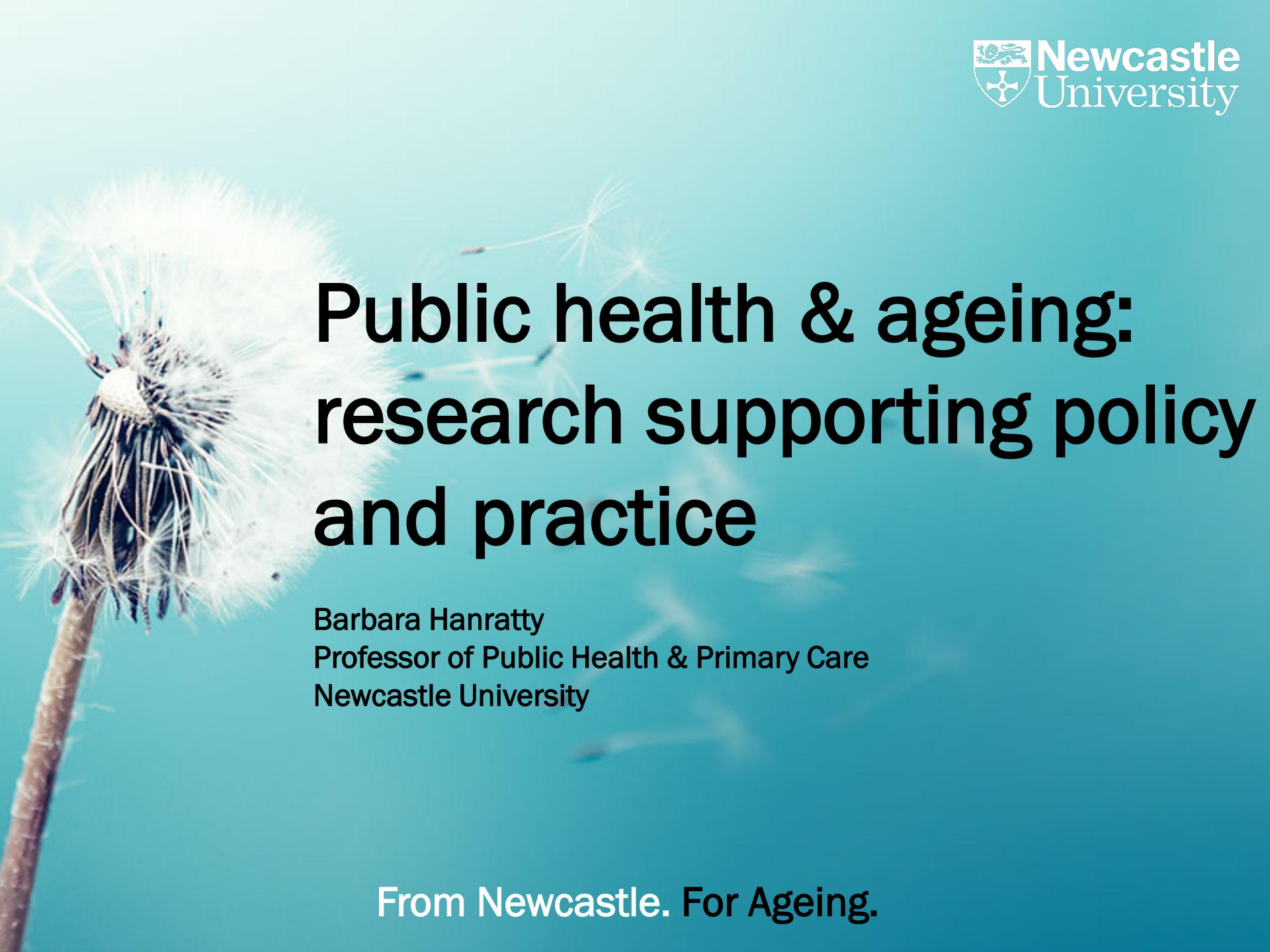


Public health & ageing: research supporting policy and practice

Barbara Hanratty
Professor of Public Health & Primary Care
Newcastle University

From Newcastle. For Ageing.

Public Health:

*"The art and science of preventing disease, prolonging life and promoting **health** through the organized efforts of society"*

(Acheson 1988)

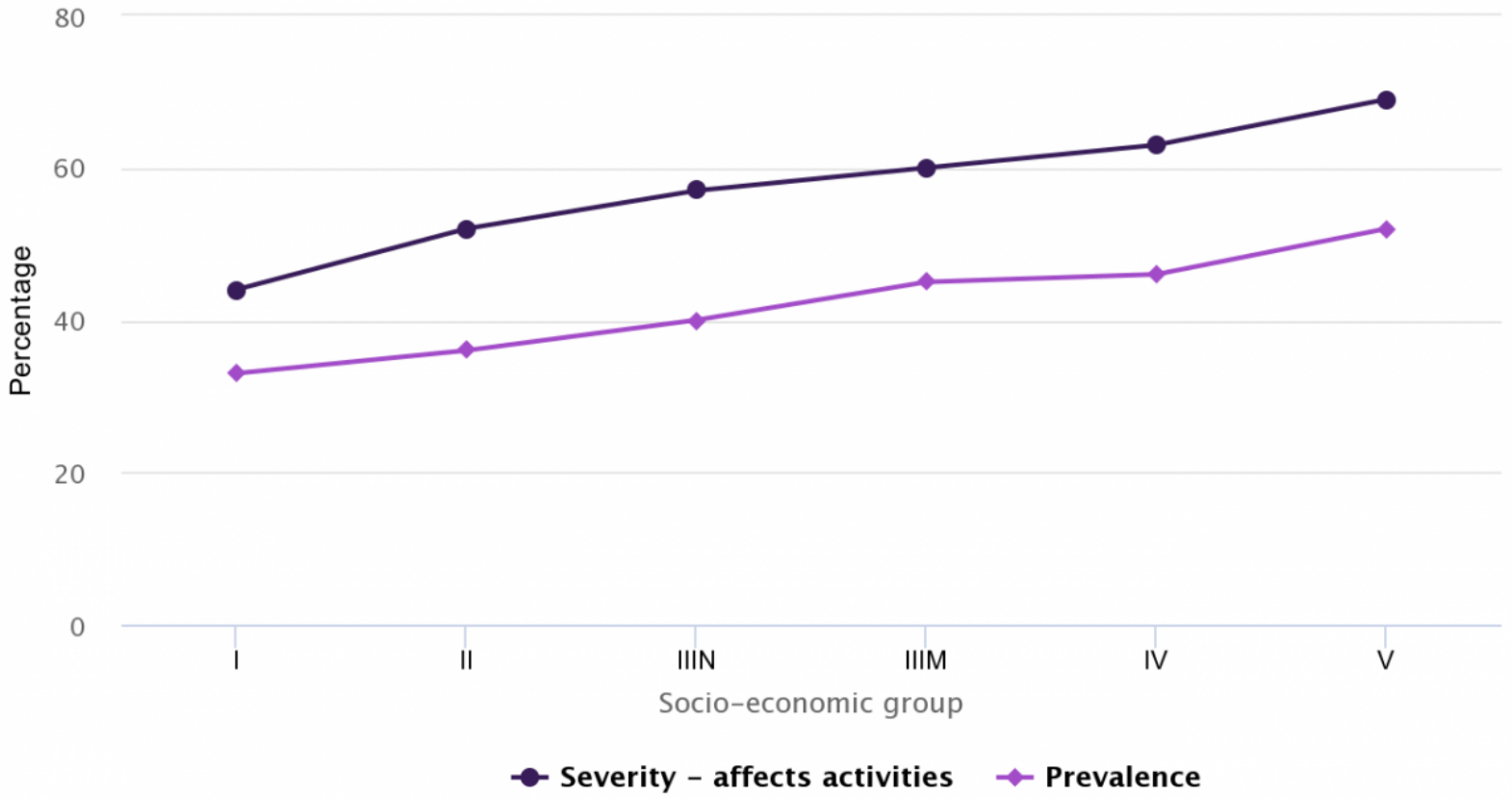
Older adults - a majority in our society

"There were 305 people of pension age for every 1,000 of working age in the UK in 2016"

