


Canterbury Earthquakes: The Public Health Response

Dr. Ramon Pink, Canterbury District Health Board, Christchurch, New Zealand

A Webber Training Teleclass

Canterbury Earthquakes: the Public Health Response




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District Health Board
Te Pōari Hauora o Waitaha

Dr Ramon Pink
Christchurch, New Zealand

Hosted by Jane Barnett
jane@webbertraining.com

www.webbertraining.com October 26, 2011



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Session Objectives


1. Overview of the Christchurch earthquakes
2. To understand potential sites of infection
3. Practical aspects of Infection control and communicable disease surveillance
4. Understanding some of the issues around recovery

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Session Outline

- September 4th & the lessons learned
- February 22nd & June 13th
- Public Health Issues & Response
- Infection Control & Gastro surveillance
- Recovery

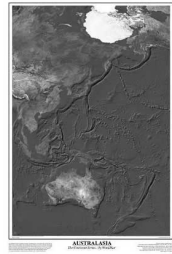


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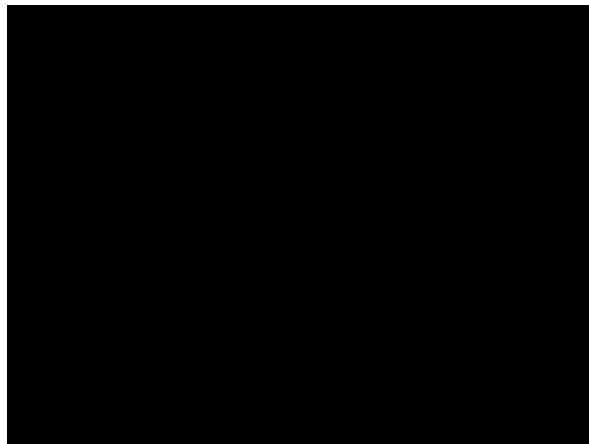
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Aotearoa, New Zealand

- South Pacific nation
- Population 4,409,224
- Area 270,534 km²



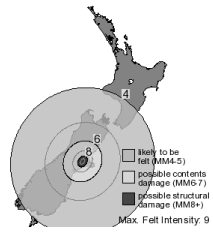
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September 4th 2010, 0435 - The Darfield Earthquake

- Magnitude 7.1
- No deaths
- Power and water off for a few days for most people
- Sewerage extensively damaged
- More than 7500 aftershocks since this initial event



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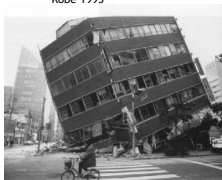
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Earthquakes

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- 1931 Hawkes Bay 7.8
- 1968 Inangahua 7.1
- 1987 Edgcumbe 6.5
- 1994 Northridge (USA) 6.7
- 1995 Kobe (Japan) 6.8
- 2007 Gisborne 6.8
- 2009 Dusky Sound 7.8
- 2010 Port au Prince (Haiti) 7.0
- 2010 Darfield 7.1

Kobe 1995



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Earthquakes

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<ul style="list-style-type: none"> ▪ 1931 Hawkes Bay 7.8 ▪ 1968 Inangahua 7.1 ▪ 1987 Edgcumbe 6.5 ▪ 1994 Northridge (USA) 6.7 ▪ 1995 Kobe (Japan) 6.8 ▪ 2007 Gisborne 6.8 ▪ 2009 Dusky Sound 7.8 ▪ 2010 Port au Prince (Haiti) 7.0 ▪ 2010 Darfield 7.1 	<ul style="list-style-type: none"> 256 deaths 2 deaths 72 deaths 6434 deaths 230,000 deaths 0 deaths
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Why the low mortality?

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- Rigorous building codes adhered to
- Time of day (0435)
- Epicentre away from city



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Liquefaction!

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Masonry buildings

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Public health issues

- Sewage disposal/exposure to sewage
- Contamination of water supplies
- Food safety
- Disease outbreaks
- Warmth, shelter
- Welfare centres
- Chemical spills
- Social disruption, anxiety





Recovery issues


- Sewage contamination
- Community recovery
- Restoring buildings and infrastructure
- Opportunities
- Not leaving people behind





What did we learn?


- A well informed community can do a lot for themselves
- The community appreciates face to face contact
- Portaloos are important
- Health extends across all aspects of recovery



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“If you want to fix my mental health, I don’t need a counsellor, I need a drainlayer!”







