Dementia: Prevention, Promotion and Early Intervention - What are the Options?

Collaborative partnerships • Translating evidence • Research partnerships

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Alzheimer’s Australia 14th National Conference Brisbane Convention Centre, May 20th, 2011
DAPHNE: Dementia & Population Health Needs Evaluation

• Survey potential population health approaches which could be applied to dementia in the Australian context

• Clarify the important questions and options
  – Can we apply a PH model to dementia?
  – What options should we consider for inclusion in national policy?
  – What is the form of this policy?
DAPHNE methods

• Literature review
• Seek input from experts and community
  – DAPHNE Reference Group and specific interviews
  – Aust Health Promotion Association Conference, Cairns April
  – Alzheimers Australia Conference, Brisbane, May
  – Public Forum, Brisbane, June
  – National Dementia Research Forum, Sydney, September
• Paper and report (December 2011)
What is population health?

- Targets the population as a whole
- Influence social, economic and environmental factors
- Prevention and promotion

WHO:
Primary prevention is directed towards preventing the initial occurrence of a disorder.

Secondary - to arrest or retard existing disease and its effects through early detection and appropriate treatment

Tertiary - to reduce the occurrence of relapses and the establishment of chronic conditions through, for example, effective rehabilitation.
AD and Dementia as PH targets

• The main underlying causes are treated as “chronic diseases” e.g. Alzheimer’s Disease or cerebrovascular disease has a PH framework similar to diabetes etc.
• Dementia, the disabling consequence is a “mental disorder” and the same PH tools are used in a similar manner to depression
Hypothetical model of biomarkers in AD

Where is the point of primary and secondary prevention of AD?
Sperling, Alzheimer’s & Dementia, 2011
The mental health intervention spectrum for mental disorders

From Mrazek and Haggerty, 1994
Staying healthy

• Health promotion – enable people to increase control over their health and its determinants
  – Build healthy public policy
  – Create supportive environments for health
  – Strengthen community action for health
  – Develop personal skills, and
  – Re-orient health services
## Table 2  Aggregated costs in each WHO region (billions US$)

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of people with dementia</th>
<th>Informal care (all ADLs)</th>
<th>Direct costs</th>
<th>Total costs</th>
<th>Percent of GDP</th>
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</thead>
<tbody>
<tr>
<td>Australasia</td>
<td>311,327</td>
<td>4.30</td>
<td>0.70</td>
<td>5.07</td>
<td>10.08</td>
</tr>
<tr>
<td>Asia Pacific High Income</td>
<td>2,826,388</td>
<td>34.60</td>
<td>5.23</td>
<td>42.29</td>
<td>82.13</td>
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<tr>
<td>Oceania</td>
<td>16,553</td>
<td>0.07</td>
<td>0.02</td>
<td>0.01</td>
<td>0.10</td>
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<tr>
<td>Asia Central</td>
<td>330,125</td>
<td>0.43</td>
<td>0.28</td>
<td>0.24</td>
<td>0.94</td>
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<td>Asia East</td>
<td>5,494,387</td>
<td>15.24</td>
<td>4.33</td>
<td>2.84</td>
<td>22.41</td>
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<td>Asia South</td>
<td>4,475,324</td>
<td>2.31</td>
<td>1.16</td>
<td>0.57</td>
<td>4.04</td>
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<td>Asia Southeast</td>
<td>2,482,076</td>
<td>1.77</td>
<td>1.48</td>
<td>0.73</td>
<td>3.97</td>
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<tr>
<td>Europe Western</td>
<td>6,975,540</td>
<td>87.05</td>
<td>30.19</td>
<td>92.88</td>
<td>210.12</td>
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<td>Europe Central</td>
<td>1,100,759</td>
<td>8.59</td>
<td>2.67</td>
<td>2.94</td>
<td>14.19</td>
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<tr>
<td>Europe Eastern</td>
<td>1,869,242</td>
<td>7.96</td>
<td>3.42</td>
<td>2.94</td>
<td>14.33</td>
</tr>
<tr>
<td>North America High Income</td>
<td>4,383,057</td>
<td>78.76</td>
<td>36.83</td>
<td>97.45</td>
<td>213.04</td>
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<td>Caribbean</td>
<td>327,825</td>
<td>1.50</td>
<td>0.78</td>
<td>0.71</td>
<td>2.98</td>
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<td>Latin America Andean</td>
<td>254,925</td>
<td>0.35</td>
<td>0.31</td>
<td>0.28</td>
<td>0.93</td>
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<tr>
<td>Latin America Central</td>
<td>1,185,559</td>
<td>1.58</td>
<td>2.61</td>
<td>2.37</td>
<td>6.56</td>
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<td>Latin America Southern</td>
<td>614,523</td>
<td>2.36</td>
<td>1.42</td>
<td>1.29</td>
<td>5.07</td>
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<tr>
<td>Latin America Tropical</td>
<td>1,054,560</td>
<td>2.17</td>
<td>2.67</td>
<td>2.42</td>
<td>7.26</td>
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<tr>
<td>North Africa / Middle East</td>
<td>1,145,633</td>
<td>1.90</td>
<td>2.05</td>
<td>0.54</td>
<td>4.50</td>
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<td>Sub-Saharan Africa Central</td>
<td>67,775</td>
<td>0.04</td>
<td>0.02</td>
<td>0.01</td>
<td>0.07</td>
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<td>Sub-Saharan Africa East</td>
<td>360,602</td>
<td>0.28</td>
<td>0.08</td>
<td>0.04</td>
<td>0.40</td>
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<td>Sub-Saharan Africa Southern</td>
<td>100,733</td>
<td>0.52</td>
<td>0.11</td>
<td>0.06</td>
<td>0.69</td>
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<td>Sub-Saharan Africa West</td>
<td>181,803</td>
<td>0.11</td>
<td>0.04</td>
<td>0.02</td>
<td>0.18</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>35,558,717</strong></td>
<td><strong>251.89</strong></td>
<td><strong>96.41</strong></td>
<td><strong>255.69</strong></td>
<td><strong>603.99</strong></td>
</tr>
</tbody>
</table>
Dementia, population health and policy in Australia

