Deaths in New Zealand and the Need for Palliative Care

Professor Heather McLeod
Deaths in New Zealand and the Need for Palliative Care
Deaths – Closer to Home?

- Strategic Challenge for New Zealand:
  - Increasing Numbers of Deaths
  - Deaths at Older ages
  - Trajectories at the End of Life
- Place of Death
- Need for Palliative Care
- Challenges for Rural Health
Increasing Numbers of Deaths
Deaths in New Zealand 2000-2010

There has been remarkable stability in the total number of deaths since 2000, with perhaps only a very small increase.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Historic Births and Deaths 1876-2012

Baby Boomers are usually regarded as those born in the years 1946–65

Source: Statistics New Zealand data, 1876 to 2012
The great majority of survivorship improvements occurred at childhood and young adult ages.

Historic Deaths and Future Projections - Comparison

Previous projection used Census 2006, had Base 2006 (as updated October 2012) and projected to 2061. New projection follows Census 2013, has Base 2014 and projects to 2068.

Source: Drawn using data from Statistics New Zealand. Historic estimates and National population projections, 2014(base)-2068
Deaths at Older Ages
Deaths in New Zealand 2000-2010

30.1% of all deaths are over age 85; 60.1% are over age 75 and 77.4% are over age 65.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Deaths in New Zealand 2000-2010

Note steady increase in deaths over age 85 over the period, from 25.9% of deaths in 2000 to 33.2% of deaths in 2010. Decline in deaths age 65-74.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Deaths in New Zealand 2000-2010
All Causes

39.3% of all deaths for women are over age 85; men dying at younger ages and with more deaths under age 65 (26.9%).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Updated projections from Statistics NZ use Base 2014 and project to 2068. Graph begins in 1979 when the first hospice was opened in New Zealand. Note the increase in deaths over age 85-94 and age 95+.

Source: Drawn using data from Statistics New Zealand. Historic estimates and National population projections, 2014(base)-2068
Historic Deaths, Future Projections

Note the large expected growth in deaths in the groups age 85-94 and age 95+.

19.2% of all deaths projected to be under age 65; 37.1% of deaths projected to be age 85+.

Source: Analysis of Statistics New Zealand projections Base 2014
Deaths in New Zealand 2068

3.4% of all deaths projected to be under age 65;
78.4% of deaths projected to be age 85+; with 30.0% of deaths age 95+

Source: Analysis of Statistics New Zealand projections Base 2014
Trajectories at the End of Life
Trajectories at the End of Life

- Accidents
- Cancer
- Organ failure
- Frailty and dementia

Trajectories at the End of Life

- The three characteristic trajectories are roughly sequential in relation to the ages afflicted
  - with cancer (trajectory 1) peaking around age 65
  - fatal chronic organ system failure (trajectory 2) about a decade later, and
  - frailty and dementia (trajectory 3) afflicting those who live past their mid-eighties.

29.1% of deaths are from neoplasms which includes malignant and benign neoplasms. 38.3% of deaths from circulatory system conditions.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Women account for 49.9% of deaths from all causes.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
In proportional terms, large decrease in deaths from circulatory system conditions, little change in deaths from neoplasms and large increase in deaths from other conditions.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Implications of Older Deaths

- The major challenge for palliative care will be that not only will the number of deaths be increasing, but they will be increasing in older age bands.
- These deaths are likely to be occurring to people with more co-morbidities and a high prevalence of dementia.
- If current patterns of end-of-life care continue most of these deaths over age 85 will occur in residential aged care facilities after an extended period of care.

- Will challenge existing models of care.
- Will challenge the way end of life care is funded.
Place of Death
The largest proportion died in hospital (34.2%), followed by residential care (30.7%) and private residence (22.3%).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Very significant differences in place of death by gender. Proportionately more women die in residential care (37.6% of women, 24.0% of men). More men die in a private residence (26.1%, compared to 18.4% for women).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Significant patterns by age and gender, with a distinct funnel of deaths in residential care as age increases.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Private residence is the predominant place of death for both women (27.4%) and men (28.9%) with neoplasms. The next most significant place for women is residential care (26.5% of women) while for men it is hospital (28.1% of men).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Residential care is a significant place of death from circulatory system conditions for women (42.8% of women). Both genders have a high proportion in hospital (35.5% for woman, 37.2% for men).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
For deaths from other conditions, 46.0% of women die in residential care (compared to 33.4% of men). Men are more likely to die in hospital (43.6%).

