



The Christchurch Earthquake



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Christchurch earthquake

- Talk briefly about St John
- Earthquake
 - Events
 - Challenges
 - Ongoing challenges
 - What we learnt
- Questions

St John in New Zealand

- > A charity
 - > Range community services
 - > Emergency ambulance service
 - > Core funding from Government
 - > Large additional contribution from St John charitable trust
- > Heavy reliance on volunteers
 - > Particularly in rural areas
- > Multi level service
 - > Five levels from basic to advanced paramedics



Christchurch

- Second largest city in NZ
 - 400,000 people
 - Stone and brick buildings
- Eight ambulances during day
 - Utilisation rate high
- One major hospital

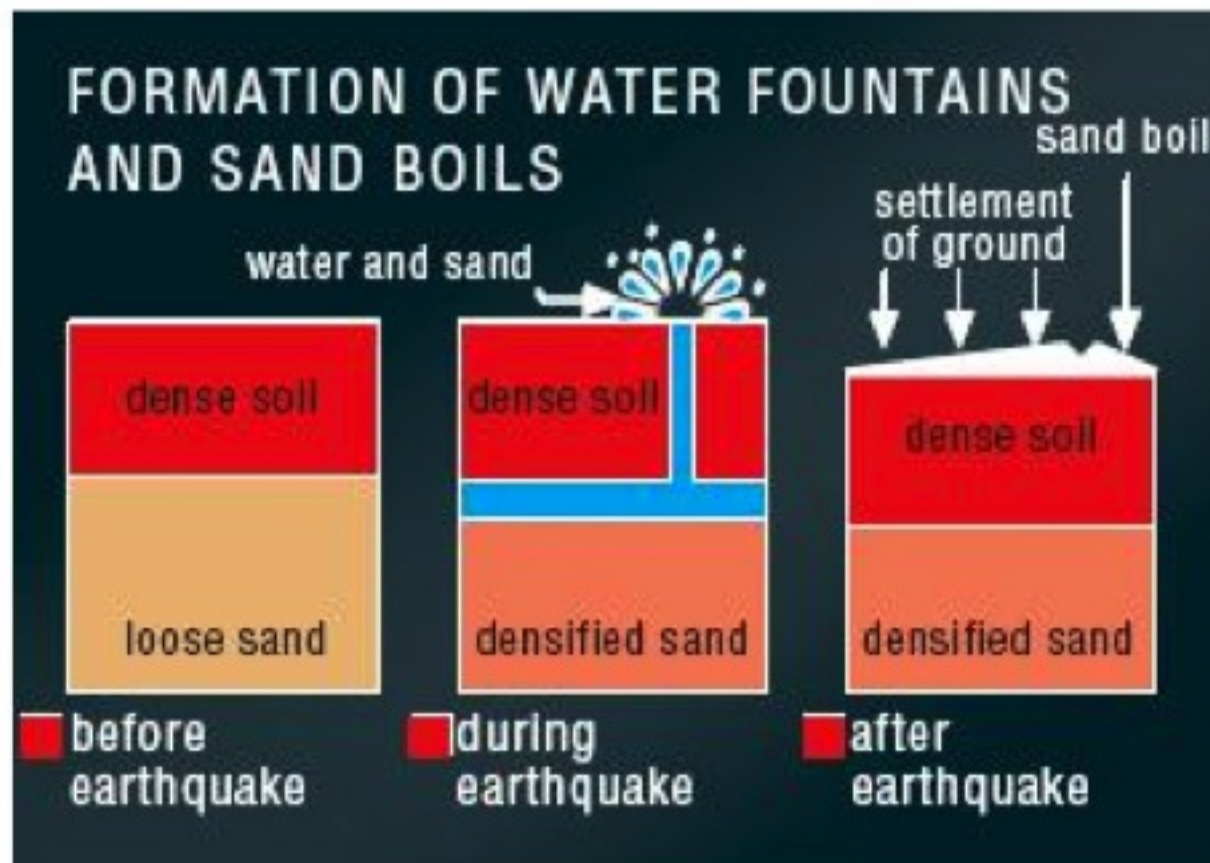


Christchurch earthquake

- Not had large major incident for over sixty years
 - Planned, practiced, not truly tested
- 4 September 2010, 0400
- 6.3 M earthquake
 - Centred outside Christchurch
 - Not a known risk area for earthquakes
- Extensive but largely superficial damage
- Brief loss of power
- Extensive loss of water and sewerage
- Small number of injured
- Moderate amount of liquefaction

Liquefaction

- Christchurch built on an old flood plain
 - Sandy, fertile soil
 - Prone to liquefaction



Liquefaction

- Like quicksand when wet
 - Then sets like concrete
 - Then turns to dust



Christchurch earthquake

- Aftershocks continued for months
 - Unusually high number able to be felt
 - Very unnerving for residents
 - Things appeared to be settling
- 22 February 2011, 1251
- 7.1 M earthquake
 - Centred on central business district
- Immediate widespread destruction

