



**Issues experienced by disabled people following
the 2010-2011 Canterbury earthquake series:**

evidence based analysis to inform future planning and best practice
guidelines for better emergency preparedness

S. R. Phibbs

E. Woodbury

K. J. Williamson

G. A. Good

**GNS Science Report 2012/40
November 2012**

BIBLIOGRAPHIC REFERENCE

Phibbs, S. R.; Woodbury, E.; Williamson, K. J.; Good, G. A. 2012. Issues experienced by disabled people following the 2010-2011 Canterbury earthquake series: evidence based analysis to inform future planning and best practice guidelines for better emergency preparedness, *GNS Science Report 2012/40*. 53 p.

S. R. Phibbs, School of Health and Social Services, Massey University, Private Bag 11222, Manawatu Mail Centre, Palmerston North 4442

E. Woodbury, Public Health Department and Rehabilitation Unit, Department of Medicine, Otago University, PO Box 7343, Newtown, Wellington 6242

K. J. Williamson, School of Health and Social Services, Massey University, Private Bag 11222, Manawatu Mail Centre, Palmerston North 4442

G. A. Good, School of Health and Social Services, Massey University, Private Bag 11222, Manawatu Mail Centre, Palmerston North 4442

CONTENTS

EXECUTIVE SUMMARY	III
1.0 KEY FINDINGS	1
1.1 Emergency response.....	1
1.2 Emergency accommodation and welfare centres	1
1.3 Information needs.....	1
1.4 Emergency preparedness for disabled people.....	2
1.5 Housing	2
1.6 Mobility issues	2
1.7 Further support needs	2
2.0 RESEARCH METHOD	4
3.0 STATUTORY AND REGULATORY FRAMEWORK	5
4.0 INDIVIDUAL PREPAREDNESS, COMMUNITY PREPAREDNESS AND RESPONSE, ORGANISATIONAL PREPAREDNESS AND RESPONSE, AND THE EFFICACY OF WELFARE CENTRES FOR DISABLED PEOPLE FOLLOWING THE GREATER CHRISTCHURCH EARTHQUAKES	8
4.1 How the earthquakes impacted upon activities of daily living	8
4.2 Individual preparedness: survey results	8
4.3 Individual preparedness action and advice: survey results.....	9
4.3.1 Summary	10
4.4 Community preparedness and response	10
4.4.1 Summary	10
4.5 Organisational preparedness and response	10
4.6 Centralised systems and fragmented services	11
4.7 Lack of understanding	11
4.7.1 Summary	11
4.8 Welfare centres concerns: survey results	12
4.9 Welfare centres suggestions for improvement.....	13
4.9.1 Summary	13
5.0 HOUSING, MOBILITY AND TRANSPORT, HEALTH ISSUES AND INFORMATION AND COMMUNICATION NEEDS FOLLOWING THE GREATER CHRISTCHURCH EARTHQUAKES	15
5.1 Housing: survey results	15
5.1.1 Summary	16
5.2 Mobility and transport	16
5.2.1 Summary	18
5.3 Health related issues	18
5.3.1 Summary	19
5.4 Information needs and communication: survey results information sources	19
5.5 Survey results access to information.....	19
5.6 Barriers to accessing information.....	19

5.6.1	Summary	20
5.7	Coping strategies and resilience	21
5.7.1	Summary	22
6.0	CONCLUSIONS AND RECOMMENDATIONS	23
6.1	Recommendations.....	23
7.0	LITERATURE REVIEW	28
7.1	Existing disaster research	29
7.2	Disaster preparedness for people with disabilities	29
7.3	Existing resources in relation to disaster preparedness for disabled people	30
8.0	REFERENCES	32

FIGURES

Figure 3.1	Disability Action Plan – Canterbury Recovery. (Source: Office of the Minister for Disability Issues, 2012).....	7
-------------------	---	---

APPENDICES

APPENDIX 1: DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS	39
APPENDIX 2: SURVEY QUESTIONNAIRE OF DISABILITY ISSUES EXPERIENCED IN THE CANTERBURY EARTHQUAKE SERIES 2010-2011.....	40
APPENDIX 3: DEMOGRAPHIC CHARACTERISTICS OF INTERVIEW PARTICIPANTS	50
APPENDIX 4: DISABILITY ISSUES EXPERIENCED IN THE CANTERBURY EARTHQUAKE SERIES 2010-2011 – SEMI-STRUCTURED INTERVIEW SCHEDULE	51

APPENDIX TABLES

Table A 1.1	Demographic characteristics of survey participants <i>n</i> =35.	39
Table A 2.1	Demographic characteristics of interview participants <i>n</i> =23	50

EXECUTIVE SUMMARY

This research project identifies issues experienced by the disabled community in the Canterbury earthquake series. This research will inform future guidelines and assist emergency planners to better protect and serve the disabled community. This research report will be made available to the National Welfare Coordination Group and partner agencies, including the Ministry of Civil Defence & Emergency Management (MCDEM).

This report is based on the results of a quantitative survey and on interviews with 23 disabled people about their experiences during and after the 2010 and 2011 greater Christchurch earthquakes. While there are many significant ways in which the earthquakes affected the people interviewed, this report focuses on areas of their lives where they were further disabled by the earthquakes and which could be ameliorated by further planning, investment, or by attitudinal changes. This report discusses the preparedness of individuals, the preparedness and responsiveness of communities, organisations, and welfare centres. Consideration of key areas of concern for the people interviewed is provided, including access to information, housing, mobility and transport, and health during and after the earthquakes. Additionally, coping strategies and resilience are discussed, along with suggested strategies for effective planning for disabled people in disasters and civil emergencies.

The people interviewed for this report were not, on the whole, prepared for emergency situations such as the 2010 and 2011 greater Christchurch earthquakes. While many disabled people received and provided support within their family and social networks, those who did not have strong pre-existing networks were left extremely vulnerable after the earthquakes. Few people anticipated a disaster on the scale of the February 2011 earthquake and as a result institutional responses were ad hoc and highly variable with some disabled people receiving excellent support and others none at all. In some cases, government organisations were either slow to meet the needs of people with impairments, or failed to understand or respond to their stated needs.

Disabled people want to be supported to remain independent within the community following a civil emergency. The community response to the earthquakes appeared to bring some people together and to contribute to the strengthening of social networks, as well as to the forging of new networks. However, other existing social networks were disrupted, as people were put under a great deal of physical, emotional and financial stress, and many people had to abandon their homes and communities. Major areas of concern for the people interviewed were: the physical safety of disabled people during and after the earthquakes; ensuring communication was accessible for all; the availability of accessible housing and transport; and being able to access healthcare in the immediate aftermath of the earthquakes.

Government departments, state owned enterprises, and local government have responsibilities as expressed in the New Zealand Bill of Rights (1990) and in the Human Rights Act (1993) for ensuring disabled people are not discriminated against. The strategic direction and goals for health and disability services are set out in the New Zealand Public Health and Disability Act (2000). The framework for the provision of health and disability services is outlined in the New Zealand Disability Strategy (2001). In September 2008 the New Zealand Parliament ratified the UN Convention on the Rights of Persons with Disabilities (the Convention). These Acts and the New Zealand Disability Strategy, through which the disability action plan and articles of the Convention are promoted, need to be taken

into account when planning, developing and implementing emergency preparedness planning and recovery responses for disabled people.

Early research on disaster recovery has identified a major goal of rehabilitation processes as the reconstruction and restoration of the community to pre-disaster levels (Chang, 2010). Alternative approaches to community recovery have suggested that disasters should be seen as opportunities to improve pre-disaster conditions by avoiding the recreation of vulnerable conditions that previously existed. Disabled people who participated in this research wanted the rebuilding of public buildings, houses, roads, footpaths and urban spaces to enhance safety and accessibility for disabled people.

This report also identifies opportunities to improve service responses by avoiding the recreation of vulnerable conditions that previously existed. The overall conclusion of this report is that the emergency service response did not adequately cater to the needs of disabled people. A more effective multi-agency response could have been achieved through linkages between disability supports and services and MCDEM. Information and communication needs as well as mobility and transport emerged as major issues in this research. Disabled people said that information provided did not cater for their needs and that much of the printed material did not adhere to the accessibility guidelines. Consideration of ways to enhance mobility and lessen the impact of changes to public transport for disabled people should also be addressed as a priority.

1.0 KEY FINDINGS

1.1 EMERGENCY RESPONSE

Continue to improve emergency preparedness planning for disabled people. Introduce disability accessible principles and practices into MCDEM/emergency social service/welfare management and coordination.

Continue the initiative to ensure greater flexibility, choice, and control in the delivery of disability supports and services. A more effective multi-agency response needs to be achieved through creating linkages between disability supports and services and MCDEM.

Customer support staff within organisations (such as EQC) providing key services following an event should be provided with disability awareness training as an on-going project.

Disabled people thought that many of the issues that they experienced could be resolved if disability services were provided for, and by, disabled people in ways that are acceptable to disabled people.

Review existing disaster preparedness planning and emergency contact information to ensure that it is provided in disability accessible formats.

Consider extending the initiative to support access to employment opportunities in recovery related work and to also support employment opportunities in disaster preparedness and response planning within MCDEM at national, regional and local levels.

1.2 EMERGENCY ACCOMMODATION AND WELFARE CENTRES

Emergency accommodation and welfare centres urgently review sleeping, toileting and showering arrangements and make changes so that they are able to cater for the needs of disabled people.

Emergency accommodation welfare centres consider the safety and security needs of disabled people.

Welfare centres consider putting plans in place that would enable timely access to non-emergency services like physiotherapists or pharmacists.

Nationally consistent disability training is needed among emergency accommodation and welfare centre staff to ensure that they “see the person and not the disability”.

1.3 INFORMATION NEEDS

Explore ways in which key organisations (such as EQC) providing services following a civil emergency may be supported in developing nationally consistent disability accessible information format resources (web enhanced, email, texting, telephone, social media) for use before and after an event.

Localised information about businesses and local infrastructure, including changed bus routes and mall closures, need to be provided in disability accessible formats.

Ensure that procedures put in place to inform people that they need to evacuate (such as red stickers and red zones) also make sure that the people affected are physically able to evacuate.

1.4 EMERGENCY PREPAREDNESS FOR DISABLED PEOPLE

Explore ways to raise awareness among disabled people about where they can expect to find disability accessible information prior to and following an event.

Include a recommendation to develop multiple support networks in pre-disaster preparedness planning information for disabled people.

Explore options with MCDEM regarding the funding, development and piloting of individualised disaster preparedness planning programmes among disabled people.

Approach MCDEM to trial community-based disaster preparedness planning through strengthening existing community networks within an existing network of disabled people.

Adapt existing business continuity planning programmes so that they are written in an accessible format and are relevant to community-based disability support groups.

Identify resources and areas that enable disabled people to be involved in providing voluntary support and assistance following a civil emergency.

1.5 HOUSING

Review the extent and potential impact of local council practices of under-insuring social housing on accommodation options for disabled people during the recovery period.

Greater disability accessible housing stock is needed so that disabled people who need to relocate have greater accommodation choices.

Review the safety of some disability accessible equipment in an emergency such as keyless door locks.

1.6 MOBILITY ISSUES

Consider ways to enhance mobility for disabled people following a civil emergency.

The mobility and safety needs of disabled people need to be taken into account when safety barriers and cordons are put in place.

Consider ways to lessen the impact of changes to public transport for disabled people.

1.7 FURTHER SUPPORT NEEDS

Consider ways of ensuring greater security of supply for people on restricted medicines.

Consider how caregiver services may be strengthened so that caregiver support is able to be maintained following a civil emergency.

Consider developing an “opt-on” register of vulnerable people who would like to be contacted in an emergency.

Identify and work with a national voluntary organisation that would be willing to develop a plan and be responsible for mobilising volunteers to help relocated disabled people unpack and put away their everyday household possessions.

More research is needed in relation to the issues and needs of Māori and Pacific peoples who were under-represented in this research.

2.0 RESEARCH METHOD

This piece of research was conducted over an 11 week period from the 1st of May until the 12th of July 2012.

The research followed completion of a qualitative study by the authors into the impact of the September 4th, 2010 earthquake on 12 people who are blind or vision impaired. Three staff within the Royal Foundation of the Blind were also interviewed in April 2011 regarding their views on the impact of the September and February earthquakes on their organisation and its members. Five of the original blind or vision impaired participants in this research were re-interviewed one year later in January 2012. Information from the vision impaired research was combined with the results from this research. As per the terms of reference for this study provided by the MSD, the approach for this study consisted of:

1. Literature review.
2. Qualitative interview schedule design.
3. Semi-structured face-to-face interviews with 10 disabled people.
4. An interview with a manager of a service provider.
5. Quantitative questionnaire design.
6. Administration of the quantitative questionnaire to delegates at the Disability Inclusive Disaster Preparedness symposium held in Christchurch on the 28th and 29th of May ($n=35$).
7. Analysis and write-up.
8. Submission of draft report.
9. Feedback.
10. Final report.

A mixed method research design was chosen in order to triangulate findings from the qualitative interviews with the quantitative data and existing research literature. While the research sample of 23 qualitative interviews and a 35 survey respondents (comprising 25 disabled people, and 10 family members, caregivers or agency representatives), is one of the largest studies of its kind in the world, it should be noted that the sample size is still small and results cannot be generalised beyond the research sample.

This research project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 12/18.