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Place of Death 2000-2010 Male

Hospital and private residence are most common places for male deaths. Deaths in residential care have increased over the period and now equal deaths in private residence.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
Residential care is most common place for female deaths, with private residence much smaller than residential care or hospital.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
30.1% of deaths occur at age 85 and over and residential care is the predominant place of death: 58.8% of women and 47.3% of men aged 85+. Some deaths in public hospital likely to be after transfer from residential care.

Source: Analysis of Ministry of Health MORT data 2000 to 2010
The Need for Palliative Care
End of Life and Last Days of Life

Life expectancy:

- Years
- Months
- Weeks
- Days

Transition of care identified in place, levels and/or goals of care

Condition:

- No evidence of disease
- Early stage disease
- Advanced disease
- Unstable and Deteriorating
- Dying

End of Life

Last Days of Life

At risk of dying

Prepared for forthcoming New Zealand Palliative Care Glossary, 2015
Palliative Care Council November 2014
Palliative Care and Supportive Care

Person:
- No evidence of disease
- Early stage disease
- Advanced disease
- Unstable and Deteriorating
- Dying

Family /whānau/carer:
- Adjustment
- Bereavement

Care:
- Curative Care
- Supportive Care
- Palliative Care
- Last Days of Life

Prepared for forthcoming New Zealand Palliative Care Glossary, 2015
Palliative Care Council November 2014
Palliative Care is care for people of all ages with a life-limiting or life-threatening condition.

Palliative care is provided according to an individual’s need, and may be suitable whether death is days, weeks, months or occasionally even years away.

It should be available **wherever the person may be.**

It should be provided by **all health care professionals,** supported where necessary, by specialist palliative care services.

Primary Palliative Care and Specialist Palliative Care

Episodes of care to meet the needs of the patient, family /whānau/ carers, depending on the expertise and experience of the primary palliative care providers.
Health Needs Assessment Phase 1

- **Phase 1**: Assessment of Palliative Care Need

- It established, for the first time, the number of people who might benefit from palliative care in New Zealand.


- Report prepared by Wayne Naylor
Previous Estimate of Need for Palliative Care

<table>
<thead>
<tr>
<th>Estimated palliative care population — children and young people</th>
<th>Minimal</th>
<th>Mid-range</th>
<th>Maximal</th>
</tr>
</thead>
<tbody>
<tr>
<td>287 (44.0%)</td>
<td>273 (41.9%)</td>
<td>388 (59.5%)</td>
<td></td>
</tr>
<tr>
<td>Estimated palliative care population — adults</td>
<td>11,396 (41.8%)</td>
<td>15,452 (56.7%)</td>
<td>25,515 (93.6%)</td>
</tr>
</tbody>
</table>

Minimal estimate for adults: 41.8% of deaths amenable to palliative care. Maximal: 93.6% of deaths.

In 2006, 27 909 deaths in total, with 15 725 (56.3%) amenable to palliative care (mid-range estimate).

But methodology underestimates deaths from frailty and dementia ...

Source: Palliative Care Council (2011) National Health Needs Assessment for Palliative Care, Phase 1 Report.
Need for Palliative Care 2000-2010

Comparison of old and potential methodologies. Initial thoughts on potential impact of adding all deaths in residential care over age 65. Work-in-progress...

Preliminary Results: do not quote without speaking to author
Data Source: Analysis of Ministry of Health MORT data 2000 to 2010
Challenges for Rural Health
The median Statistics NZ projection is that deaths as a percent of births increase from 51% in 2015 to peak at 87% in 2055, then a plateau to 86% by 2068.

Regional Deaths Relative to Births

More deaths relative to births in all areas by 2033.

Source: data from Statistics New Zealand, using Census 2013 base.
## Regional Deaths Relative to Births 2015 and 2033