- **Dementia care in Victoria: a public health Approach, DHS, 1997** (Calder, 1999)
- **National Action Plan for Promotion, Prevention and Early Intervention for Mental Health, 2000**
- **National Framework for Action on Dementia 2006-10**
  - Care and support
  - Access & equity
  - Information & education
  - Research
  - Workforce & training

Calder RV, J Fam Stud, 1999; 5: 248-257
Countries and selected provinces with a specific dementia strategy

- UK
- Australia
- France
- Norway
- Netherlands
- South Korea
- Japan

- Scotland, Wales
- Vic, SA, Qld policies
- Ontario/Quebec/British Columbia
- Texas, California
- Dozens in development especially in EU
- Public pressure for others

President Obama signs legislation laying the foundation for a US Alzheimer strategy
4th January 2011
PH in special contexts

• Younger onset
• Indigenous
• Culturally & Linguistically Diverse
• Intellectual Disability
• Rural & Remote etc.
Dementia risk among indigenous

Factors associated with dementia included
• older age, male gender OR 3.1
• no formal education OR 2.7
• current smoking OR 4.5
• previous stroke OR 17.9
• epilepsy OR 33.5
• head injury OR 4.0
• poor mobility, incontinence and falls.

See also [www.healthinfonet.ecu.edu.au](http://www.healthinfonet.ecu.edu.au)

Smith, Neurology, 2008; Smith, Aust NZ J Psychiatry, 2010
Primary Prevention
Heart and brain health for African-Americans

What's good for your heart is good for your brain.

A public awareness program of the American Heart Association and Alzheimer's Association

African-Americans are especially at risk for stroke and Alzheimer's. They have a higher risk of developing diabetes, high blood pressure and cardiovascular (heart) disease, all conditions that may damage blood vessels.

Conditions that threaten to damage the heart and its blood vessels also threaten to damage the brain and its blood vessels, increasing the chance of stroke and Alzheimer's.

Learn more

A Guide to Heart and Brain Health for African-Americans (5 pages)

African-Americans and Alzheimer's disease

Power to end stroke

New awareness program

The Alzheimer's Association and the American Heart Association, along with its American Stroke Association division, have partnered on a new public awareness program to help African-Americans manage their heart and brain health. The program - What's good for your heart is good for your brain - launched in February to mark Black History Month and American Heart Month.

