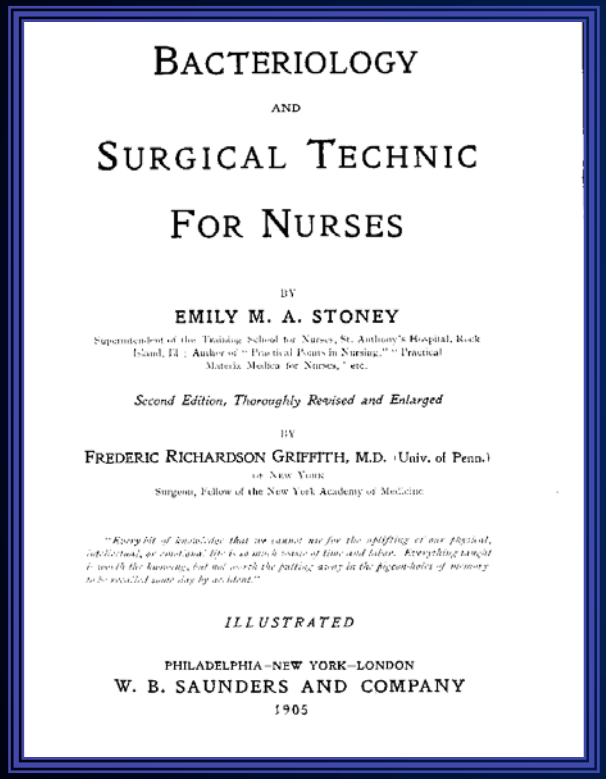
THE UNIVERSITY OF AUCKLAND
Te Whare Wānanga o Tāmaki Makaurau
NEW ZEALAND

Moving forward by looking back

NZNO Gerontology Conference 2016

Dr Michal Boyd, RN, NP, ND, FCNA(NZ), FAANP
The University of Auckland
School of Nursing

Nursing Practice 1905



BACTERIOLOGY

AND

SURGICAL TECHNIC

FOR NURSES

BY

EMILY M. A. STONEY

Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill.; Author of "Practical Points in Nursing," "Practical Materia Medica for Nurses," etc.

Second Edition, Thoroughly Revised and Enlarged

BY

FREDERIC RICHARDSON GRIFFITH, M.D. (Univ. of Penn.)

OF NEW YORK

Surgeon, Fellow of the New York Academy of Medicine

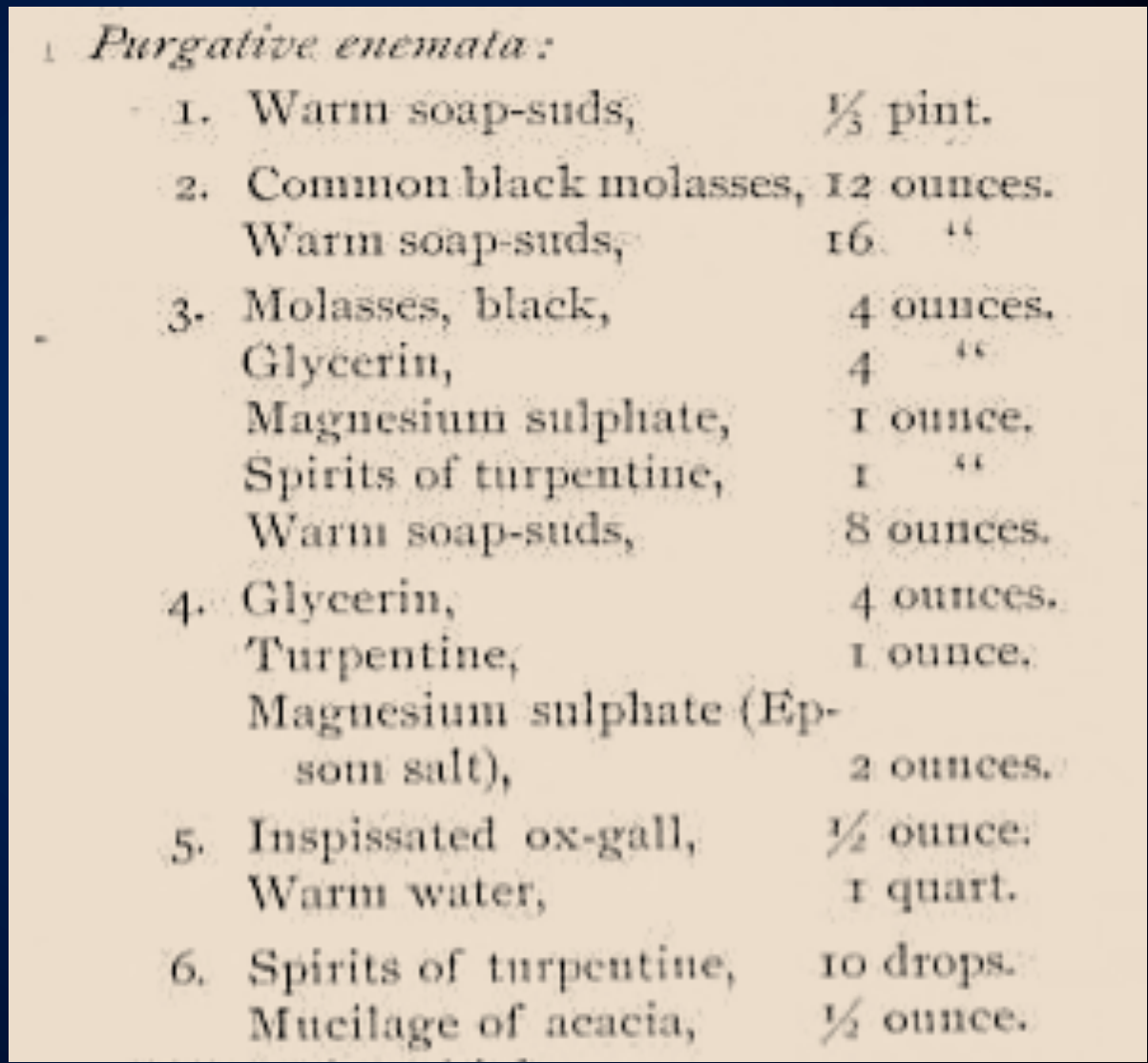
"Every bit of knowledge that we cannot use for the uplifting of our physical, intellectual, or emotional life is so much waste of time and labor. Everything taught is worth the knowing, but not worth the putting away in the pigeon-holes of memory to be recalled some day by accident."

ILLUSTRATED

PHILADELPHIA—NEW YORK—LONDON

W. B. SAUNDERS AND COMPANY

1905

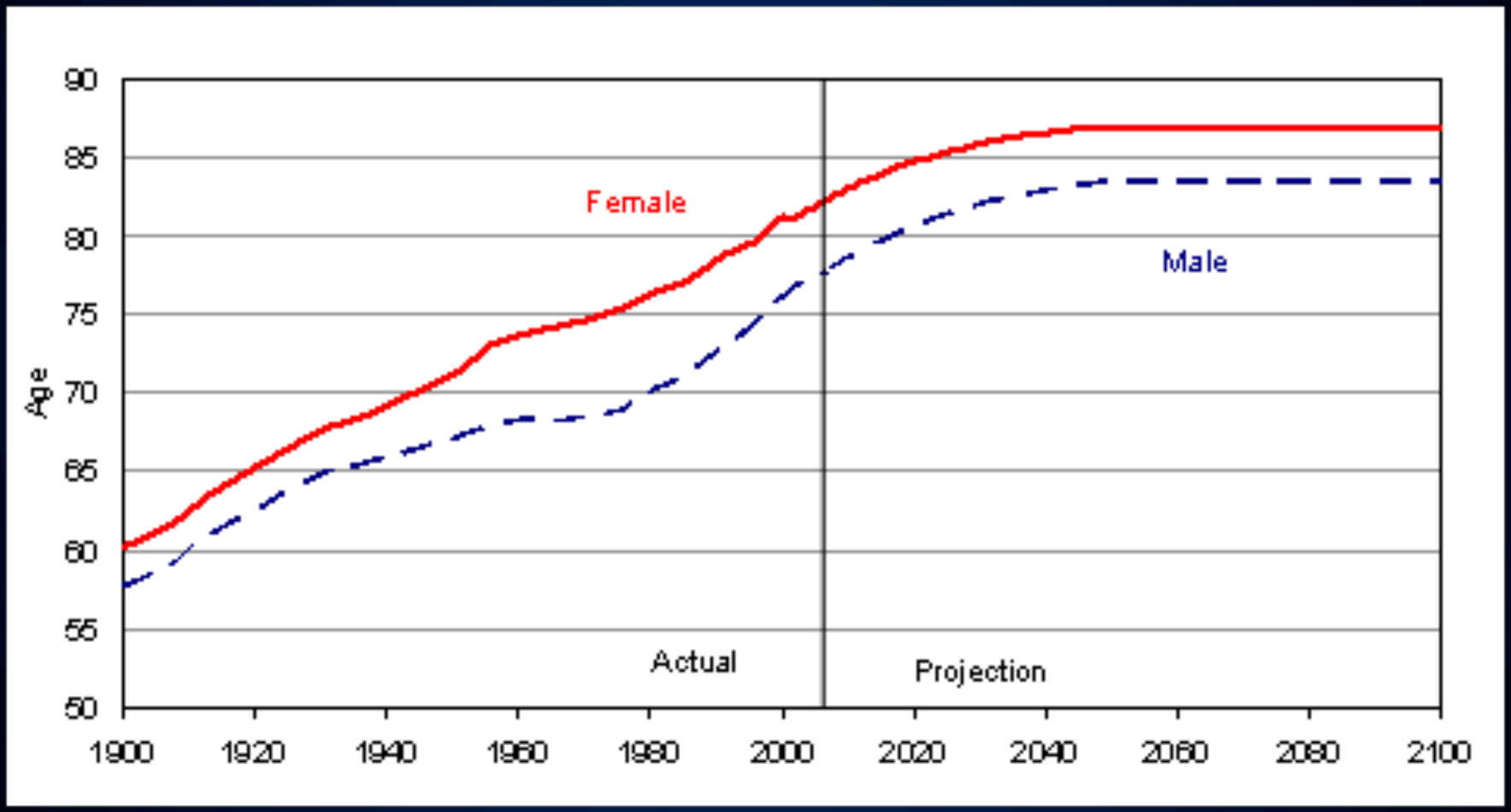


Purgative enemata:

1.	Warm soap-suds,	⅓ pint.
2.	Common black molasses,	12 ounces.
	Warm soap-suds,	16 "
3.	Molasses, black,	4 ounces.
	Glycerin,	4 "
	Magnesium sulphate,	1 ounce.
	Spirits of turpentine,	1 "
	Warm soap-suds,	8 ounces.
4.	Glycerin,	4 ounces.
	Turpentine,	1 ounce.
	Magnesium sulphate (Epsom salt),	2 ounces.
5.	Inspissated ox-gall,	½ ounce.
	Warm water,	1 quart.
6.	Spirits of turpentine,	10 drops.
	Mucilage of acacia,	½ ounce.

What are the trends in older adult care?

NZ Life Expectancy Changes



http://www.treasury.govt.nz/publications/research-policy/ppp/2006/06-01/07.htm

New Zealand Herald – 1 October 2013

- 5% of workforce is over 65 years old now
- By 2031 - 12% of workforce will be over 65 years old

In 2009 Hamilton real estate agent Bobbie Jarvis continued to work full-time at age 80 through choice

Old age is Always 15 years older than you are now!

Increasing life expectancy is one of the greatest achievements of the last century.

Being Mortal

- *"Our reverence for independence takes no account of the reality of what happens in life: sooner or later, independence will become impossible. Serious illness or infirmity will strike. It is as inevitable as sunset."*
  - *Atul Gawande*

Clinical Frailty Score

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house.** Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

Clinical Frailty Score (cont)

7 Severely Frail – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

---

8 Very Severely Frail – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

---

9. Terminally Ill - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

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DALHOUSIE UNIVERSITY

Frailty Risk Factors

Sociodemographic and Psychological

A. Female gender

B. Low socioeconomic status

C. Race/ethnicity

D. Depression

Disability

A. Activity of daily living disability

Frailty is defined as 3 or 5 Components (Fried 2001):

- unintentional weight Loss
- slow walking speed
- self-reported exhaustion
- low energy expenditure
- weakness

Espinoza and Fried, 2007, Clinical Geriatrics,15(6).