<table>
<thead>
<tr>
<th>Region</th>
<th>District Health Board</th>
<th>Projected Number of Deaths 2015</th>
<th>Projected Number of Deaths 2033</th>
<th>Deaths as percent of Births 2015</th>
<th>Deaths as percent of Births 2033</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern</td>
<td>Northland</td>
<td>1,400</td>
<td>1,950</td>
<td>65%</td>
<td>87%</td>
</tr>
<tr>
<td></td>
<td>Waitakere</td>
<td>2,870</td>
<td>4,480</td>
<td>37%</td>
<td>48%</td>
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<tr>
<td></td>
<td>Auckland</td>
<td>2,490</td>
<td>3,140</td>
<td>41%</td>
<td>41%</td>
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<td></td>
<td>Counties Manukau</td>
<td>2,540</td>
<td>3,740</td>
<td>31%</td>
<td>37%</td>
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<tr>
<td></td>
<td>Northern Total</td>
<td>9,300</td>
<td>13,310</td>
<td>38%</td>
<td>45%</td>
</tr>
<tr>
<td>Midland</td>
<td>Waikato</td>
<td>2,620</td>
<td>3,560</td>
<td>50%</td>
<td>66%</td>
</tr>
<tr>
<td></td>
<td>Lakes</td>
<td>830</td>
<td>1,030</td>
<td>58%</td>
<td>79%</td>
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<tr>
<td></td>
<td>Bay of Plenty</td>
<td>1,810</td>
<td>2,500</td>
<td>65%</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>Tairawhitia</td>
<td>420</td>
<td>480</td>
<td>61%</td>
<td>76%</td>
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<tr>
<td></td>
<td>Taranaki</td>
<td>940</td>
<td>1,150</td>
<td>61%</td>
<td>84%</td>
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<tr>
<td></td>
<td>Midland Total</td>
<td>6,620</td>
<td>8,720</td>
<td>57%</td>
<td>74%</td>
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<tr>
<td>Central</td>
<td>Hawke’s Bay</td>
<td>1,340</td>
<td>1,720</td>
<td>61%</td>
<td>84%</td>
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<tr>
<td></td>
<td>Whanganui</td>
<td>580</td>
<td>670</td>
<td>70%</td>
<td>93%</td>
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<tr>
<td></td>
<td>MidCentral</td>
<td>1,410</td>
<td>1,710</td>
<td>66%</td>
<td>82%</td>
</tr>
<tr>
<td></td>
<td>Capital and Coast</td>
<td>1,670</td>
<td>2,200</td>
<td>45%</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>Hutt Valley</td>
<td>990</td>
<td>1,240</td>
<td>51%</td>
<td>70%</td>
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<tr>
<td></td>
<td>Wairarapa</td>
<td>410</td>
<td>550</td>
<td>84%</td>
<td>131%</td>
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<tr>
<td></td>
<td>Central Total</td>
<td>6,400</td>
<td>8,090</td>
<td>56%</td>
<td>73%</td>
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<tr>
<td>South Island</td>
<td>Nelson Marlborough</td>
<td>1,200</td>
<td>1,710</td>
<td>79%</td>
<td>120%</td>
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<td></td>
<td>West Coast</td>
<td>280</td>
<td>360</td>
<td>70%</td>
<td>100%</td>
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<tr>
<td></td>
<td>Canterbury</td>
<td>3,720</td>
<td>4,940</td>
<td>64%</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>South Canterbury</td>
<td>590</td>
<td>700</td>
<td>92%</td>
<td>115%</td>
</tr>
<tr>
<td></td>
<td>Southern</td>
<td>2,470</td>
<td>2,980</td>
<td>71%</td>
<td>85%</td>
</tr>
<tr>
<td></td>
<td>South Island Total</td>
<td>8,260</td>
<td>10,690</td>
<td>70%</td>
<td>88%</td>
</tr>
<tr>
<td>New Zealand</td>
<td></td>
<td>30,600</td>
<td>40,800</td>
<td>52%</td>
<td>63%</td>
</tr>
</tbody>
</table>

**Source:** data from Statistics New Zealand, using Census 2013 base.
Changing Rural Demographics

- All areas will be home to more people aged 65+ in 2043.
- Deaths will increase relative to births in all areas.
- Deaths will outnumber births in two-thirds of territorial authority areas by 2043 (Median projection).
- A median age of 50 years or older is projected for 15 territorial authority areas in 2043: Kaipara, Thames-Coromandel (60 years), Hauraki, Opotiki, Central Hawke's Bay, Horowhenua, Kapiti Coast, Carterton, South Wairarapa, Tasman, Marlborough, Kaikoura, Waimate, and Central Otago districts, and Nelson city.

- New projections by broad family type and household type:
  - National family and household projections - next release 2015
  - Subnational family and household projections - next release 2016

Deaths – Closer to Home?

- Much older populations in rural areas:
  - More co-morbidity; increased frailty;
  - Changing cause of death in the direction of longer trajectories at the end of life.
- Key role of rural GPs and district nurses in provision of palliative care.
- Regional initiatives to provide specialist palliative care support.
- Advance Care Planning — important to have conversations. Where do people prefer to have end of life care?
- Provision for home care? Local residential care? Or will people be forced to migrate to larger centres?
- Recognition and funding of end of life and palliative care?
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CLOSE TO HOME

Conference 2015

In association with NZRHN

NEW ZEALAND RURAL GENERAL PRACTICE NETWORK

RURAL HEALTH ALLIANCE AOTEAROA NEW ZEALAND