Prevention: crucial in later life

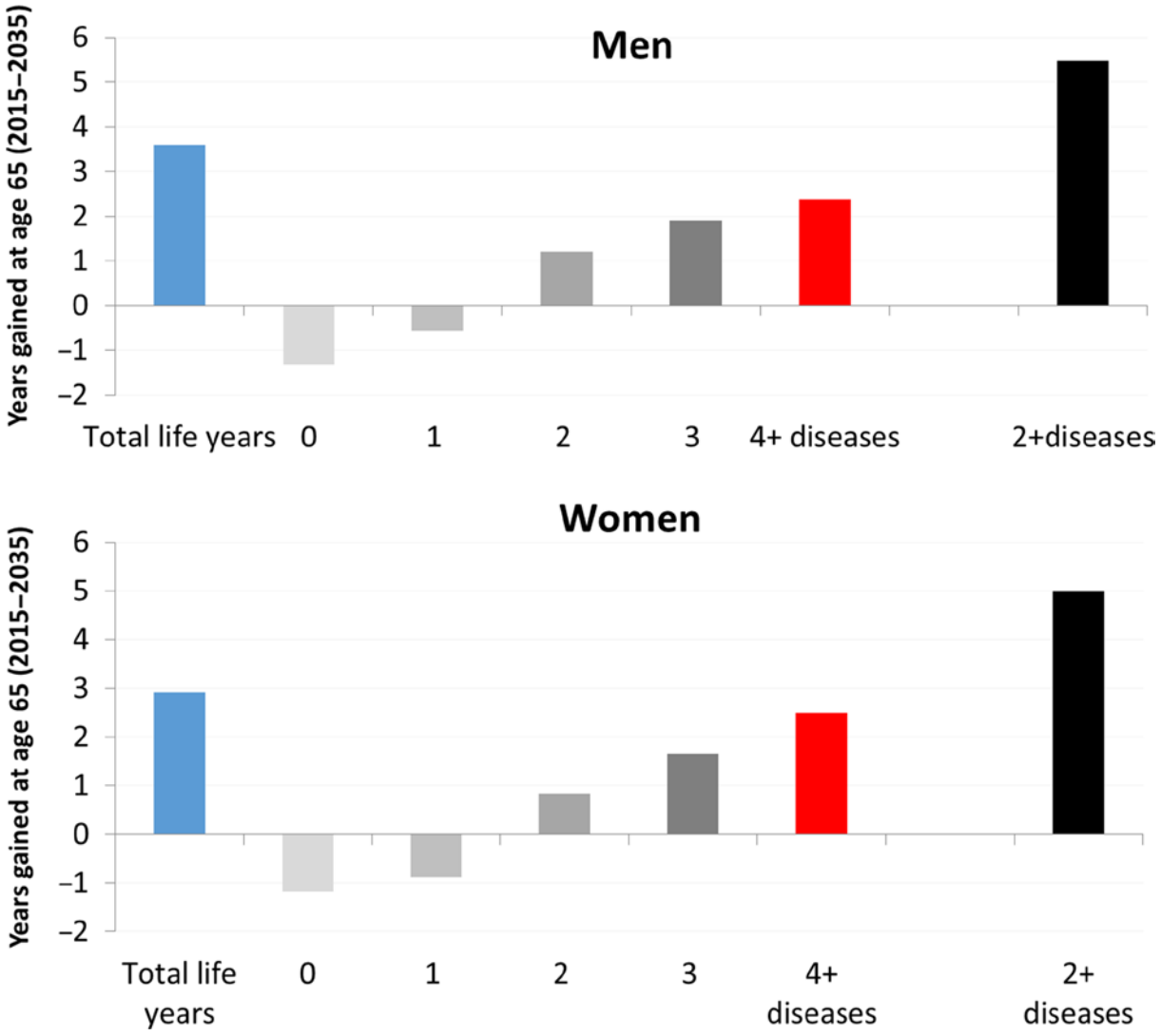
Newcastle University

Link between socio-economic group and long-term conditions prevalence and severity



The King's Fund

Years gained between 2015 and 2035 in life expectancy at age 65 and years lived from age 65 with different numbers of conditions

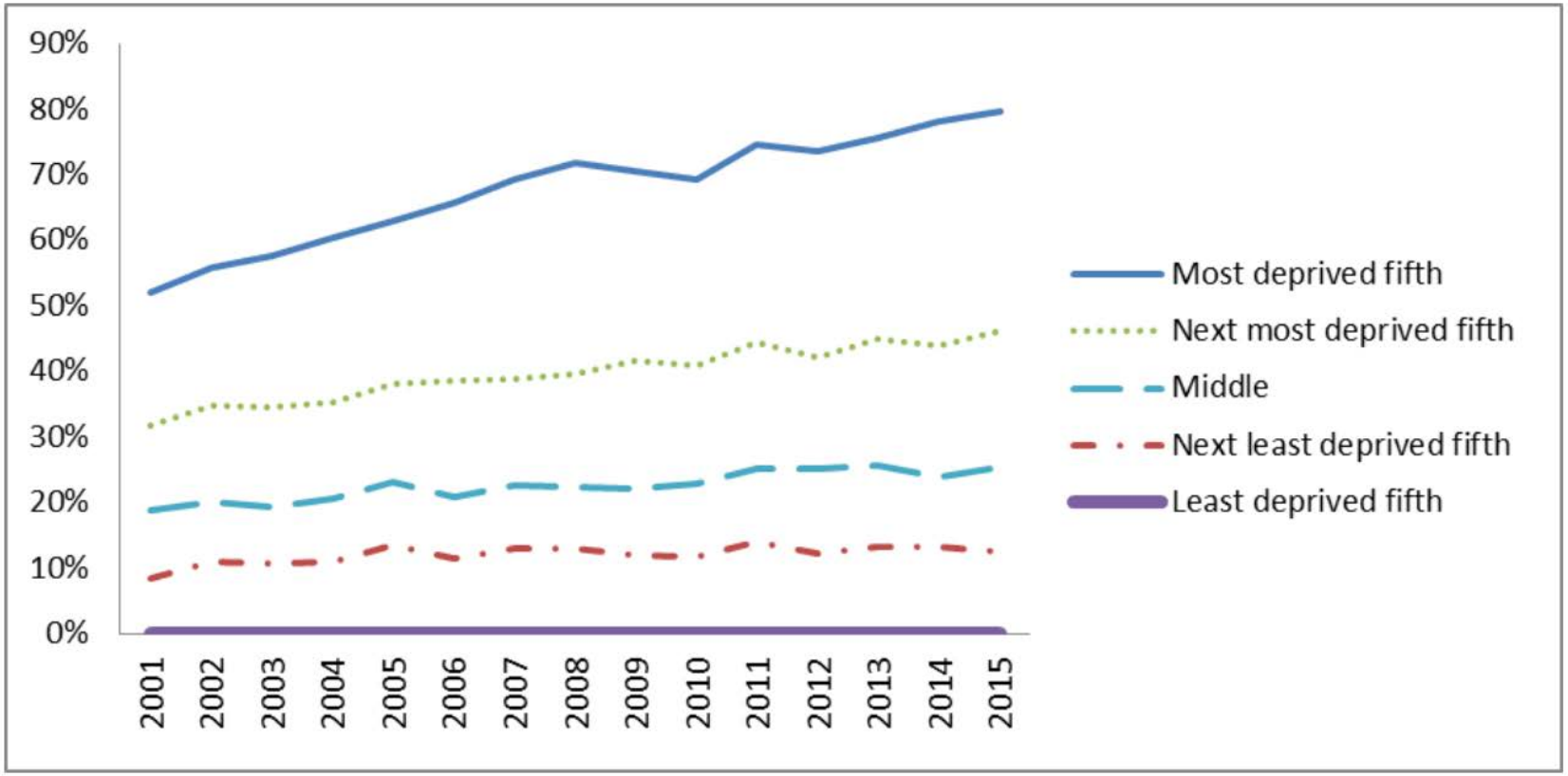


Kingston et al. Age and Ageing, Volume 47, Issue 3, May 2018, Pages 374–380, https://doi.org/10.1093/ageing/afx201

Ageing is unequal – for men

Newcastle University

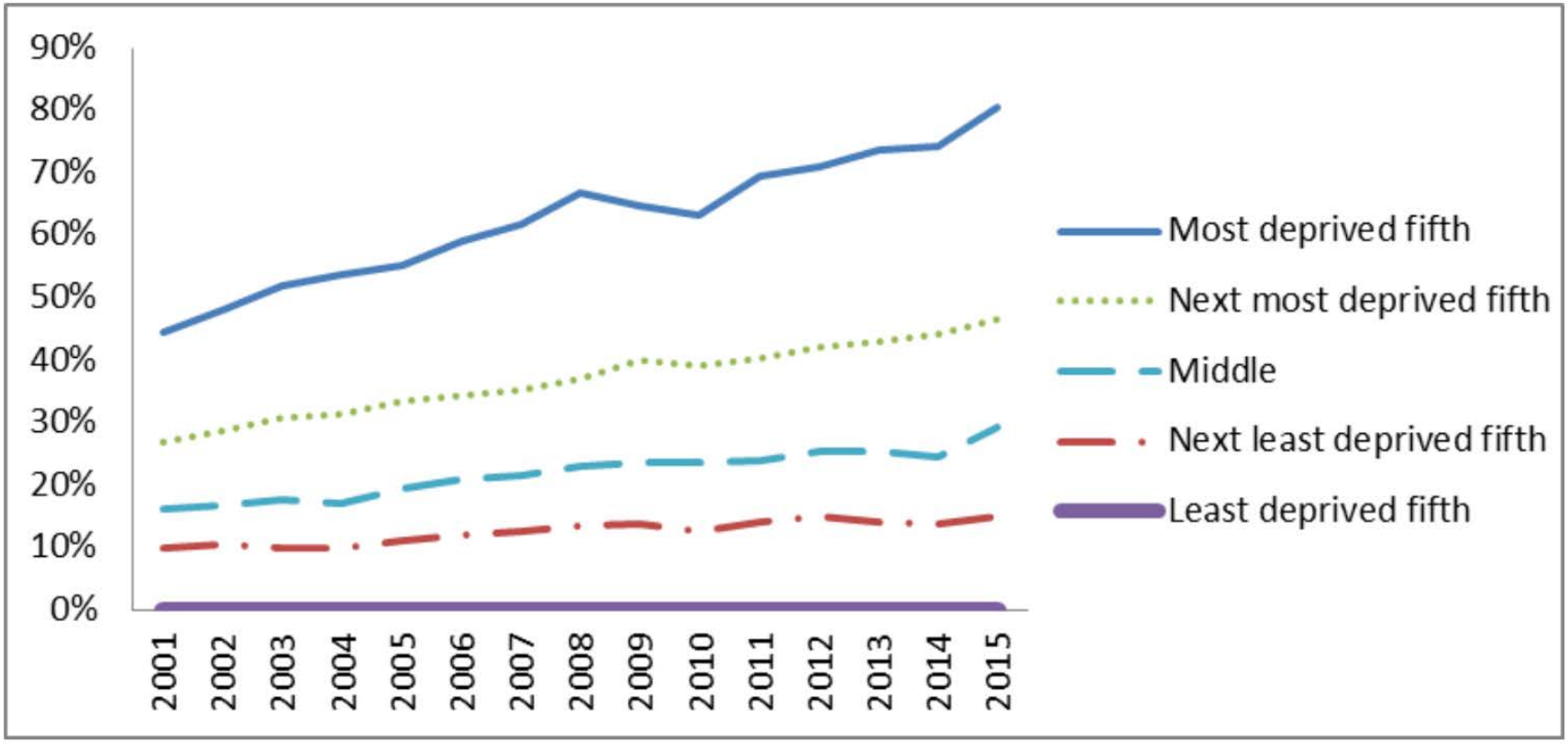
Percentage difference in death rates relative to the least deprived fifth: Males aged 60-89 in England.