Frailty Risk Factors

Physiologic

A. Activated inflammation

B. Immune system dysfunction

C. Anaemia

D. Endocrine system alteration

E. Underweight or overweight

F. Age

Medical Illness &/or Comorbidity

A. Cardiovascular disease

B. Diabetes

C. Stroke

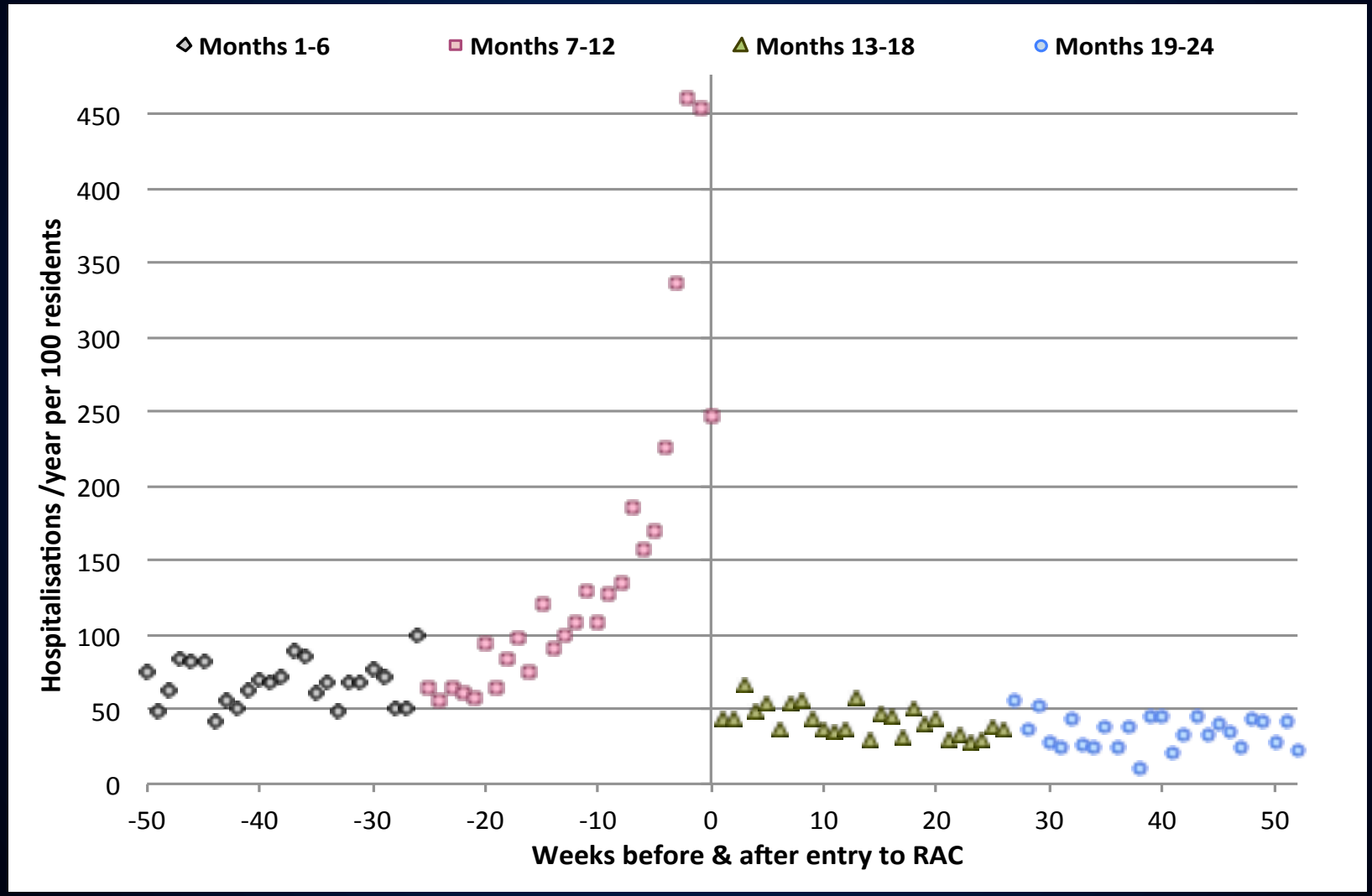
D. Arthritis

E. Chronic obstructive pulmonary disease

F. Cognitive impairment/ cerebral changes

Espinoza and Fried, 2007, Clinical Geriatrics,15(6).

Hospitalisation Before and After ARC Admission

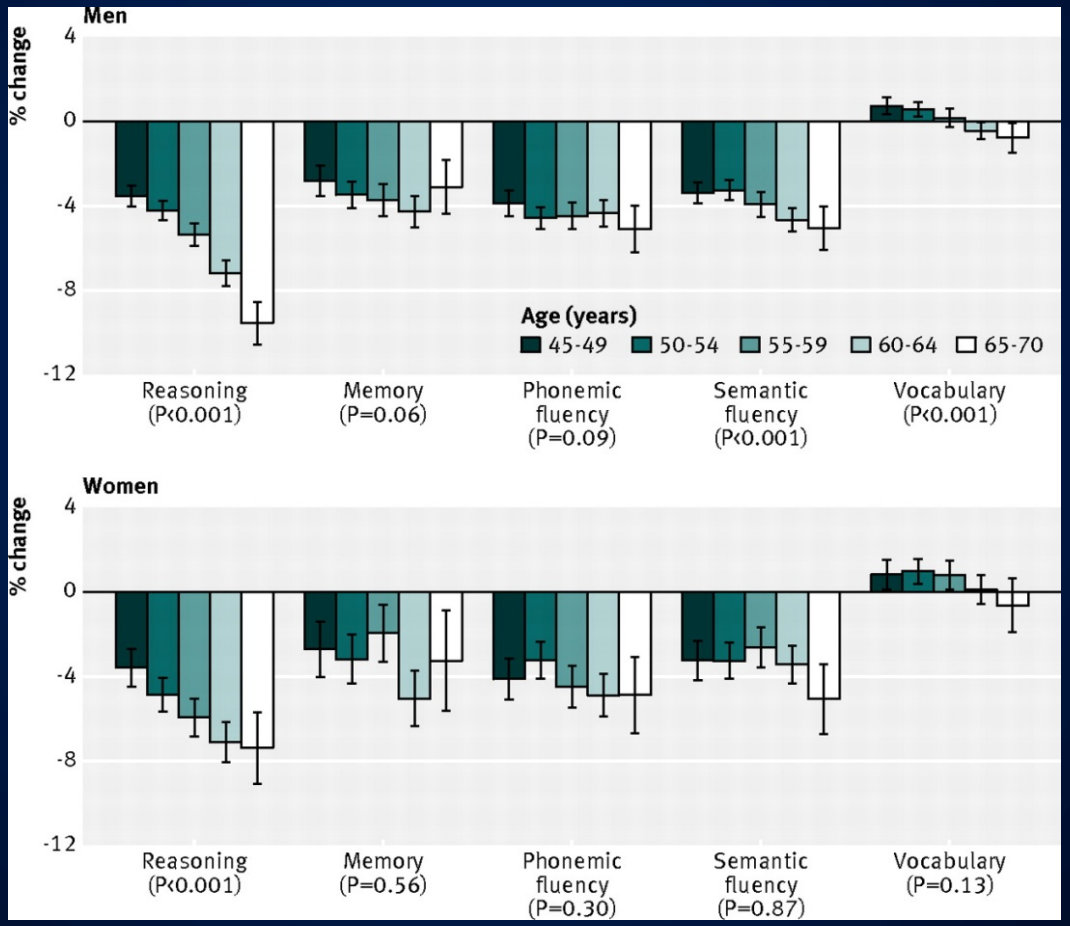


CARE Project includes

- A comprehensive assessment
- Care planning session (GP, nurse and patient)
- DHB Gerontology Nurse Specialist support
- Treatment resources – to enhance comprehensive care and self management
- Clear referral options and criteria

The Ageing Brain

From age 45-49 the ability to reason declined 3.6% in 10 years



Singh-Manoux A et al. BMJ 2012;344:bmj.d7622

IOM Report 2015
Promoting Brain Health

Good Evidence For:

Be physically active

Reduce and manage cardiovascular disease risk

high blood pressure, diabetes, and smoking.

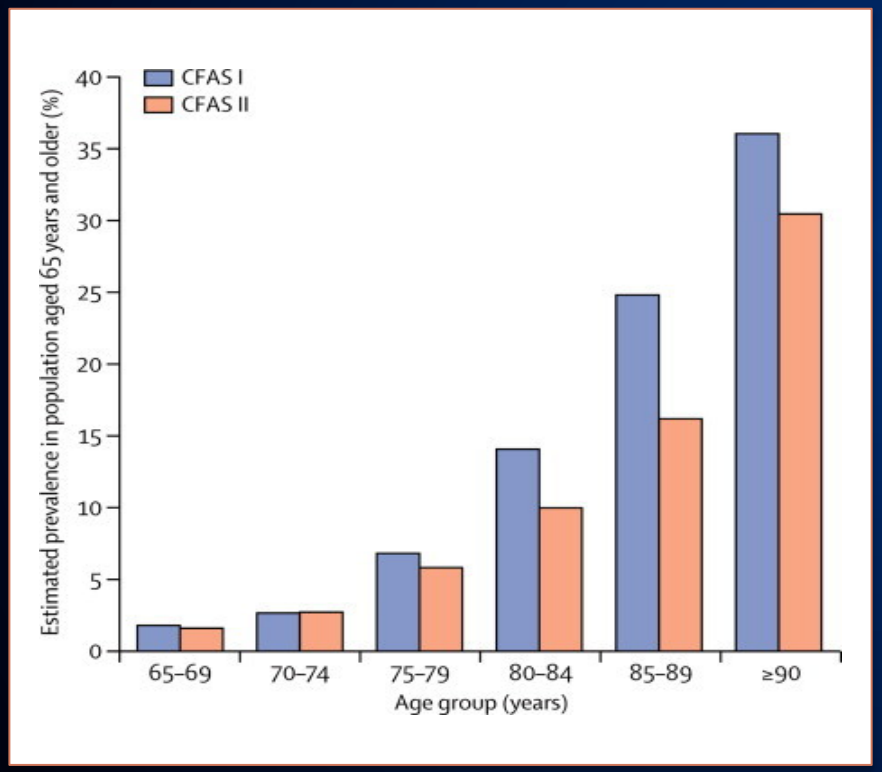
- Management of conditions and medications that might have a negative effect on cognitive function

Some Evidence or Mixed:

- Being socially and intellectually active
- Getting adequate sleep
- Avoid delirium
- medications, nutritional supplements, and cognitive training are mixed

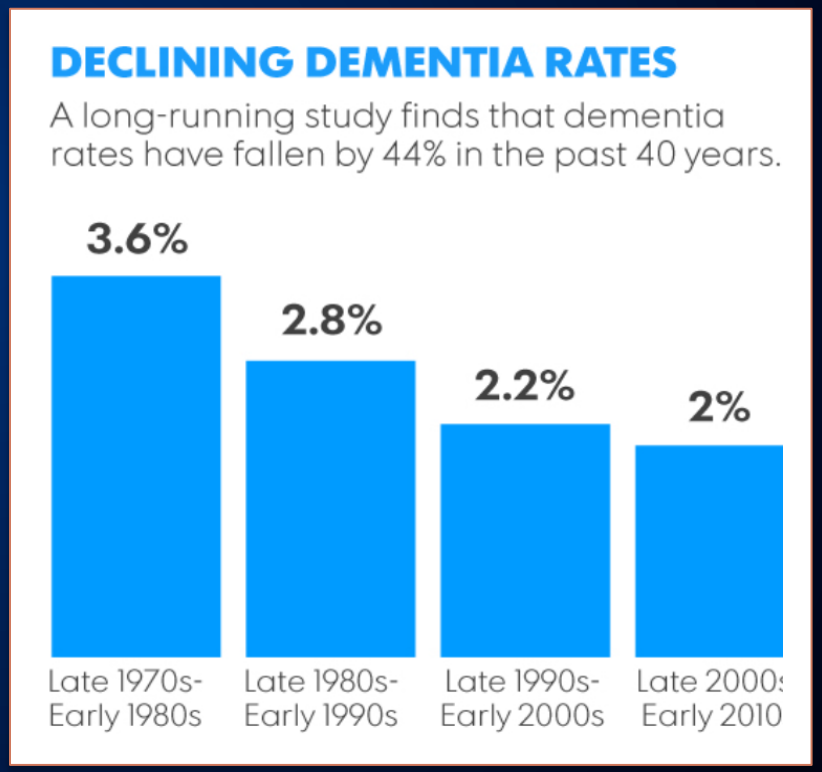
Falling rates of dementia in UK and USA

UK (1989-2004)



