

## Research Proposal

Preparedness of West Coast for the Alpine Fault rupture: a qualitative exploration

### Background

The West Coast region of Aotearoa stretches almost 600km and is home to just under 34,000 people, with Māori making up 13.5% of the population<sup>1</sup>. The whole region is classified as rural or remote rural<sup>2</sup>. The West Coast region's topography makes it vulnerable to the effects of natural disasters<sup>3</sup>. The Alpine Fault is a geological fault line that traverses the entirety of the West Coast. The Alpine Fault has a 75% chance of rupturing and causing a magnitude 8 earthquake at some point in the next 60 years<sup>4</sup>, codenamed by civil defence as 'AF8'. Disaster response planning for AF8 incorporates Mātauranga Māori through collaboration between Ngāi Tahu and Civil Defence (AF8 Programme). Following AF8 it is likely that the West Coast will be inaccessible for weeks. People closest to the fault will be most affected. Infrastructure will be destroyed. Many people may be homeless, injured, and with limited access to food, sanitation or clean water. Help may be slow to arrive as the rest of the South Island is likely to be affected by AF8<sup>5</sup>.

This project focuses on rural general practice services. Rural general practice services are provided by multidisciplinary teams. West Coast Health is PHO not-for-profit community trust that plans, coordinates, funds, and provides primary health care for West Coasters<sup>6</sup>. West Coast Health is currently formulating a response plan to the expected Alpine Fault rupture in collaboration with Te Whatu Ora and Civil Defence.

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<sup>1</sup> The West Coast Regional Council (internet), *West Coast Region*, Land Air Water Aotearoa [cited 2025 August 11]. Available from: <https://www.lawa.org.nz/explore-data/west-coast-region>

<sup>2</sup> Rural Health Research Network (internet), *Maps*, University of Otago [cited 2025 August 11]. Available from: <https://rhrn.nz/gch/maps>

<sup>3</sup> DTEC CONSULTING LTD, *West Coast Regional Council: National hazard Review*, 2022 June, p137.

Available from: <https://ref.coastalrestorationtrust.org.nz/site/assets/files/5873/naturalhazardsreview.pdf>

<sup>4</sup> Robert Langridge, *Research finds Alpine Fault quake more likely in the next 50 years*. Our Science, GNS Science [internet], 1 June 2021. Available from: <https://www.gns.cri.nz/news/research-finds-alpine-fault-quake-more-likely-in-the-next-50-years/#:~:text=The%20Alpine%20Fault%20represents%20a,such%20as%20the%20AF8%20programme%20>

<sup>5</sup> New Zealand Lifelines Council (2020), *National Vulnerability Assessment*, p73

<sup>6</sup> West Coast Health (internet) *About West Coast Health* [cited 2025 August 11]. Available from: <https://westcoasthealth.nz/about>

22 Response planning to date has been limited to responding to the logistical challenges of  
23 lost communication and road access, isolation, rupture scale and associated hazards  
24 (e.g. landslides, debris, flooding). However, there is a lack of consideration into the ways  
25 that rural general practice teams may respond on the West Coast to care for casualties.

26 General practice teams proved to be a crucial part of the disaster response to the  
27 Christchurch earthquake providing clinical care to people injured in the earthquake and  
28 those needing care for non-earthquake related matters<sup>7</sup>. Rural general practice teams  
29 may have attributes, knowledge, resources and skills that are advantageous post AF8<sup>8</sup>.  
30 Currently it is not known how prepared general practice teams on the West Coast are to  
31 provide care for their communities in isolation, with limited resources in a post AF8  
32 environment. The perspectives of general practice teams will be essential to understand  
33 how West Coast Health can help general practices to prepare their personnel, develop  
34 skill sets, fund resources and enable in-practice organisation to deliver optimal standard  
35 of care post AF8.

#### 36 *Research question*

37 Aim: to explore the perspectives of West Coast general practitioners regarding their  
38 preparedness for a magnitude 8 earthquake caused by the rupture of the Alpine Fault.

#### 39 *Research objectives*

40 The objectives are, within the context of remote and rural general practice and disaster  
41 response planning, to:

- 42 1) gain some understanding of current rural general practice context on the West  
43 Coast
- 44 2) consider what general practices may need to prepare or strengthen  
45 preparedness for a AF8 rupture

#### 46 *Methodology*

47 This research project will use a qualitative design, semi-structured interviews and  
48 thematic analysis of data. The research team may at times include a community advisor

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<sup>7</sup> S Johal, Z Mounsey, R Tuohy, D Johnston. *Coping with disaster: general practitioners' perspectives on the impact of the canterbury earthquakes*. PLoS Currents Disasters. 2014 April 2.

<sup>8</sup> KA Willson, GJ FitzGerald, D Lim. *Disaster Management in Rural and Remote Primary Health Care: A Scoping Review*. Cambridge University Press. 2021 June; 6(3)

49 from West Coast Health. The primary researcher is a third-year medical student. Every  
50 stage of the research project will be supervised by the senior researchers.

51

52 i. Literature review: This will focus on what is known about primary care in  
53 emergency responses and disaster preparedness.