Longevity Science Panel (2018)

Ageing is unequal – and women

Percentage difference in death rates relative to the least deprived fifth: Females aged 60-89 in England.



Longevity Science Panel (2018)

Pensioner poverty is increasing

ageing@newcastle

Newcastle University

Institute for Ageing

Newcastle University > Institute for Ageing

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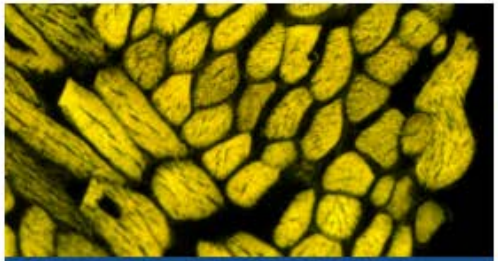
- Our Research
- Learning & Teaching
- Innovation
- Partners & Collaborators
- Staff
- News
- Events
- Projects
- Dementia Research
- Contact us

About Us

Staff

Global Challenges Academy

Ageing research themes

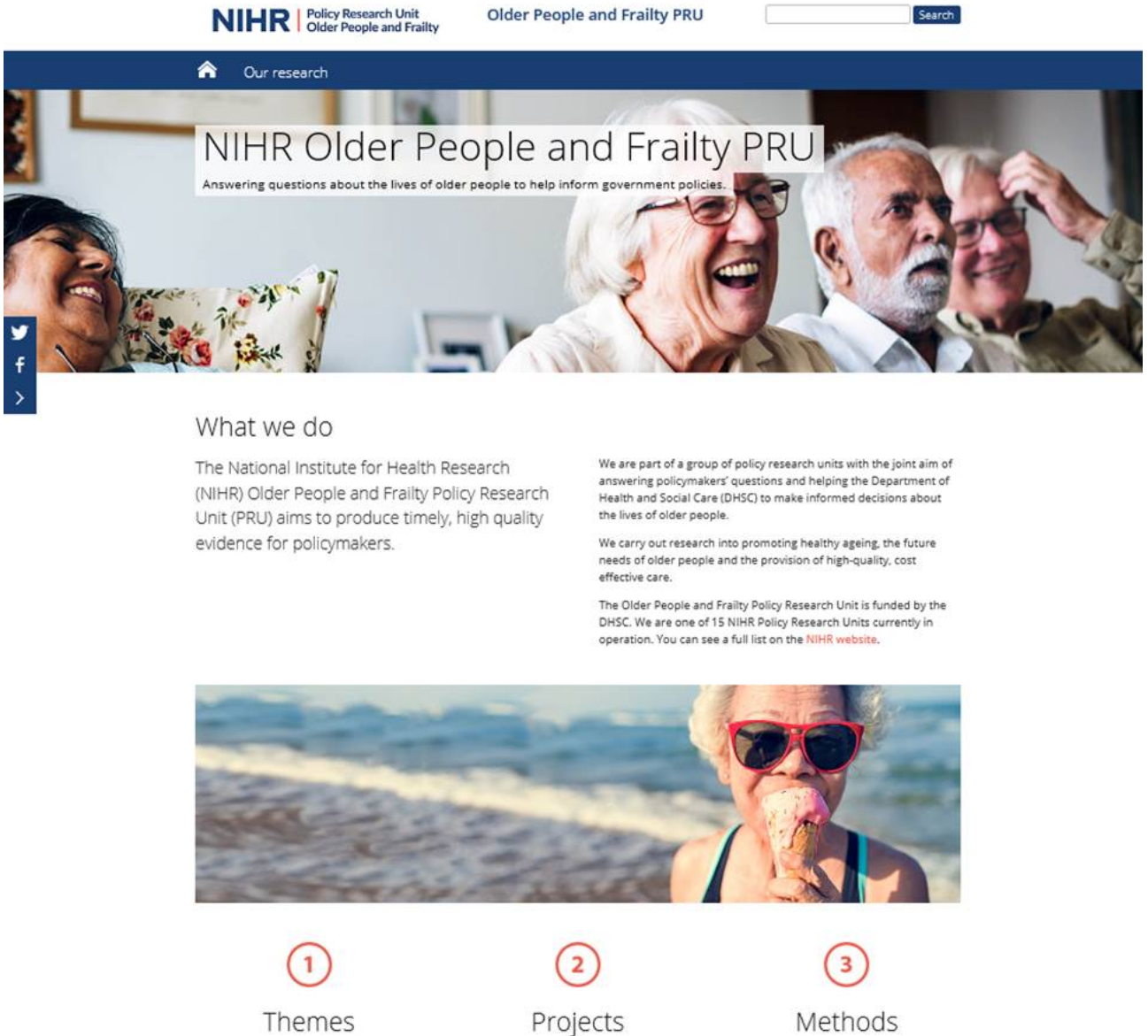


How we age

How can we age better

Ageing in place

Policy Research Unit Older People & Frailty



Multimorbidity, Ageing and Frailty Research Theme

Newcastle University

- NIHR CLAHRC East of England
- NIHR CLAHRC East Midlands
- NIHR CLAHRC Greater Manchester
- NIHR CLAHRC North Thames
- NIHR CLAHRC North West Coast
- NIHR CLAHRC Northwest London
- NIHR CLAHRC Oxford
- NIHR CLAHRC South London
- NIHR CLAHRC South West Peninsula
- NIHR CLAHRC Wessex
- NIHR CLAHRC West
- NIHR CLAHRC West Midlands
- NIHR CLAHRC Yorkshire and Humber

North East &
North Cumbria Applied
Research Collaboration
2019-2024

Research to inform practice

Newcastle University

nature COMMUNICATIONS

461

A two decade dementia incidence comparison from the Cognitive Function and Ageing Studies I and II

998

THE LANCET

Is late-life dependency increasing or not? A comparison of the Cognitive Function and Ageing Studies (CFAS)

theguardian

Social care

UK needs 71,000 more care home places in eight years, study predicts

Age and Ageing

Loneliness as a risk factor for care home admission in the English Longitudinal Study of Ageing FREE

Age and Ageing

Impact of social care supply on healthcare utilisation by older adults: a systematic review and meta-analysis

BMC Medicine

Frailty trajectories to identify end of life: a longitudinal population-based study

European Journal of

EPIDEMIOLOGY

Two-decade change in prevalence of cognitive impairment in the UK

Frailty and end of life care: A population approach

Daniel Stow | FUSE Healthy Ageing | September 2019

From Newcastle. For Ageing.

BBC RADIO 4

Newcastle University

The Right Place for Reg?

Newcastle University

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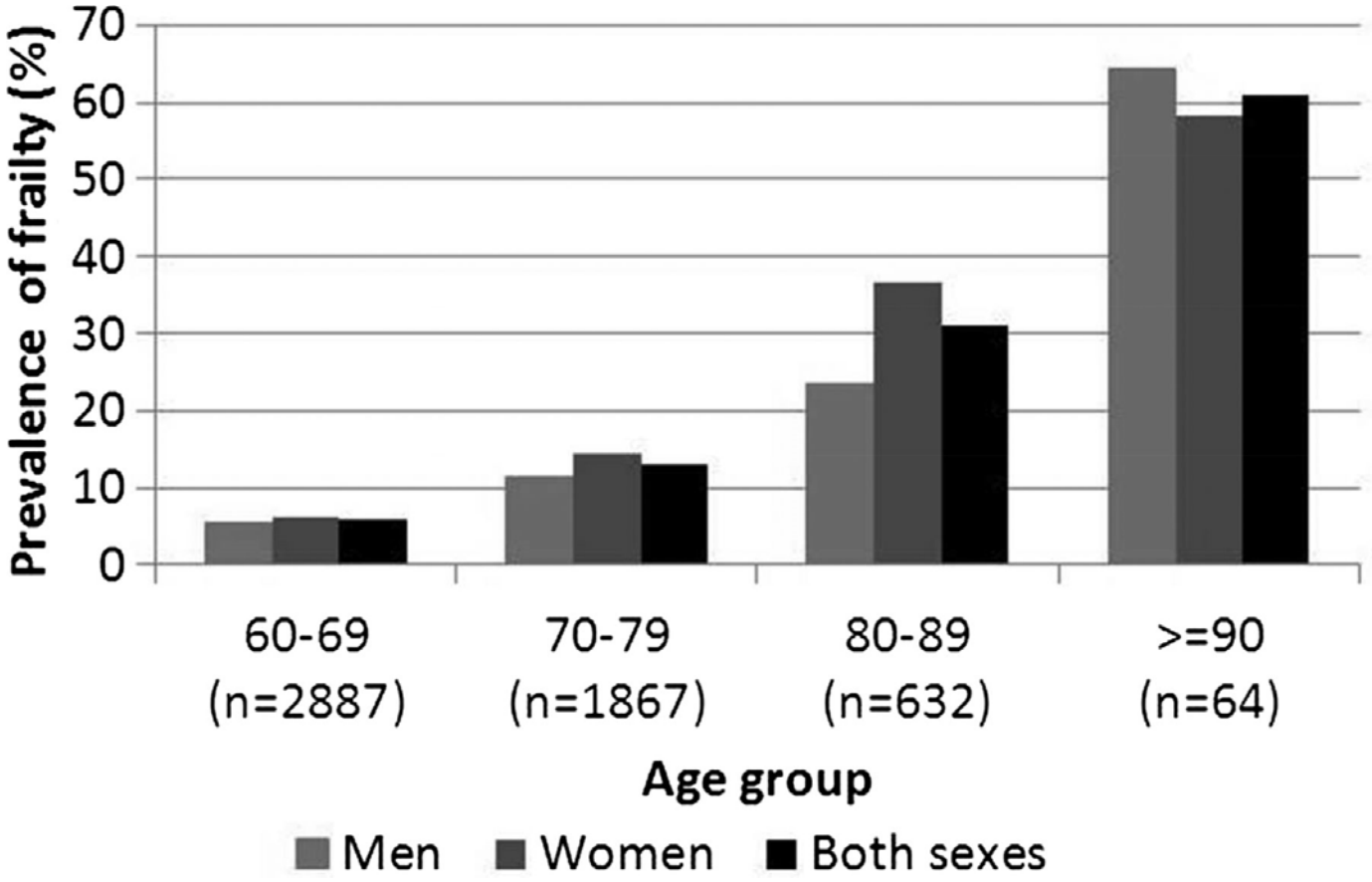
Frailty…