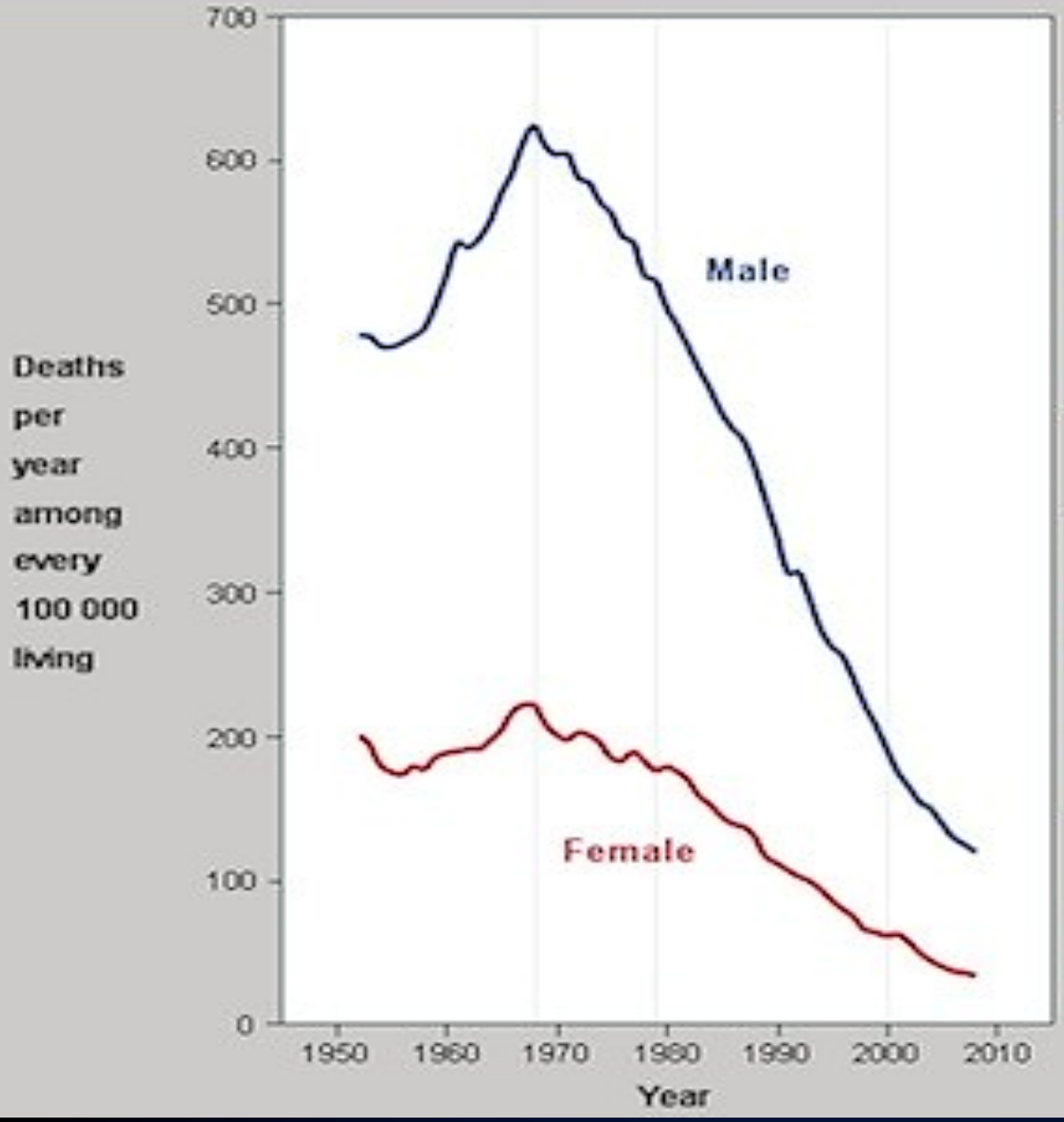
Matthews et al. Lancet 2013; 382(9902): 1405–1412

USA



Satizabal et al., *NEJM*, February 2016

Mortality trends for coronary heart disease: age 35-69 years, New Zealand (Aotearoa)



Male deaths from this cause at age 35-69 years in 2008:

- 843 (20% of deaths at this age)
- 120 out of every 100 000 males at this age, a rate which was:
  - → 37% less than in 2000 (rate: 190)
  - → 79% less than in 1975 (rate: 562)
  - → 75% less than in 1955 (rate: 470)

Female deaths from this cause at ages 35-69 years in 2008:

- 242 (8% of deaths at this age)
- 34 out of every 100 000 females at this age, a rate which was:
  - → 44% less than in 2000 (rate: 61)
  - → 81% less than in 1975 (rate: 184)
  - → 80% less than in 1955 (rate: 175)

Created: 25 Jul 2012, 2:48 pm
Males & females, ages 35-69 years
Coronary heart disease
New Zealand

www.mortality-trends.org

Cognitive Impairment Pathway

GP teams self rating of dementia knowledge

- *61 people enrolled in CIP*
- *(60 carers)*
- *5% dropped out early*
- *20% 'other diagnosis'*
- *34% dementia diagnosis*
- *41% mild cognitive impairment diagnosis*

Diagnosis	Number of Participants
No cognitive impairment	4
Depression	2
Alcohol issues/depression	1
Parkinson's disease	1
Seizure disorder/ inconclusive diagnosis	1
Stroke - admitted to *ARC (died)	1
Brain metastasis (died)	1
Moved out of area/subsequent ARC admit	1

*ARC = Aged Residential Care

owledge Knowledge Knowledge

Retirement Villages in New Zealand

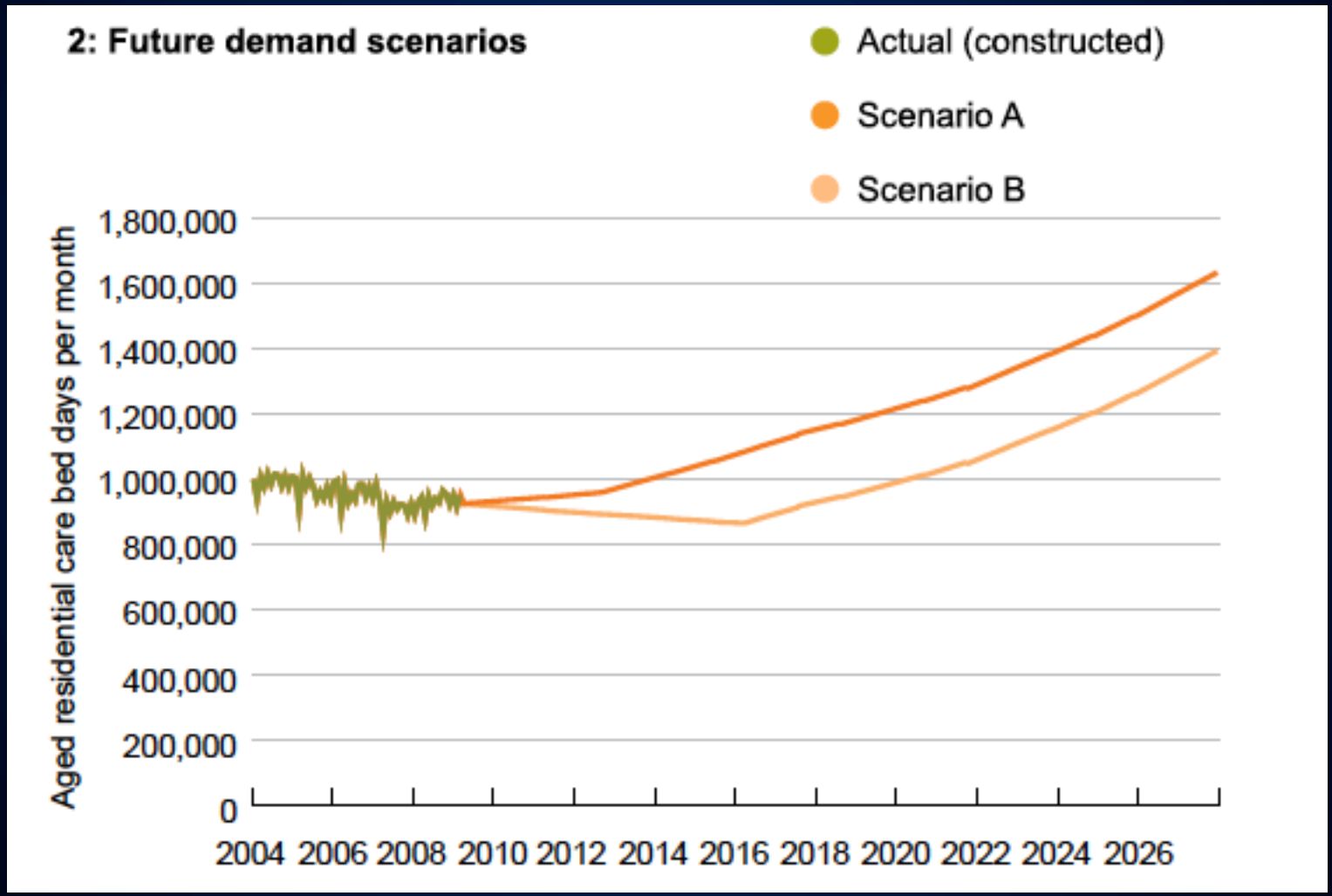
- ~30,000 people across New Zealand
- ~5% proportion of those over 65 years reside in villages

Retirement Village Dwellings:

- 1998 – 10,000
- 2010 – 17,250
- Annual increase of 800-1200 dwellings

Currently more people reside in retirement villages than residential aged care.

Grant Thornton Report 2010



Residential Aged Care: Two Emerging Trends

Decreased Rest Home Beds

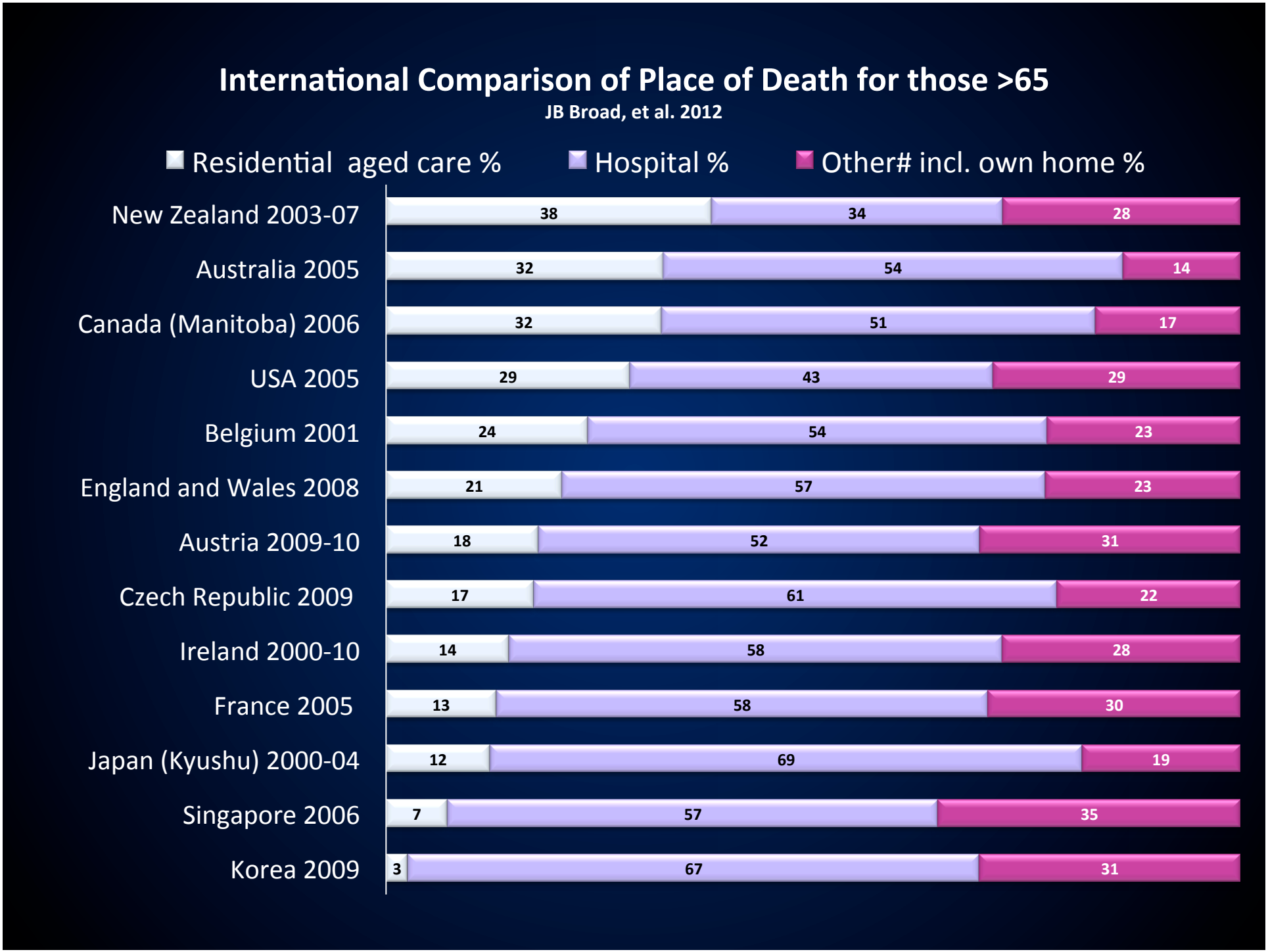
22% decrease in the rest home population 1998-2008 possibly due to:

