abstract**

The research to identify measures to prevent glass-sourced injury is one target of an injury prevention and safety promotion project in Cherbourg, a 1200 resident community 250 kilometres north-west of Brisbane.

Funded by Health Promotion Queensland and the Queensland Injury Prevention Council, the Cherbourg Injury Prevention and Safety Promotion Project (CIPSPP) was established in 2008. Five areas were identified for action, one of which was the environment, in which there was a specific interest in broken glass litter.

Exact data on glass-sourced injury were poor as records from the public hospital, the Aboriginal Medical Service clinic or school-based laceration clinic did not specify cause or location of injury. However the volume of anecdotal evidence backed by community concerns about glass as a cause of injury has resulted in focussed activities to reduce litter and prevent injury.

The broken glass project has three principal objectives of determining the extent of the problem, devising workable strategies within the local context and assessing the outcome and impact following implementation of those strategies.

Determining the extent of the problem was supported by Photovoice, undertaken by the local school children, community survey and interview with community members, health service providers and other stakeholders. Photovoice, in which the school children captured over 100 photographs of potential injury hazards in the community, identified the principal area of interest, glass litter. Fifty three survey respondents and 20 interviewees revealed the perception of glass litter being an increasing problem which was exacerbated by a number of factors including lack of garbage collection and decline in social responsibility in particular by youth.

A number of strategies were designed and implemented that dovetail into the overall safety and injury prevention plan. A Council-driven alcohol management plan has contributed to reducing the amount of glass in the community. This has been supported by a community clean-up campaign and a resumption of a household garbage collection service. Rubbish bins have been purchased and located in high traffic areas.

Education is a key component of the strategy and a poster competition was initiated as part of the litter awareness and education campaign. Glass as the cause of injury to humans and animals, the unattractiveness of litter and the benefits of wearing shoes were the foci of the poster competition. The five winning posters were generated into an anti-litter message for the community.

### **Certification of Dissertation**

I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

---

Signature of Candidate

---

Date

### **Endorsement**

---

Signature of Supervisor

---

Date

---

Signature of Supervisor

---

Date

## Table of Contents

<b>List of Tables.....</b>	<b>vi</b>
<b>1. Background.....</b>	<b>1</b>
1.1 Safety concerns.....	4
<b>2. Literature Review.....</b>	<b>7</b>
2.2 Injury: Global.....	7
2.3 Injury: Australia.....	9
2.4 Injury: Queensland.....	12
2.5 Injury: Indigenous.....	13
2.6 Litter.....	15
2.7 Glass.....	16
2.8 Prevention.....	20
<b>3. Methods.....</b>	<b>23</b>
3.1 Aim.....	23
3.2 Objectives.....	23
3.3 Identifying the problem.....	24
3.4 Ethics.....	24
3.5 Governance.....	24
3.6 Observations.....	25
3.7 Community Survey.....	25
3.7.1 Incentive.....	25
3.7.2 Distribution of survey.....	26
3.8 Individual interviews.....	27
3.9 Collection of injury data.....	27
3.10 Student Survey.....	29
3.11 Student Photos (Photovoice).....	29
<b>4. Results.....</b>	<b>30</b>
4.1 General Observations.....	30
4.2 Community Survey.....	30
4.3 Individual Interviews.....	46
4.5 Cherbourg Hospital injury data.....	51
4.5.1 Age and Gender.....	51
4.5.2 Top 10 Major Injury Factors.....	52
4.6 School Survey-Year 6/7 Cherbourg Primary school.....	55
4.7 Photovoice-Cherbourg Primary School.....	56
4.8 Cherbourg School injury data.....	57
4.8.1 Age and gender.....	57
4.8.2 Monthly records of injury.....	57
4.8.3 Type of injury.....	58
4.8.4 Bodily location of injury.....	58
4.8.5 External causes of injury.....	59
4.8.6 Part or place where injury occurred.....	59
4.8.8 Activity when injured.....	61
4.8.9 Method of injury.....	62
4.8.10 Injury Factor- Glass.....	62
<b>5. Discussion.....</b>	<b>64</b>
5.1 Key findings of the study.....	64
5.2 Community Survey.....	67
5.3 Individual Interviews.....	72
5.4 School survey.....	75
5.5 Cherbourg School injury data.....	76
5.6 Hospital injury data.....	77