Houses on hills destroyed by slips



Historic buildings badly damaged



Walls fell away from buildings



A number of buildings collapsed



Including two multi-storey buildings



Earthquake overview

- 181 people killed
 - 124 in two multi-story buildings that totally collapsed
- Many hundreds injured
 - Thirty critically
- Widespread loss of power, water and sewerage
- Widespread damage to roads
- Widespread damage to buildings
 - 40% of buildings in the CBD to be demolished
 - Thousands of homes to be demolished
 - No building is untouched
- Liquefaction much worse than first earthquake

Liquefaction much worse



Liquefaction much worse



Initially overwhelmed

- South Island communications centre inoperable
 - Hundreds of calls, diverted to other two centres
 - Many calls went unanswered
 - Began despatching South Island from Auckland
- Major incident declared within minutes
 - National management team in place within twenty minutes
 - Very clear that it was a large major incident
 - Only thing that was clear...

Initially overwhelmed

- Getting reliable information very difficult
- Lost cell phone coverage to many areas
 - Ability to text remained
 - Cell phone batteries went flat quickly
- Lost landline contact in many cases
 - Many phones required power to work
- Lost AVL, MDT and paging
 - Couldn't see where our vehicles were
 - Couldn't despatch by normal means
- Intermittent loss of radio coverage
 - Couldn't always despatch or speak over the air
- When we were able to despatch
 - Vehicles often couldn't get to the job

Vehicles couldn't get to jobs



Vehicles couldn't get to jobs



The first one to eight hours

- Main station and headquarters had to be evacuated
- Control and command established
 - National and local management teams in place
 - Plan fully activated, people allocated to roles, 12 hours shifts
 - Many staff unsure about family and friends



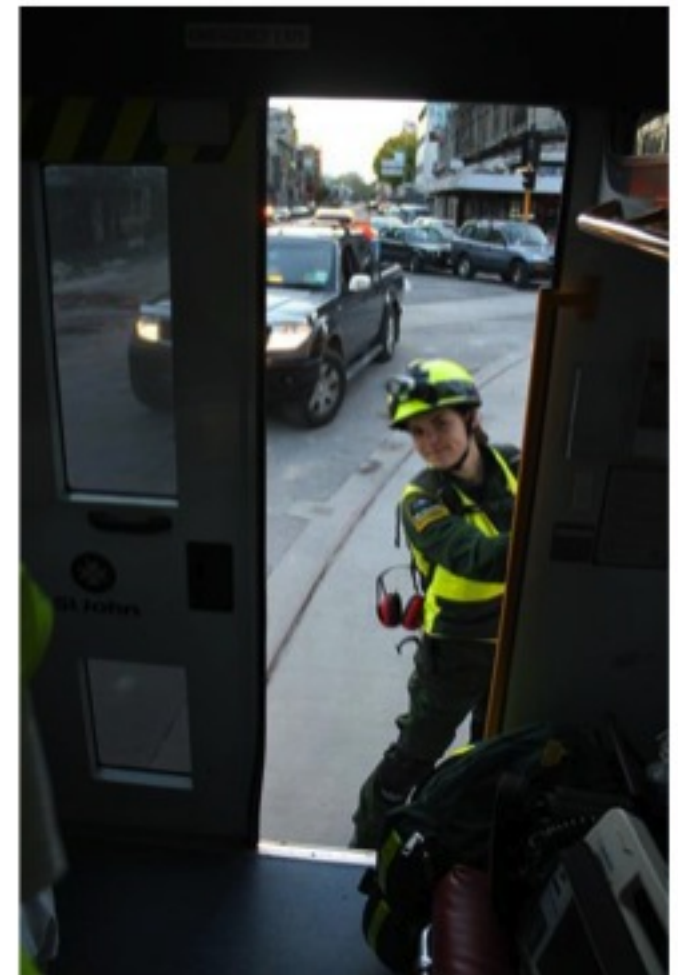
The first one to eight hours

- Regular teleconferences, Hospital and Ministry of Health
 - Web based information sharing
- Major change to usual transport 'rules'
 - Only badly injured or very ill patients to hospital
 - Rest initially treated at home or triage points
- Four patients had amputations performed at the scene
 - Ketamine and tourniquets proved invaluable
- Two patients able to be reached, not able to be extricated



The first one to eight hours

- Vehicles and staff deployed into Christchurch
 - 50 people on a plane from Auckland within four hours
- Additional staff contacted by group text
- All three NZ USAR teams deployed
- Major incident caches deployed
- Set up a number of triage points