- Increased Home Care
- Increased Villages

- Dementia Care is dominant in rest homes
- Increasing complexity of residents
- More 'swing' beds

More Private Hospital Beds

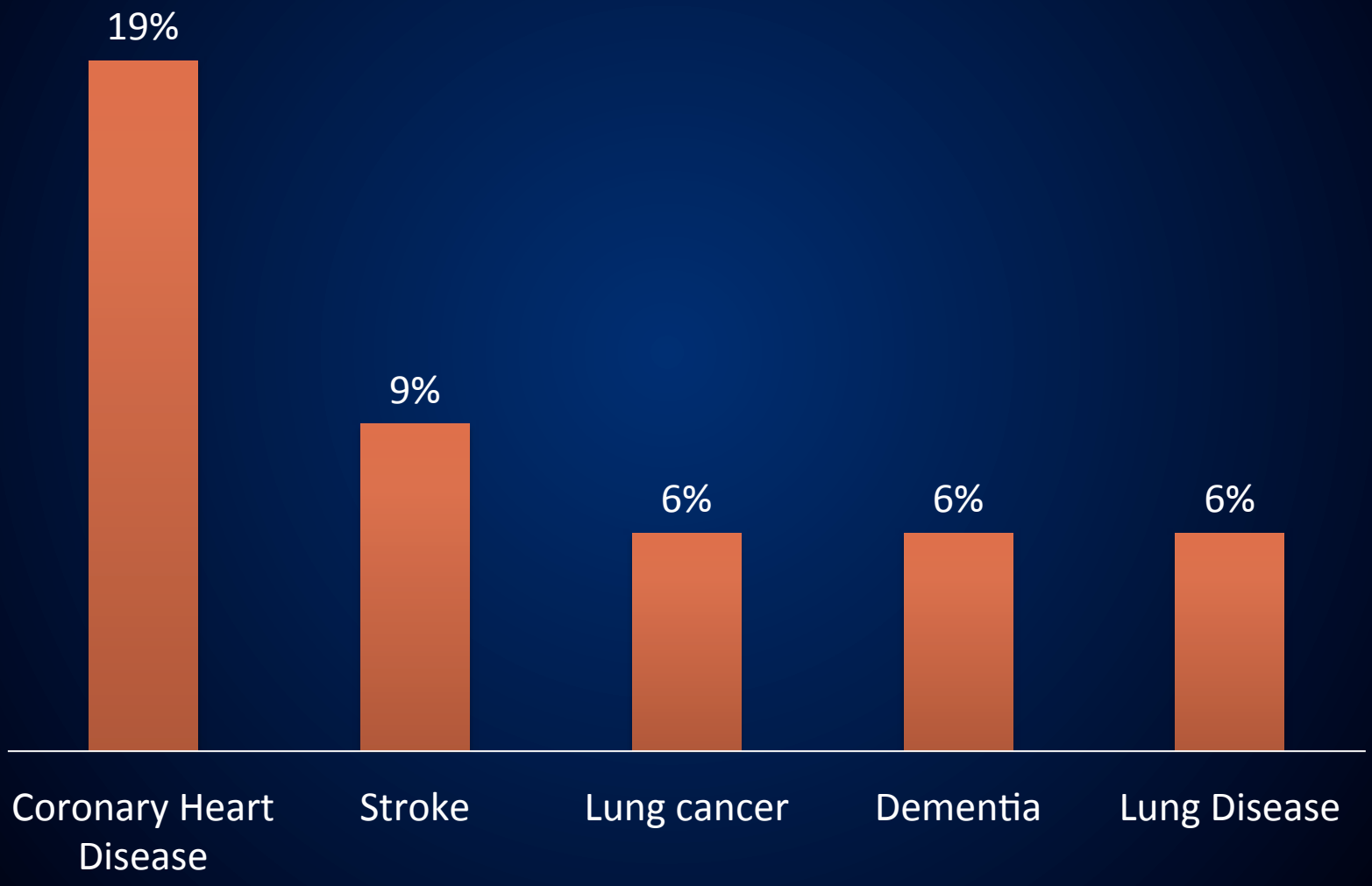
- Shorter Length of Stay
- More End of Life Care
- More Complex Care
- Increasing Transitional Care Schemes
- More younger people?


International Comparison of Place of Death for those >65
JB Broad, et al. 2012
Residential aged care %
Hospital %
Other# incl. own home %
New Zealand 2003-07
38
34
28
Australia 2005
32
54
14
Canada (Manitoba) 2006
32
51
17
USA 2005
29
43
29
Belgium 2001
24
54
23
England and Wales 2008
21
57
23
Austria 2009-10
18
52
31
Czech Republic 2009
17
61
22
Ireland 2000-10
14
58
28
France 2005
13
58
30
Japan (Kyushu) 2000-04
12
69
19
Singapore 2006
7
57
35
Korea 2009
3
67
31

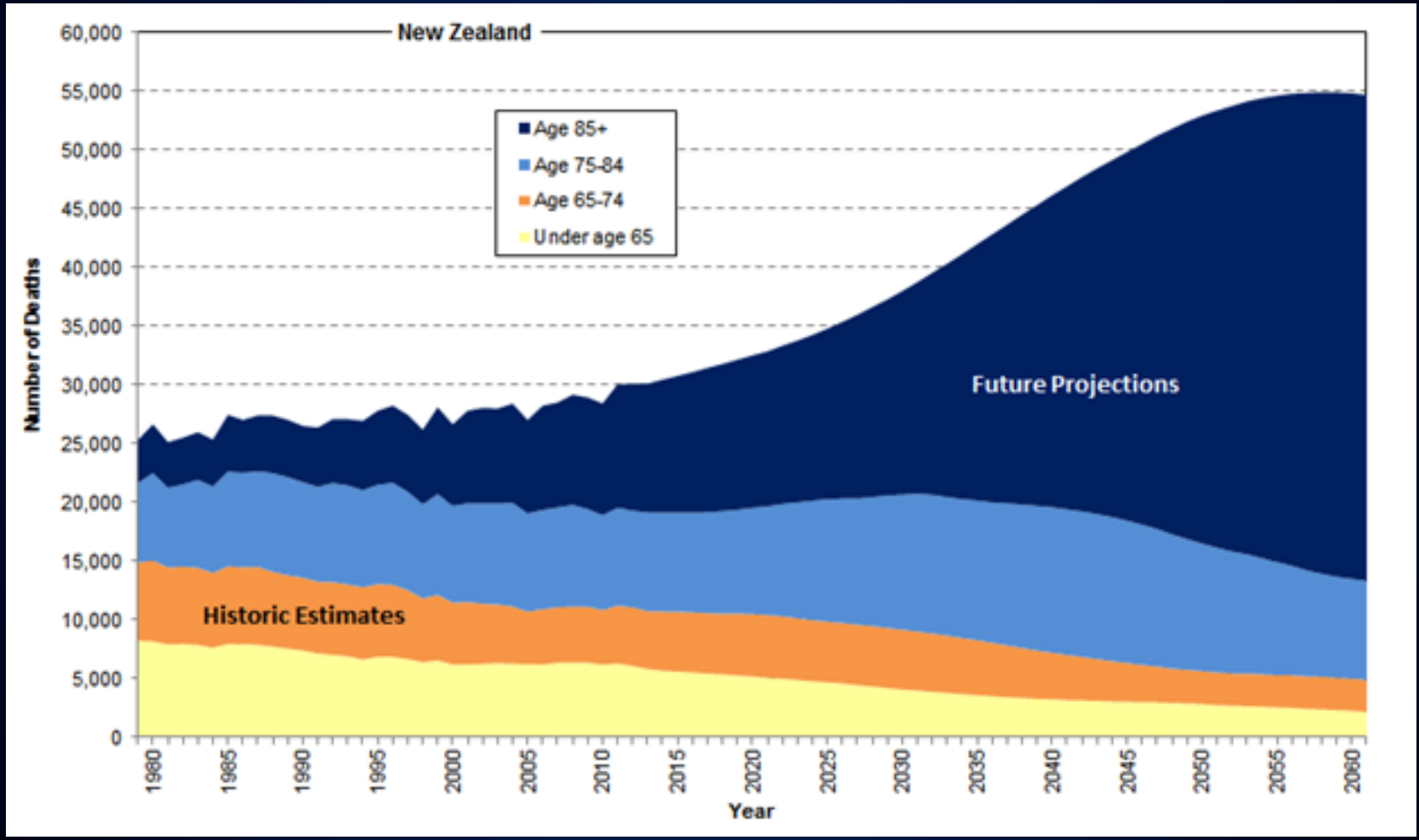
Dementia Mortality

Connors, M. H., Ames, D., Boundy, K., Clarnette, R., Kurrle, S., Mander, A., . . . Brodaty, H. (2016). Predictors of Mortality in Dementia: The PRIME Study. *J Alzheimer's Dis*.

Leading Causes of Death in New Zealand

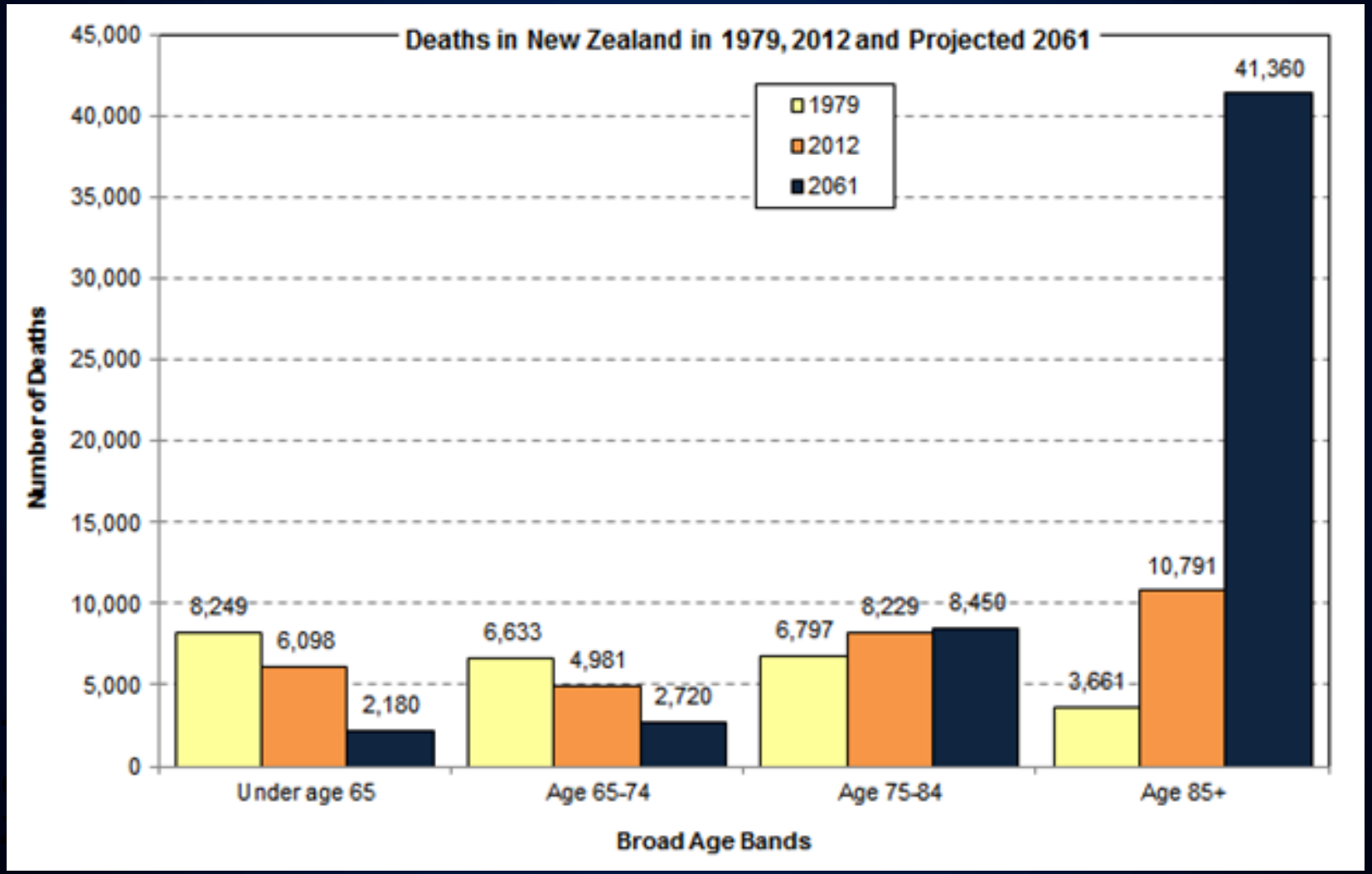


Historic Deaths and Future Projections by Age Band



Heather McLeod, Palliative Care Council, July 2013. Drawn using data from Statistics New Zealand; personal communication Joanna Broad.