"… is the most problematic expression of population ageing. It is a state of vulnerability to poor resolution of homeostasis after a stressor event and is a consequence of cumulative decline in many physiological systems during a lifetime"

Clegg et al, Lancet (2013)

People are living longer, meaning **more people are living with frailty**

ELSA: Frailty prevalence



Age and Ageing, Volume 44, Issue 1, January 2015, Pages 162–165, https://doi.org/10.1093/ageing/afu148

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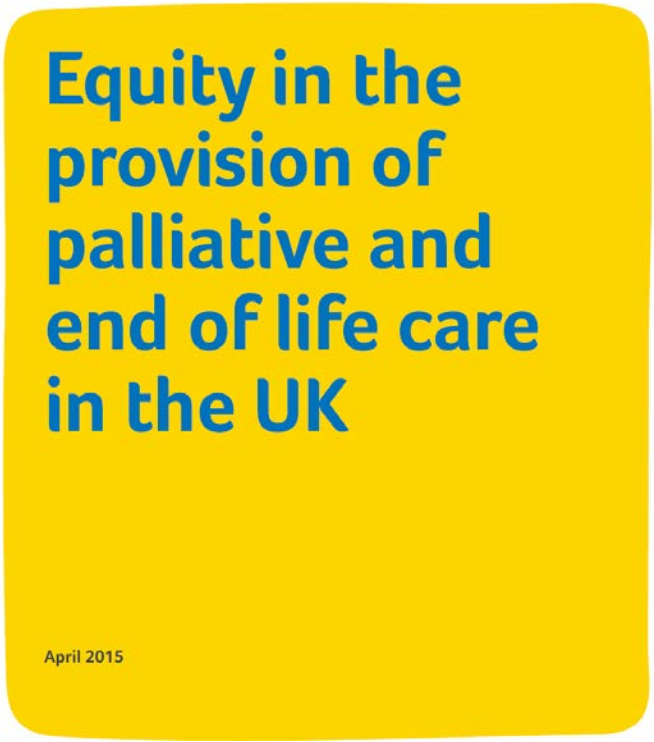
People living with frailty among the **least likely to access end of life care**



LSE PSSRU
Personal Social Services Research Unit

Marie Curie
Care and support through terminal illness

Newcastle University

Benefits of end of life care

Newcastle University

Improved **quality of life**

Reduces **symptom burden**

More likely to **die at home**

Reduces **costs**

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BBC RADIO 4

The Right Time?

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Research One
Transforming data into knowledge

Anonymised primary care electronic health records

20 million records

35% GP practices in England

Electronic frailty index

- The number of deficits an individual has divided by the number of deficits in the index
- Scores between 0 (not frail) and 1 (extremely frail)
- For example 7/36=0.19

Electronic frailty index

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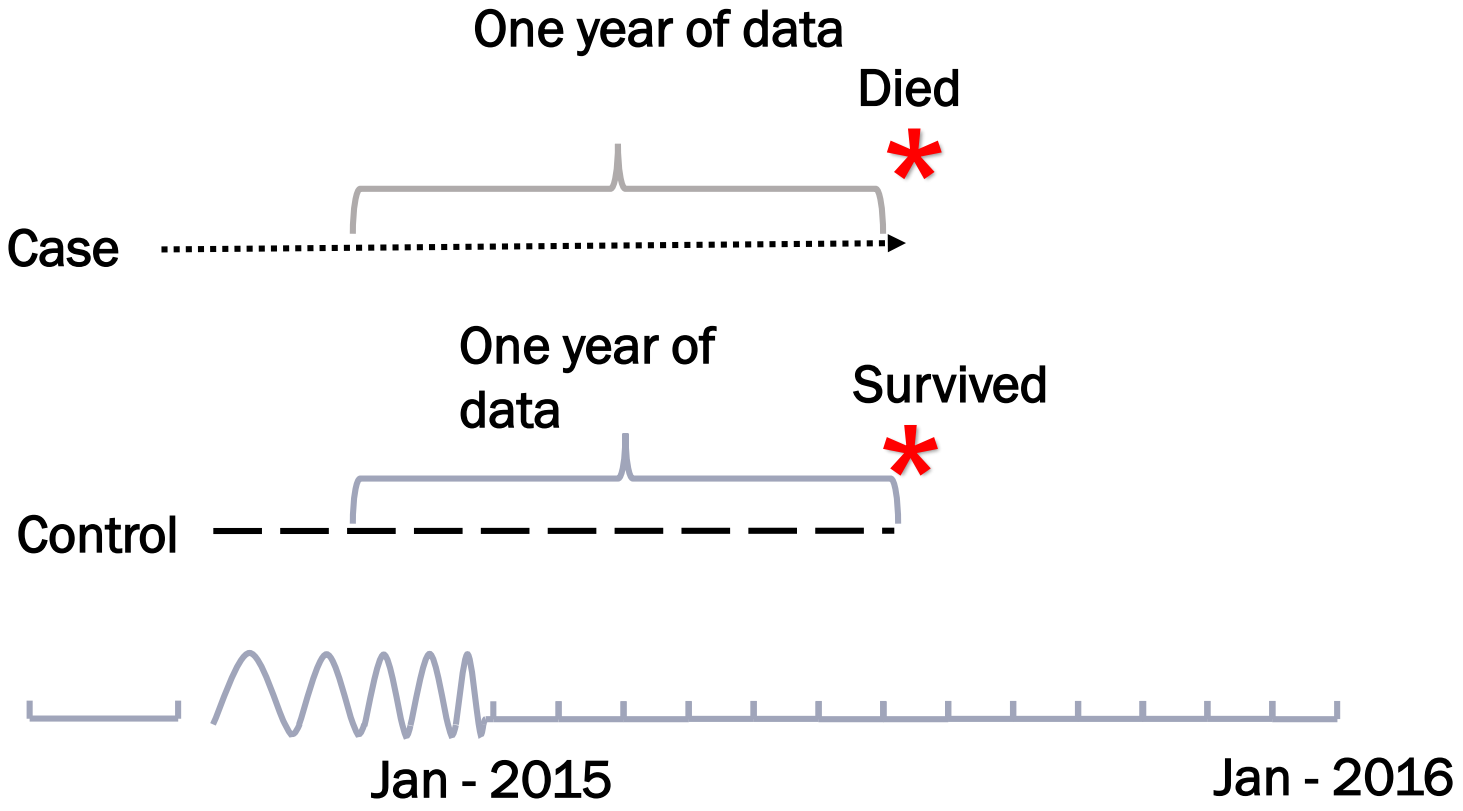
- Activity limitation
- Anaemia
- Arthritis
- Atrial fibrillation
- Cerebrovascular disease
- Chronic kidney disease
- Cognitive problems
- Diabetes
- Dizziness
- Dyspnoea
- Falls
- Foot problems
- Fragility fracture
- Hearing impairment
- Heart failure
- Heart valve disease
- Housebound
- Hypertension
- Hypotension/syncope
- Ischemic heart disease
- Mobility problems
- Osteoporosis
- Parkinsonism and tremor
- Peptic ulcer
- Peripheral vascular disease
- Polypharmacy
- Requirement for care
- Respiratory disease
- Skin ulcer
- Sleep disturbance
- Social vulnerability
- Thyroid disease
- Urinary incontinence
- Urinary system disease
- Visual impairment
- Weight loss and anorexia



DOB matching
(+/- 6 months)