3.0 STATUTORY AND REGULATORY FRAMEWORK

Government departments, state owned enterprises and local government have responsibilities for ensuring disabled people are not discriminated against as expressed in the New Zealand Bill of Rights (1990) and the Human Rights Act (1993). The strategic direction and goals for health and disability services are set out in the New Zealand Public Health and Disability Act (2000). The framework for the provision of health and disability services is outlined in the New Zealand Disability Strategy (2001). In September 2008 the New Zealand Parliament ratified the UN Convention on the Rights of Persons with Disabilities (the Convention). These Acts and the New Zealand Disability Strategy, through which the disability action plan and articles of the Convention are promoted, need to be taken into account when planning, developing and implementing emergency preparedness and recovery responses for disabled people.

The Human Rights Act (1993) protects disabled people in New Zealand from discrimination. As outlined in the Act 'discrimination occurs through being treated unfairly or less favourably than another person in the same or similar circumstances' (Human Rights Commission, 2012a). The 2001 Amendment to the Human Rights Act (HRA) made the Government, government agencies, and public officers accountable for unlawful discrimination under the HRA. The Human Rights Commission (the Commission) was established by the Human Rights Commission Act (1977). The Commission is empowered under the Human Rights Act to project the human rights of disabled people in accordance with the United Nations Convention on the Rights of Persons with Disabilities (Human Rights Commission, 2012a).

The New Zealand Bill of Rights Act (1990) provides a framework for peoples' relationship with the Government. The Act places limits on the ability of those in government to act in ways that interfere in the rights of individuals. New legislation needs to be consistent with the rights and freedoms affirmed by the Bill of Rights Act and the Government is required to justify any legislation that limits individual rights. Rights contained within the Bill of Rights that are particularly relevant to disabled people include the right to life and security of the person, democratic and civil rights, non-discrimination and minority rights and the right to justice (Human Rights Commission, 2012b).

Public sector funding and the organisation of health and disability services are set out in the New Zealand Public Health and Disability Act (2000). The Act sets the strategic direction and goals for health and disability services. The Minister of Health and the Minister for Disability Issues are jointly responsible for the New Zealand Disability Strategy (the Strategy) and its implementation (Ministry of Health, 2011).

The New Zealand Disability Strategy (2001) provides the framework for the provision of health and disability services for disabled people in this country.

"Underpinning The New Zealand Disability Strategy is a vision of a fully inclusive society. New Zealand will be inclusive when people with impairments can say they live in:

'A society that highly values our lives and continually enhances our full participation.'

Achieving this vision will involve ensuring that disabled people have a meaningful partnership with Government, communities and support agencies, based on respect and equality. Disabled people will be integrated into community life on their own terms, their abilities will be valued, their diversity and interdependence will be recognised, and their human rights will be

protected. Achieving this vision will also involve recognising the principles of the Treaty of Waitangi” (Minister for Disability Issues, New Zealand Disability Strategy, 2001 p. 7).

The Strategy has 15 objectives and 130 actions. The objectives of the Strategy that relate to recovery planning in greater Christchurch include:

Objective 1: Encourage and educate for a non-disability society.

Objective 2: Ensure rights for disabled people.

Objective 4: Provide opportunities in employment and economic development for disabled people.

Objective 5: Foster leadership by disabled people.

Objective 6: Foster an aware and responsive public service.

Objective 7: Create long-term support systems centred on the individual.

Objective 8: Support quality living in the community for disabled people.

Objective 9: Support lifestyle choices, recreation and culture for disabled people.

Objective 10: Collect and use relevant information about disabled people and disability issues.

Objective 11: Promote participation of disabled Māori.

Objective 12: Promote participation of disabled Pacific peoples.

Objective 14: Promote participation of disabled women in order to improve their quality of life.

Objective 15: Value families, whānau and people providing ongoing support.

(Minister for Disability Issues, New Zealand Disability Strategy, 2001 p. 7).

Objectives with the Strategy that relate specifically to this report are Objectives 1, 6, 7 and 10.

Under the New Zealand Public Health and Disability Act 2000, Section 8, the Minister for Disability Issues is required to report to Parliament annually on progress in implementing the Strategy. The Office for Disability Issues monitors the activity of government agencies and reports to the Minister (Office for Disability Issues, 2012b). The Ministerial Committee on Disability Issues provides leadership on implementing The Strategy through the disability action plan and in promoting the articles of the Convention (Office for Disability Issues, 2012a). In 2011 the disability action plan reported progress in three priority areas 1. supports for living, 2. mobility and access and 3. Employment (Office of the Minister for Disability Issues, 2011).

The Government’s first report on implementing the articles of the Convention (Office for Disability Issues, 2011b) noted that significant progress had been made in regard to the establishment of legislative frameworks, the development of a disability strategy as well as policies that support inclusion and mainstreaming. Ongoing challenges identified include continuing disadvantage and poor outcomes in health, education and employment. Disabled people still experience discrimination and physical and environmental barriers as well as difficulties accessing services. Limited data and a lack of culturally appropriate service provision are also identified as issues that the Government is currently moving to address. Article 11 of the Convention relates to situations of risk and humanitarian emergencies. The

New Zealand report confirms that “measures taken in instances of risk, disaster or emergency are extended to all people, regardless of whether they are disabled or not” (p.18). Examples of public information about emergency preparedness and resources, that takes into account the diverse needs of disabled people, are provided by way of example (Office for Disability Issues, 2011b).

In July 2011 Cabinet agreed to the incorporation of cross-government initiatives in the Disability Action Plan on the Canterbury recovery for the next 18 months. This document states that the development of Recovery Plans, as required in the Canterbury Earthquake Recovery Act (2011), will have regard to the New Zealand Disability Strategy (Office of the Minister for Disability Issues, 2011). Two key areas for ensuring disabled people are included in the Canterbury recovery were identified. The first involves reconfiguring the way disability supports and services are delivered so that disabled people have greater flexibility, choice and control. The MSD is currently reviewing the design of government service delivery in light of changed individual, community and business needs. The second involves improving the accessibility of the built environment. This will be achieved by ensuring that the repair and rebuild of public buildings, houses, roads, footpaths and urban spaces enhances safety and accessibility for disabled people and older family members (Office of the Minister for Disability Issues, 2011).

The 2012 progress report on the inclusion of disabled people in the Canterbury recovery affirmed the need for action in the two priority areas identified previously. The progress report proposed that the action area to reconfigure supports and services be renamed “enable good lives” for disabled adults, children and their whānau. The report proposed that two additional priorities should be included – support access to employment opportunities in recovery related work, and use lessons learnt from the Canterbury response to improve emergency preparedness for people with disabilities. Priorities in relation to supporting people with disabilities in Canterbury are set out in the diagram below (Office of the Minister for Disability Issues, 2012):



Figure 3.1 Disability Action Plan – Canterbury Recovery. (Source: Office of the Minister for Disability Issues, 2012)

The analysis provided in this report will be based upon best practice guidelines for including disabled people in the Canterbury recovery, as outlined in the New Zealand Disability Strategy (2001), the Convention, and the disability action plan.

4.0 INDIVIDUAL PREPAREDNESS, COMMUNITY PREPAREDNESS AND RESPONSE, ORGANISATIONAL PREPAREDNESS AND RESPONSE, AND THE EFFICACY OF WELFARE CENTRES FOR DISABLED PEOPLE FOLLOWING THE GREATER CHRISTCHURCH EARTHQUAKES

4.1 HOW THE EARTHQUAKES IMPACTED UPON ACTIVITIES OF DAILY LIVING

We asked survey respondents what kind of everyday things had the earthquakes made more difficult for them/their family member/clients. All respondents answered this question, responses are listed in order of frequency. Getting around generally (24/35); spending time with friends doing things that are enjoyable (20/35); staying positive (15/35); inadequate facilities (such as sewerage and water) in my/family member's/client's home (14/35); shopping for groceries (13/35); using public transport (12/35); managing financially (12/35); maintaining personal support networks that I would normally rely on for help (9/35); accessing disability support services (6/35); accessing home help (6/35); getting an appointment with a general practitioner (6/35); accessing specialist services at the hospital (6/35); accessing day services (5/35). People wrote the following comments in the additional comments section of this survey question: lack of access to disability accessible walks, gyms, recreational areas (3/35); difficulties getting children to and from school (1/35); and in keeping family contact (1/35); housing issues (1/35); lack of immediate access to information (1/35). One agency representative from outside of Christchurch city indicated that there had been no change since the earthquakes began.

4.2 INDIVIDUAL PREPAREDNESS: SURVEY RESULTS

The majority of disabled people who participated in this research reported that they were not prepared for an emergency prior to the September earthquake. Only 5/25 disabled people who answered the survey indicated that they had adequate emergency equipment and/or a workable emergency plan (3/25) in place prior to September 4th 2010. This finding is consistent with international literature relating to emergency preparedness among disabled people. Following the earthquake most people took steps to ensure that they were better prepared. Thirty-two out of the thirty-five people agreed (15) or strongly agreed (17) that they were more prepared for an emergency now compared to the 4th of September, 2010. Two people disagreed while one person did not answer the question. The majority of disabled people felt that they were now well prepared should another major earthquake occur. 22/25 disabled people, and 32/34 people who answered the survey, stated that they were either well prepared (11/25 and 17/34 respectively) or somewhat prepared (11/25 and 15/34 respectively) for a civil emergency. One disabled person indicated that they were not very well prepared, one did not know, and one did not answer the survey. However, few disabled people were able to prepare for an emergency without additional support from family, friends or caregivers.

A lack of disability accessible information was identified as a key barrier to individual preparedness. Advice provided by MCDEM was not appropriate as it was too general or made assumptions about people's bodies or lives that did not apply to many disabled people. A lack of appropriate disability accessible equipment as well as communication and transport difficulties following the earthquakes were identified as barriers to individual preparedness by some disabled people. Disabled people reported running out of emergency supplies requiring them to restock after several days or in preparation for the next earthquake event. However it

was unclear where they could go to access supplies as stores had closed or run out of stock and most needed help with transport to do this.

4.3 INDIVIDUAL PREPAREDNESS ACTION AND ADVICE: SURVEY RESULTS

The following numbers of disabled people who answered the survey said that following the September earthquake: they had put together emergency supplies (18/25); organised people to telephone in the event of a civil emergency (16/25); put together emergency related equipment (14/25); placed important instructions such as their medication regime in a prominent or safe place (10/25); put in place a civil emergency contingency plan (9/25). Three out of the twenty-five people said that they had not done anything extra to prepare for a civil emergency.

Disabled people emphasised the need to personalise emergency kits particularly if they required specialised medical equipment, medicines or hygiene products. Disabled people on restricted medicines that require a hospital number and were collected from the pharmacy each week were unable to set aside additional medical provisions for the recommended three days.

Disabled people provided the following advice on individual emergency preparedness for people with disabilities. Suggestions are reproduced in the respondents' own words:

- Don't just assume you will be assisted ASAP. You have to be prepared to look after yourself for three or four days.
- Make sure you have a plan, that you are safe and have a safe area to go to.
- Build up support systems, get to know your neighbours and make sure they know how to help in an emergency.
- Have a list of 2-3 people that you can contact to get the immediate support that you need and make sure that you have the contact numbers of those in your immediate area.
- Get key information such as copies of all legal, insurance and medical documents and know where to find information prior to an emergency.
- Think of what you would do if you had no electricity, water or sewerage, how would you go to the toilet or charge electrical equipment?
- Have an emergency kit handy and updated with spare supplies that you may need.
- Respondents' suggestions for supplies included: essential medication, wet wipes, hand sanitiser, incontinence products, emergency cash, a tin opener, \$2 shop rain cape, a headlight torch to keep hands free, two buckets one for water and one for the toilet, plastic liners and toilet paper.
- Stock up on water, food, candles, spare batteries and torches, and rubbish bags to use in the toilet.
- Always keep your cell phone charged and make sure you have a gas cooker and gas.
- Have all medication in a place where it can be reached quickly.
- Take leadership in your own community and have a voice in the recovery.

4.3.1 Summary

- Disabled people were not prepared for an emergency prior to the September earthquake. Following the earthquake most people took steps to ensure that they were better prepared. However, few disabled people were able to prepare for an emergency without additional support.
- A lack of disability accessible information and equipment was identified as a barrier to individual preparedness. Explore ways to raise awareness among disabled people about where they can expect to find disability accessible information and equipment prior to and following an event.
- Need to explore options regarding the funding, development and piloting of individualised disaster preparedness planning programmes among disabled people.

4.4 COMMUNITY PREPAREDNESS AND RESPONSE

The people that we talked to highlighted the importance of neighbourhood support. Disabled people described how neighbourhood friends accompanied them on the bus, took them grocery shopping, and helped out at home. Informal systems of support, particularly where neighbours regularly checked upon each other, were more enduring than serendipitous support networks that were established after the September earthquake (and fell away subsequently). Friends and family in other parts of the country were an important source of support as they enabled some disabled people to leave Christchurch in the days following the February earthquake.

Disabled people who remained in their homes and communities reported loss of key support networks as neighbours moved away. This made them feel more vulnerable should another earthquake occur. Disabled people who were relocated outside of their community following the earthquakes reported that the disruption to social networks and social isolation made them feel more vulnerable should another earthquake occur. Some disabled people who had been relocated reported experiencing negative attitudes from people in the community and in local facilities. Evidence from this research suggests that developing multiple support networks, with family, neighbours, work colleagues and/or community groups would lessen vulnerability following a natural disaster.