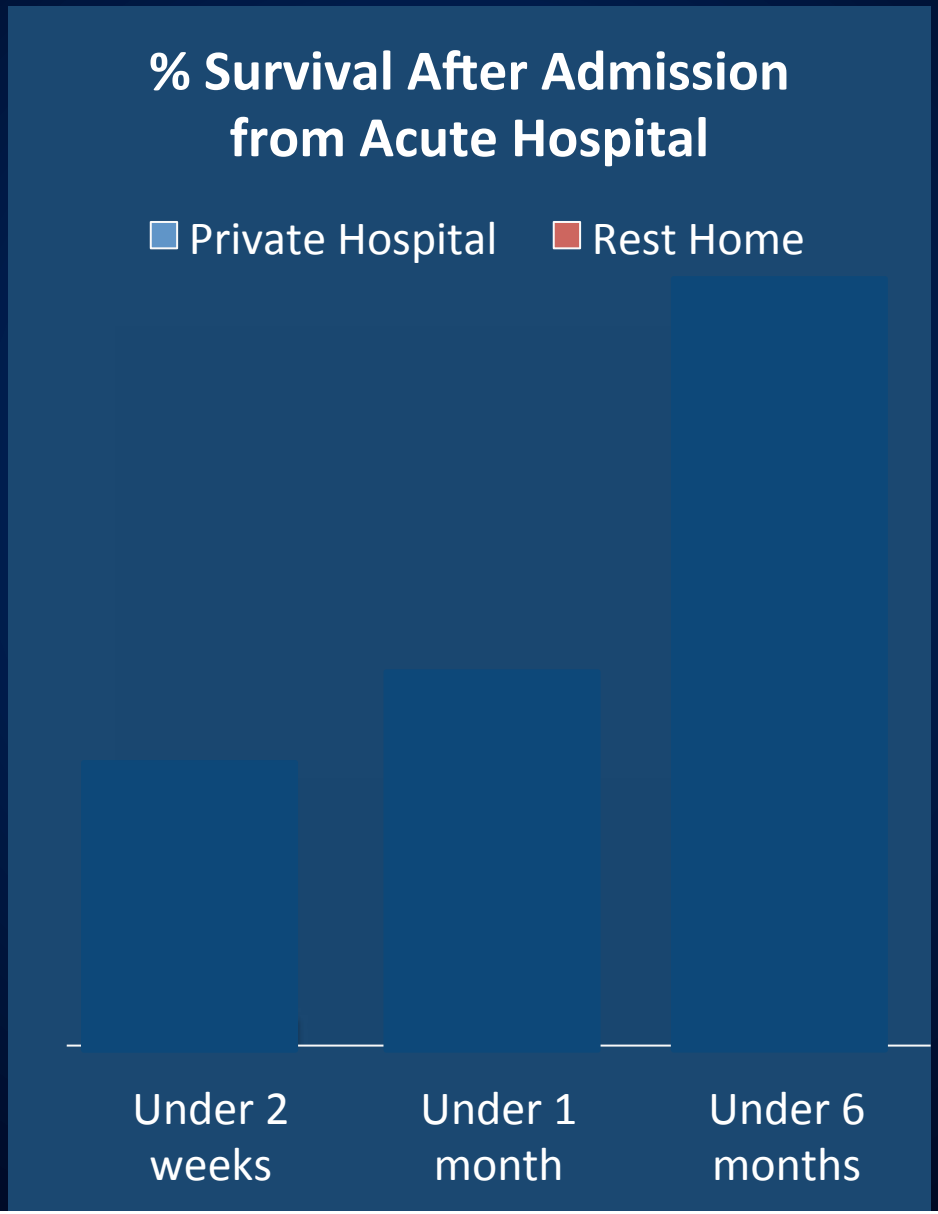
Deaths in New Zealand by Age Band Comparing 1979, 2012 and 2061



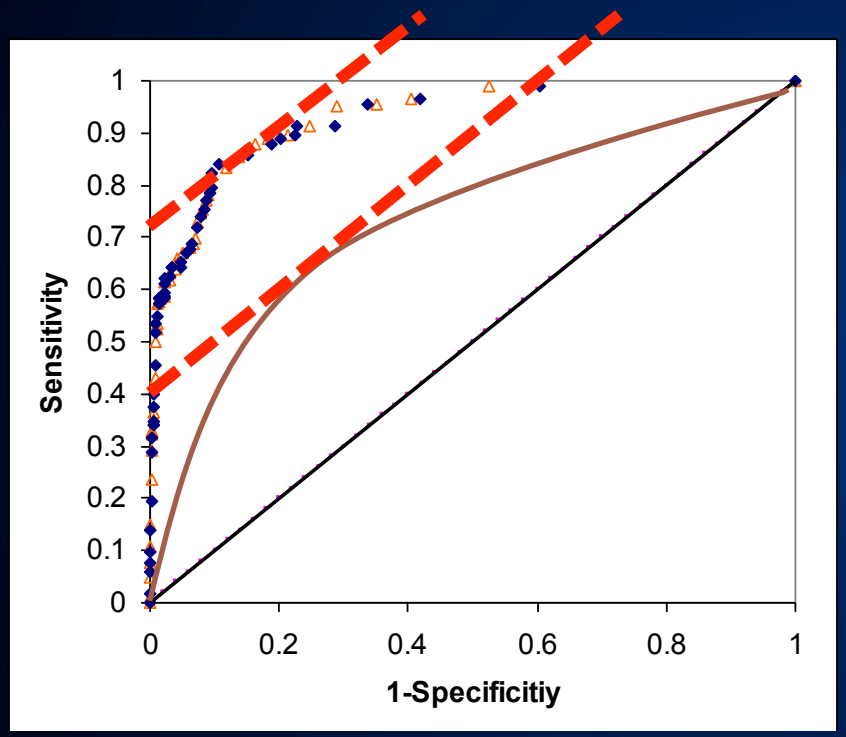
Source: Palliative Care Council, Working Paper No. 1, July 2013. Drawn using data from Statistics New Zealand; personal communication Joanna Broad.

% Survival After Residential Aged Care Admission

Connolly, Broad, Boyd, Gott, Australasian J Ageing, 2013.



ROC (C Statistic) Primer



- Sensitivity:

$$\frac{\text{True Positives}}{(\text{True Positives}) + (\text{False Negatives})}$$

- Specificity:

$$\frac{\text{False Positives}}{(\text{False Positives}) + (\text{True Negatives})}$$

Predicting Death In Residential Aged Care

Study	Year	Setting	Tool	Predictors	Area Under the Curve
Porock et al [1] MMRI	2005 6 months	Nursing homes US	MDS	ADL function SOB, loss appetite, gender, weight loss, CHF, CRF, cognition (CPS), dehydrated, cancer, age, recent admission, deteriorating condition, Interaction terms	**0.75**
Porock [2] MMRI-R	2010 6 months	Nursing homes US	MDS	Gender, hospitalisation, SOB, appetite, weight loss, CHF, CRF, dehydrated, cancer, age, ADL function, cognitive deterioration, interaction terms	**0.76**
Flacker Kiely [3]	1998 1 year	Long-term care homes US	MDS	Functional impairment, weight loss, SOB, male, BMI <22, swallowing problems, CCF, age	**0.77**
Flacker Kiely [4]	2003 1 year	Nursing homes US Newly admitted and long-stay groups	MDS	32.1% 1y mortality Newly admitted cohort Cancer, SOB, CCF, bedfast, unstable conditions, male, >25% food left, poor function, swallowing prob, BMI<23, bowel incontinence Long stay cohort SOB, feeding tube, unstable conditions, male, >25% food uneaten CCF, poor function, weight loss, BMI<23, DM, age	**0.73 (new)** **0.71 (long-stay)**
Mitchell et al[5] ADEPT	2010 6 month	Nursing homes US Advanced dementia	MDS	Recent admission, age, male, SOB, pressure ulcers, bedfast, poor ADL function, insufficient intake, bowel incontinence, BMI<18.5, weight loss, CCF	**0.67**

InterRAI CHESS

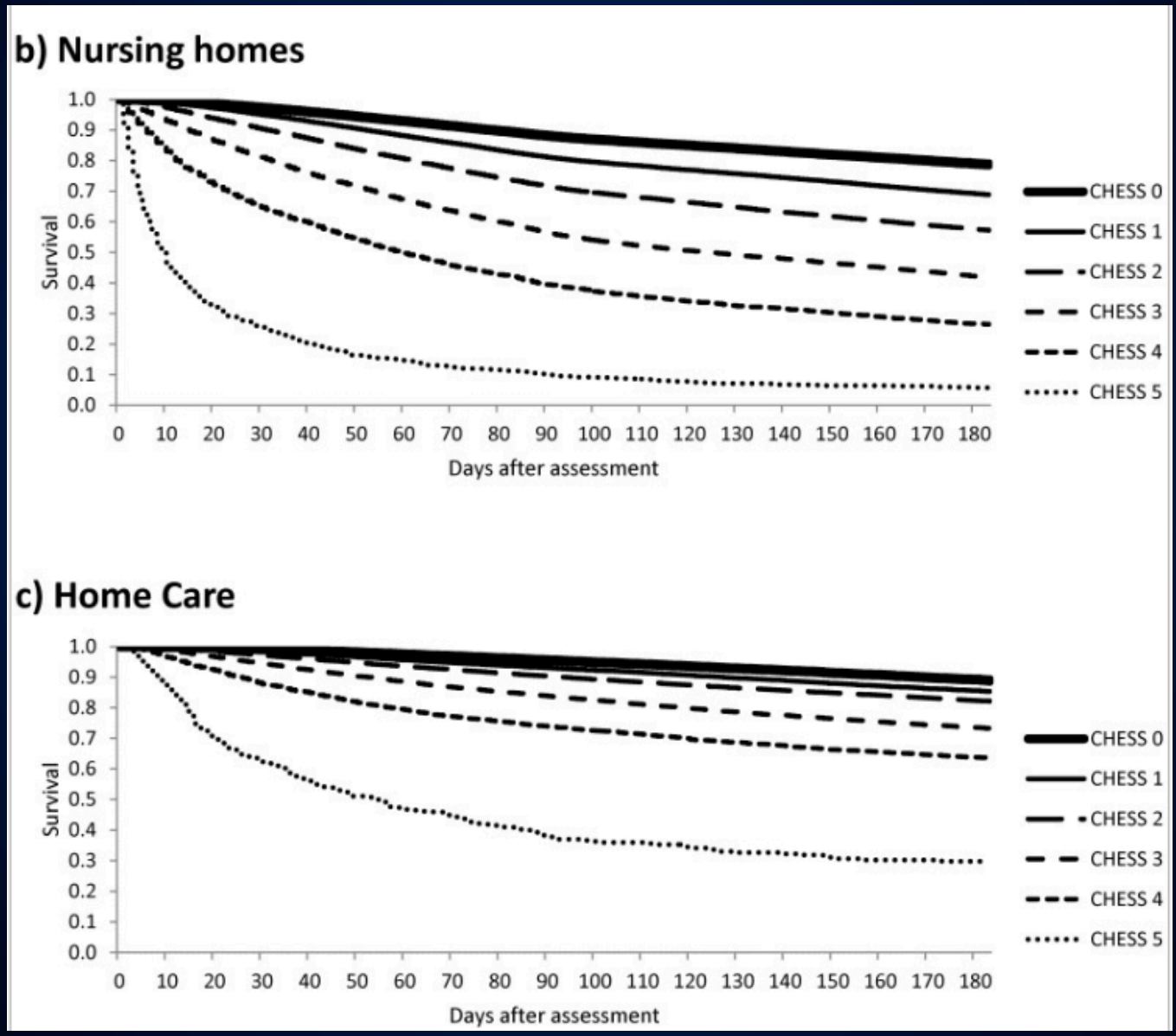
Medical complexity and health instability scores range from 0 to 5.