54 ii. Semi structured interviews

55 Practice engagement: will occur via pre-existing relationships of West Coast  
56 Health and one of the supervisors.

57 Recruitment: Purposive sampling of specialist GPs employed in general practice  
58 on the West Coast will be undertaken. Three to five semi-structured interviews  
59 of GPs working on the West Coast will occur. We will aim to recruit from three  
60 different sites.

61

62 Recruitment emails will be sent to relevant general practice email addresses  
63 available in the public domain inviting GPs to participate. The researcher will  
64 provide information on the project with participation information sheets.  
65 Participants will then be given the opportunity to take part. Informed consent  
66 will be obtained from all individuals prior to the interviews. A consent form will  
67 be provided to participants and signed, with further clarification provided as  
68 requested.

69

70 Data collection:

71 Having participants from multiple general practice sites and thus different  
72 contexts will increase the generalisability of the study. The decision to interview  
73 one clinical role (GPs) was made given the time and resource constraints of the  
74 research.

75 Basic demographic data will be collected from the participants. This will include  
76 age group, gender and ethnicity. The data will be sought from the participant via

77 email, concurrently with the recruiting call. No financial reimbursement will be  
78 provided to interview participants.

79

80 To fit the projects budget all interviews will be held via an online platform  
81 (Zoom, alternate Microsoft teams). This will also allow flexibility with interview  
82 timing.

83 An interview schedule will be developed by the research team and will explore 4  
84 broad areas: the context in which care is delivered, current confidence and  
85 concerns, perceived strengths and challenges; and what general practice  
86 readiness would look like for the participant. The semi-structured interviews will  
87 be around 55minutes, this will include an introduction and short literature  
88 presentation.

89 Data will be transcribed using Otter AI transcription.

90 Transcripts will be returned to participants for comment and /or correction.

91 Data analysis:

92 A thematic analysis will be conducted . Codes will be produced from the data and  
93 analysed using standard thematic analysis methodology to develop themes.

94 Researcher positionality:

95 The primary researcher is a third year medical student and a medic in the NZ  
96 Army Reserve Force. She grew up in a rural location in NZ. Both senior  
97 researchers are rural GPs and rural health academics. EM is based on the West  
98 Coast. Given the small community of rural GPs and rural health academics in NZ  
99 it is likely that research team members will be known in some way to  
100 participants. The insider status of researchers will be explicitly acknowledged in  
101 the participant information and consent forms. Other measures that will be  
102 taken for ensuring rigor in this study include team member review of data and  
103 regular team discussion. Member checking with participants will occur.

104 *Ethical considerations*

105 Ethics approval will be sought prior to commencement of research. Approval will also be  
106 obtained from Ngai Tahu through the University of Otago Research Consultation with

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107 Māori process. This research is highly relevant to Māori as tangata whenua. Rural Māori  
108 experience inequitable health outcomes. Health inequities may be exacerbated for rural  
109 Māori people during a natural disaster.

110 To ensure privacy all data will be monitored and protected. Participants will be  
111 anonymised, with pseudonyms used in discussion. Any potentially identifying  
112 information will be omitted.

113 Anonymised transcripts will not be available outside of the research project and will be  
114 securely stored on a double password protected laptop. This will be the personal laptop  
115 of the researcher, with password protection required on laptop startup and to access the  
116 transcript data. Anonymised data will be saved for five years in this way.

117 The zoom recording will only be downloaded and stored securely on UoO HCS server It  
118 will not be loaded or registered onto the cloud nor laptop. All non-anonymised data  
119 including interview recordings will be securely stored in NZ on University of Otago  
120 servers (HCS) and destroyed as soon as it is no longer needed for research.

121 The rural workforce is a small community Every attempt will be made to anonymise data but  
122 given the small pool of participants and sites involved in it may be possible to identify  
123 participants from the content of the data. Participants will be made aware of this during  
124 consent, and every effort made by researchers to avoid this. Member checking will allow  
125 participants to retract data prior to finalisation of the research report.

#### 126 *Relevance and importance*

127 The results of this study will contribute to the understanding of general practice  
128 preparedness for its role in the AF8 disaster response with the aim to reduce morbidity  
129 and mortality in our community. Whilst the focus of this research is a large earthquake  
130 in the context of the West Coast, the results may have relevance for other rural areas of  
131 Aotearoa. It is likely that this research will form the basis of a larger future project.

#### 132 *Dissemination*

133 The topic contributes to a wider workload being undertaken by West Coast Health. As  
134 such, this research may be utilised and distributed by the PHO, and shared amongst the  
135 University of Otago Health Research Network. It is hoped to present the results at the  
136 WONCA conference in 2026.

Commented [KB4]: Ensure we don't overstate potential contribution of this small study

Commented [KB5]: Thus align what we are saying n background etc ie its earthquake scenario

137 *Timeline*

	Proposa l and Approva l	Literatur e Review	Develop Presentatio n and Data Preparation	Ethics Approva l	Conduct Interview s	Data Analysi s	Discussio n Write- up
Sep 202 5	X			X			
Nov 202 5		X	X	X			
Dec 202 5					X	X	
Jan 202 6					X	X	X
Feb 202 6							X