4.4.1 Summary

- Loss of key support networks made disabled people feel more vulnerable should another earthquake occur.
- Include a recommendation to develop multiple support networks in pre-disaster preparedness planning information for disabled people.
- Approach MCDEM regarding trialling community-based disaster preparedness planning through strengthening existing community networks within an existing network of disabled people.

4.5 ORGANISATIONAL PREPAREDNESS AND RESPONSE

Disabled people reported that there was plenty of support in the way of food, water and necessities. People reported positive experiences with organisations that were familiar with providing services to a diverse range of people such as the Salvation Army, IDEA services, and CCS [Disability Action]. Inconsistent contact, or lack of contact, was reported by disabled people who were members of patient support organisations that had lost their premises in

the earthquakes. Most of the people interviewed in this research wanted personal contact from organisations that they had had dealings with for most of their lives, such as Housing NZ, and felt abandoned when this did not happen.

4.6 CENTRALISED SYSTEMS AND FRAGMENTED SERVICES

Objective 6 of the New Zealand Disability Strategy focuses upon fostering an aware and responsive public service. Aid needs to be community-based as centralised systems and resources are more difficult for disabled people to access. Disabled people commented that services were too fragmented and that the lack of an integrated system was an ongoing issue. Disabled people reported frustration at having to go through a number of organisations to be able to access the support that they required. Often policies that were put into place in the aftermath of the earthquakes did not account for the additional barriers to mobility encountered by people with impairments after the earthquakes. Having to physically turn up to register with the Red Cross, or go to Housing NZ or Work and Income was particularly difficult for disabled people as both public transport and their usual support networks were disrupted, making presenting for appointments difficult. After the February earthquake some disabled people were increasingly aware of not being safe or easily able to manage if an earthquake occurred while they were away from their homes and support systems. This made the need to travel across town to access support from government agencies more stressful. A more effective multi-agency response could have been achieved through linkages between disability supports and services and MCDEM.

4.7 LACK OF UNDERSTANDING

Stress experienced during the earthquakes was exacerbated by having to interact with government organisations and private companies, such as Christchurch Airport, insurance companies and EQC, which did not understand how their practices affected people with impairments and which did not alter their practices when the difficulties were explained to them. Some organisations either did not, or were slow to, listen to the stated needs of disabled individuals, their support people and advocates, and in some cases offered inappropriate solutions. An advocate who was trying to find alternative accommodation for a severely disabled person reported that rest home referrals had been frozen and instead the advocate was inappropriately referred to Housing NZ and Work and Income. One respondent with an intellectual disability reported difficulties dealing with large organisations because they did not understand, or even believe, that he had an intellectual impairment and they did not take his intellectual impairment into account in their communications with him. Procedures that were put in place to inform people that they had to evacuate (such as red stickers and red zones) did not make sure that the people affected understood the evacuation process and/or were physically able to evacuate.

4.7.1 Summary

- Adapt existing business continuity planning programmes so that they are written in an accessible format and are relevant to community-based disability support groups.
- Continue to improve emergency preparedness planning for disabled people. Introduce disability accessible principles and practices into MCDEM/ emergency social service/welfare management and coordination.
- Disability supports and services need to be community-based and co-located as separate, geographically centralised systems and resources were more difficult for disabled people to access.

- Continue the initiative to ensure greater flexibility, choice and control in the delivery of disability supports and services. A more effective multi-agency response needs to be achieved through creating linkages between disability supports and services and MCDEM.
- Many organisations did not understand how their practices affected disabled people and did not alter their practices when the difficulties were explained to them.
- Customer support staff within organisations (such as EQC) involved in providing key services following an event should be provided with disability awareness training as an on-going project.

4.8 WELFARE CENTRES CONCERNS: SURVEY RESULTS

Thirteen of the thirty-five survey respondents reported that they had to evacuate from their home following one of the major earthquakes. Thirty-two of the thirty-five respondents reported concerns about evacuating to a welfare centre. Three people did not answer this question. The following concerns are listed in order of frequency: Whether the shelter has disability facilities (23/32); whether the shelter had disability access (21/32); having services provided at the shelter that catered to the needs of disabled people (20/32); hygiene at the shelter (19/32); other people's attitudes towards people with disabilities (18/32); leaving pets behind (18/32); being turned away from the shelter (because of my/my family member's/client's disability) (13/32); the home being burgled while it is vacant (13/32); unsure where to go (10/32); too difficult to travel (6/32); no transportation (5/32); taking a service dog (4/32). One person wrote that they would be concerned about how long they would be there.

International literature suggests that disabled people are more likely to need to evacuate to a welfare centre and are less likely to do so. Comments from interview respondents provided insights not currently available in the literature as to why disabled people may be reluctant to evacuate to welfare centres. It may be more difficult for people with impairments to abandon their home because it might be the one place that is organised to suit their specific needs. Disabled people expressed concerns that they would be more dependent at a welfare centre than if they remained at home. They also had concerns about a lack of disability support, such as the availability of readers and writers, at welfare centres.

People who were vision impaired were concerned about the safety of their possessions at an evacuation centre as they could not watch over them. Disabled respondents who evacuated to welfare centres noted they had concerns that they would be targeted and robbed suggesting that they needed to be extra vigilant. One mobility impaired disabled person was located next to the security guard, a staff member was also assigned to check on her regularly, and this made her feel safer as well as welcome at the centre.

Having one or more impairment complicated the decision to move to an evacuation centre. One person described having medical equipment, such as an oxygen machine, and controlled medication which would be difficult to take to a welfare centre. Having a service animal could further complicate decisions about going to a welfare centre because of the possibility of encountering other untrained animals, or people who interacted inappropriately with the service animal.

For people with mobility impairments, who used wheelchairs, other mobility aids or who had difficulty walking, the crowded welfare centres could also be hard to navigate as paths

between beds were narrow and people had possessions around them. People with vision impairments could be completely unable to move around independently.

Some of the people interviewed said that even if they had to leave their homes, just getting to a welfare centre would be their biggest challenge. Getting people to welfare centres was not a high priority for institutions involved in first response such as St John's Ambulance. Making sure that disabled people are able to physically get to a safe place should be included in planning for disaster responses.

4.9 WELFARE CENTRES SUGGESTIONS FOR IMPROVEMENT

Disabled people requested accessible welfare centres and a dedicated helpdesk to be provided at the centres. They also expressed a preference for disability services provided for and by disabled people in ways that are acceptable to disabled people. Evidence from this research suggests that welfare centres need to review their policies and practices for disabled people. Disability training is also needed for MCDEM staff and volunteers to ensure that they "see the person and not the disability." Shelter, safety and security are basic human rights. Disabled people have the right to expect reasonable accommodation in relation to their needs. Some disabled people had positive experiences at welfare centres while others reported negative experiences. One mobility-impaired disabled person who had been rescued from her severely damaged home by neighbours described arriving at an evacuation centre with another power chair user and being turned away. The welfare centre staff member made this decision without asking what resources they would require and whether these needs could be accommodated within the existing facilities at the centre.

Facilities within evacuation centres need to be reviewed so that they cater for the needs of disabled people. One wheelchair user described needing four people to help with toileting in a Port-a-loo. The person became unwell and risked medical complications by severely limiting their fluid intake to avoid going to the toilet. The centre had a disability access toilet however it was not working. It took three days for a solution to be found so that the disability access toilet was able to be used. We question why the centre persisted with the Port-a-loo when as a stop gap measure a rubbish bag could be placed inside the disability access toilet and removed for disposal after use.

A significant number of disabled and elderly people are unable to get up from the floor without assistance. The practice of placing mattresses on floors creates dependency for disabled and elderly people who are used to getting in and out of bed without assistance. We ask that welfare centres consider using raised disability accessible beds for disabled people and the elderly. We understand that as a result of lessons learnt from the bush fires, raised beds are currently being implemented in selected welfare centres in Victoria, Australia.

4.9.1 Summary

- Emergency accommodation and welfare centres need to urgently review sleeping, toileting and showering arrangements and make changes so that they are able to cater for the needs of disabled people.
- Emergency accommodation and welfare centres need to consider the safety and security needs of disabled people.
- Welfare centres should consider putting plans in place that would enable timely access to non-emergency services like physiotherapists or pharmacists.

- Nationally consistent disability training is needed among emergency accommodation and welfare centre staff to ensure that they “see the person and not the disability”.
- Disabled people thought many of the issues that they experienced could be resolved if services were provided for and by disabled people in ways that are acceptable to disabled people.
- Consider extending the initiative to support access to employment opportunities in recovery related work to supporting employment opportunities in disaster preparedness and response planning within relevant MCDEM at national, local and regional levels.

5.0 HOUSING, MOBILITY AND TRANSPORT, HEALTH ISSUES AND INFORMATION AND COMMUNICATION NEEDS FOLLOWING THE GREATER CHRISTCHURCH EARTHQUAKES

5.1 HOUSING: SURVEY RESULTS

Thirteen out of thirty-five respondents said that their housing situation was unchanged since the earthquakes began. Of the remaining 22 respondents, 3 were still living in temporary accommodation at the time of filling out the survey, 6 had moved houses due to the earthquakes, 7 were in short-term alternative accommodation, and one did not answer the question. Five respondents were worried about their current housing situation, 8 were living in housing that needed minor repairs, 4 in housing that needed moderate repairs, and 5 in housing that needed major repairs. Six respondents reported that they would need to move soon so that their house could be repaired. Four people (2 disabled and 2 agency representatives commenting on the situation for their clients) reported that they were finding it difficult to find adequate housing. The findings from the survey suggest that disabled people (63%) were disproportionately impacted by the greater Christchurch earthquakes. This finding is consistent with the international literature relating to the impact of natural disasters on disabled people.

Three of the seven agency representatives said that their clients needed to be evacuated from their usual place of residence. Of those that needed to be evacuated one agency's clients were impacted on the 4/9/2010 and the 22/11/2011, with the February earthquake resulting in the second immediate evacuation to alternative premises. Another organisation's clients needed to be evacuated within a week following the 22/11/2012 earthquake as their residence was red stickered and one agency reported that their clients needed to be evacuated immediately following the 13/6/2011 earthquake. At the time of filling out the survey (May, 2012), none of the agencies reported that their clients were back in their original places of residence.

Ten out of twenty-five disabled people who filled out the survey said that they needed to be evacuated from their usual place of residence. Two people had to evacuate immediately following the September 9/2010 earthquake while 9 people indicated that they needed to evacuate following the February 22, 2011 earthquake - 8 of those immediately. One person was evacuated five times as a result of earthquakes between September 4, 2010 and June 13, 2011. Four of the nine disabled people who were evacuated following the February earthquakes experienced residential instability and reported that they had moved a minimum of 3 times since the February 22, 2011 earthquake. Six people indicated that they were back in their usual place of residence within two weeks, while 2 people who had been evacuated following the February 22, 2011 earthquake reported that they were still not back in their usual place of residence at the time of filling out the survey (May, 2012).

With the aftershocks continuing, people's homes could go from safe and liveable to unsafe very quickly and many people did not have a choice about whether they left their homes or not. Disabled people might have people in their social network who would take them in, if they had the resources or specific accessibility requirements, but their homes were not always accessible. One person described having to move 12 times in 18 months because of a lack of temporary wheelchair accessible accommodation. Due to communication difficulties deaf people preferred to find alternative accommodation within the deaf community.

For those people whose homes were still standing, it could be unclear how safe their houses were by just looking at them. People with vision impairments might not even know how dangerous their homes were after an earthquake and could unwittingly stay in an unsafe environment. One interviewee discussed needing support to check the safety her home and to make it immediately inhabitable. Some systems that had been put in place to make their home more accessible made their home unsafe during the earthquakes. For example, one person described being locked in her home as electricity was needed to activate the keyless electronic access system.

The task of moving house could be made even more difficult by having a physical impairment. One interviewee would have liked external help with the task of relocating her possessions including unpacking, washing and stowing away belongings that had been kept in storage.

People who had insurance to pay for motels and other accommodation costs had more choices than those who did not. Many disabled people are at an economic disadvantage and rely on state or council housing to be able to access affordable housing. It has also been noted that the cost of renting in Christchurch rose steeply after the earthquakes. Many state and council houses were not accessible and did not have, for example, wheelchair access or secure storage for a mobility scooter. Some disabled people were offered alternative accommodation that was not fully accessible. Not having an accessible kitchen meant that they would be unable to return to the independent life that they had before the earthquake. Disabled people who actively made sure that they got the support that they needed including accessible housing were seen as 'difficult' by the authorities.

5.1.1 Summary

- Twenty-two of the thirty-five survey respondents (63%) reported that they, or their disabled clients, had to be evacuated from their usual accommodation following the earthquakes.
- Friends and family of disabled people did not have disability accessible housing limiting options for temporary alternative accommodation.
- Greater disability accessible housing stock is needed so that disabled people who need to relocate have greater accommodation choices.
- Review the extent and potential impact of local council practices of under-insuring social housing on accommodation options for disabled people during the recovery period.
- Review the safety of some disability accessible equipment in an emergency such as keyless door locks.
- Identify and work with a national voluntary organisation that would be willing to develop a plan and would be responsible for mobilising volunteers to help relocated disabled people unpack and put away their everyday household possessions.