Items:

- Vomiting
- Dehydration
- leaving food uneaten
- weight loss
- shortness of breath
- oedema
- end-stage disease
- decline in cognition and ADL

Hirdes JP, Frijters D, Teare G. (2003) The MDS CHESS Scale: A New Measure to Predict Mortality in the Institutionalized Elderly. Journal of the American Geriatrics Society 51(1): 96-100.

CHESS and Mortality



New Zealand InterRAI CHESS Scores

0 - No symptoms	1 - Minimal health instability	2 - Low health instability	3 - Moderate health instability	4 - High health instability	5 - Highest level of instability

Figure 23: Home Care assessments – CHESS scores

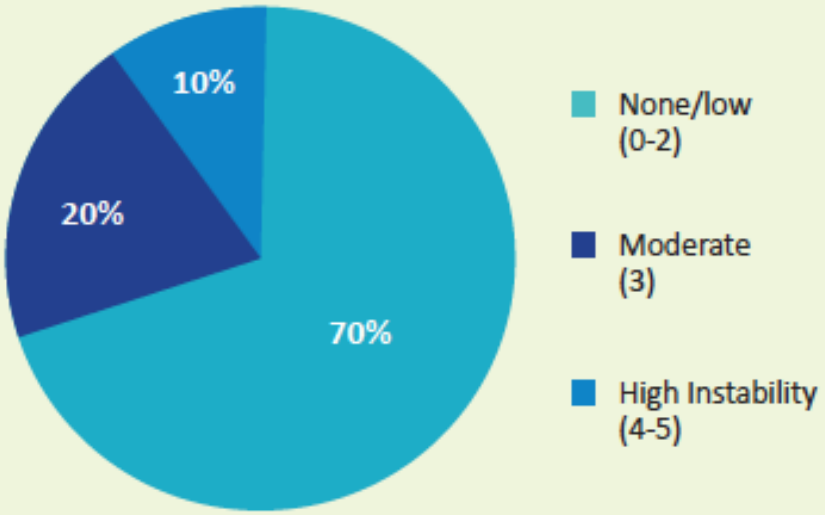
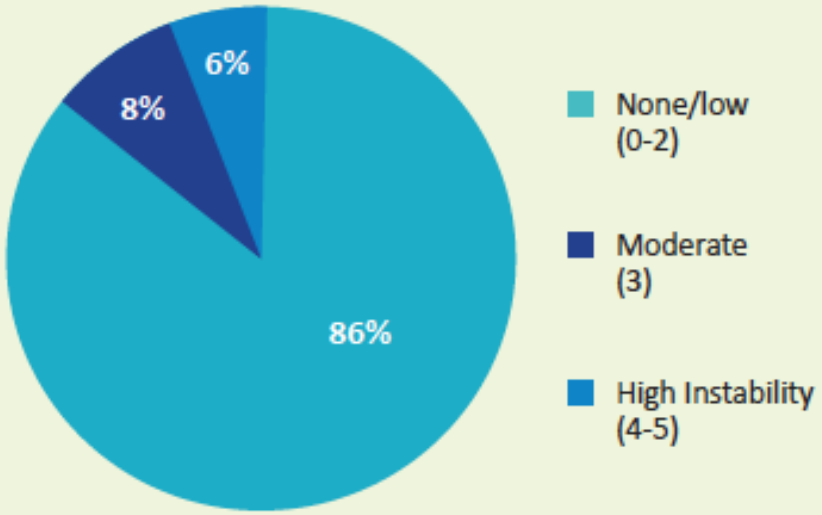
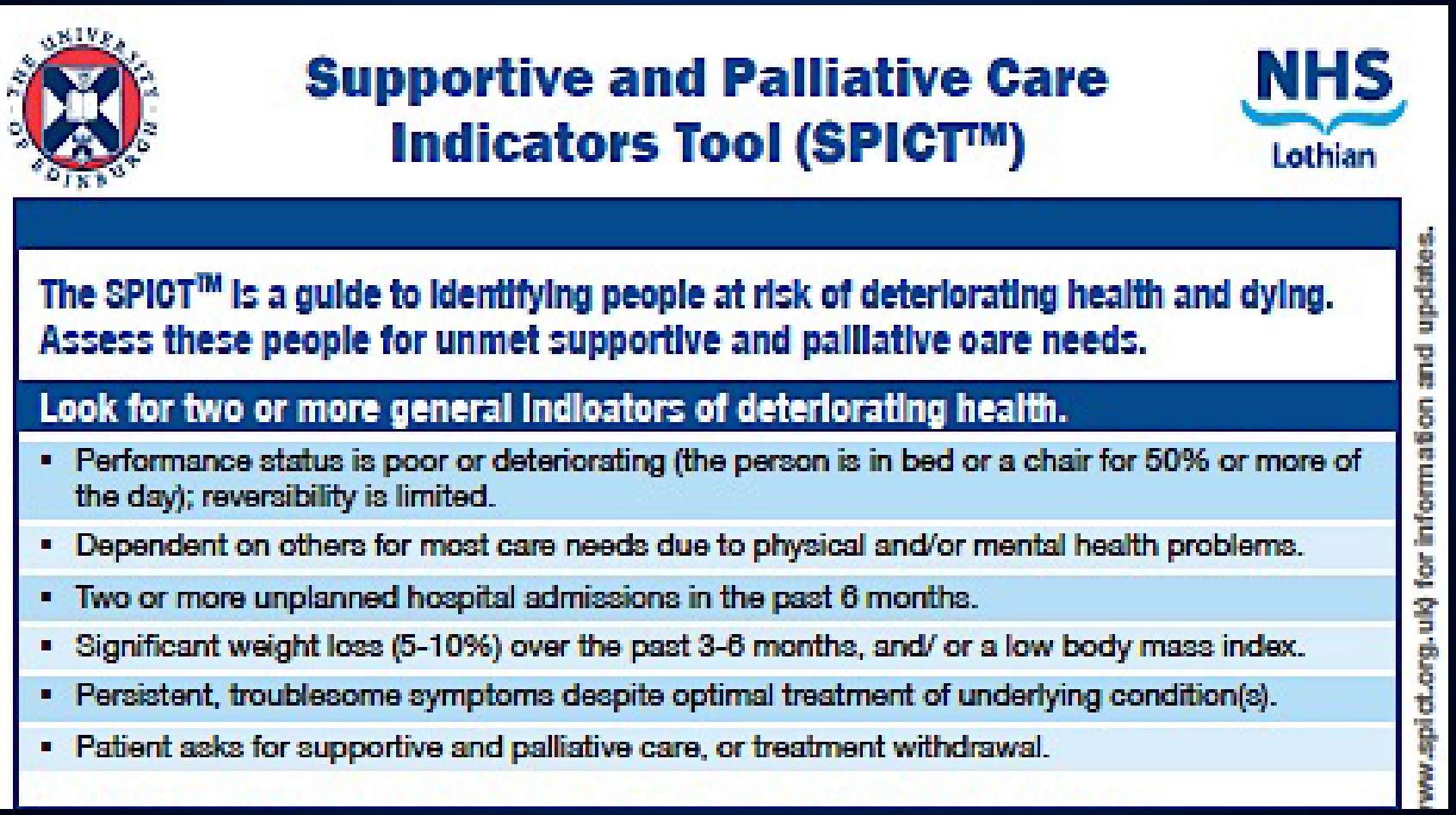


Figure 24: LTCF assessments – CHESS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

SPICT TOOL



Supportive and Palliative Care Indicators Tool (SPICT™)

NHS Lothian

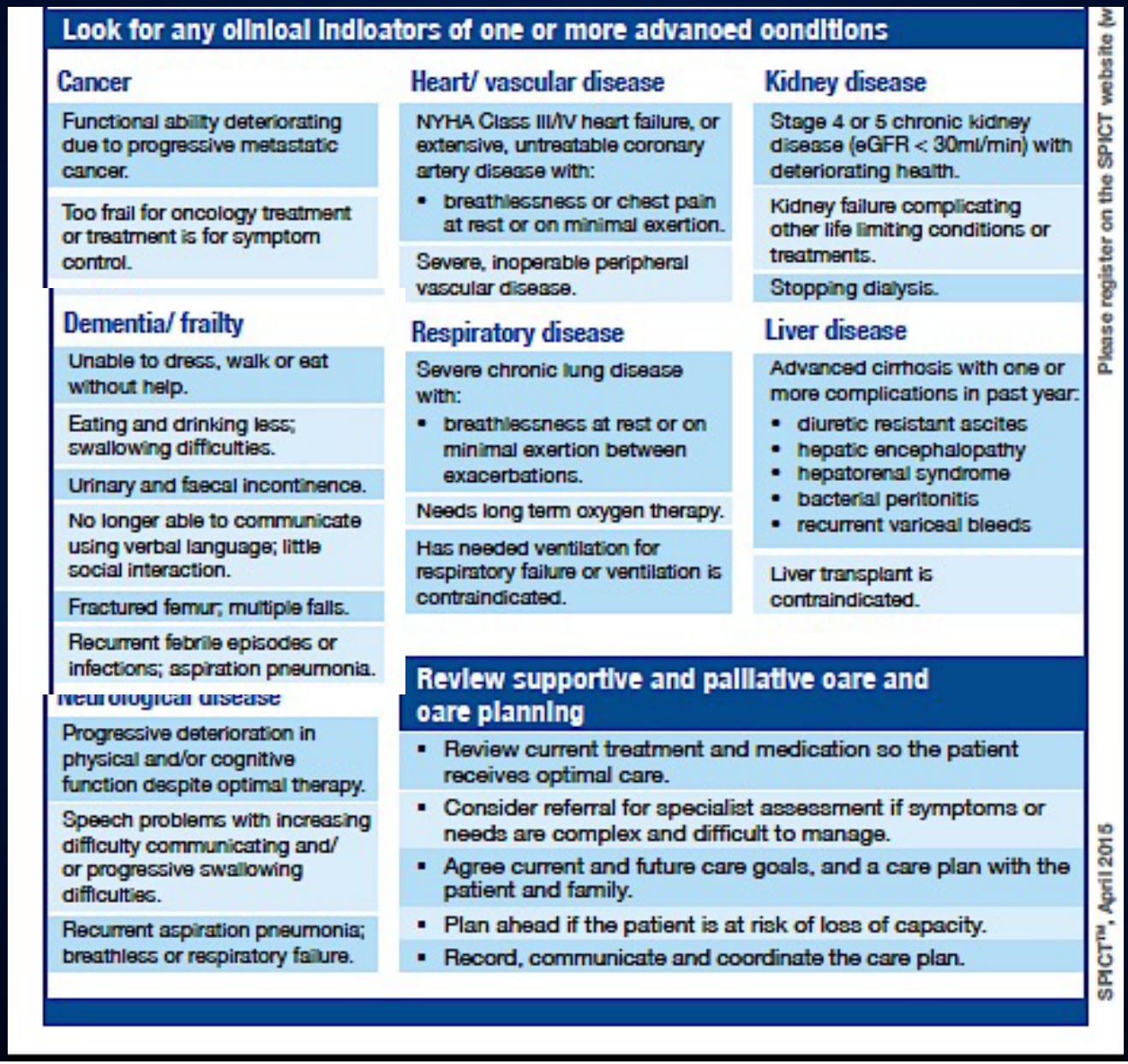
The SPICT™ is a guide to identifying people at risk of deteriorating health and dying. Assess these people for unmet supportive and palliative care needs.

Look for two or more general indicators of deteriorating health.

- Performance status is poor or deteriorating (the person is in bed or a chair for 50% or more of the day); reversibility is limited.
- Dependent on others for most care needs due to physical and/or mental health problems.
- Two or more unplanned hospital admissions in the past 6 months.
- Significant weight loss (5-10%) over the past 3-6 months, and/ or a low body mass index.
- Persistent, troublesome symptoms despite optimal treatment of underlying condition(s).
- Patient asks for supportive and palliative care, or treatment withdrawal.

www.spict.org.uk) for information and updates.

SPICT Tool



Look for any clinical indicators of one or more advanced conditions

Cancer

- Functional ability deteriorating due to progressive metastatic cancer.
- Too frail for oncology treatment or treatment is for symptom control.

Dementia/ frailty

- Unable to dress, walk or eat without help.
- Eating and drinking less; swallowing difficulties.
- Urinary and faecal incontinence.
- No longer able to communicate using verbal language; little social interaction.
- Fractured femur; multiple falls.
- Recurrent febrile episodes or infections; aspiration pneumonia.

Neurological disease

- Progressive deterioration in physical and/or cognitive function despite optimal therapy.
- Speech problems with increasing difficulty communicating and/ or progressive swallowing difficulties.
- Recurrent aspiration pneumonia; breathless or respiratory failure.