Must be ≥75
at this point

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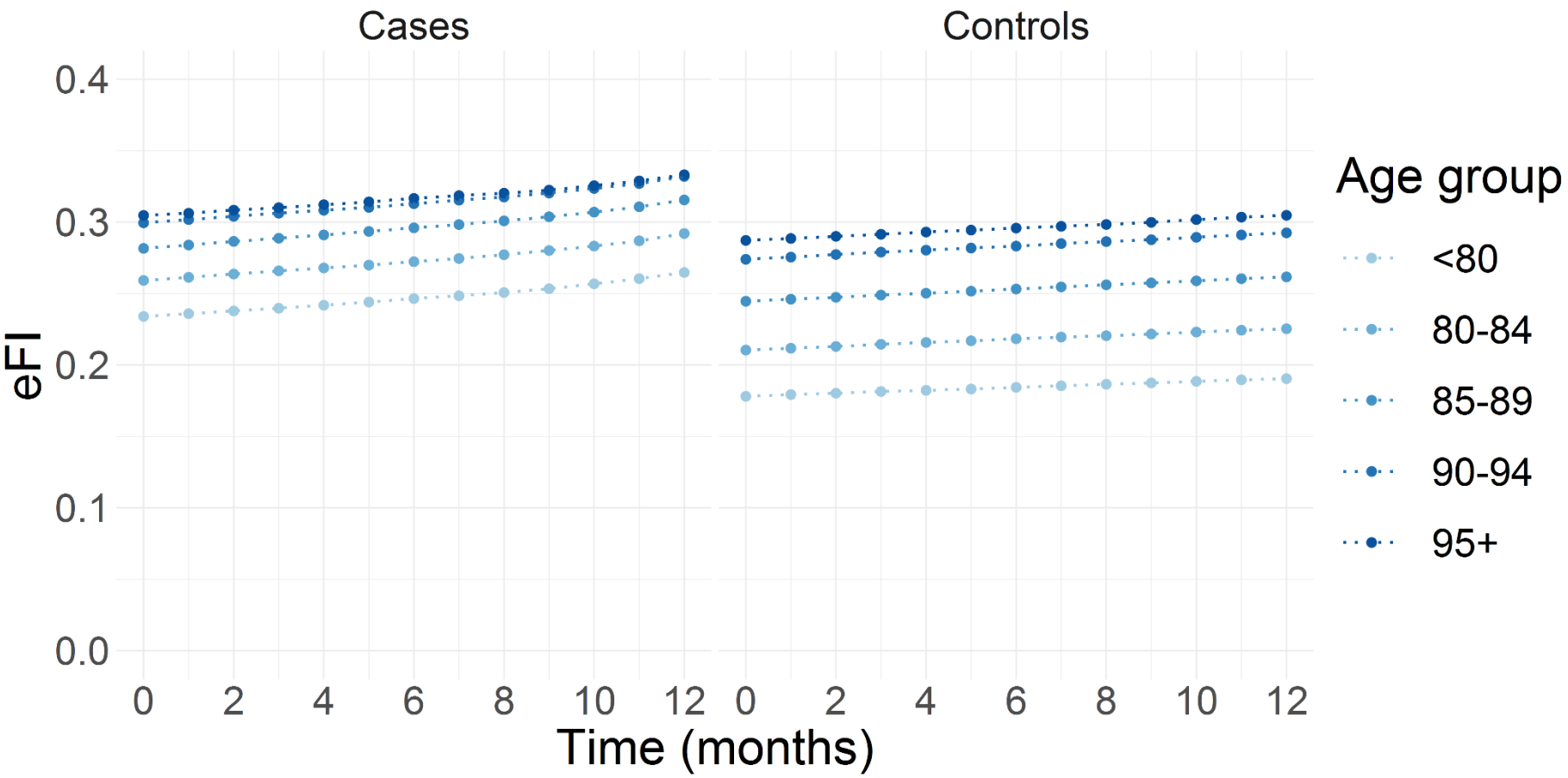
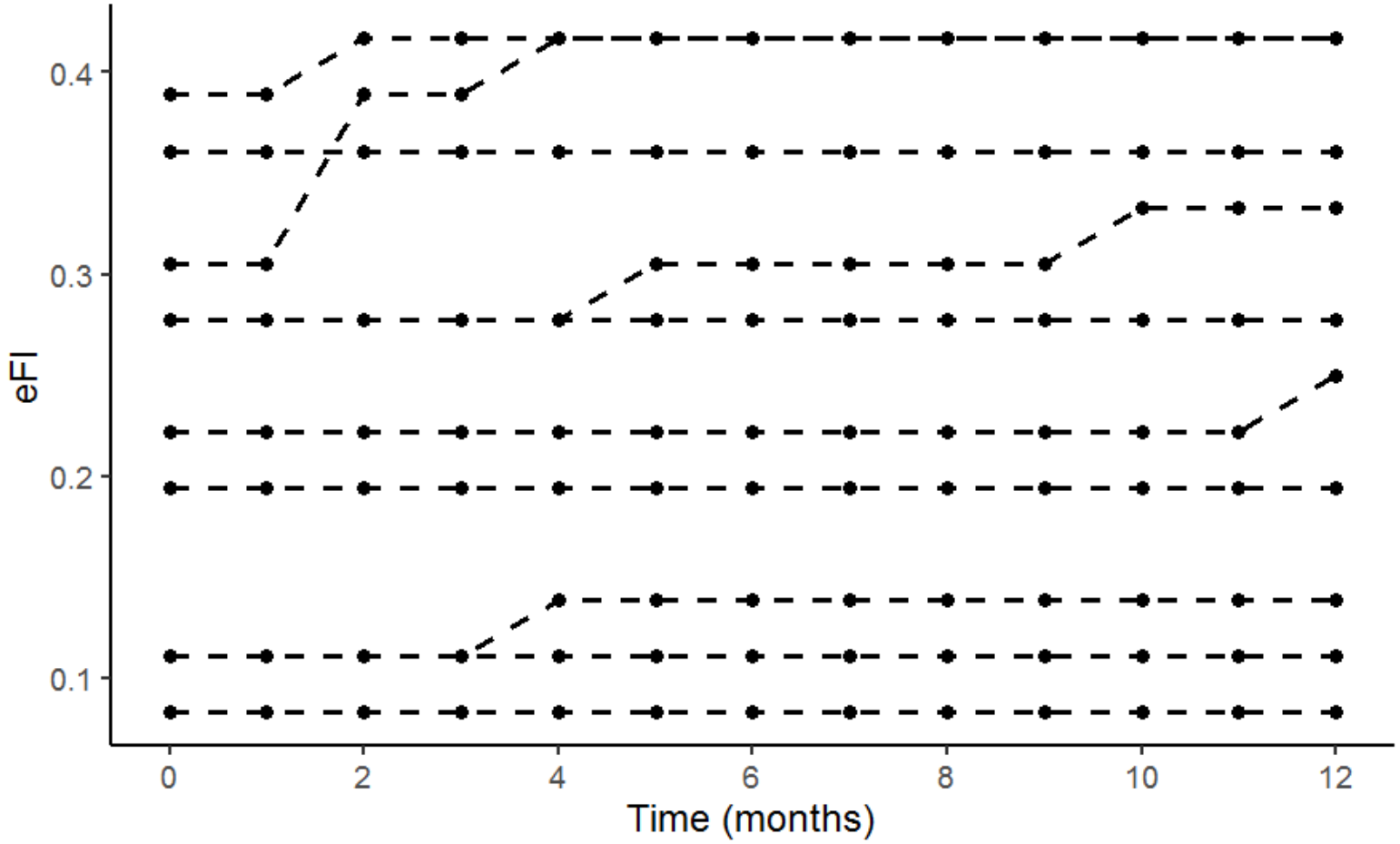
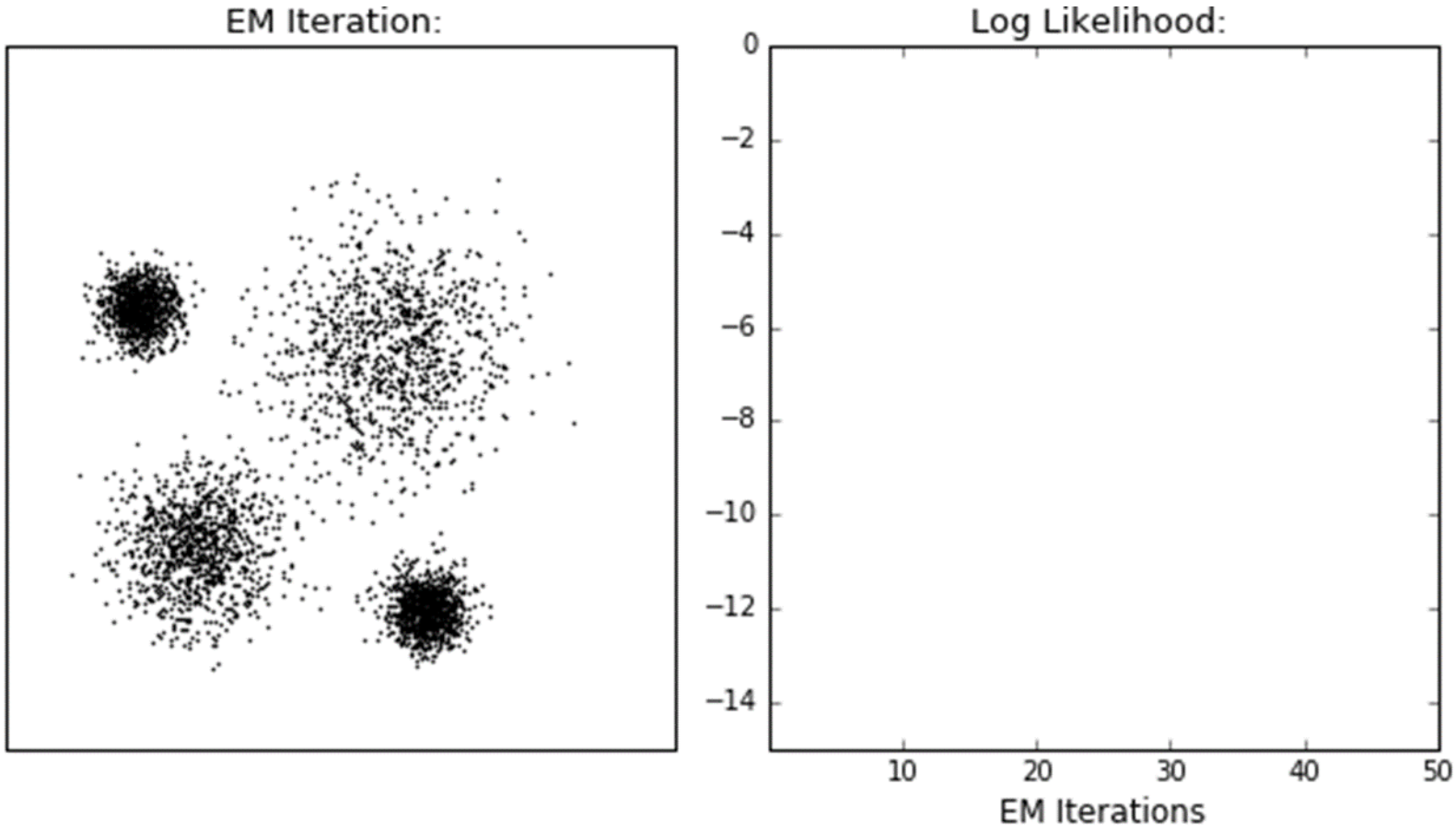
13,149 cases
13,149 controls