5.2 MOBILITY AND TRANSPORT

After the earthquakes, mobility around Christchurch was more difficult for many people who had vision or mobility impairments. The earthquakes significantly altered the physical environment and this could affect people's ability to leave their homes and get to evacuation and welfare centres. After the earthquakes, safety measures put in place to protect the majority actually created greater risks for some people, particularly those with vision

impairments. Changes in public transport systems could also affect disabled people more than other people, either because the environment around public transport was no longer accessible or because routes were changed. When bus routes changed disabled people could be prevented from travelling independently.

Existing safety measures in the community were compromised for people with vision impairments. Mobility around the community became more hazardous than usual for people with vision impairments, there were extra hazards on the streets, safety measures such as pedestrian crossings were unusable and roads had been reorganised. Many people with vision impairments, for example, struggled with the safety barriers that were erected along streets, as they were often placed around the traffic light poles obscuring the pedestrian cross buttons. It is recommended that the mobility and safety needs of disabled people are taken into account when safety barriers and cordons are put in place.

The disabling environment was made easier to manage with the support of people in the community. People in wheelchairs who lived in suburbs that were badly affected by liquefaction could not 'walk' and had to catch a taxi. Two people described not being able to leave their property independently as they were unable to manoeuvre their wheelchair around debris in their home or liquefaction in the street.

People who could drive did not experience the physical environment as disabling. For people with mobility impairments who could drive, mobility around the community was facilitated by access to a vehicle. Although many roads in Christchurch were damaged, most were able to be driven on immediately or after a short period of time. However, other people with mobility impairments could not, or did not drive and this limited their mobility around the community. For some disabled people the earthquakes did not necessarily mean that they were made immobile, but that their mobility was made more difficult and they required extra time, organisation, and often money to facilitate it. For those who did not have easy access to a car, closure of local supermarkets and government agencies created longer and more expensive trips, particularly for those living in the Eastern suburbs. As well as affecting people's ability to move around the community, the earthquakes dictated where people could go to. One woman described being unable to go to upper floors of high rise buildings because the lifts were out of service and she was unable to use stairs.

One of the big challenges to mobility in the aftermath of the earthquakes was the disruption and changes to public transport. For people with vision impairments, the cutting or alteration of a bus route could mean that their guide dog could no longer assist them. In some instances, friends or work colleagues were relied on to accompany disabled people on altered bus routes.

The restrictions placed on their mobility by disruptions to public transport services made some people more housebound, The difficulties they encountered meant they would only make the effort to navigate public transport for essential appointments. One person interviewed said that she was managing as best as she could, but that she felt public transport services were not getting closer to meeting her mobility needs. Another person described their bus routes returning to normal as being a key indicator that Christchurch was recovering and that life was becoming easier. One woman felt that rebuilding Christchurch after the earthquakes provided an opportunity to make it a more accessible and inclusive place to live and was inspired to be involved in the planning.

5.2.1 Summary

- Consider ways to enhance mobility for disabled people following a civil emergency.
- The mobility and safety needs of disabled people need to be taken into account when safety barriers and cordons are put in place.
- Travel around the city was more difficult requiring extra time, organisation and money.
- Consider ways to lessen the impact of changes to public transport for disabled people.

5.3 HEALTH RELATED ISSUES

Some of the disabled people interviewed either had on-going health conditions, or had impairments which could make them vulnerable to health complications if they did not have access to appropriate support. It should be noted that most people with existing health conditions that are reliant on medicines or medical equipment have plans in place for managing their condition in an emergency. The following issues were noted in relation to healthcare. Some of the people interviewed were either injured in the earthquakes or their impairments were aggravated. One woman described having to leave her home without her usual medication after being concussed in the earthquake. She did not have access to a doctor or pharmacy in order to get replacement medication or pain relief. The woman was eventually admitted to hospital after self-evacuating to the North Island where she was diagnosed with concussion.

Some people reported positive experiences with general practitioners while others were not so fortunate. One person said that their GP made sure that the appropriate agencies knew they needed urgent assistance. Another woman was unable to contact health professionals to access the medication and treatment that she needed because of the way the earthquake had affected her. When she eventually did access a doctor he refused to prescribe the medicines needed when her condition was 'active' because the doctor did not think that she needed them.

In the aftermath of the earthquakes some disabled people were left without support workers and this had the potential to cause serious health complications. People reliant on physiotherapists to help manage their condition, for example, reported finding it difficult to access physiotherapy following the earthquakes. Disabled people suggested that plans should be put in place that could be called upon if needed for providing non-emergency services, like physiotherapy or access to pharmacists, at welfare centres.

Some disabled people were reluctant to leave their neighbourhood where the chemist had a record of their medication because of anticipated difficulties getting new prescriptions in a different locale. Disabled people on restricted medications that were collected weekly were particularly vulnerable as they were unable to put aside emergency medical supplies in preparation for an earthquake.

The experiences of disabled people in this research underpin the importance of always carrying a supply of important medications on the person. Objective 5 of the New Zealand Disability Strategy acknowledges the experience of disability as a form of specialised knowledge. People with long-term medical conditions are often experts in their illness, they are able to tell when it has been exacerbated and they know what they need in order to get better. Health professionals need to recognise and act on this expertise. Solutions need to be found that enable people on restricted medicines to put aside an emergency supply.

5.3.1 Summary

- Consider how caregiver services may be strengthened so that caregiver support is able to be maintained following a civil emergency.
- Disabled people suggested that non-emergency services, like physiotherapy or access to pharmacists, should be provided at welfare centres.
- Consider ways of ensuring greater security of supply for people on restricted medicines.

5.4 INFORMATION NEEDS AND COMMUNICATION: SURVEY RESULTS INFORMATION SOURCES

Disabled people reported that they were most likely to get information from the radio (21/25), television (18/25), through text messages (15/25) or from family, friends or neighbours (16/25). Fourteen (14/25) disabled people said that they received information from the internet, 13/25 from newspapers and 13/25 by telephone. Eight (8/25) received information from a disability support organisation and 2/25 from a government agency. Social networks such as work colleagues and friends were good sources of information about what was happening around Christchurch and with government and community agencies, as many people were suddenly cut off from their usual forms of news and communication.

5.5 SURVEY RESULTS ACCESS TO INFORMATION

Twenty (20/34) people either strongly agreed (5) or agreed (15) that it was easy to access information provided by MCDEM/emergency services. Thirteen (13/34) people either disagreed (10) or strongly disagreed (3) that it was easy to access information. One person did not answer this question and one person said they didn't know. Seventeen (17/34) people either agreed (13) or strongly agreed (4) that information provided by emergency services/MCDEM was adequate. Fifteen (15/34) people (44%) either strongly disagreed (1) or disagreed (14) that information was adequate. One person did not answer this question and two people said that they did not know. Twenty-six (26/35, 74%) of survey respondents either strongly disagreed (10) or disagreed (16) that emergency information took into account the needs of disabled people. Five (5/35) people either agreed (3) or strongly agreed (2) that emergency information took into account the needs of disabled people. Four people did not answer this question.

Disabled people agreed that if you had electricity and could use a computer it was easy to access information provided by emergency services or MCDEM and that for the most part the information was adequate. Disabled people said that information provided did not cater for the needs of disabled people and that much of the printed material did not adhere to the accessibility guidelines. Issues identified included: lack of information written in accessible format, too many phone numbers and no emails, people who had learning difficulties or who were vision impaired had difficulties accessing written material. Some support websites were too wordy making information hard to access. Some disabled people said that they found it hard to get advice from someone who understood their mobility issues.

5.6 BARRIERS TO ACCESSING INFORMATION

Barriers included no electricity (24/34), loss of cell phone coverage (1), unable to charge cell phone (20), inability to text (1), conflicting information provided to the public (19), no access to television (18), emergency helplines were overloaded (13), unable to find key information

related to areas of residence (10), disability support services, such as telephone information lines, were not up to date (9), ran out of credit on my cell phone (7), unable to hear broadcasts (4), did not know where to find information that I needed (4), unable to read (3) or understand (3) printed information. Two (2/34) people reported that they personally did not encounter any barriers. One person did not answer this question. People who were deaf and hearing impaired said that they knew what was happening in Christchurch. However finding out information and engaging with their community was made more difficult by not knowing which community meetings would have New Zealand sign language interpreters present and that they could therefore attend.

Once businesses and infrastructure, which had previously been unavailable, began to operate again, it could be difficult for people to find out accurate information about what services were open. Malls in particular were mentioned as well as information about bus routes that were not working or had been changed.

Objective 6 of the New Zealand Disability Strategy focuses upon ensuring that government agencies, publically funded services and publically accountable bodies are aware of, and responsive to, disabled people. There was some anger expressed towards government organisations that either did not understand the communications needs and rights of people who had hearing impairments or were deaf, or that ignored requests for accessible forms of communication. EQC was consistently singled out as failing to provide disability accessible information. Deaf people reported that key information was provided over the telephone rather than through email, while people who were vision impaired or had learning difficulties experienced problems with receiving written material rather than a telephone call.

Social media appeared to be an acceptable means of communication for many disabled people. Some commented on how social media provided a useful and supportive way of communicating with people and organisations on an on-going basis. MCDEM should look at ways of informing people using social media.

Comments were made around being upset by media coverage during and after the earthquakes that involved rumour and speculation. Disabled people with learning difficulties, intellectual impairments or mental health issues could potentially be overwhelmed by conflicting advice and constantly changing updates. Ken Ring's earthquake predictions were identified as being particularly dangerous for people with intellectual impairments.

5.6.1 Summary

- Only 2 of the 34 people who answered the survey reported that they experienced no barriers to accessing emergency information.
- Seventy-four percent of survey respondents (26/35) agreed that emergency information did not take into account the needs of disabled people.
- Forty-four percent of survey respondents (15/34) thought that information provided by emergency services was inadequate.
- Explore ways in which key organisations involved in providing services following a civil emergency such as EQC may be supported in developing nationally consistent disability accessible information format resources (web enhanced, email, texting, telephone, social media) for use before and after an event.
- Localised information about businesses and local infrastructure including changed bus routes and mall closures need to be provided in disability accessible formats.

- Ensure that procedures put in place to inform people that they need to evacuate (such as red stickers and red zones) also make sure that the people affected are physically able to evacuate.

5.7 COPING STRATEGIES AND RESILIENCE

The ability of individuals to be resilient and cope in the aftermath of the earthquakes was dependent on the extent to which they were affected in key areas of their lives. Erosion of resilience occurs when a lack of progress in repairing housing and infrastructure occurs.

Objective 5 of the New Zealand Disability Strategy focuses upon fostering leadership by disabled people. As has been seen in the literature on disasters and emergency situations, many people find it beneficial to cope with their own reactions by offering support to other people. Enabling disabled people to be involved in helping others was suggested by participants. Many of the disabled people interviewed talked about helping other people (disabled or not) in the wake of the Christchurch earthquakes. Disabled people who helped out following the earthquakes did not just offer support through organisations, but within their communities and families. One person talked about how offering support to people and talking to them about their reactions enabled them to have a break from their own feelings about the earthquakes. Working to support others during this time gave disabled people a sense of purpose and meaning that could also help them to cope with a chaotic situation. Helping other people over a prolonged period of time could be tiring but was also strongly associated with positive mental health benefits.

It was also noted by one interviewee that having the ability to offer help to others required first receiving support from his support worker. Being able to support other people was very important for people's well-being and also meant that disabled people could receive support from within their own communities from people who had shared some of their experiences.

Another important coping strategy that many people highlighted was having opportunities to discuss their experiences of the earthquakes. Those who worked for disability organisations noted that many clients needed to feel that they had someone to listen to their experiences. While some disabled people wanted to share their experiences of the earthquakes as people with impairments, experiences of disasters were in most ways universal and people shared experiences with a wide range of others. However, because of the displacement of many people after the earthquakes, finding a place to connect with friends and to share experiences could be difficult depending on how easy it was to navigate around the city.

For disabled people to have resilience it was helpful to have the financial resources and independence to be able to receive the kind of help that they found most appropriate. One person described accessing respite care to give themselves a break from the stress of having to cope independently with the earthquakes. Conversely, having limited financial resources could create extra stress during times of emergency and could limit people's options of how they coped with their changed circumstances. The extra costs, such as additional transport expenses, meant that for people on low incomes, bill payments may have had to be deferred so that they could survive financially.

There were many stories of friends, family members, colleagues, neighbours and people in the community supporting each other in the aftermath of an earthquake. Having these social networks was seen as an important part of resilience. Disabled people also used their social networks to navigate institutions and organisational support after the earthquakes. For people who had a close community, with strong social support, there was a very pressing

need to stay close to that community. Rebuilding social networks after they had been disrupted was a very important coping strategy from an emotional and practical, perspective.

Many interviewees talked about the important role played by cell phones, emails and phone calls, during and after the earthquakes. Communication technologies enable them to connect to social networks and find out information about what was happening in Christchurch. Using a cell phone was particularly important for people with hearing impairments as it could be potentially be their only form of accessible communication.

Support workers could make a lot of difference in the aftermath of the earthquakes. While some found that their support workers helped their resilience, others had less positive experiences. One support worker left a disabled person in temporary accommodation that was not disability accessible and another ignored a disabled person's acute medical needs. Support workers who dismissed disabled peoples' fear of the earthquakes were described as unhelpful. People also had very positive experiences with support workers. One man described how the attitude of his individually funded support workers meant that he felt that he could cope with the effects of the earthquakes.