5.7	Photovoice.....	78
5.8	Activities implemented from recommendations from the project.....	80
<b>6.</b>	<b>Conclusion .....</b>	<b>83</b>
	<b>List of References.....</b>	<b>85</b>
	<b>Appendix A – Consent Form.....</b>	<b>89</b>
	<b>Appendix B – Community Survey .....</b>	<b>91</b>
	<b>Appendix C – Map of Cherbourg in relation to Brisbane .....</b>	<b>93</b>
	<b>Appendix D – Town map of Cherbourg.....</b>	<b>94</b>
	<b>Appendix E – Location of Placement of Community Bins .....</b>	<b>95</b>
	<b>Appendix F – School Injury Data Form .....</b>	<b>96</b>
	<b>Appendix G – School Survey .....</b>	<b>98</b>
	<b>Appendix H – Presentation of Photovoice.....</b>	<b>99</b>

## List of Tables

Table 1.1	Action areas .....	4
Table 1.2	Injury prevention priorities .....	4
Table 1.3	Injury issues for the Cherbourg community .....	5
Table 3.1	Survey distribution.....	26
Table 4.1	Age of survey respondents.....	31
Table 4.2	Gender of survey respondents.....	31
Table 4.3	Residency of survey respondents.....	31
Table 4.4	Survey respondents who work in Cherbourg.....	32
Table 4.5	Respondents use of streets and footpaths.....	32
Table 4.6	Perception of litter in Cherbourg .....	32
Table 4.7	Occurrence of broken glass on the streets.....	33
Table 4.8	Is broken glass a hazard? .....	33
Table 4.9	Locations of broken glass .....	34
Table 4.10	Origin of broken glass.....	34
Table 4.11	Perceptions of change in the amount of broken glass.....	35
Table 4.12	Respondents cut by broken glass .....	35
Table 4.13	Medical treatment sought due to laceration from street glass.....	36
Table 4.14	Were shoes being worn at the time of injury? .....	36
Table 4.15	How often is footwear worn?.....	37
Table 4.16	Are there enough bins in Cherbourg? .....	37
Table 4.17	Resident perception of litter problem .....	38
Table 4.18	Residence cut by broken glass within Cherbourg.....	39
Table 4.19	Survey respondents and their response to being cut by glass .....	40
Table 4.20	Laceration from glass and the use of footwear .....	41
Table 4.21	Perception of litter problem and if Cherbourg has enough rubbish bins ...	42
Table 4.22	Age of survey respondents and their perception of the litter problem.....	43
Table 4.23	Age of survey respondents and their perception of the litter problem.....	44
Table 4.24	Areas in which broken glass is a hazard .....	44
Table 4.25	Reasons for littering .....	45
Table 4.26	In the past year has the problem worsened or improved, and why? .....	45
Table 4.27	Solutions for glass.....	46
Table 4.28	Individual interview part one .....	47
Table 4.29	Individual interview part two.....	48
Table 4.30	Individual interview part three.....	49
Table 4.31	Individual interview part four .....	50
Table 4.32	Age and gender .....	51
Table 4.33	Top 10 Major injury factors .....	53
Table 4.34	External cause of injury .....	54
Table 4.35	Gender of survey respondents.....	55
Table 4.36	Does Cherbourg have a litter problem? .....	55
Table 4.37	Is there broken glass in Cherbourg where you walk, skate, cycle or play?55	
Table 4.38	Have you ever been cut by broken glass in Cherbourg?.....	55
Table 4.39	Were you wearing shoes at the time? .....	56
Table 4.40	Location when cut by glass.....	56
Table 4.41	Age and gender .....	57
Table 4.42	Injuries per month.....	57
Table 4.43	Nature of injury.....	58
Table 4.44	Bodily location of injury .....	58

Table 4.45	External causes of injury.....	59
Table 4.46	Where injury occurred .....	60
Table 4.47	Type of place.....	60
Table 4.48	Activity when injured .....	61
Table 4.49	Mechanism of injury .....	62
Table 4.50	Glass- place of injury .....	63
Table 4.51	Glass- nature of injury .....	63
Table 4.52	Glass -activity when injured .....	63