Major incident caches



Triage points



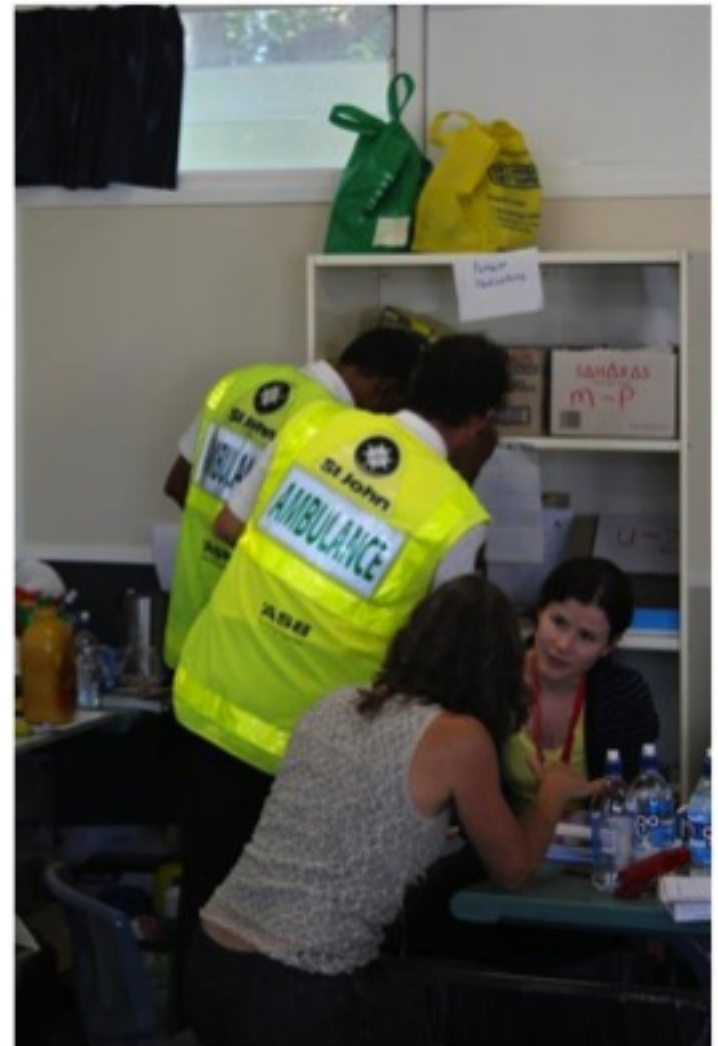
The next twelve hours

- It went very quiet from a call perspective
 - Small numbers of patients extricated from buildings
 - Last patient extricated 22 hours after earthquake
- Accommodation, food arranged for arriving staff
- Community support immense
- Difficult getting some staff to go home
- Coordinated arriving staff and self responders



The next twelve hours

- Welfare centres were set up
- Learnt from the previous earthquake
- Priority for staffing with personnel
- Paramedics who were also nurses were invaluable



Welfare centres

- Presence of paramedics prevented ambulances being called unnecessarily
- Took control of health needs
- Helped coordinate GP clinics



The next few days

- Christchurch Hospital coping
 - But only just
 - Needed to move patients out
- Coordinated movement of 35 ICU patients over 48 hrs
 - Set up a temporary national air ambulance desk
- Coordinated movement of 150 ward patients over 72 hrs
- Call volumes rose again
 - Job cycle times very prolonged
- Large increase in shortness of breath, acute coronary syndrome and premature births
 - Occurred previous earthquake as well

The next few days

- Began 'filtering' patients in that had been managed up until now in the community
 - Large number of orthopaedic injuries
 - Re-distributed post op
- Set up a process for checking at risk people
- Set up a process for welfare checks
 - Utilised our caring caller service
- Staff welfare team put in place

Staff welfare

- Most staff had damaged homes
 - Some extensively
- Some staff had missing or injured relatives/friends
- Most staff not sleeping
 - Shortened our usual roster
 - Staff rostered out of town for sleep
- External staff rotated in for four day blocks to provide additional cover
- Peer support team in place 24 hours a day

The next few days

- We helped coordinate the movement of over 300 rest home patients out of Christchurch
 - Complex and difficult task



The next few days

- Lots of vehicle problems
- Liquefaction dust caused air filters to block and door hinges to seize
- Rostered mechanics 24 hours a day
- Fuel stations without power or empty
 - Secured our own supply



The next few days

- Visits from Ministers, lots of media enquiries



Next few days to weeks

- Focus shifted away from patients to maintaining service
- Longer term rosters established
 - Still rotating extra staff in
- Buildings and stations formally assessed by engineers
- Communications centre re-opened
- Staff welfare an ongoing issue
- Job cycle times continued to be very long
- Workload in small towns around Christchurch rose

And then...

- After a period of 'relative quiet'
- On 13 June another 6.1 M earthquake
 - More superficial damage
 - No significant injuries
 - More liquefaction...
- Psychological impact on staff and residents huge
 - Those 'just holding it together' are no longer doing so
 - Some want to leave

Summary

- The biggest event we have had to cope with
- Never been seriously tested before
- In general our plan worked well
 - Good team
- Learnt a lot
- There is a lot to be done for the city to recover
 - Estimated to take several decades
- Ongoing nature of large separate earthquakes unusual
 - September 2010, February 2011, June 2011
 - No-one knows when it is going to end
 - Makes it particularly difficult



Thank you



St John
first to care

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