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22nd February 2011 12.51pm

- 6.3 magnitude earthquake
- Modified Mercalli up to 10 (2.24G Peak ground acceleration)
- 181 Confirmed fatalities
- 12 amputees among other trauma
- 1368 residential properties “red stickered”
- 1359 Commercial properties red stickered (including CPH)
- 90,000 people displaced
- 55,000 people not working from CBD
- Extensive damage to infrastructure:
 - Power (generally not phones)
 - Roads
 - Bridges
 - Reticulation system
 - Sewerage





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Immediate Local, Regional and National response

- Establish Emergency Operations Centres
- USAR
- Establish power
- Cordon/security
- Welfare centres
- Boil water notice
- Water tankers
- Porta-loos

National Civil Defence Emergency declared on 23rd February 2011




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Public Health Issues


- Sewage disposal/exposure to sewage
- Contamination of water supplies
- Food safety
- Disease outbreaks
- Warmth, shelter
- Welfare centres
- Chemical spills
- Social disruption, anxiety



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Monday 13 June 2011


- 5.7 & 6.3 aftershocks
- 1 death
- Building damage
- Liquefaction
- Water and sewage system damage
- Power outages
- Boil water notice
- Welfare centre



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Public Health Issues & Response

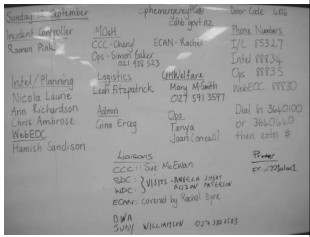




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Coordinated Incident Management System (CIMS)

- Co-ordinated Incident Management System (NZ Fire Service 1998)
- Clearly specified roles for emergency response
- Control
- Communication
- Training

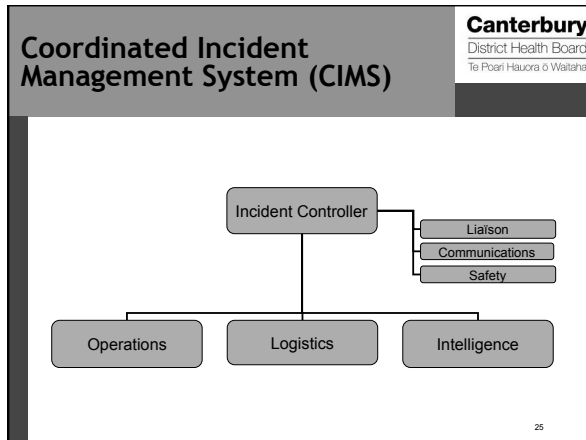


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Legislation

- Health Act 1956 S70/71
- Only during declared emergency
- Declaration re closure of schools, unsafe buildings
- Insanitary waterways, estuary, coastline, harbour
- New Zealand Food Safety Authority

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Infection Control & Surveillance

Welfare Centres

- Recreation Centres: Race Course Complex
- Directly linked to EOC
- Oversight by St John (ambulance) & Red Cross
- Infection Control advice and review by:
 - Specialist Infection Control Nurses
 - Public Health Staff
- Hand hygiene, isolation
- Link to Primary Care for General Practitioner review if required

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Infection Control and Surveillance

- Welfare Centres
 - visited by HPOs daily to assess health status and provide advice (gastroenteritis, chicken pox, mental health issues).
- Gastroenteritis surveillance
 - All GPs in Canterbury asked to report any increase in gastroenteritis
 - Daily / alternate day surveillance by 19-34 sentinel GPs in the most affected areas for 10 days. No increase observed.
- ILI surveillance
- CATI survey
- Recovery

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Situation Report

- Web-based Situation Report
- Password protected but accessible to Intranet and Internet users
- Published daily
- Emailed to CDEM, NHCC, CCC and a public health list

Canterbury Public Health Intelligence Report

All Contents Member Publication date and time: 14/09/2010 2:26:05 p.m.

This report was extracted from the central database on 14/09/2010 2:26:05 p.m. Information that is current with this report is the same as that on the date of the report.

CAPH Situation Report

Report Date: 14/09/2010
 Report To: CDEM
 Prepared By: Carol Williams and Heide Lauer
 Contact Details: 03 366 1777
 Email: carolwilliams@cdem.govt.nz

ASSESSMENT:

1.1 magnitude earthquake at 04:35 on 4 Sep 2010. Ongoing aftershocks up to 5.1 magnitude, but frequency of aftershocks reducing. Over 800 aftershocks experienced with seven since midnight, 14th Sept 2010, A.C.