While there may be additional factors to consider when planning for the needs of disabled people, those interviewed agreed that as far as practicable disabled people still needed to be able to make their own decisions about their living situations, safety and social networks – just as non-disabled people have to make those decisions. One man believed there was a risk of putting systems for disasters in place that would discriminate against disabled people by preventing them from making their own decisions about matters that non-disabled people would be free to decide about.

The findings from this research mirrors previous studies, which highlighted that organisations need to be aware that although employees are professional, they are also exposed to the same stressors as those that they are assisting. Some of the people interviewed for this report provided support to disabled people in a professional capacity, as well as, in some cases experiencing disability themselves. For those people who were disabled and worked for an organisation supporting other disabled people, they noted that they had to be mindful of only providing support that was asked for. Disabled people might need assistance, but those people providing the assistance should not assume that they know what that might entail, and should not make decisions for disabled people.

A number of people who were interviewed felt that disabled people should be able to opt into a database for civil emergencies which indicated that that they would want an agency to check that they were safe after a disaster. It was noted, however, that a database would be only appropriate if it was run as a voluntary scheme, and not compulsory.

Finally, it was noted by one interviewee that the most important thing for disabled people during times of emergency, is that they are already engaged in their community and have a range of relationships and social supports in place. This was something that needed to be encouraged and supported all the time, so that in times of crisis disabled people are less likely to be isolated and therefore vulnerable.

5.7.1 Summary

- Identify resources and areas that enable disabled people to be involved in providing voluntary support and assistance following a civil emergency.
- Consider developing an "opt-on" register of vulnerable people who would like to be contacted in an emergency.

6.0 CONCLUSIONS AND RECOMMENDATIONS

As with many other people in Christchurch the people interviewed for this report, were not, on the whole, prepared for emergency situations such as the September 2010 and February 2011 earthquakes. While many disabled people received and provided support within their family and social networks, those without strong pre-existing networks were left extremely vulnerable after the earthquakes. Because few people anticipated a disaster such as the February 2011 earthquake, institutional responses were ad hoc and highly variable, with some disabled people receiving excellent support and others none at all. In some cases, government organisations were either slow to meet the needs of people with impairments or failed to understand or respond to their stated needs.

The community response to the earthquakes appeared to bring some people together and contribute to the strengthening of existing social networks as well as forging new networks. However, some social networks were disrupted as people were put under a great deal of physical, emotional and financial stress, and many people had to abandon their homes and communities.

Major areas of concern for the people interviewed were: the physical safety of disabled people during and after the earthquakes; ensuring communication was accessible for all; the availability of accessible housing and transport; and being able to access healthcare in the immediate aftermath of the earthquakes.

The resilience of disabled people depended on an individual's circumstances, access to institutional support, their socio-economic position, and being part of social networks. The coping strategies disabled people employed after the earthquakes were mainly focussed around providing, as well as receiving, support, including having opportunities to listen to, and talk about, shared experiences.

Many people said that they would have liked to have had someone from a government or community organisation check on them to make sure they were okay after the February earthquake. One way to make sure vulnerable disabled people are checked on in an emergency is to have a voluntary database that disabled people opt into. This voluntary database would immediately identify a specific group of people who could need extra support in a time of emergency.

6.1 RECOMMENDATIONS

Civil Defence and Emergency Management and welfare services

1. The overall conclusion of this report is that the emergency service response did not adequately cater to the needs of disabled people. A more effective multi-agency response could have been achieved through linkages between disability supports and services and MCDEM.

Recommendation: Introduce disability accessible principles and practices into MCDEM/emergency social service/welfare management and coordination.

2. The centralised but fragmented welfare services that were put into place in the aftermath of the earthquakes did not take into account the additional barriers to mobility encountered by people with impairments after the earthquakes.

Recommendation: Continue the initiative to ensure greater flexibility, choice and control in the delivery of disability supports and services. A more effective multi-agency welfare service response could have been achieved through linkages between key disability supports and services that would enable disabled people to access housing and welfare support at one community-based location.

3. High rates of unemployment and under-employment exist among disabled people.

Recommendation: Disability inclusive disaster preparedness planning and response should be led by disabled people as they have knowledge, expertise and insight into what disabled people need to in order get through.

4. **Recommendation:** Consider extending the initiative to support access to employment opportunities in recovery-related work, to supporting employment opportunities in disaster preparedness and response planning within relevant MCDEM at national, regional and local levels.

Emergency accommodation and welfare centres

5. **Recommendation:** That emergency accommodation and welfare centres should urgently review sleeping, toileting and showering arrangements and make changes so that they are able to cater for the needs of disabled people.

6. **Recommendation:** That emergency accommodation and welfare centres consider the safety and security needs of disabled people.

7. **Recommendation:** That nationally consistent disability training is needed among emergency accommodation and welfare centre staff to ensure that they “see the person and not the disability”.

8. **Recommendation:** Consider providing non-emergency services, like physiotherapy or access to pharmacists, at welfare centres.

Housing

9. Disabled people are more dependent on social housing than the general population. Council under-insuring of civic assets has the potential to delay repairs to social housing and reduce housing options for people with disabilities following a significant disaster event.

Recommendation: Further modelling is needed to explore the extent and potential impact of local council practices of under-insuring of social housing on accommodation options for disabled people following a disaster event.

10. Disability accessible housing was in short supply following the earthquakes and many disabled people reported difficulties accessing appropriate housing.

Recommendation: Greater disability accessible housing stock is needed so that disabled people who need to relocate have greater accommodation choices.

11. Several people who contributed to this research were unable to exit their home when the electricity failed.

Recommendation: Review the safety of some disability accessible equipment such as keyless door locks.

Mobility and transport

12. For some disabled people the earthquakes compromised their mobility making it more difficult and requiring extra time, organisation and money.

Recommendation: Consider ways to enhance mobility for disabled people following a civil emergency.

13. Changes in public transport were identified as contributing to a loss of independence and increased financial costs. Some disabled people were poorly served by public transport following the earthquakes.

Recommendation: Consider ways to lessen the impact of changes to public transport for disabled people.

14. Many people with vision impairments struggled with the safety barriers that were erected along streets, as they were often placed around traffic light poles obscuring pedestrian cross buttons.

Recommendation: The mobility and safety needs of disabled people need to be taken into account when safety barriers and cordons are put in place.

Health issues

15. Disabled people on restricted medications that were collected weekly were particularly vulnerable as they were unable to put aside emergency medical supplies in preparation for an earthquake.

Recommendation: Consider ways of ensuring greater security of supply for people on restricted medicines.

Information and communication needs

16. Advice provided by MCDEM was inappropriate for the disabled as it was too general or made assumptions about people's bodies or lives that did not apply to disabled people. Emergency advice provided in the back of the telephone book for example is not provided in a disability accessible format.

Recommendation: Review existing disaster preparedness planning and emergency contact information to ensure that it is provided in disability accessible formats.

17. Explore ways in which key organisations involved in providing services following a civil emergency may be supported in developing nationally consistent disability accessible information format resources (web enhanced, email, texting, telephone, social media) for use before and after an event.

Recommendation: Disability accessible information is needed in relation to information critical to the emergency (such as safety and immediate help available) as well as localised information about business closures, operation of public transport and available services.

18. Although the research sample is too small to be representative of disabled people in the Canterbury region, a large number of respondents expressed frustration when having to deal with agencies for whom disabled people comprise a minority of their core business.

Recommendation: Customer support staff within organisations (such as EQC) involved in providing key services following an event should be provided with disability awareness training as an on-going project.

19. **Recommendation:** Ensure that procedures are put in place to inform people that they need to evacuate (such as red stickers and red zones) also make sure that the people affected understand the meaning of a red sticker, what the evacuation processes requires, and are physically able to evacuate.

Disaster preparedness planning – individuals and communities

20. New Zealand research has shown that awareness does not necessarily translate into disaster preparedness planning. People with disabilities are even less likely to prepare for a civil emergency event than the general population. Few disabled people were able to prepare for an emergency without additional support from family, friends or caregivers.

Recommendation: Explore options regarding the funding, development and piloting of individualised disaster preparedness planning programmes among disabled people.

21. A number of disabled people who contributed to this research were unsure where to find disability accessible information and/or equipment prior to and following an event.

Recommendation: Explore ways to raise awareness among disabled people about where they can expect to find disability accessible information and/or equipment prior to, and following, an event.

22. Disaster preparedness planning for disabled people encourages them to develop support networks in their local community through getting to know their neighbours. People who had multiple support networks at work, home and in the community tended to cope better than those who did not.

Recommendation: Emphasise the need to develop multiple support networks in pre-disaster preparedness planning information for disabled people.

23. The Christchurch experience has demonstrated that it takes a community to get through a natural disaster. Community-based disaster preparedness initiatives are being developed alongside existing individual preparedness strategies. Wellington Regional Civil Defence is currently trialling community-based emergency preparedness planning through strengthening existing community networks.

Recommendation: That MCDEM consider trialling community-based emergency preparedness planning through strengthening existing community networks within an existing network of disabled people.

Organisational preparedness

24. Many organisations did not understand how their practices affected disabled people and did not alter their practices when the difficulties were explained to them.

Recommendation: Customer support staff within organisations (such as EQC) that provide key services following an event should undergo disability awareness training as an on-going project.

25. Many non-governmental disability support organisations are vulnerable to loss of premises and key resources following a natural disaster.

Recommendation: That existing business continuity planning programmes be adapted so that they are written in accessible format and are relevant to community-based disability support groups who have limited resources. Ideally facilitators could be involved in helping organisations plan for mitigating business disruption following a disaster event.

Further support needs

26. Respondents who were made homeless by the earthquakes more than once reported that they felt it difficult to ask relatives or friends to help them relocate yet again - particularly when their key support people were dealing with their own issues. One particular issue identified by respondents was a lack of support in unpacking and putting away everyday household possessions once they had moved into their new premises particularly if their possessions had been put in storage and they had been living in temporary accommodation such as a motel.

Recommendation: That a national organisation is identified that would be willing to develop a plan to organise relocation support for disabled people following a civil emergency.

27. Acts of service are an important coping mechanism following a natural disaster. Volunteering also lessens vulnerability through strengthening networks within the community. Disabled people were an under-utilized resource in Christchurch.

Recommendation: Identify resources and areas that enable disabled people to be involved in providing voluntary support and assistance following a civil emergency.

28. Disabled people want to be supported to remain independent within the community following a civil emergency. Caregiver dependent respondents identified that a major barrier to maintaining independence was sudden loss of access to caregivers.

Recommendation: Relevant government agencies work with existing homecare service organisations to investigate how caregiver services may be strengthened so that caregiver support is able to be maintained following a natural disaster.

29. Several people who participated in this research suggested a register of vulnerable people.

Recommendation: Consider developing a cost-benefit analysis for an "opt-on" register of vulnerable people who would like to be contacted in an emergency.

30. Pacific and Māori are under-represented in this research.

Recommendation: More research is needed in relation to the issues and needs for Māori and Pacific peoples who were under represented in this research.

7.0 LITERATURE REVIEW

Internationally there is limited research on the experiences of disabled people during and following a major disaster. Health status and socio-economic status (Miles & Chang, 2004; Chou, et al. 2004) are important determinants of earthquake vulnerability yet little is known about how these factors increase exposure to hazards (Chou et al. 2004) and/or impact upon recovery needs. People with disabilities are more likely to be poor and to live in low income neighbourhoods, both of which are identified as risk factors for earthquake vulnerability (Chou, et al. 2004) and for the erosion of resilience during the disaster recovery phase (Paton, 2000). Zaidi (2010) and Ronan (2011) consider that the provision of tangible financial support at the recovery stage encourages mastery and independence in those affected by a natural disaster. Conversely, financial hardship increases stress, erodes resilience, and prolongs dependency. People who are materially disadvantaged are more likely to have fewer resources for dealing with adverse life events, and are less able to insulate themselves from the economic impacts (World Health Organisation, 2003; Fougere, 1994), that typically follow natural disasters (Stevenson, et al. 2011). In New Zealand, people with disabilities were more likely to live in the two most deprived deciles (21% compared to 15% of the able-bodied population), to have personal incomes of less than \$15,001 (39% compared to 27% of the able-bodied population), and to be twice as likely to reside in low income households (Office for Disability Issues 2011a).

Research in the area of disaster preparedness appears to be targeted at the able bodied and at those who can access resources to ensure self-help for disaster survival. People with disabilities are more likely to have high healthcare needs, to live alone (Office for Disability Issues 2011a; Spence et al. 2007), to be unable to respond quickly during an emergency (Chou, et al. 2004), and to be reluctant to evacuate due to concerns that emergency shelters will not be able to meet their needs.

Lack of disaster preparedness for people with disabilities is likely to affect a significant proportion of New Zealanders. 17% of New Zealanders identify as having a disability (Office for Disability Issues, 2011a). Of those people 53% of people stated that their disability impacted upon mobility (defined as difficulty or inability to walk 350 metres) and 47% agility (as significantly impacting on self-care). In New Zealand, people with disabilities are more likely to be elderly and to be living alone in low income households that are located in the more deprived areas of New Zealand (Office for Disability Issues, 2012d). They are more likely to have no educational qualifications and are twice as likely as non-disabled people to be out of the workforce. New Zealand figures for example suggest that over 70% of people who have significant vision impairment are unemployed (Crothall, 2004) and are therefore more likely to be experiencing some form of financial hardship.