1 year eFI trajectories (aggregate)

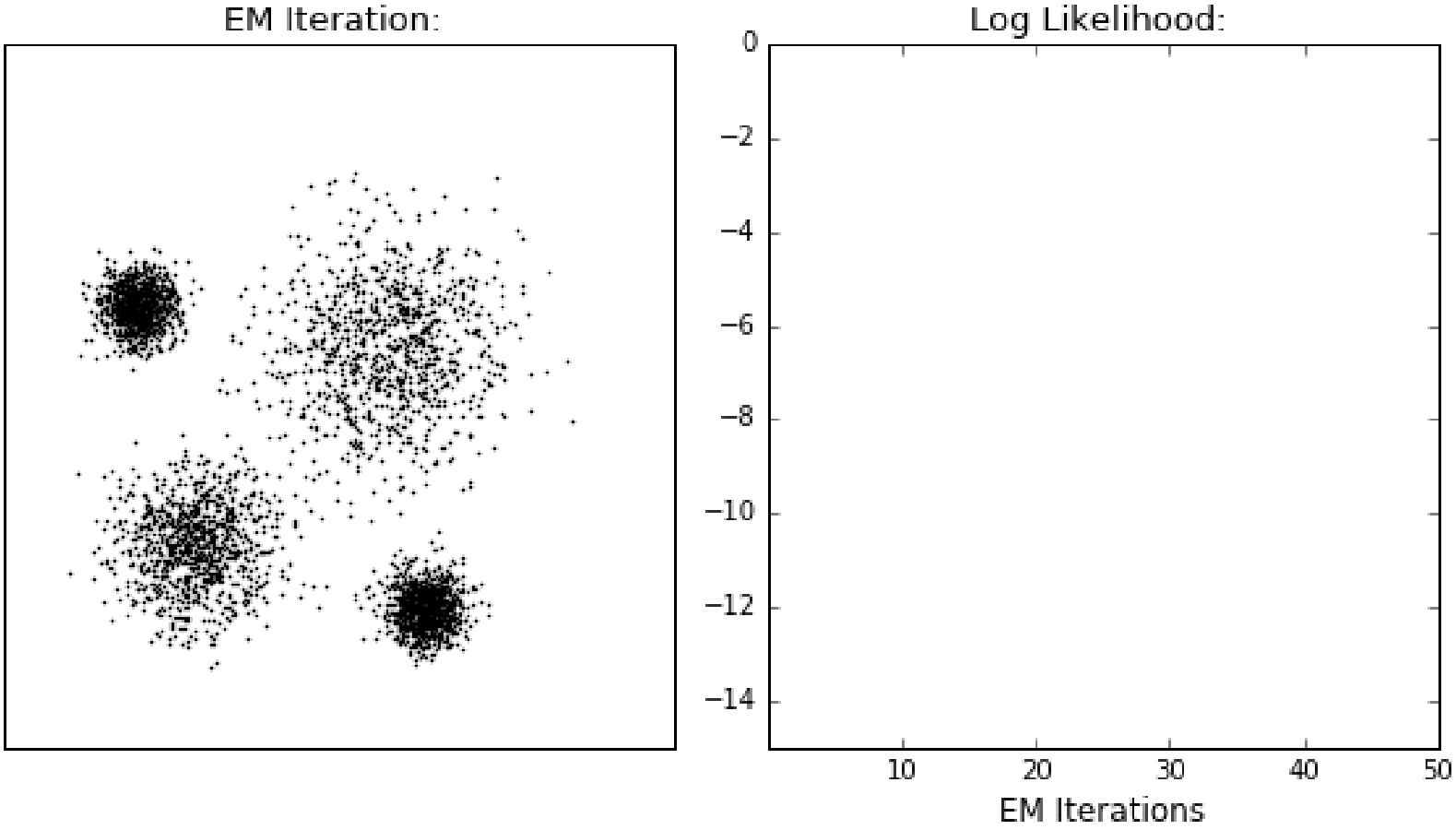


1 year eFI trajectories (10 individuals)

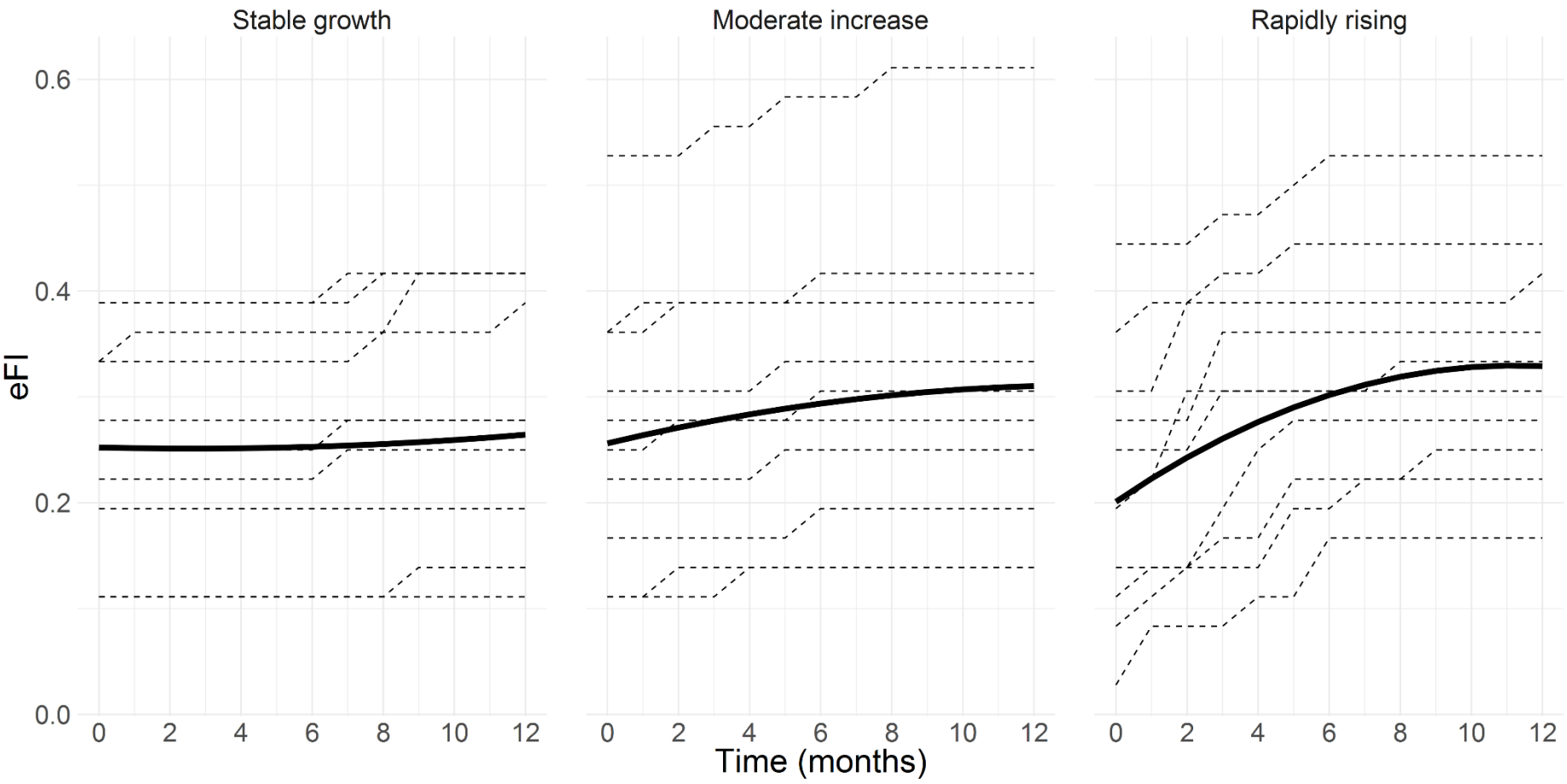




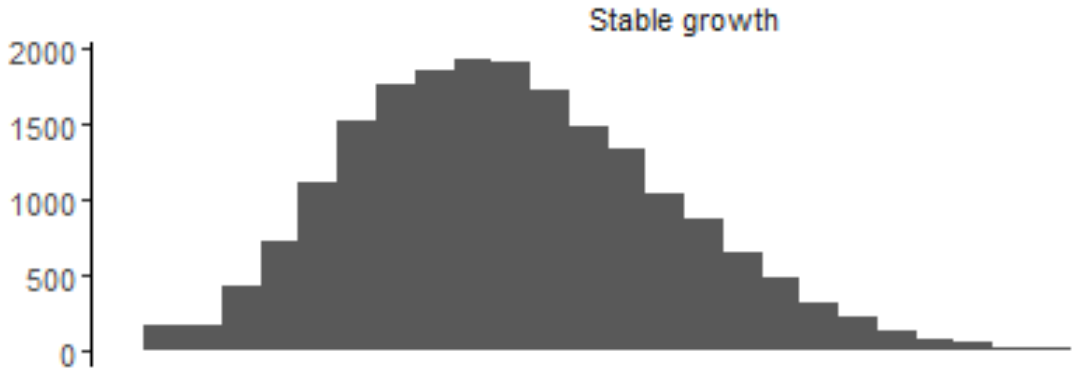
Animation courtesy of David Sheehan (dashee87.github.io)