2. The state of emergency will extend until midday today (14/09/10) in the CCC, Invercargill and Tairāne.

WASTE WATER:

2.1 Change issues with damaged pumps, need problems and a number of sites without sewer connections.

2.2 Sewer overflows continue to be monitored with warnings given to the public.

DEFERRED WATER:

2.3 All water supplies restored however, some new leaks occurring. A good quality technical water sampling plan is being drawn up (CCC and CDEM).

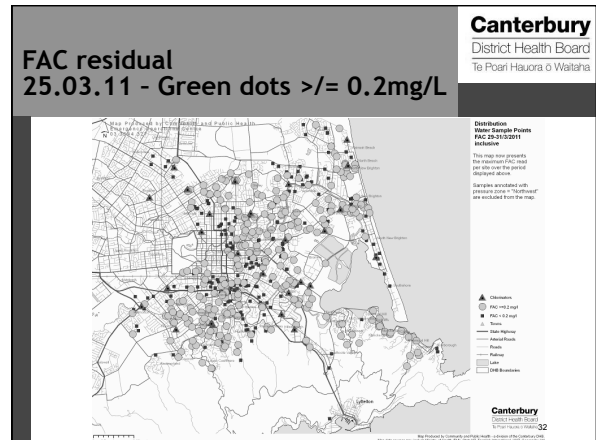
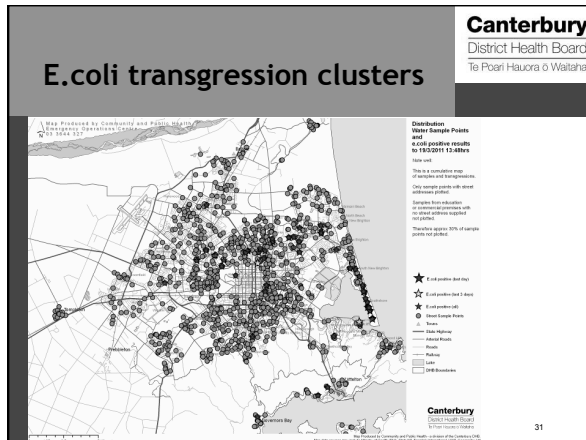
2.4 The area areas which still have a boil water notice in place are: Hāwera, Kaitiaki, and Pukekohe (Interim).

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Post-Quake Communicable Disease Surveillance

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Gastroenteritis

Data	Source
Notifiable diseases	Primary Care, Microbiology laboratory, national database
Number of faecal specimens	Microbiology laboratory
Attendances at hospital Emergency Dept	Hospital statistics
Gastroenteritis product distributed in community	Pharmaceutical warehouses
Public enquiries regarding gastroenteritis	HealthLine

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Post-Quake Communicable Disease Surveillance continued

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Respiratory Illness

Data	Source
Influenza -like illness	Sentinel primary care and after hours medical practices
Influenza virus identifications	Virology laboratory
Attendances at hospital Emergency Dept	Hospital statistics
Pneumococcal disease	Microbiology laboratory
Public enquiries regarding influenza-like illness	HealthLine