Māori are more likely to have poor overall health compared to the general population (Kingi, 2009). Within the health sector there is a need to enhance understandings about how socio-economic disparities impact on Māori with disabilities, as well as an identified lack of competency around cultural needs (Wiley, 2008). Wiley for example argues that “Māori face service barriers including poverty, physical environment, legal, institutional and ...attitudinal barriers” (p.75). The total disability rate for Māori is 17% (Statistics New Zealand, 2007). Across every age group Māori are slightly more likely to be disabled than non-Māori with the gap being widest in the 45-64 age group (28% compared to 20% respectively)(Statistics New Zealand, 2010). Males in general, and Māori men in particular, are over-represented in

incidences of spinal cord injury (Smith, 2010; Dixon, et al. 1993) a population group for whom mobility and independence may be significantly impacted following a natural disaster.

7.1 EXISTING DISASTER RESEARCH

Most research to date on natural disasters is quantitative focusing on the restoration of the community to pre-disaster levels (Chang, 2010) through recovery of infrastructure (Rotimi et al, 2006; Le Masurier et al, 2006; Chang, 2000), the physical environment or the economy (Stevenson, et al. 2011) at a macro level. Early research on disaster recovery has identified a major goal of rehabilitation processes as the reconstruction and restoration of the community to pre-disaster levels (Chang, 2010). Alternative approaches to community recovery have suggested that disasters should be seen as opportunities to improve pre-disaster conditions through avoiding recreating conditions of vulnerability that may have existed previously (Chang 2010). People who are sick, moderately physically disabled, or otherwise vulnerable and/or who live in poverty are more likely to be impacted in a natural disaster (Klinenberg, 2002; Chou et al. 2004) and less likely to have access to the social and economic resources necessary for recovery (Klinenberg, 2002). Prior to 2011, disaster research in the area of disability primarily focused upon identifying conditions of vulnerability (Klinenberg, 2002; Eisenman, Kordasco & Ash, 2007; NACCHO, 2009), developing recommendations for risk reduction (Wisner, 2002), improving disaster preparedness (Wisner, 2002; Sullivan & Hakkinen, 2006; Paton & Johnston, 2001), or addressing gaps in education and training (Wingate, Perry & Campbell, 2007). Within this literature, identified vulnerable populations include the elderly, children, medically dependent persons, homeless or shelter dependent people, physically or mentally disabled individuals and those who are rurally isolated (NACCHO, 2009). Existing research on vulnerable adult populations has tended to focus specifically on the experiences of the elderly (Tuohy, 2009) or their health needs (Lamb & O'Brien, 2008; Aldrich & Benson, 2008), or to be based upon quantitative studies (Grady, et al. 1991; Chou et al. 2004; Brodie, Weltzien, Atlman et al. 2006; Sastry, 2009; Sastry & VanLandingham 2009). An epidemiological study by Chou et al. (2004), for example, identified that people with moderate disabilities, those with mental disorders or who had been hospitalised in the week prior to the 1999 Taiwan earthquake, were most at risk of injury with the degree of vulnerability increasing with decreasing monthly wage. Longitudinal research (Grady et al. 1991) in the area of rheumatoid arthritis identified adverse health effects, including increased rates of depression and more advanced progression of the disease among people within the study who had experienced the San Francisco earthquake or Hurricane Hugo.

7.2 DISASTER PREPAREDNESS FOR PEOPLE WITH DISABILITIES

The maintenance of preparedness is essential to preservation of human resilience following a natural disaster (Paton, 2000; 2003; Paton & Johnston, 2001). For many Christchurch residents, personal disaster preparations proved inadequate in light of the magnitude and consequent effects of the February 2011 earthquake with emergency services inundated and significant numbers of the population requiring ongoing assistance with food, shelter, sanitation and heating (Lake, 2011; Good et al. 2011). Lack of progress in restoring the built environment and in repairing infrastructure are identified as key factors in eroding resilience among people and communities (Potangaroa et al. 2008). Spence, et al. (2007) claim that the information and disaster preparedness needs for people with disabilities has been overlooked in the literature. Disaster preparedness and emergency response systems, public warning systems and advice tend to be designed for people who are able-bodied (Sullivan & Hakkinen, 2006). Eisenman, Zhou, Ong Asch et al. (2009) identified that people

who self-rate their general health as fair or poor or had a serious mental illness were less likely to have disaster supplies or emergency communication plans and that this may lead to increased vulnerability in a civil emergency. Research conducted in New Orleans following Hurricane Katrina identified that people with disabilities are more likely to have emergency preparedness kits but are less likely to have an evacuation plan compared to the able bodied population (Spence, et al. 2007). Yet people with physical impairments are more likely to have experienced significant damage to their homes (VanWilligen et al. 2002) and to be reluctant to evacuate due to concerns that emergency shelters will not be able to meet their needs (VanWilligen, et al. 2002; Brodie, Weltzien, Altman et al. 2006; Spence et al. 2007). Resource gaps in the provision of emergency accommodation for disabled people has been identified in the literature including disparate treatment, disabling environments and a lack of auxiliary support services (FEMA, 2010). People with intellectual disabilities who had been evacuated to welfare centres following the 1995 Hanshin earthquake in Japan, for example, experienced difficulties managing due to the restricted space, discrimination (including a lack of tolerance of 'odd' behaviour) as well as problems obtaining adequate food (Takahashi, Wtanabe, Oshima, Shimada and Ozawa 1997). Participants in our initial post September Christchurch earthquake study also raised concerns about evacuating to emergency accommodation including: difficulties getting there, leaving their own home empty, overcrowding, clutter on the floor, personal safety and the safety of their guide dog at the emergency centre (Good, et al. 2011, Phibbs et al., 2011).

Psychological distress (Good et al. 2011) and mobility (Lake, 2011; Good et al. 2012) emerged as significant issues within research conducted in Christchurch since the initial September 2010 earthquake. Findings from our research on the September 2010 non-fatal Christchurch earthquake suggest that acts of nature can rupture safety, security and emotional well-being, resulting in shock, disbelief and uncertainty (Good, et al. 2011). In recovering from the initial trauma of the first Canterbury earthquake, initial findings from our research indicate that people who are vision impaired were disadvantaged through an inability to continue their daily routines and in connecting to their usual support networks. Ronan (2011) considers that the rupture of communication and contact with existing social and/or support groups is a major stressor in vulnerable groups. Disaster recovery research stemming from the 2010 and 2011 Christchurch earthquakes (Johnston, et al. 2011) and the Brisbane floods (Ronan, 2011) indicate that the re-establishing and enhancing of existing social supports is an effective psychosocial intervention and of paramount importance for helping organisations. Being prepared lessens vulnerability and enhances the independence of disabled people in a civil emergency. Emergency preparedness is needed in relation to individuals, communities, first responders and organisations. Leadership is required from government to mitigate vulnerability through facilitating disability inclusive disaster preparedness, response and recovery across all sectors of society (FEMA, 2011).

7.3 EXISTING RESOURCES IN RELATION TO DISASTER PREPAREDNESS FOR DISABLED PEOPLE

The Office of Disability Integration and Coordination within the Federal Emergency Management Agency (FEMA) has produced a range of resources for disability inclusive disaster preparedness (FEMA, 2011; FEMA, 2012) including advice for individuals and communities (FEMA, 2012) as well as guidelines for the provision of disability accessible general population shelters (FEMA, 2010).

Within New Zealand, resources and advice regarding emergency preparedness and responsiveness for people with disabilities is provided on the website of the Office for

Disability Issues (2012c) including inclusive practice guidelines for first responders and local authorities as well as relevant international websites and resources. Additional New Zealand information in relation to individual preparedness is also available through MCDEM (2012), Waikato Region CDEM (2012) and the Disabilities Resource Centre Trust (2009). The tendency to focus on individual responsibility in the New Zealand literature underlines the need for organisations involved in responding to a civil emergency to also consider how disability inclusive preparedness, response and recovery may be included in planning for a civil emergency.

8.0 REFERENCES

- Aldrich, N. & Benson, W. (2008) Disaster Preparedness and the Chronic Disease Needs of Vulnerable Older Adults. *Preventing Chronic Disease: Public Health Research, Practice, and Policy* 5(1) 1-7.
- Brodie, M. Weltzien, E., Altman D. et al (2006) Experiences of Hurricane Katrina Evacuees in Houston Shelters: Implications for Future Planning. *American Journal of Public Health* 96(5) 1402-1408.
- Canterbury Earthquake Recovery Act 2011
<http://www.legislation.govt.nz/act/public/2011/0012/latest/DLM3653522.html>
Downloaded: August 2012
- Chang, S. (2000) Disasters and transport systems: loss, recovery and competition at the Port of Kobe after the 1995 earthquake. *Journal of Transport Geography* 8 53-65.
- Chang, S. (2010) Urban disaster recovery: a measurement framework and its application to the 1995 Kobe earthquake. *Disasters* 34(2), 303-327.
- Chou, Y., Huang, N., Lee, C., Tsai, S., Chen, L. & Chang, H. (2004) Who is at Risk of Death in an Earthquake? *American Journal of Epidemiology* 169 (7) 688-695.
- Crothall, P. (2004) *Looking on the bright side: employment barriers experienced by employed, totally blind New Zealanders and how these were minimised or overcome*. Unpublished MA Thesis. Massey University, Palmerston North.
- Disabilities Resource Centre Trust (2009) *Disaster Preparedness for People with Disabilities*. Bay of Plenty. Disabilities Resource Centre Trust.
[http://www.civildefence.govt.nz/memwebsite.nsf/Files/Disability-disaster-preparedness/\\$file/Disability-disaster-preparedness.pdf](http://www.civildefence.govt.nz/memwebsite.nsf/Files/Disability-disaster-preparedness/$file/Disability-disaster-preparedness.pdf).
Downloaded: September, 2012.
- Dixon, G., Danesh, J. Caradoc-Davies, T. (1993) Epidemiology of spinal cord injury in New Zealand. *Neuroepidemiology* 12(2) 88-95.
- Eisenman, D. Cordasco, K. & Asche, J. (2007) Disaster Planning and Risk Communication with Vulnerable Communities: Lessons from Hurricane Katrina. *American Journal of Public Health* 97 (S1) S109-S115.
- Eisenman, D.P., Zhou, Q., Ong, M., Asch, S., Glik, D., Long, A. (2009) Variations in Disaster Preparedness by Mental Health, Perceived General Health, and Disability Status, *Disaster Medicine and Public Health Preparedness*, 3(1): 33-41.
- FEMA (2010) *Guidance on Planning for Integration of Functional Needs Support Services in General Population Shelters*. Washington DC. FEMA
http://www.fema.gov/pdf/about/odc/fnss_guidance.pdf. Downloaded September 2012.
- FEMA (2011) *Getting Real II: Promising Practices in Inclusive Emergency Management for the Whole Community*. <http://gettingreal-ii.webcaston.tv/home/homepage.php>. Downloaded September 2012.

- FEMA (2012) *Office of Disability Integration & Coordination* Website. <http://www.fema.gov/office-disability-integration-coordination/office-disability-integration-coordination/office-1>. Accessed September, 2012.
- Fougere, G. (1994) Health. In Paul Spoonley, David Pearson & Ian Shirley (eds.) *New Zealand Sociology* (Second Edition). Palmerston North. Dunmore Press.
- Good, G., Phibbs, S., Chambers, P. & Williamson, K. (2011) *Earthquake and Vision Impairment: Findings from the Christchurch Study*. Unpublished Research Report: School of Health and Social Services, Massey University, Palmerston North.
- Good, G., Phibbs, S., Chambers, P. & Williamson, K. (2012) Disorientation and Immobility: The experiences of people with vision impairment during and after the Christchurch September 2010 earthquake. Full paper in the conference proceedings of. *The 14th International Mobility Conference. Mobility through the ages, up over & down under*. Palmerston North 13-17th February.
- Grady, K., Reisine, S., Fifield, J., Lee, N., McVay, J. & Kelsey, M. (1991) The Impact of Hurricane Hugo and the San Francisco earthquake on a sample of people with rheumatoid arthritis. *Arthritis & Rheumatism* 4(2) 106-110.
- Human Rights Commission (2012a) *Human Rights Act*. Wellington, Author. <http://www.hrc.co.nz/human-rights-environment/human-rights-legislation/human-rights-act> Downloaded 20 August, 2012.
- Human Rights Commission (2012b) *New Zealand Bill of Rights Act*. Wellington Author <http://www.hrc.co.nz/human-rights-environment/human-rights-legislation/new-zealand-bill-of-rights-act> Downloaded 20 August, 2012.
- Johnston, D., Becker, J., Coomer, M., Cronin, S., Daly, M., Doyle, E. et al. (2011) Exploring elements of an effective recovery process. Proceedings of the *Ninth Pacific Conference on Earthquake Engineering. Building an Earthquake-Resilient Society*. 14-16th April, Auckland, New Zealand. <http://db.nzsee.org.nz>. Downloaded 5/08/2011.
- Kingi, T (2009) Indigeneity and Māori Mental Health. In *Matariki: A Monograph Prepared by Te Mata o te Tau: The Academy for Māori Research and Scholarship*. Massey University, Office of the Deputy Vice Chancellor (Māori). June.
- Klinenberg, E. (2002) *Heatwave: A social autopsy of disaster in Chicago*. Chicago: University of Chicago Press.
- Lake, S. (2011) *Earthquake Recovery and Population Health in Opawa*. Unpublished Research Report. School of Health and Social Services. Massey University. (June).
- Lamb, K. & O'Brien, C. (2008) Elders at Risk During Disasters. *Home Healthcare Nurse* 26(1) pp 30-38.
- Le Masurier, J., Rotimi, J. & Wilkinson, S. (2006) A Comparison between Routine Construction and Post-Disaster Reconstruction with Case Studies from New Zealand. Paper presented at the 22nd *ARCOM Conference on Current Advances in Construction Management Research*. Birmingham, U.K. *Resilient Organisations Resources Group*. www.resorgs.org.nz. Downloaded 5/08/2011.

