Where do people die?

What proportion ever uses residential aged care?

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in Freemasons’ Department of Geriatric Medicine, University of Auckland

Conference for General Practice,
Auckland, September 2011
People want to die “at home”

- Many reports, eg:
  - UK Higginson 2000, Koffman 2004
  - USA Hays 2001
  - Korea Choi 2005
  - Japan Fukui 2011
  - Israel Iecovich 2009

- In Australia, a survey showed 58% preferred to die at home Foreman 2006

- If place of death was “home”, preference was not often met Agar 2008
Social and demographic changes

• “Traditional” options for late life care less common:
  – less informal care (family or neighbours) available esp. more women aged 45-65, in workforce
  – more older people living alone
  – changes in families, eg fewer children, live a distance away
  – almost no live-in “housekeeper” or boarding arrangements
  – ? changing responsibility for/to parents

• Growth in retirement villages
What proportion live in residential LTC?

- Of population, at any one time, 5-6% live in residential long term care:

<table>
<thead>
<tr>
<th>Location</th>
<th>65+</th>
<th>85+</th>
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<tbody>
<tr>
<td>Auckland, 2008 (OPAL)</td>
<td>5.5%</td>
<td>27.5%</td>
</tr>
<tr>
<td>NZ, 2006 (Census)</td>
<td>5.5%</td>
<td>25.4%</td>
</tr>
<tr>
<td>Australia, 2008 (AIHW)</td>
<td>5.3%</td>
<td>23.5%</td>
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OECD (2006) data for 65+s showed 8.2% NZ

<table>
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Population rates in LTC in Auckland 2008 (OPAL)

![Graph showing the percentage of women and men in LTC by age group.]

- Women: 73.3% for those aged 90-94, 55.4% for those aged 95+
- Men: 70.0% for those aged 90-94, 50.0% for those aged 94+

5.5% of all 65+ are in LTC.
How will ageing impact....?

Source: MSD 2011
Where do people die?

Classification of place of death using NZ Death Registrations
Medical Certificate of Causes of Death

This certificate must be given to the funeral director or person in charge of the body without delay.

Please print clearly:

First or given name(s) of deceased
Surname of deceased

Date of birth
Day
Month
Year
Sex
Female
Male

Place of death in full

Date of death as stated to me
Day
Month
Year

Last seen alive by me on
Day
Month
Year

Body seen by me after death
No
Yes

Post-mortem

Ethnic group(s)
NZ Maori
NZ European or Pakeha
Other European
Samoan
Cook Island Maori
Tongan
Niuean
Chinese
Indian
Other (such as Fijian, Vietnamese)

Tick as many circles as needed to show which ethnic group(s) deceased belonged to.

Print other ethnic group(s) here

I did not see the deceased alive and the doctor who last attended the deceased is unavailable, and having regard to the medical records of the unavailable doctor and having examined the body, giving regard to the circumstances of the death, I am satisfied the death is not required to be reported to the Coroner.

To be held

Which of these groups
Dutch
English
Australian
Scottish
Other
Irish
Information goes to Dept. of Internal Affairs, & passed to Statistics NZ, MoH, MSD, transport, passports… Usual address is not analysed or reported.
NZ Ministry of Health algorithm

- Developed an algorithm to classify place of death:
  1. hospital deaths identified from a facility code given during data entry => ‘hospital’
  2. search for words e.g. ‘rest’, ‘home’, ’centre’, ‘lodge’, ‘hospital’ etc and not ‘hospice’ => ‘residential care’
  3. if ‘residence’, ‘unit’, ‘flat’ => ‘private residence’
  4. if not otherwise classified e.g. traffic or work => ‘private residence’

- For policy development & advice to Minister
NZ MoH place of death for 65+s
4 year 2003-2007, average %

- Residential aged care, 38.1%
- Hospital, 34.1%
- Home & other, 27.9%

“Home & other” includes private home, work place, road & traffic, public place & unknown

RAC includes rest homes and all private hospitals

Public acute care hospitals
### Place of death of 65+s using published, online and requested data

<table>
<thead>
<tr>
<th>Country</th>
<th>Residential aged care</th>
<th>Hospital</th>
<th>Home &amp; other</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Zealand 2003-07</td>
<td>38</td>
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<tr>
<td>Australia 2005</td>
<td>32</td>
<td>54</td>
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<tr>
<td>Canada (Manitoba) 2006</td>
<td>32</td>
<td>51</td>
<td>17</td>
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<td>Canada (Ontario) 2002</td>
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<td>USA 2003</td>
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<td>Belgium 2001</td>
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<td>England &amp; Wales 2008</td>
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<td>France 2005</td>
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<td>Japan (Kyushu) 2000-04</td>
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<tr>
<td>South Korea 2006</td>
<td>3</td>
<td>67</td>
<td>31</td>
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</tbody>
</table>
Where do people live shortly before they die?

Estimation for NZ
Estimation for Australia
What measures of “ever use”? 