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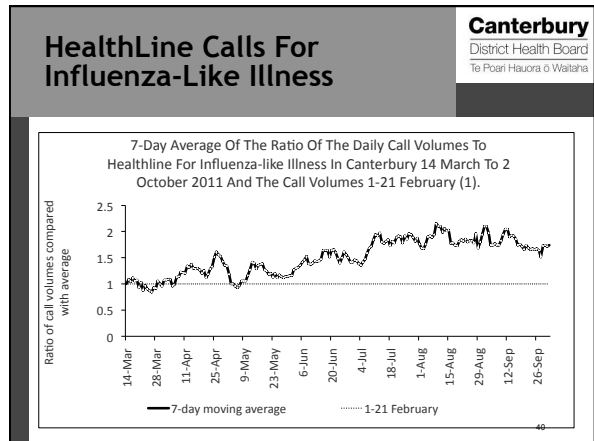
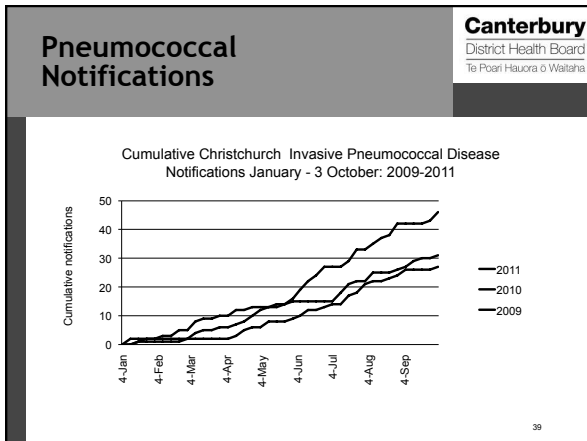
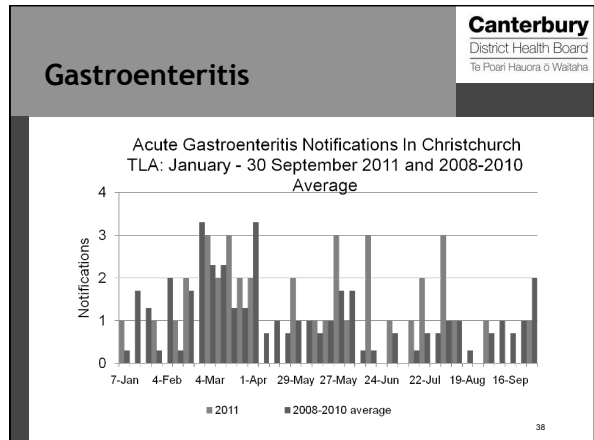
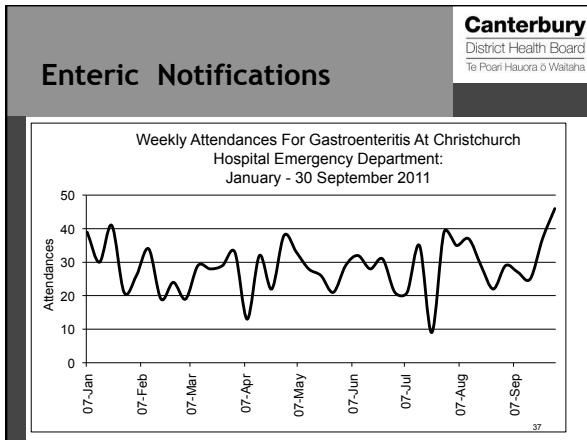
- Surveillance Reports**
- Canterbury District Health Board
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- National database - table of notifiable communicable diseases
 - Enteric report (local data)
 - Respiratory report (local data)
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- Enteric And Respiratory Reports**
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- Content**
- Summary comment of the current situation
 - Graphs of various indices of incidence of enteric and respiratory diseases
 - Initially daily then weekly
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Recovery and the Community

- Boiling their water
 - 88% were still boiling water 6 weeks later
- Washing their hands
 - No outbreaks occurred at all
- Digging silt from liquefaction
 - The student army
- Providing equipment to assist
 - The "farmy" army
- Establishing their own welfare centres
 - Tradesmen helped build laundries etc
- Accommodating their neighbours
 - Many had to accommodate two or three families
 - Sports clubs provided showers

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Recovery and the community

- Face to face contact at community briefings
- Mailbox Leaflet drop
- Free phone lines
- Websites
- Media
- Public Health messages

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Recovery & public health

- Service reconfigured:
 - Information
 - Protection
 - Communities
 - Policy
- Working from home
- Regionalisation




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Recovery Planning


- Not practised
- CDEM framework
- CPH Plan
- CDHB Plan



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Recovery




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Equity	Neighbourhood Amenity	Communication
Public Services	Cultural Diversity	Natural Capital
Active Lifestyle	Housing Stock	Resource Sustainability
Transport	Economic Development	Food Security
Social & Community Capital	Community Safety	Community Resilience

Version Two




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Equity	Neighbourhood Amenity	Communication
Public Services	Cultural Diversity	Natural Capital
Active Lifestyle	Housing Stock	Resource Sustainability
Transport	Economic Development	Food Security
Social & Community Capital	Community Safety	Community Resilience

Reflections

- Resilient community
- Preparation/Practice
- Engineers
- Recovery - the real test
- 'Long Haul'



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COMING SOON

TELECLASS EDUCATION 2012

Coming December 1, 2011
2012 Teleclass Schedule

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