The health and care needs of future older populations: opportunities or challenges?

Carol Jagger
Outline

Government target: Ensure that people can enjoy at least 5 extra healthy, independent years of life by 2035, while narrowing the gap between the experience of the richest and poorest.

• Is it feasible in the light of
  • the experience of the EU?
  • current trends
  • future trends

• What needs to be done?
Ageing

From Newcastle. For ageing.
Healthy Ageing


Health expectancy (HE):
- Combines information on health and mortality
- Is independent of age structure and size of population

“Increased longevity without quality of life is an empty prize. Health expectancy is more important than life expectancy.”

*Dr Hiroshi Nakajima, Director-General WHO 1997*
What is happening to life and health expectancy?
## EU Healthy Life Years

### European Innovation Partnership on Active & Healthy Ageing

**+2 Healthy Life Years by 2020**

**EU28 2008 2017 DIFF**

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2017</th>
<th>DIFF</th>
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</thead>
<tbody>
<tr>
<td><strong>HLY at birth</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>61.1</td>
<td>63.5</td>
<td>2.4</td>
</tr>
<tr>
<td>Women</td>
<td>62.2</td>
<td>64.0</td>
<td>1.8</td>
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<tr>
<td><strong>LE at birth</strong></td>
<td></td>
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<tr>
<td>Men</td>
<td>76.3</td>
<td>78.3</td>
<td>2.0</td>
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<tr>
<td>Women</td>
<td>82.3</td>
<td>83.5</td>
<td>1.2</td>
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<tr>
<th></th>
<th>2008</th>
<th>2017</th>
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<tr>
<td><strong>Gap in HLY</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Men</td>
<td>17.8</td>
<td>22.6</td>
<td>4.8</td>
</tr>
<tr>
<td>Women</td>
<td>17.8</td>
<td>21.4</td>
<td>3.6</td>
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<tr>
<td><strong>Gap in LE</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Men</td>
<td>14.5</td>
<td>21.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Women</td>
<td>7.8</td>
<td>7.0</td>
<td>-0.8</td>
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Mind the gap—reaching the European target of a 2-year increase in healthy life years in the next decade

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⁶ Public Health and Surveillance, Scientific Institute of Public Health, Brussels, Belgium
⁷ Institut National d’Études Démographiques, Paris, France
⁸ Institute of Public Health, Epidemiology, University of Southern Denmark, Denmark
⁹ INSERM U988 and U710 and EPHE, Paris and Montpellier, France

To reach EI-P-AHA target by 2020 for all countries and reduce the inequalities between Member States

• Requires EU27 HLY increase of 6.4 years for a 50% reduction in the gap
• Reducing the gap by 50% alone would result in all but two Member States (Malta and Sweden) increasing their HLY by two years
Change at age 65: 1991 to 2011

Cognitive Impairment Free Life Expectancy (CIFLE)

Men
Women
CIFLE increase of 44%

Healthy Life Expectancy (HLE)

Men
Women
HLE increase of 43% (men)
28% (women)

Source: Jagger et al Lancet 2015
From Newcastle. For the world.
Change at age 65: 1991 to 2011

Years with different care needs*

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
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<tbody>
<tr>
<td>LE65</td>
<td>4.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Independent</td>
<td>1.7</td>
<td>2.4</td>
</tr>
<tr>
<td>Care &lt; daily</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Care daily</td>
<td></td>
<td>1.3</td>
</tr>
<tr>
<td>24-hr care</td>
<td>0.9</td>
<td></td>
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</table>

Independent free LE increase 18% (men) 2% (women)

*Based on interval of need - lapsed time between periods when the individual may need help (Isaacs and Neville 1975)

Source: Kingston et al Lancet 2017
Where is care provided?

- Fewer older people with substantial dependency now going into care homes
- More with substantial dependency now supported in the community

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1991</th>
<th>2011</th>
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<tbody>
<tr>
<td>65-74 years</td>
<td>8%</td>
<td>25%</td>
</tr>
<tr>
<td>75-84 years</td>
<td>12%</td>
<td>47%</td>
</tr>
<tr>
<td>85+ years</td>
<td>3%</td>
<td>6%</td>
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<td>5%</td>
<td>49%</td>
</tr>
<tr>
<td>85+ years</td>
<td>12%</td>
<td>12%</td>
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Source: Kingston et al Lancet 2017
Who cares?

- Most care for medium and high dependent 85 years olds provided by children

Source: Jagger et al BMC Geriatrics 2011
How long is care required?

- Majority of remaining years from age 65 spent independent or requiring care < daily

![Graph showing expected years after 65 for men and women in different care scenarios.]

Source: Kingston et al Lancet 2017
Healthy ageing for all?