Animation courtesy of David Sheehan (dashee87.github.io)


Stable growth
Moderate increase
Rapidly rising
eFI
0.0
0.2
0.4
0.6
0
2
4
6
8
10
12
Time (months)

Month: 0



n = 20,144

(76.6%)

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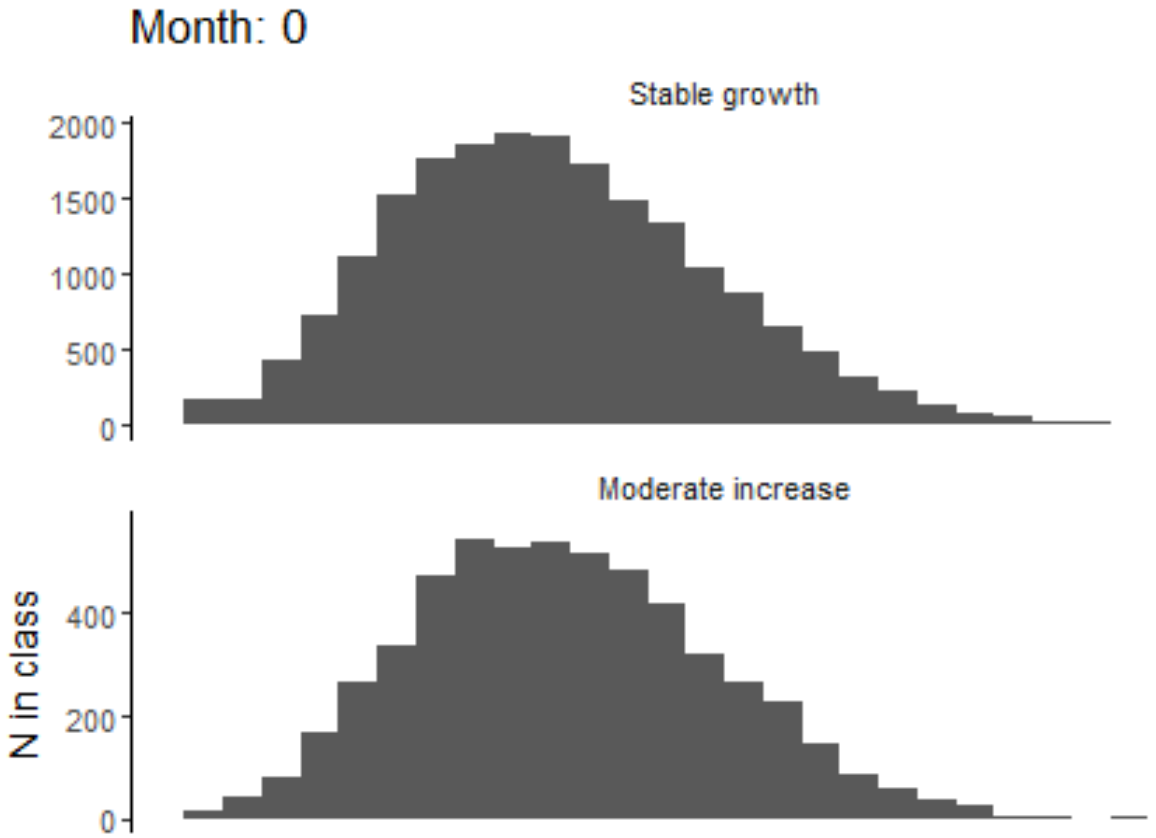

n = 20,144

(76.6%)

n = 5,571

(21.2%)

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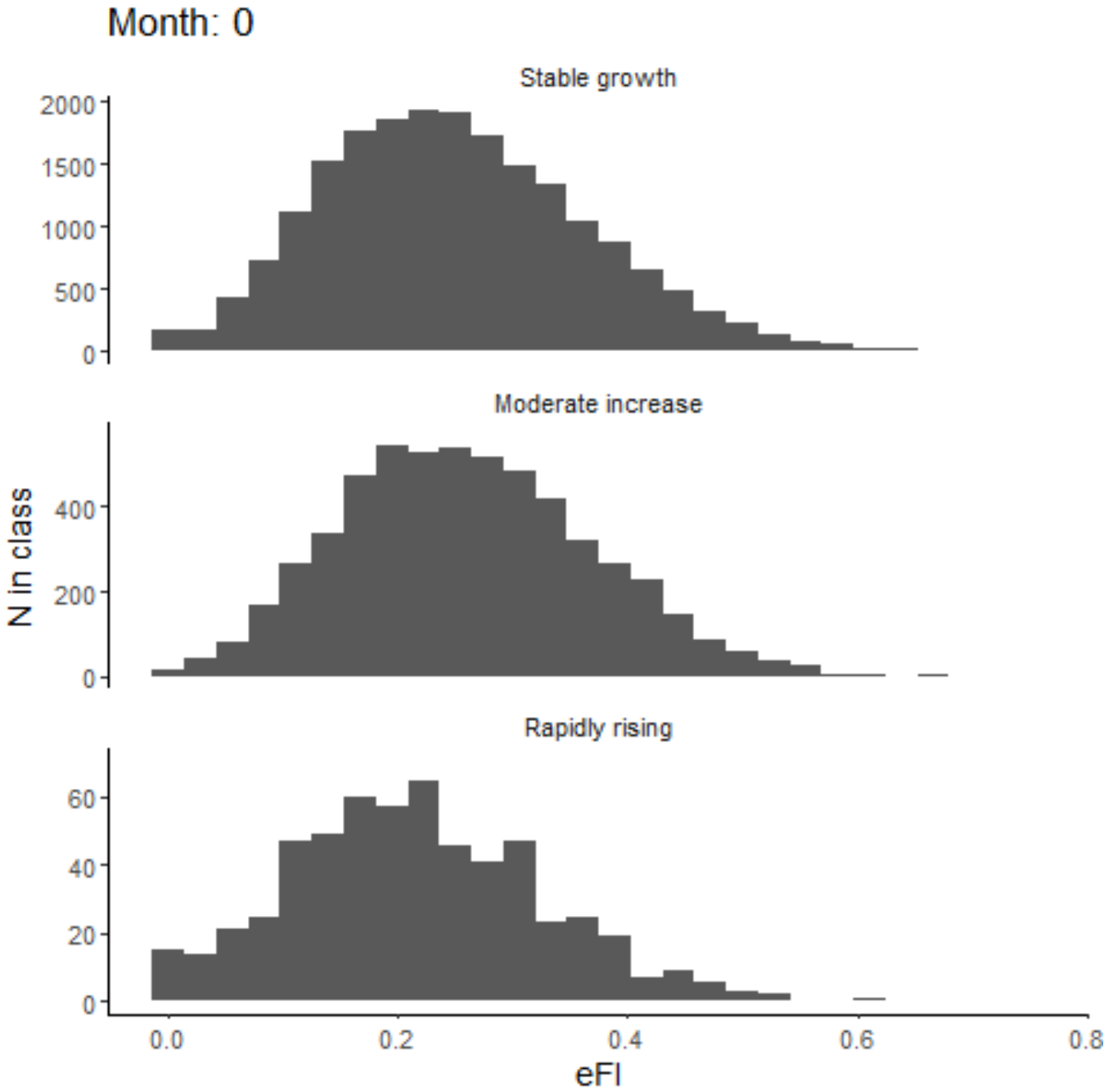

n = 20,144
(76.6%)

n = 5,571
(21.2%)

n = 583
(2.2%)