Heart/ vascular disease

- NYHA Class III/IV heart failure, or extensive, untreatable coronary artery disease with:
  - breathlessness or chest pain at rest or on minimal exertion.
- Severe, inoperable peripheral vascular disease.

Respiratory disease

- Severe chronic lung disease with:
  - breathlessness at rest or on minimal exertion between exacerbations.
- Needs long term oxygen therapy.
- Has needed ventilation for respiratory failure or ventilation is contraindicated.

Kidney disease

- Stage 4 or 5 chronic kidney disease (eGFR < 30ml/min) with deteriorating health.
- Kidney failure complicating other life limiting conditions or treatments.
- Stopping dialysis.

Liver disease

- Advanced cirrhosis with one or more complications in past year:
  - diuretic resistant ascites
  - hepatic encephalopathy
  - hepatorenal syndrome
  - bacterial peritonitis
  - recurrent variceal bleeds
- Liver transplant is contraindicated.

Review supportive and palliative care and care planning

- Review current treatment and medication so the patient receives optimal care.
- Consider referral for specialist assessment if symptoms or needs are complex and difficult to manage.
- Agree current and future care goals, and a care plan with the patient and family.
- Plan ahead if the patient is at risk of loss of capacity.
- Record, communicate and coordinate the care plan.

Please register on the SPICT website (w

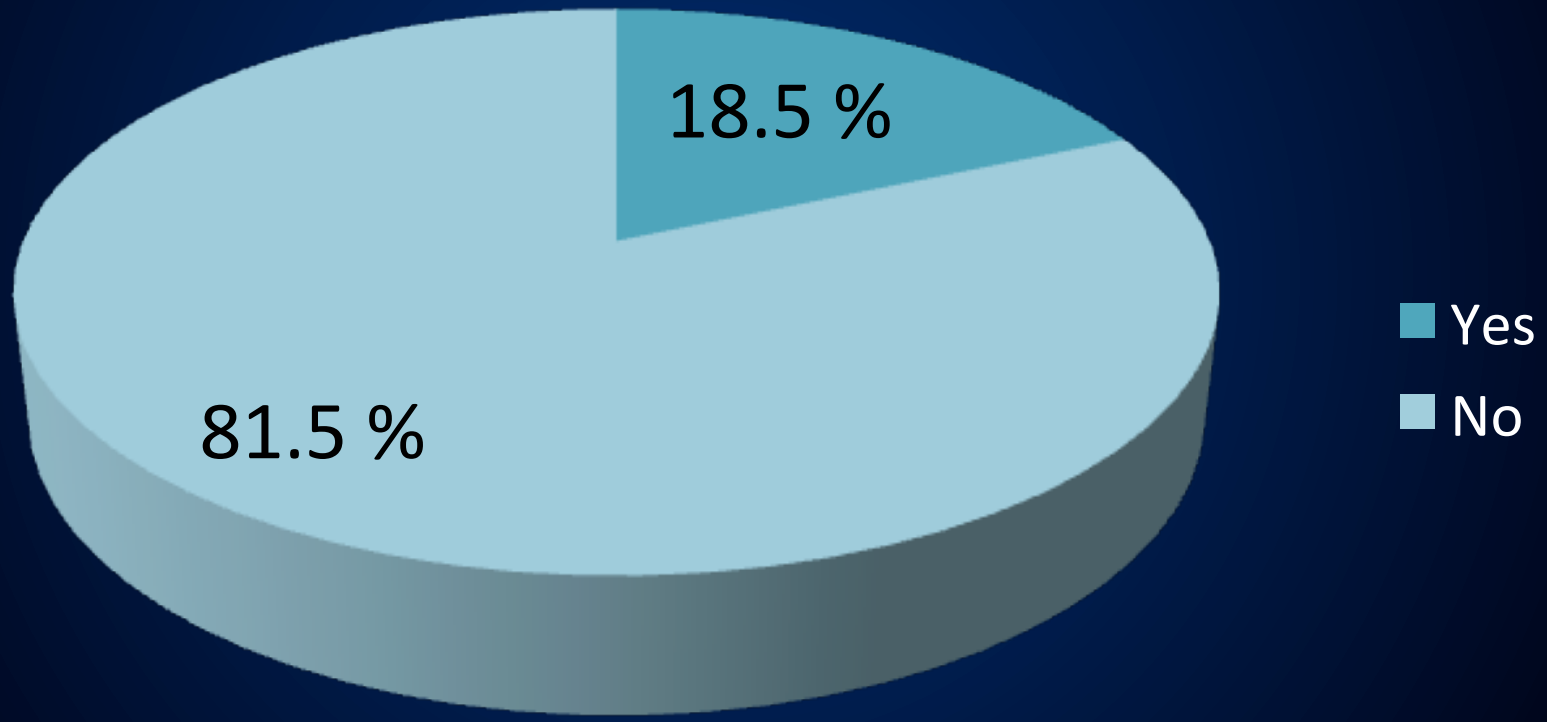
SPICT™, April 2015

Supportive Hospice & Aged Residential Care Exchange: SHARE

- **REVIEW AND ASSESSMENT OF GOALS OF CARE**
- **RECIPROCAL CLINICAL COACHING AND ROLE MODELLING**
- **EDUCATION PLANNING**
- **ROLE MODELLING OF ADVANCE CARE PLANNING CONVERSATIONS**
- **DEBRIEFING AND REFLECTION**

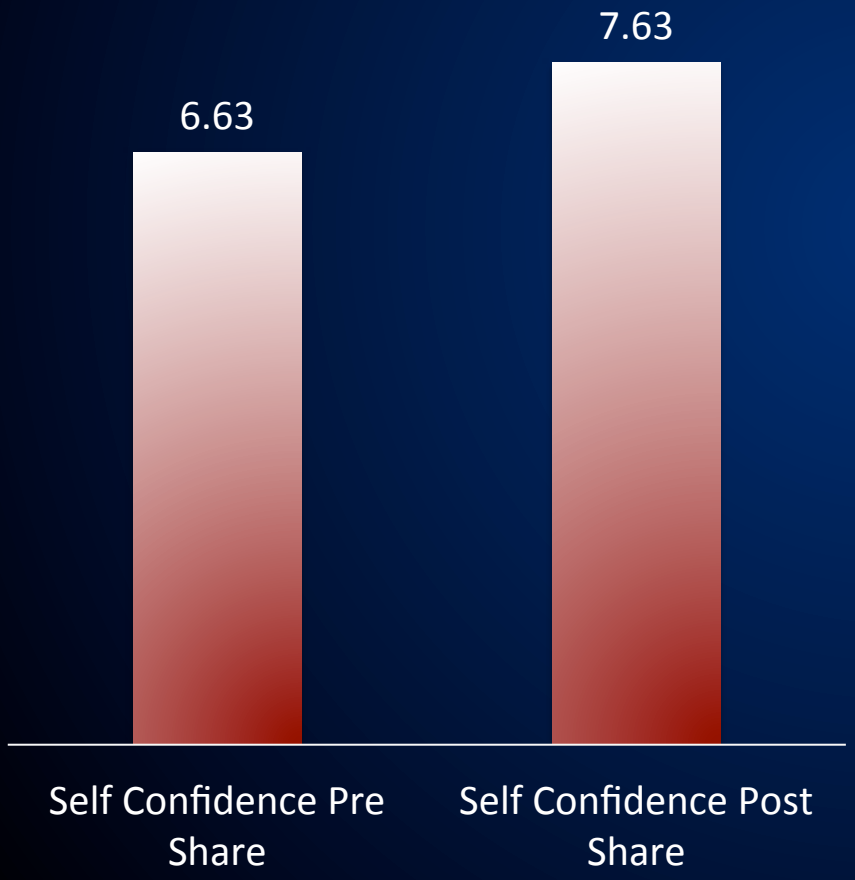
ARC Staff Reported Formal Palliative Care Education