Australia

- study in 2002 modeled annual probability of entering care
- est. 64% of 65+ women & 39% of 65+ men would use residential aged care before death

Rowland 2002

New Zealand

- no similar study undertaken in NZ
- no national reporting of LTC admissions or discharges
- ?use place of death or place of usual residence
Estimate for Australia

- Used annual summaries of discharged dead from LTC & acute hospital (AIHW)
- 32% in LTC, 54% in hospital
- Of all in-hospital deaths, 13% were LTC residents “on leave”
- Est. total of ever use:
  \[32\% + 0.13 \times 54 = 39\%\] of 65+s
- Probably an underestimate e.g. if resident was discharged from LTC to hospital
Estimate # 1 for New Zealand

- RACIP trial in WDHB tracked hospitalisations in those from residential LTC aged 65+ Boyd, in progress
- Of all in-hospital deaths for 65+s, 30% were from LTC
- Est. total living in residential LTC at the time of death:

\[ 38\% + 0.30 \times 34\% = 48\% \text{ of } 65+s \]
Estimate # 2 for New Zealand

- Follow-up of OPAL cohort in Auckland – hospitalisations & deaths
- Weighted to represent a 12-month RAC cohort
- Of all deaths Sep2008-09, est. 9% occurred in acute hospital
- Est. total from residential LTC at the time of death:

\[ 38\% \times 1.11\% = 42\% \text{ of } 65+\text{s} \]
40 - 50% in LTC in NZ?

- **inadequate assessment** before admission to LTC
  Weatherall 2004, Grant Thornton 2010

- LTC model prevails, & **options not understood** by older person or their families
  Jorgensen 2009

- **home-based services** poorly co-ordinated, inadequate, ineffective or not timely
  Weatherall 2004, Grant Thornton 2010

- ? **hospice-care is less available** for older people, facilities provide de facto palliative care

- ? **reducing lengths of stay** in AT&R units => failure to rehabilitate, false economy

- ? **LTC preference** over episodes of acute care
Back to the future – deaths will rise…

After 20-year stable period, number of deaths is now rising, though death rates continue to fall.

Projected rise in demand for beds of **78-110%** by 2026 - ? unsustainable

Grant Thornton 2010
Summary

- in NZ, high rates of use of LTC ~48% of 65+s die while resident in LTC
- arguably more compelling (vs 5-6%), more attention-demanding, with greater potential for advocacy or policy
- helpful to explore other models of non-acute care, especially for end-of-life
  - impacts of changes to funding of LTC
  - inform care provision
  - personal planning for retirement
  - admitting practices to LTC
Acknowledgements

- Ann Peut, AIHW, Canberra
- He Chen, Beijing
- Hongsoo Kim, Seoul
- Merryn Gott, Auckland

Be nice to your kids
They’ll choose your nursing home

Abraham Maslow
Deaths in residential care, doubling each 10 years of age

Percentage of deaths in residential aged care

65-74 75-84 85+

Iceland 2007-09
New Zealand 2003-07
Australia 2005
Canada (Manitoba) 2006
Canada (Ontario) 2002
USA 2005
Wales 2001
England & Wales 2008
Austria 2009-10
Malta 2001-10
Czech Republic 2009
Ireland 2000-10
Cyprus 2007-09
France 2005-06
Croatia 2009
Singapore 2006
South Korea 2009
In future, population rates in LTC may move to older ages.
NZ Population pyramids

1951
Median age = 29 years
Age (years)

50 years on

2006 (base)
Median age = 36 years
Age (years)

80 years on

2031, series 5
Median age = 41 years
Age (years)
Outline

• Where do people die?
• Reporting deaths in NZ
• Place of death in NZ
• International comparisons

• Where do people live before they die?
• Estimates for NZ & Australia
• Implications & work in progress
High proportion of deaths in LTC? or Low proportion in hospital?

• If estimates correct, compared to other countries, NZ
  – has high proportion of deaths in private home & LTC
  – & low proportion in hospital

• Maybe LTC is in some sense the best option for some to “age in place” ....
  – not necessarily the family home or living alone
  – could be a facility of their choosing, familiar surroundings

• Residence in LTC may reduce deaths in hospital
  – preventive? protective?
  – or a question of access?
Reporting preference to die “at home”

• Preference for home death may not reflect care when disabled or very old Freid 1999
• Difficult to survey preferences in some cultures Choi 2005
• Poor-moderate congruence between preferred place of death and actual place of death Bell 2009
• Post-bereavement interviews - care-givers think actual place of death appropriate Brazil 2005
• Important for care-givers and physicians to know preferred place of death Cohen 2011
Market & environment considerations

• Little provision for:
  – short-term live-in rehabilitation after acute episode & perhaps => hasty decision to move
  – community care eg adult day-care or seniors centres
  – sheltered housing eg from local bodies, & few small apartments & flats (though LTC is more than a housing option)

• LTC bed provision high
Completing the certificate….

Place of death

If the deceased died in a hospital or other institution, please ensure that the name of the hospital or institution is entered in this field, not just the street address.
<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Total</th>
<th>Home &amp; other</th>
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</tr>
</tbody>
</table>

n.s. = not stated
* = including RAC
\[ y = -0.71x + 69.44 \]

\[ R^2 = 0.57 \]
Australia - impact of deaths in hospital from LTC

- RAC but death in hospital
- Death in LTC

Men
- 65-74
- 75-84
- 85+

Women
- 65-74
- 75-84
- 85+
AT&R utilisation – for 85+s

Index of growth for pop/discharges compared to base year (1999)

- Pop Growth: 1.3%
- Med/Surg Growth: 7.4%
- AT&R Growth: 3.9%