- Kingi, T (2009) Indigeneity and Māori Mental Health. In *Matariki: A Monograph Prepared by Te Mata o te Tau: The Academy for Māori Research and Scholarship*. Massey University, Office of the Deputy Vice Chancellor (Māori). June.
- Klinenberg, E. (2002) *Heatwave: A social autopsy of disaster in Chicago*. Chicago: University of Chicago Press.
- Miles, S., & Chang, S. (2004). Foundations for modelling community recovery from earthquake disasters. *13th World Conference on Earthquake Engineering*. Vancouver, B.C. Canada. August 1-6. Paper No. 567.
- Miles, S. B., & Chang, S. E. (2006) Modeling Community Recovery from Earthquakes. *Earthquake Spectra*, 22(2), 439-458.
- Minister for Disability Issues (2001) *The New Zealand Disability Strategy*. Wellington: Ministry of Health.
- Ministry of Civil Defence and Emergency Management (2012) *People with disabilities or special requirements*. Wellington: MCDEM.
<http://www.getthru.govt.nz/web/GetThru.nsf/web/BOWN-7H442K?OpenDocument>.
Downloaded September, 2012.
- Ministry of Health (2011) *New Zealand Public Health and Disability Act 2000*. Wellington: Ministry of Health. <http://www.health.govt.nz/new-zealand-health-system/statutory-framework>. Downloaded 20 August 2012.
- NACCHO (2009) *"Vulnerable Populations" – What is in a Definition?* Washington: Author.
- New Zealand Disability Strategy (2001)
<http://www.odi.govt.nz/resources/publications/new-zealand-disability-strategy.html>
Downloaded: August 2012
- Office for Disability Issues (2011a) *Achieving a fully inclusive society 2011. The annual report from the Minister for Disability Issues to the House of Representatives on implementing the New Zealand Disability Strategy*. Wellington: Author.
- Office for Disability Issues (2011b) *First New Zealand Report on Implementing the United Nations Convention on the Rights of Persons with Disabilities*.
<http://www.odi.govt.nz/resources/publications/index.html>. Downloaded 10 August, 2012.
- Office for Disability Issues (2012a) *Ministerial Committee on Disability Issues Website*. Wellington: Office for Disability Issues. <http://www.odi.govt.nz/what-we-do/ministerial-committee-on-disability-issues/index.html>. Downloaded 10 August, 2012.
- Office for Disability Issues (2012b) *New Zealand Disability Strategy Website*. Wellington: Office for Disability Issues. <http://www.odi.govt.nz/nzds/index.html>. Downloaded 10 August, 2012.
- Office for Disability Issues (2012c) *Emergency Preparedness and responsiveness*.
<http://www.odi.govt.nz/resources/guides-and-toolkits/emergency-preparedness-and-responsiveness/index.html>.

- Office for Disability Issues (2012d) *Information about disabled people* Website. Wellington: Author. <http://www.odi.govt.nz/resources/guides-and-toolkits/disability-perspective/resources/info-disabled-people.html>. Downloaded April, 2012.
- Office for Disability Issues (n/d) *Indicators from the 1996, 2001 and 2006 New Zealand Disability Surveys for monitoring progress on outcomes for disabled people*. www.odi.govt.nz. Downloaded 5 August, 2010.
- Office of the Minister for Disability Issues (2011) *Disability Action Plan: Including disabled people in the Canterbury recovery* (Cabinet paper, July 2011). Wellington. <http://www.odi.govt.nz/what-we-do/ministerial-committee-on-disability-issues/disability-action-plan/cabinet-paper-july-2011-disability-action-plan.html>. Downloaded 10 August, 2012.
- Office of the Minister for Disability Issues (2012) *Progress Report on inclusion of disabled people in the Canterbury Recovery* May 2012. Wellington. <http://www.odi.govt.nz/what-we-do/ministerial-committee-on-disability-issues/index.html#DisabilityActionPlan2011to2012focusonChristchurch5>.
- Paton, D. (2000). Emergency Planning: Integrating community development, community resilience and hazard mitigation. *Journal of the American Society of Professional Emergency Managers* 7, 109-118.
- Paton, D. (2003). Disaster preparedness: a social-cognitive perspective. *Disaster Prevention and Management* 12(3) 210-216.
- Paton D. & Johnston, D. (2001) Disasters and communities: vulnerability, resilience and preparedness. *Disaster Prevention and Management* 10(4) 270-277.
- Phibbs, S., Good, G., Williamson, K, and Chambers, P. (2011) "It was a bit nasty eh?" Risk, vulnerability and resilience in narratives of the Christchurch earthquake from people who are blind or vision impaired. *Looking Forward: Trends, Horizons and Utopias*. SAANZ Annual Conference. Victoria University of Wellington. December 7-9.
- Potangaroa, R., Wang, M., Chan, Y (n/d) Identifying Resilience in those affected by the 2008 Sichuan Earthquake. *Resilient Organisations Resources Group*. www.resorgs.org.nz. Downloaded 5/08/2011
- Ronan, K. (2011) *Community and Personal Problems and Support in Disasters*. Paper presented at the Queensland Flood Disaster Recovery Briefing and Presentation, Brisbane.
- Rotimi, J., Le Masurier, J., & Wilkinson, S. (2006). *The Regulatory Framework for Effective Post-Disaster Reconstruction in New Zealand*. Paper presented at the Third International Conference on Post-Disaster Reconstruction: Meeting Stakeholder Interests., Florence, Italy. *Resilient Organisations Resources Group*. www.resorgs.org.nz. Downloaded 5/08/2011.
- Sastry, N. (2009) Displaced New Orleans Residents in the Aftermath of Hurricane Katrina: Results from a Pilot Study. *Organisation & Environment* 22(4) pp 395-409.

- Sastry, N & VanLandingham (2009) One Year Later: Mental Illness Prevalence and Disparities Among New Orleans Residents Displaced by Hurricane Katrina. *American Journal of Public Health* (Supplement 3). 99 (S3) pp. S725-S731.
- Smith, M. (2010) *An evaluation of the efficacy of motivational interviewing (MI) in increasing commitment language (CL) in interviews with clients with spinal cord injury (SCI)*. Unpublished Masters Thesis. School of Health and Social Services, Massey University, Palmerston North, New Zealand.
- Spence, P., Lachlan, K., Burke, J. & Seeger, M. (2007) Media Use and Information Needs of the Disabled During a Natural Disaster. *Journal of Healthcare for the Poor and Underserved* 18 394-404.
- Statistics New Zealand (2007) *2006 Disability Survey - Hot off the Press*. Wellington, Author.
- Statistics New Zealand (2010) *Disability and Māori in New Zealand 2006. Results from the New Zealand Disability Survey*. Wellington, Author.
- Stevenson, J., Kachali, H., Witman, Z., Seville, E., Vargo, J. & Wilson, T. (2011) Preliminary observations of the impacts of the 22 February Christchurch Earthquake had on organisations and the economy: A report from the field (22 February – 22 March 2011). *Bulletin of the New Zealand Society for Earthquake Engineering*. 44(2) 65-77. *Resilient Organisations Resources Group*. www.resorgs.org.nz. Downloaded 5/08/2011.
- Sullivan, H. & Hakkinen, M. (2006) Disaster Preparedness for Vulnerable Populations: Determining Effective Strategies for Communicating Risk, Warning and Response. Paper presented at the *Third Annual Magrann Research Conference on The Future of Disasters in a Globalising World*. Brunswick, New Jersey, April.
- Takahashi, A, Wtanabe, K., Oshima, M., Shimada, H. and Ozawa A. (1997) The effect of the disaster caused by the great Hanshin earthquake on people with intellectual disability. *Journal of Intellectual Disability Research*. 41(2) 193-196. April.
- Tuohy, R. (2009) *Older adults' experiences of a flood disaster: Making sense of an extraordinary event*. Unpublished MA Thesis. Massey University, Palmerston North.
- VanWilligen, M., Edwards, T., Edwards, B., and Hesse, S. (2002) Riding out the storm: Experiences of the Physical Disabled during Hurricanes Bonnie, Dennis and Floyd. *Natural Hazards Review* 3(3) 9 pages.
- Waikato Region Civil Defence Emergency Management (2012) *Disabilities and disaster preparedness*. Waikato: Waikato Region Civil Defence Emergency Management. <http://www.waikatoregionMCDEMg.govt.nz/PageFiles/40/Disabilities%20and%20disaster%20preparedness.pdf>. Downloaded September, 2012.
- Wiley, A. (2008) A Preliminary Literature Review of Issues and Policies Affecting The Provision of Health and Support Services To Māori with Disabilities in New Zealand. In *Matariki: A Monograph Prepared by Te Mata o te Tau: The Academy for Māori Research and Scholarship*. Massey University, Office of the Deputy Vice Chancellor (Māori). June.

- Wingate, Perry & Campbell, (2007) Identifying and Protecting Vulnerable Populations in Public Health Emergencies: Addressing Gaps in Education and Training. *Public Health Rep.* 122(3): 422-426.
- Wisner, B. (2002) The Communities Do Science! Proactive and Contextual Assessment of Capability and Vulnerability in the Face of Hazards. In G. Kerks, T. Hilhorst and G. Bergoff (eds.) *Vulnerability: Disasters, Development and People. Proceedings of a Work Conference*, Wageningen University, Netherlands. London: Earthscan.
- World Health Organisation (2003) *The social determinants of health. The solid facts*. Copenhagen: Author.
- Zaidi, S., Kamal, A., & Baig-Ansari, N. (2010) Targeting vulnerability after the 2005 earthquake: Pakistan's Livelihood Support Cash Grants programme. *Disasters* 34(2), 380-401.

APPENDICES

APPENDIX 1: DEMOGRAPHIC CHARACTERISTICS OF SURVEY RESPONDENTS

35 people answered the survey. 25 respondents identified as having a disability, 1 was a family member, 2 were caregivers, and 7 were agency representatives.

Table A 1.1 Demographic characteristics of survey participants $n=35$.

	Total	Disabled Person	Family Member	Caregiver	Agency Rep.
Male	13	9			4
Female	20	14	1	2	3
Not answered	2				
Age					
72-63	3	3			
62-53	7	2		2	3
52-43	12	9			3
42-33	6	4	1		1
32-23	3	3			
22 and under	1	1			
Not answered	3				
Disability as stated on survey					
Vision impaired		2			
Vision and hearing impaired		3			
Profound hearing loss		1			
Cerebral Palsy		5			
Tetraplegic		3			
Physical disabilities		2			1
Spina Bifida (paraplegic)		1			
Multiple Sclerosis		1			
Intellectual and physical disability		1			1
Intellectual disability		1			4
Intellectual disability and mental health					1
Learning impairment and mental health		1			
Not answered		5	1	2	1
Total		25	1	2	7

APPENDIX 2: SURVEY QUESTIONNAIRE OF DISABILITY ISSUES EXPERIENCED IN THE CANTERBURY EARTHQUAKE SERIES 2010-2011

Survey of disability issues experienced in the Canterbury Earthquake Series 2010-2011

SECTION A – BACKGROUND INFORMATION

(i) Are you a... (please tick only one)

<input type="checkbox"/>	Person with a disability
<input type="checkbox"/>	Family member
<input type="checkbox"/>	Caregiver (who is not a family member)
<input type="checkbox"/>	Agency Representative

(ii) Briefly describe your disability/family member's disability/client group:

(iii) Are you Male / Female (circle one)

(iv) In which year were you born?