Healthy life expectancy at age 65 years and years lived in poorer states of health: by national deprivation deciles, England, 2015 to 2017

**Men** in the
- least deprived areas could expect on average 13.3 years healthy (64% of remaining life)
- most deprived only 5.8 years healthy (37%)

**Women** in the
- least deprived areas could expect on average 13.8 years healthy (60% of remaining life)
- most deprived only 6.9 years healthy (38%)

*Source: ONS - Annual Population Survey, 2011 Census*
Healthy ageing for all?

Years spent with (positive) or without (negative) multimorbidity (MM) at age 65 by IMD 2007 quintile

**Men**

<table>
<thead>
<tr>
<th>IMD Quintile</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Most dep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy</td>
<td>10</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1 disease</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
<td>-5</td>
</tr>
<tr>
<td>2 diseases</td>
<td>-10</td>
<td>-10</td>
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**Women**

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Gap between Q1 and Q5 in LE without MM: 2.3 years (men) 2.7 years (women)
Gap between Q1 and Q5 in LE without MM: 1.3 years (men) 0 years (women)

*Source: Chan et al IJE 2019*
What is likely to happen in the future?
PACSim is a dynamic microsimulation model which simulates future health of set of real individuals (base population) aged 35 years and over based on:

- their baseline characteristics
- change from transition models of longitudinal data
Multimorbidity

Between 2015 and 2035

• Numbers of 65+ with 4+ diseases will double

• Most of gain in LE at age 65 between 2015 and 2035 will be in years with 4+ diseases

Source: Kingston et al Age and Ageing 2018
PACSim: change 2015-2035

Independent free LE increase of 38% (men) and 8% (women)

Source: Kingston et al Lancet Public Health 2018
What is the solution?
The theory

Fig. 2.4. A public-health framework for Healthy Ageing: opportunities for public-health action across the life course

Health services:
- Prevent chronic conditions or ensure early detection and control
- Reverse or slow declines in capacity
- Manage advanced chronic conditions

Long-term care:
- Support capacity-enhancing behaviours
- Ensure a dignified late life

Environments:
- Promote capacity-enhancing behaviours
- Remove barriers to participation, compensate for loss of capacity

Source: World Health Organization 2015
The solution

- Most years are spent independent or with low dependency – aim to stay here longer to reduce time spent more dependent?

Source: Kingston et al Lancet Public Health 2018
But ......

- Not smoking increases DFLE but does not reduce LE with disability (LWD)
- Obesity increases LWD but has little effect on LE overall

Source: Majer et al Obesity 2012
Disability pathway

Source: Kingston et al  PlosONE 2012
The LifeCurve concept

From Newcastle. For ageing.
• Of the 158 exemplar social innovations (SIs) identified, the majority of evaluations were:
  • Not RCTs
  • Not before-after evaluations

• Outcomes were
  • Process measures of SI
  • Proximal measures rather than health or wellbeing
Challenges and ......

• Numbers of older people requiring substantial care (daily or 24 hr care) will increase – particularly driven by the growth in those aged 85+
• Care will be more complex as prevalence of (and numbers with) 4+ diseases increases
  • More training for family carers and care workforce
  • Care breaks for those carers also in employment
• Inequalities in healthy life expectancy are increasing
..... Opportunities

• The majority of remaining years from age 65 will be years independent or with low level needs

• Ageing IS malleable – there is evidence to intervene earlier in the disablement process to slow down decline

• Need
  • outcome-oriented prevention and intervention strategies
  • a focus on health expectancy not just health to ensure we reduce the number of unhealthy years and not simply increase both healthy and unhealthy years
  • Better understanding of behaviour change – or lack of it

• Need long term planning that transcends politics
Acknowledgements

CFAS studies collaboration

- Colleagues in Newcastle University Institute of Health & Society
- Australian Centre of Excellence in Population Ageing Research (CEPAR)

MODEM
modelling outcome and cost impacts of interventions for dementia

innovAge
Social Innovations Promoting Active and Healthy Ageing

From Newcastle. For ageing.
Thank you
Dennis Rudgewick didn’t need to worry, he’d just got £75k out of the ESRC for a project on trends in old age morbidity. He’d decided to specialize in old age a long time ago. It wasn’t a sexy subject, but it did have a future, as everyone had it to look forward to and there was a lot more of it around these days.

(Ann Oakley, Overheads)

"two mistakes ... made by mankind; first in allowing the world to be burdened with the continued maintenance of those whose cares should have been made to cease ... and the second, in requiring those who remain to live a useless and painful life."

(Anthony Trollope, The Fixed Period)
Inequalities within Newcastle

Expected age at disability onset for 55 yr old

Ponteland South

74.8

71.5

68.0

63.8

Benton

Byker

From Newcastle. For ageing.

Courtesy Prof Peter Gore/Prof Carol Jagger/ONS
Impact of diseases on DFLE at age 65

Source: Jagger et al (2007)

From Newcastle. For ageing.