Brain food

Your brain depends on healthy arteries. With each heartbeat, arteries carry about 20 to 25 percent of your blood to your brain, where billions of cells use the oxygen and fuel your blood carries.
Modifiable risk and protective factors ("best bets")

Vascular
• Smoking
• Diabetes
• Midlife Hypertension
• Hyperlipidaemia
• Midlife Obesity

Head Injury

Depression?

Higher education
Lifestyle
• Physical activity
• Cognitive engagement
• Social activity

Dietary
• Fruit and vegetable
• Fish
• Mediterranean diet
• Low saturated fat
• Light-mod alcohol

Travers, Aust Health Rev, 2009; Travers, Australasian J Ageing, 2010
AD may take years perhaps decades to produce dementia.
Preventing Alzheimer's Disease and Cognitive Decline

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U.S. Department of Health and Human Services
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Rockville, MD 20850
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AHRQ Publication No. 10-E005
April 2010
National Institutes of Health State-of-the Science Conference Statement: Preventing Alzheimer’s Disease and Cognitive Decline

• Currently, no evidence of even moderate scientific quality exists to support the association of any modifiable factor (such as nutritional supplements, herbal preparations, dietary factors, prescription or nonprescription drugs, social or economic factors, medical conditions, toxins, or environmental exposures) with reduced risk of Alzheimer’s disease

• Although numerous interventions have been suggested to delay Alzheimer’s disease, the evidence is inadequate to conclude that any are effective.

The promise of prevention…

If from 2005 the average onset of AD could be delayed by

- 5 months there would be a 5% reduction in new cases each year. This would result in 3.5% fewer cases by 2020 (4,583) and 4.8% fewer cases by 2040 (18,970).
- 5 years there would be a 50% reduction in new cases each year. This would result in 35.2% fewer cases by 2020 (46,568) and 48.5% fewer cases by 2040 (96,690).

The potential is there –
when will the evidence be adequate?

Access Economics, 2004; Labarthe, 2007
Secondary Prevention
When does Alzheimer’s disease become symptomatic?

• Diagnosis of preclinical dementia difficult and controversial
• Is Mild Cognitive Impairment really preclinical AD\(^1\)?
• At what point are potential biomarkers diagnostic
• Active lifestyle - protective factor or lack of symptoms?

\(^1\)Ritchie, Neurology, 2001; Larrieu, Neurology, 2002; \(^2\)Lautenschlager, JAMA, 2008
Tertiary Prevention
Dementia – tertiary prevention measures

1. Screening for dementia to ensure early intervention
2. Disability and handicap, quality of life
   - Mobilisation of communities to support people and families Living With Dementia (LWD)
   - Support for families and PLWD to prolong community tenure/improve quality of life
   - Measures to promote social inclusion and reduce stigma
   - To improve quality of long-term care
Screening and detection?

• Screen and refer to specialists?
• Boost your chances in primary care?
• Dedicated centres?
• Do you have a right not to know?

³Terpening, MJA, 2011
Evidence to support tertiary prevention in dementia?

• Outcomes of interest not just burden

• Best evidence for:
  – Individualised, intensive carer support and education
  – Early intervention after diagnosis

• Some evidence for:
  – Small functional gains for dementia drugs (CEIs)
  – Multicomponent interventions carer and PWD
  – Memory services
  – Organisation of care, case management

1Olarazán, Dement Geriatr Cogn Disord, 2010;
Nourhashemi, BMJ, 2010; 5Pimouget, Health Aging, 2010
High school students in Seoul assisting a woman with dementia - part of the "War on Dementia". NY Times

Takeda, Psychogeriatrics, 2010; Lee, Int J Geriatric Psychiatry, 2010

http://www.ninchisho100.net/english/index.html
What’s in the national framework now

- Availability of care
- Standards of care
- Awareness and understanding
- Carer support
- Research into PPEI
- Dementia and hospitals
What’s small print or lacking in NFAD – up for debate?

• Memory services
• Dementia coordinators
• Stigma/social inclusion
• Post-diagnostic psychological interventions
• Housing/transport standards
• Peer networks

• Integration of policy
• Better regulation of psychotropics
• Better access to CEIs
• Information development
• Funding and insurance
• Risk and protective factor awareness
• “War on dementia?”
Housekeeping

- If you email us we’ll fwd the slides
  
  c.travers1@uq.edu.au