SECTION B

1. Which of the following things have the earthquakes made more difficult for you/your family member/clients? (tick as many as apply)

<input type="checkbox"/>	There has been no change	<input type="checkbox"/>	Spending time with friends doing things that are enjoyable
<input type="checkbox"/>	Getting around generally	<input type="checkbox"/>	Accessing disability support services
<input type="checkbox"/>	Staying positive	<input type="checkbox"/>	Accessing day services
<input type="checkbox"/>	Using public transport	<input type="checkbox"/>	Accessing caregivers
<input type="checkbox"/>	Managing financially	<input type="checkbox"/>	Accessing home help
<input type="checkbox"/>	Inadequate facilities (such as sewerage and water) in my/family member's/client's home	<input type="checkbox"/>	Getting an appointment with a general practitioner
<input type="checkbox"/>	Shopping for groceries	<input type="checkbox"/>	Accessing specialist services at the hospital
<input type="checkbox"/>	Maintaining personal support networks that I would normally rely on for help	<input type="checkbox"/>	Other (please state)

Please turn over page

HOUSING AND EMERGENCY ACCOMMODATION

2. Which situation best describes your living arrangements/family member's/client's living arrangements prior to the September 2010 earthquake? (For agency respondents tick all that apply)

	Lived alone
	Lived with a partner
	Flatted with others
	Lived with family members
	Lived in supported housing

3. Which situation best describes your living arrangements/family member's/client's living arrangements now? (For agency respondents tick all that apply)

	Live alone
	Live with a partner
	Flatting with the same group of people as in September 2010
	Flatting with a different group of people
	Live with family members
	Live in supported housing

4. Did you/your family member/any clients have to evacuate following a major earthquake?

YES/ NO (circle one)

If you answered **NO** go to **QUESTION 5** (page 4)

- 4.1 If you answered YES please tick all the dates in which you had to evacuate in the following table (for agency respondents tick all that apply):

	4 September 2010		26 December 2010
	22 February 2011		13 June 2011
	23 December 2011		Other

4.2 Did you/your family member/impacted clients have to evacuate immediately or at a later date (tick one for each time you/your family member/clients have had to evacuate, for agency respondents tick all that apply):

	First evacuation to alternative premises	Second evacuation to alternative premises	Third evacuation to alternative premises
Immediately (within 2 days)			
At a later date			

4.3 If you/your family member/clients had to evacuate at a later date please state approximately how long after the earthquake event that caused the damage (for agency respondents fill in all times that apply):

	First evacuation to alternative premises	Second evacuation to alternative premises	Third evacuation to alternative premises
Approximate time of evacuation (for example one week)			

4.4 How long were you/was your family member/evacuated clients away from your/their usual place of residence? (select the most appropriate category for each move, for agency respondents tick all that apply):

	First evacuation to alternative premises	Second evacuation to alternative premises	Third evacuation to alternative premises
Less than 48 hours			
5 days or less			
6-14 days			
More than a month			
Over 3 months			
Still not back in original premises (dwelling occupied before the first move)			

4.5 What barriers did you/your family member/evacuated clients encounter in relocating to emergency/temporary or alternative accommodation? (tick all that apply)

	None
	Cost of renting
	Cost of relocating
	No-one to help with packing up possessions for relocation
	No-one to help with unpacking possessions once relocated to new accommodation
	Needed but was unable to find suitable alternative accommodation
	Lack of any kind of accommodation
	Other (please specify)

5. What kind of concerns would you/your family member/clients have regarding evacuating to an emergency shelter? (tick as many as apply)

No concerns about going to an emergency shelter	Whether the shelter has disability access
No transportation	Whether the shelter has disability facilities
Too difficult to travel	Having services provided at the shelter that catered to the needs of the disabled
Unsure where to go	Personal security at the shelter
Leaving pets behind	Hygiene at the shelter
The home being burgled while it is vacant	Other people's attitudes towards people with disabilities
Taking a service dog	Other (please state)
Being turned away from the shelter (because of my/my family member's/ client's disability)	

6. Which statements best describe your/family member's/client's housing situation since the earthquakes began (tick as many as apply):

	Unchanged since the earthquakes began
	Temporary housing (in a garage/in a caravan/with other people)
	Have moved houses due to the earthquakes
	Short term alternative accommodation
	I am (my family member is/clients are) worried about my/their current housing situation
	The house that I am (my family member is/clients are) living in needs minor repairs
	The house that I am (my family member is/clients are) living in needs moderate repairs
	The house that I am (my family member is/clients are) living in needs major repairs
	I (my family member/clients) will need to move soon so that the house can be repaired
	I am (my family member is/clients are) finding it difficult finding adequate housing

7. Rate how satisfied you are with your/your family member's/clients' current housing situation (circle one):

Not at all satisfied / Not very well satisfied / Somewhat satisfied / Satisfied / Don't know

CIVIL EMERGENCY/DISASTER PREPAREDNESS

8. Rate how strongly you agree with the following statement: I personally feel that I am more prepared now for a disaster than I was prior to the 4th of September 2010 (circle one):

Strongly disagree / Disagree / Agree / Strongly agree / Don't know

9. How prepared are you/your family/clients/agency for a civil emergency/natural disaster? (circle one):

Not at all prepared / Not very well prepared / Somewhat prepared/ Well prepared / Don't know

10. Which of these things do you have /has your agency put in place ... (tick all that apply):

	Put in place a civil emergency/disaster preparedness/contingency plan
	Placed important instructions, such as my medication regime or my client phone numbers in a prominent or safe place
	Organised people to telephone in the event of a civil emergency/natural disaster
	Put together emergency supplies
	Put together emergency related equipment
	Have not done anything extra
	Already had adequate emergency equipment in place prior to September 4th 2010
	Already had a workable emergency plan in place prior to September 4th 2010
	Other (describe)

11. What kinds of barriers have you/your family member/clients/agency encountered to being better prepared for an emergency or accessing appropriate supplies? (tick all that apply)

	Already had all the emergency equipment needed prior to the September earthquake		Had supplies (or equipment) organised but they turned out to be inadequate to get through
	Encountered no barriers		Need, but have not obtained emergency supplies (or equipment)
	Cost		No transportation
	Availability		Too difficult to travel
	Lack of information		Didn't know where to go
	Lack of appropriate equipment for people with disabilities		Other (describe)

ACCESS TO INFORMATION

12. How did you personally access information provided by emergency services/Civil Defence emergency management? (tick as many as apply)

<input type="checkbox"/>	Internet	<input type="checkbox"/>	Family, friends or neighbours
<input type="checkbox"/>	Television	<input type="checkbox"/>	A disability support organisation (e.g. Aged Concern, Royal NZ Foundation of the Blind)
<input type="checkbox"/>	Radio	<input type="checkbox"/>	Government agency
<input type="checkbox"/>	Text messages	<input type="checkbox"/>	Did not access information
<input type="checkbox"/>	Telephone	<input type="checkbox"/>	Other (please describe)
<input type="checkbox"/>	Newspapers	<input type="checkbox"/>	

Use your own experience to rate the following statements:

13. I find it easy to access information provided by emergency services/Civil Defence emergency management (circle one):

Strongly disagree / Disagree / Agree / Strongly agree / Don't know

14. I feel that adequate information is provided by emergency services/Civil Defence emergency management (circle one):

Strongly disagree / Disagree / Agree / Strongly agree / Don't know

15. I feel that emergency information takes into account the needs of people with disabilities (circle one):

Strongly disagree / Disagree / Agree / Strongly agree / Don't know

16. What kind of barriers to accessing information did you personally encounter? (tick all that apply)

	Didn't know where to find information that I/my family member/client needed
	Unable to find key information related directly to my/my family member's/clients area of residence
	Conflicting information provided to the public
	No electricity
	No access to television
	Unable to charge cell phone
	Financial hardship
	Emergency helplines were overloaded
	Disability support services, such as telephone information lines, were not up to date
	Ran out of credit on my cell phone
	Unable to read printed information
	Unable to understand printed information
	Unable to hear broadcasts
	I personally did not encounter any barriers
	Other (please specify)

SUPPORT

17. I feel that in the last 20 months I/my family member/clients received adequate support from government agencies such as Work and Income, Housing NZ or EQC (circle one):

Strongly agree / Agree / Disagree / Strongly disagree / Don't know / Not applicable

18. I feel that in the last 20 months I /my family member/clients received adequate support from health services (circle one):

Strongly agree / Agree / Disagree / Strongly disagree / Don't know / Not applicable

19. I feel that in the last 20 months I /my family member/clients received adequate support from disability support services (circle one):

Strongly agree / Agree / Disagree / Strongly Disagree / Don't know / Not applicable

20. I feel that in the last 20 months I/my family member/clients received adequate support from family, friends or neighbours (circle one):

Strongly agree /Agree / Disagree / Strongly Disagree / Don't know / Not applicable

21. What are two things that you would tell emergency workers to help with assisting you after a civil emergency?

22. What are two things you would suggest to health and disability services and support groups to better assist you/your family member/clients after a civil emergency/natural disaster?

Please turn over page

23. What advice would you give people with disabilities outside of Canterbury regarding how they can be better prepared for a civil emergency/natural disaster in the future?

24. Provide any further comments here: For example additional information about how service providers and emergency workers can improve their planning and response for civil emergencies.

Thank you for completing the survey.

APPENDIX 3: DEMOGRAPHIC CHARACTERISTICS OF INTERVIEW PARTICIPANTS

Table A 2.1 Demographic characteristics of interview participants *n*=23

	Total	
Male	9	
Female	14	
Age		
80 and over	2	
70-79	6	
60-69	2	
50-59	1	
40-49	9	
30-39	1	
20-29	2	
Disability as stated in interview		
Vision impaired		11
Vision and hearing impaired		1
Vision Impaired and Multiple Sclerosis		1
Profound hearing loss		1
Cerebral Palsy		2
Mental Illness		1
Learning impairment and mental health		1
Physical disability		1
Spina Bifida		1
Amputee/Stroke/heart condition		1
Intellectual and physical disability		1
Intellectual disability		1
Total		23

APPENDIX 4: DISABILITY ISSUES EXPERIENCED IN THE CANTERBURY EARTHQUAKE SERIES 2010-2011 – SEMI-STRUCTURED INTERVIEW SCHEDULE



MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA

Disability issues experienced in the Canterbury Earthquake Series 2010-2011

Semi-Structured Interview Schedule

(also available electronically and in big print format)

- 1a. In order to contextualise the information that you provide regarding the impact of the Canterbury earthquake series on your day to day life could you give me some background as to your physical impairment?
- 1b. Tell me about your experience of the September, February and June earthquakes. (What did you do during the major quakes?)
- 1c. In what ways has the changed post-earthquake environment been additionally disabling for you? Are you able to provide examples?
2. Tell me about any damage your home was subject to. Your friends/family? Your neighbourhood? Who checked on your home to tell you about the damage, make sure that you were able to continue to live there? Did anyone help you to clean up the mess?
3. Did you have to leave your home following any of the earthquakes?

Did you go and stay with anyone following any of the earthquakes? If so what were your reasons for doing so?
4. Who did you have contact with after the major quake(s) and how did you make contact? Did this differ from September – for example did you have people that you had agreed to contact/keeping in touch with if there was an earthquake?
5. Which agencies contacted you in the week following the September earthquake? Why did they contact you and how useful were they? And again in February and June?

Which agencies have you dealt with in the year since the earthquake? Why?

Have your dealings with social service agencies and insurance companies taken into account your needs? Have service providers come to you rather than expecting you to go to them for example?
6. What has been your experience of the aftershocks? In the last year what strategies have you used to maintain resilience and remain positive? What has helped? What kind of things make remaining positive and resilient difficult?

7. Have you had to make changes to your daily routine as a result of the quakes and aftershocks?

8. Did you or do you still have any concerns specifically related to getting around in your home, or familiar places as a result of the earthquakes?

For example, thinking about your daily routine and how you travel around, what changes have been made and why?

9. Have you had any difficulties accessing health services and/or maintaining your health since the earthquakes?

10. In relation to evacuating to an emergency shelter would you have any concerns about doing so? (For example being burgled, leaving pets, getting there)

Are there any other health or disability issues that you would now need to consider when evacuating to an emergency shelter?

11. Thinking about the earthquakes in September, February and June were you better prepared from an emergency preparedness point of view in September and June i.e., did you have an emergency plan, 3 days worth of supplies and provisions packed?

If you did prepare, did you encounter any difficulties in getting prepared for an emergency? (getting information and finding out what you needed to get - cost, getting to the relevant shops, items being sold out for example?)

12. What very practical suggestions would you make to someone for whom disability issues are likely to have a significant impact upon them to be better prepared for a disaster?" To cope with disaster? (Think about issues related to torches, food, medicine, shoes, contact people, cell phones, neighbours etc.)

13. Did you experience loss of infrastructure (water, sewerage, electricity, public transport) following the earthquakes? If so how did this impact upon you?

We understand many people had difficulty with obtaining chemical toilets, getting information about how to use the chemicals and using community dumping points. Did you have any experience with this? What worked for you and what was problematic? What would have been helpful?

14. What was your preferred way to access information provided by emergency services/civil defence about what to do following the earthquake? (Radio, television, newspapers, internet websites if so which ones, telephone?) Was this the same as in September? How difficult did you find it to access this information?

Was any emergency advice given to you from the Christchurch civil defence? If so what was the advice? Was it useful and what could have been improved?

15. Given your experience of the earthquakes is there anything that you can think of that would have been helpful for you? Help from emergency services? Helpful from disability agencies? Help from family or friends?

16. Has your life returned to normal since the first major quake? Or has a new normal been created? (If so please describe how this new normal differs from before the earthquakes).

17. Do you need any further help due to the quake and aftershocks?

Interviewer please check that the following demographic information has been covered in the interview

(I just need to ask you some brief demographic information)

What is your age within a 5 year bracket for example 36-40?

At the time of the earthquakes who was usually resident in your home?

What is your main occupation?

What is your most usual source of income?

For example nil, WINZ benefit, pension, wages, salary, partner's income.

“This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern A, Application 12/18. If you have any concerns about the conduct of this research, please contact A/Prof Hugh Morton, Chair, Massey University Human Ethics Committee: Southern A telephone 06 350 5799 x 4265, email humanethicsoutha@massey.ac.nz.”



www.gns.cri.nz

Principal Location

1 Fairway Drive
Avalon
PO Box 30368
Lower Hutt
New Zealand
T +64-4-570 1444
F +64-4-570 4600

Other Locations

Dunedin Research Centre
764 Cumberland Street
Private Bag 1930
Dunedin
New Zealand
T +64-3-477 4050
F +64-3-477 5232

Wairakei Research Centre
114 Karetoto Road
Wairakei
Private Bag 2000, Taupo
New Zealand
T +64-7-374 8211
F +64-7-374 8199

National Isotope Centre
30 Gracefield Road
PO Box 31312
Lower Hutt
New Zealand
T +64-4-570 1444
F +64-4-570 4657