Frey 2016

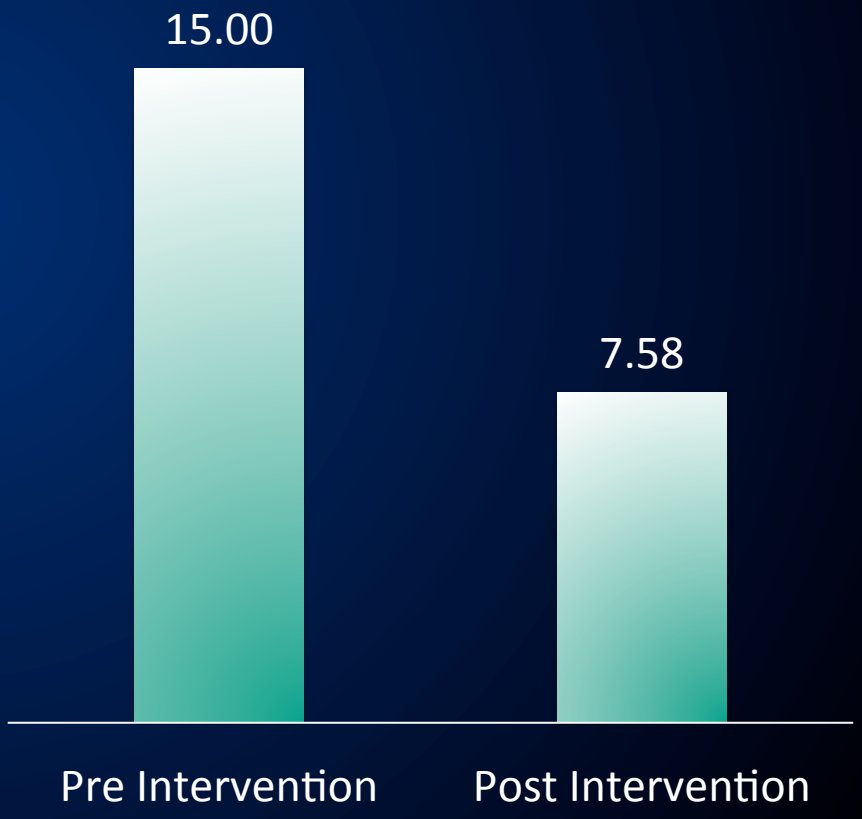


SHARES Outcomes

Self Confidence

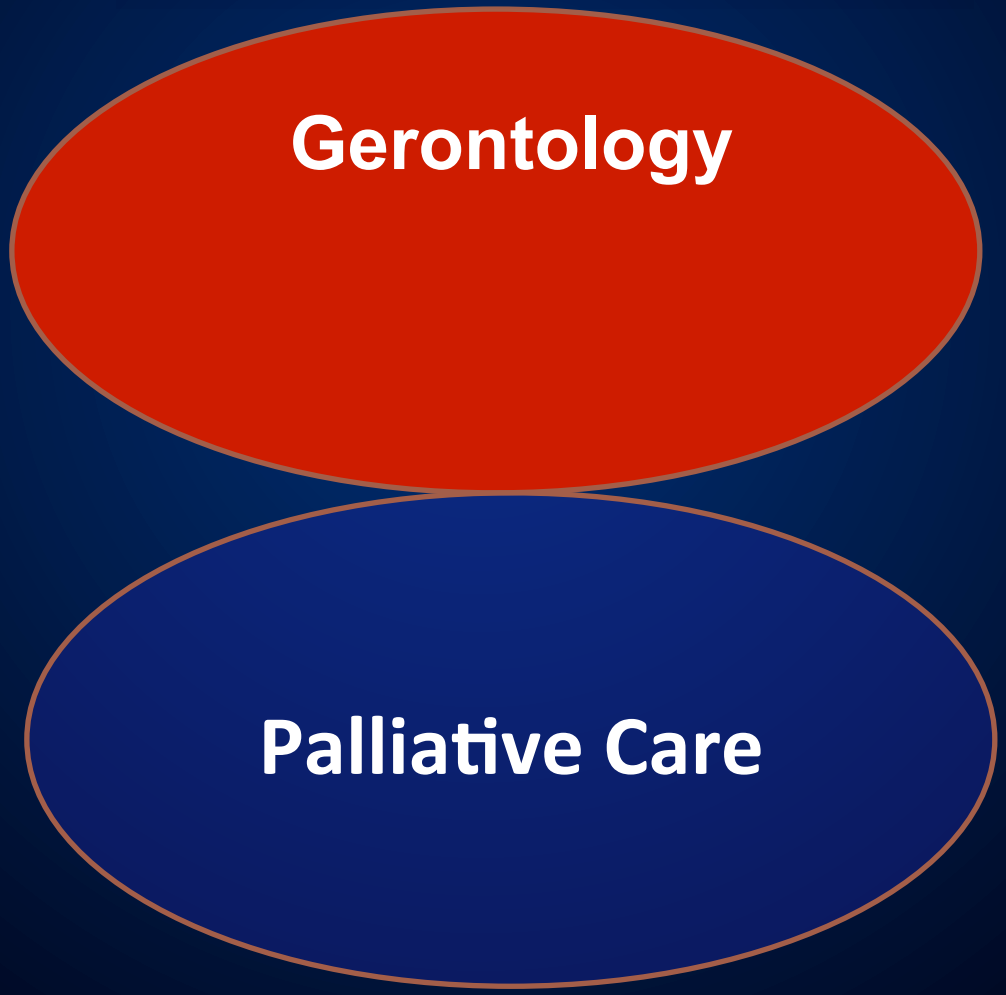


Brief Screen for Depression



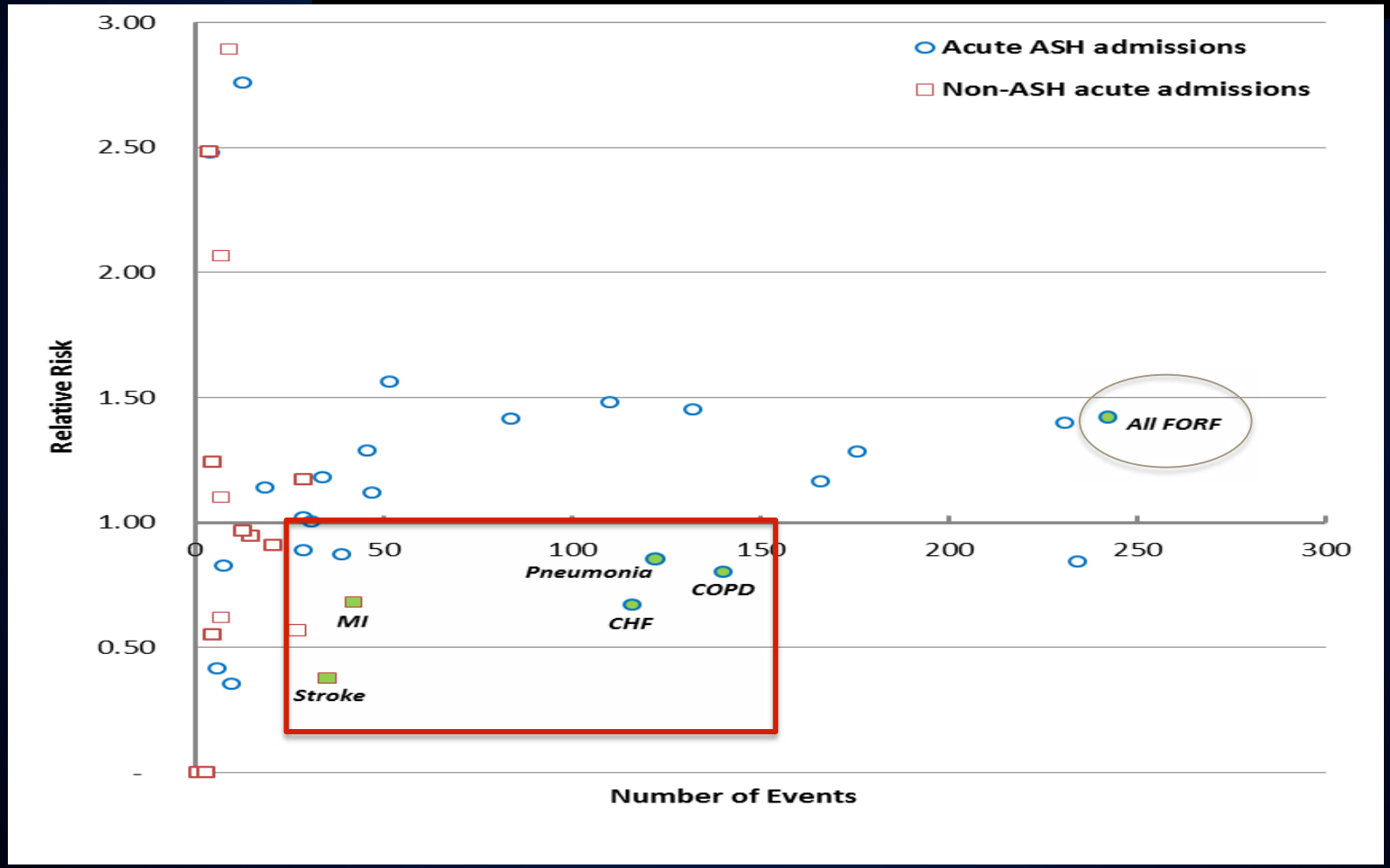
Where to From Here?

Specialist or Generalist?



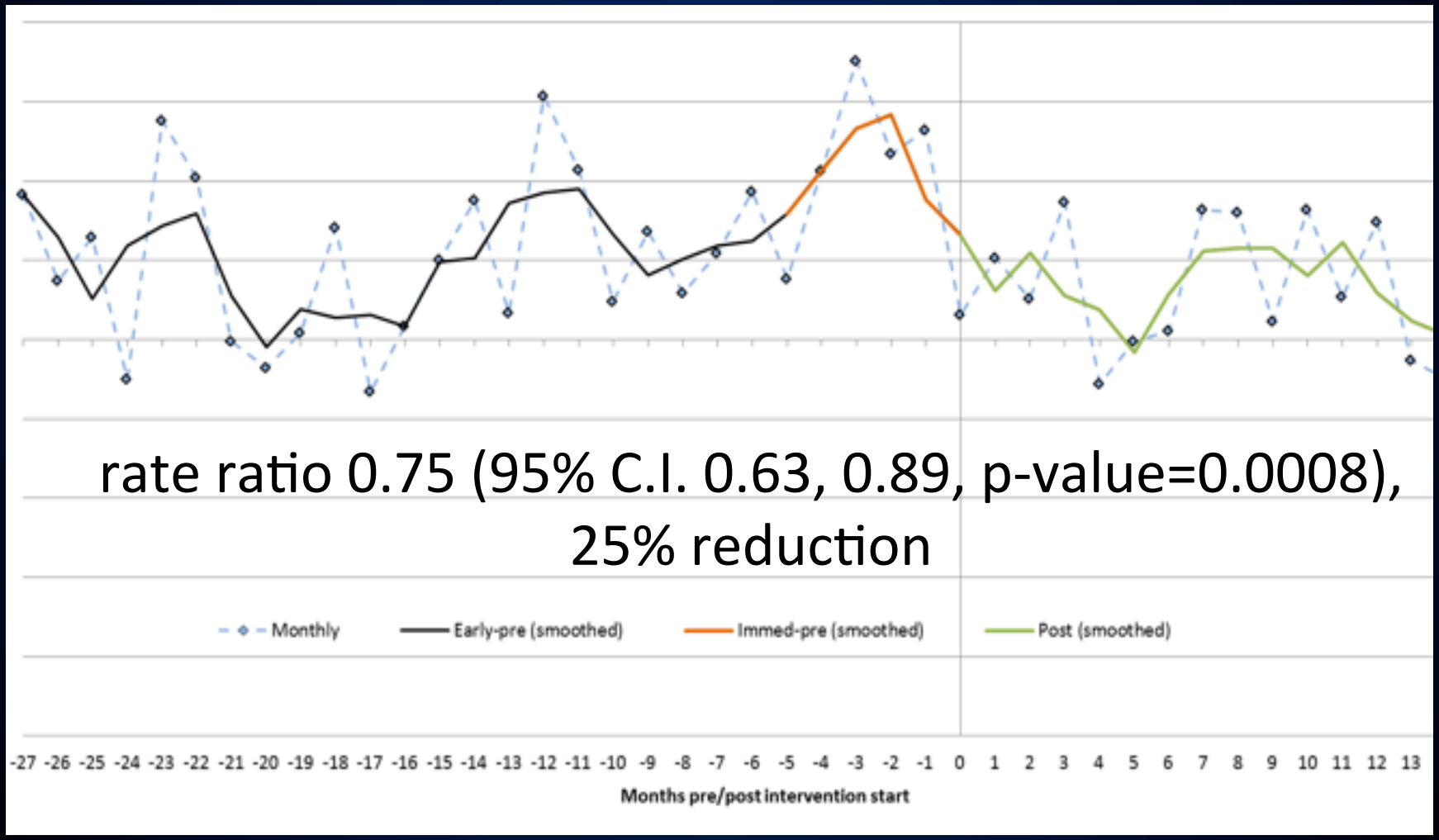
archus

Aged Residential Care Health Utilisation Study - Big 5



Connolly, Broad, Boyd et al. 2015 JAMDA

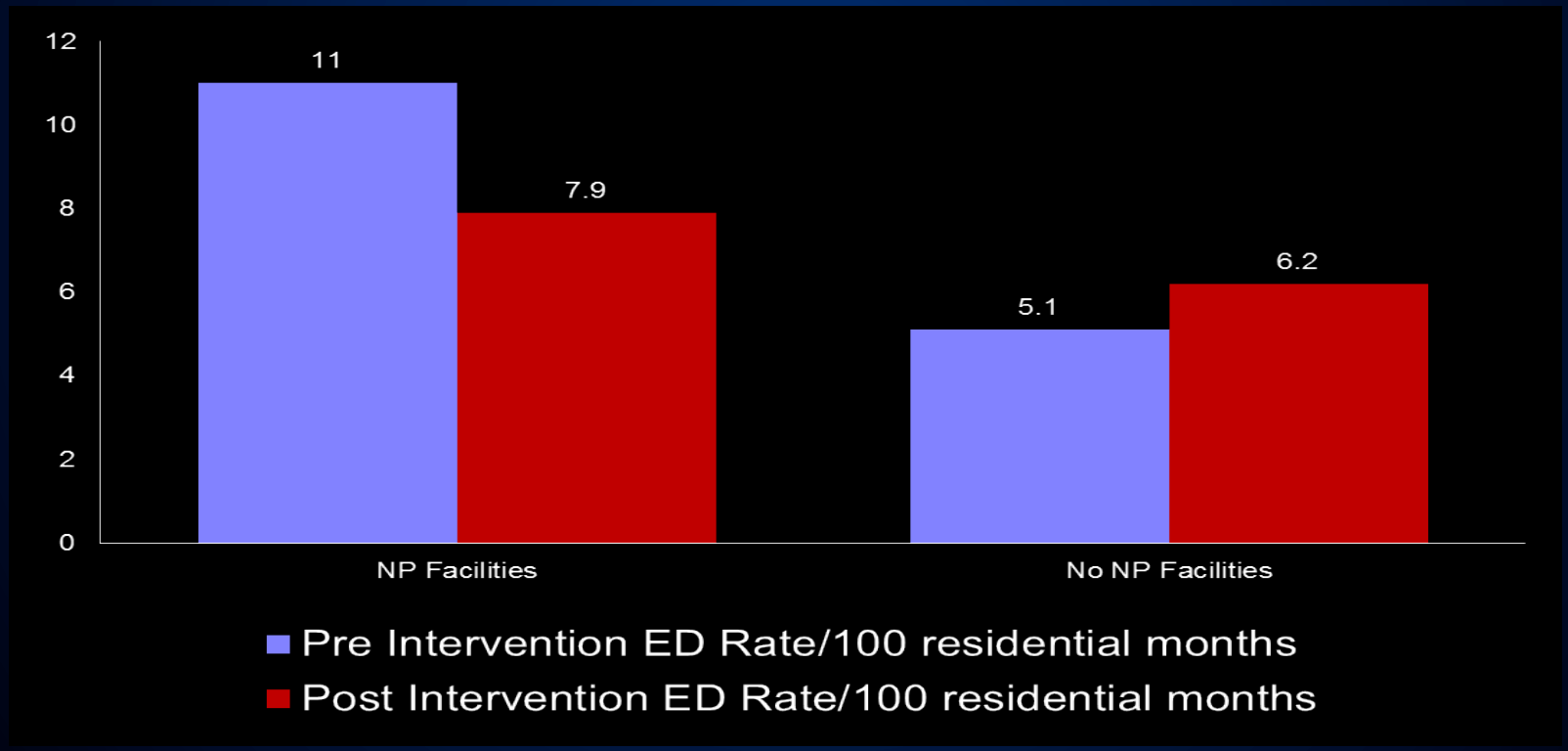
ARC Implementation Project: ARCHIP



Connolly et al. 2016 Under review

NPs in ARC
Comparison of Emergency Dept. Visits

- NP Facilities decreased by 28%
- No NP Facilities increased 21%



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Where are we going?

- Increased longevity has changed the way we will live in the last stage of our life
- The majority of healthcare is now gerontology care
- More people will require ARC care at the end of life
- Primary Health Care, community care and ARC will be pivotal in caring for older people
- ARC needs to be more integrated into the continuum of care and more public funding for: rehabilitation, social care, mental health care and palliative care.

I have said nothing about robots or telehealth!

Thank You.

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