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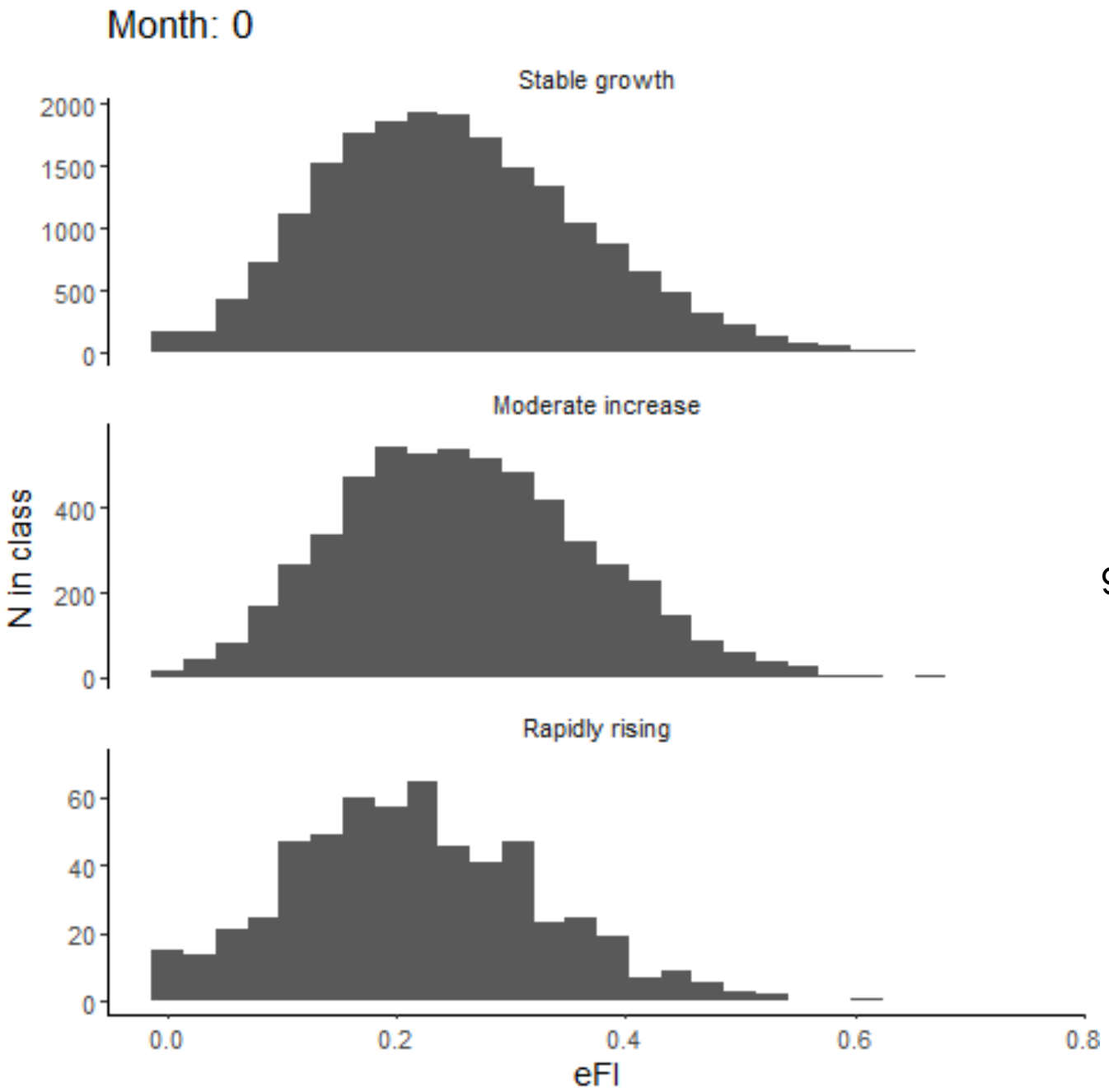

ref

OR 1.65

95% CI 1.54–1.76

OR 2.84

95% CI 2.34–3.45

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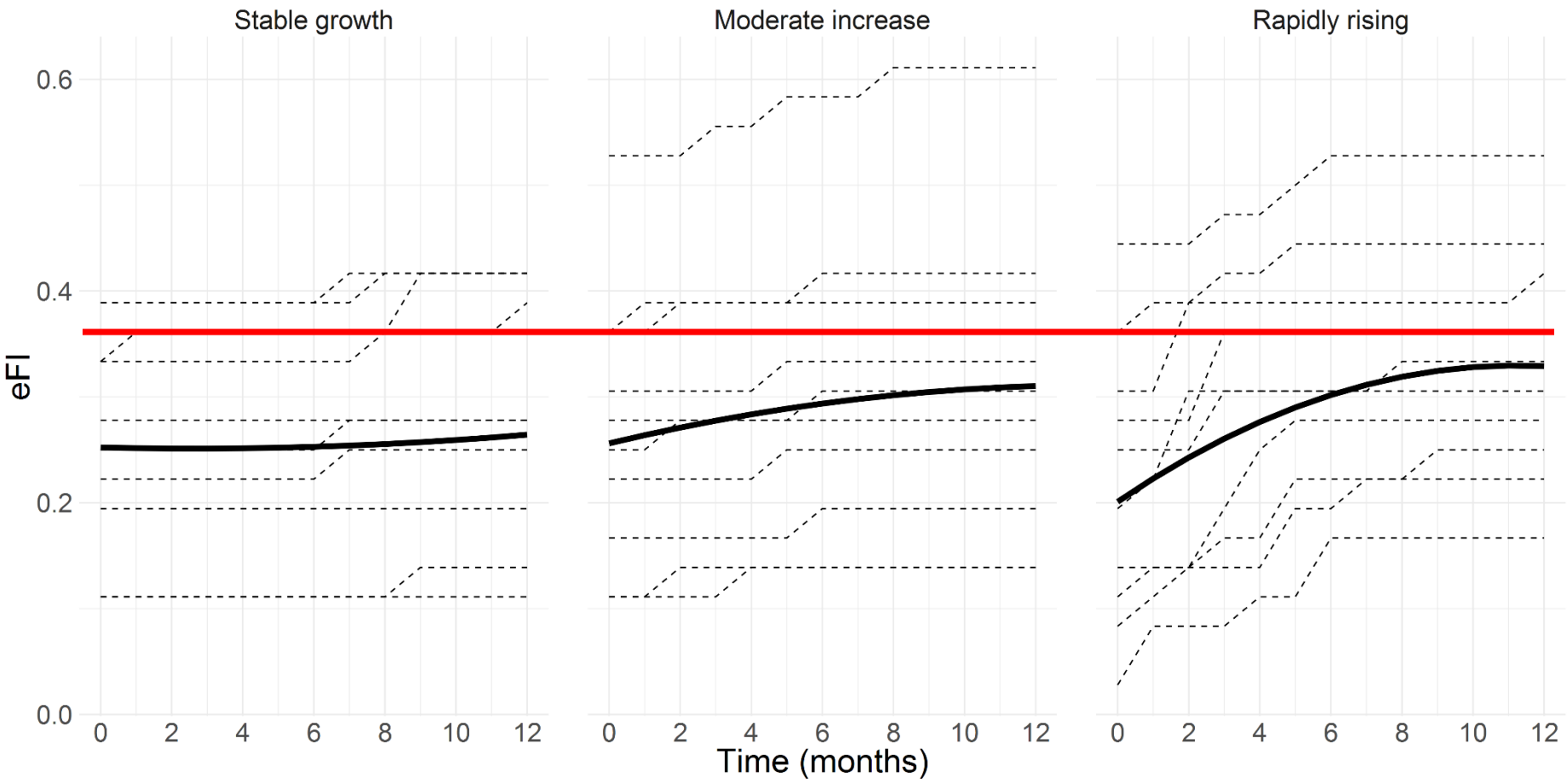
Stable growth
Moderate increase
Rapidly rising
eFI
0.0
0.2
0.4
0.6
0
2
4
6
8
10
12
Time (months)

BBC RADIO 4

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The Right Place for Reg?

Newcastle University

daniel.stow@ncl.ac.uk

@_danielstow

Thanks to: Fiona E Matthews & Barbara Hanratty

From Newcastle. For the world.

NIHR | School for Primary Care Research

This research is funded by the National Institute for Health Research School for Primary Care Research (NIHR-SPCR). The views expressed are those of the authors and not necessarily those of the NHS, the NIHR or the Department of Health.

How common is loneliness in later life? A meta-analysis

Dr Kavita Chawla
FUSE Healthy Ageing
September 2019

From Newcastle. For the world. For Ageing.

Newcastle University

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Photo by freestocks.org on Unsplash

Photo by Mathew MacQuarrie on Unsplash

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Campaign to EndLoneliness

CONNECTIONS IN OLDER AGE

JO COX LONELINESS

start a conversation

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BASIC AND APPLIED SOCIAL PSYCHOLOGY, *23*(4), 245–266

Influences on Loneliness in Older Adults: A Meta-Analysis

Martin Pinquart
Department of Developmental Psychology
Friedrich Schiller University of Jena

Silvia Sörensen
Department of Psychiatry
University of Rochester Medical Center

"A U-Shaped association between age and loneliness is identified"

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Office for National Statistics

The proportion of single-person households in over 85s will **increase by 125% by 2037**

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- What is the **prevalence** of loneliness?
- Does prevalence vary by **location**?
- Does prevalence change in the **older ages**?
- Has the prevalence **changed over time**?

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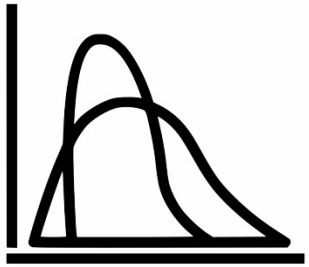
Systematic searches

Medline, Embase, Psycinfo, Cinahl, Social sciences premium collection



Meta-analysis

Observational studies

High income countries

Any tool/questionnaire

General population age >60

Published 2008-2018

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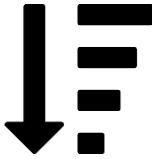
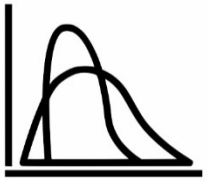
12505 records



10958 after deduplication

111 full text articles

34 eligible for inclusion



27 included in meta analysis

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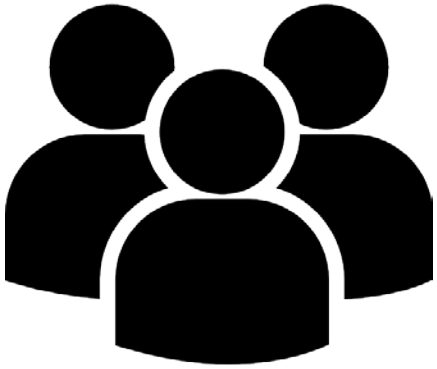
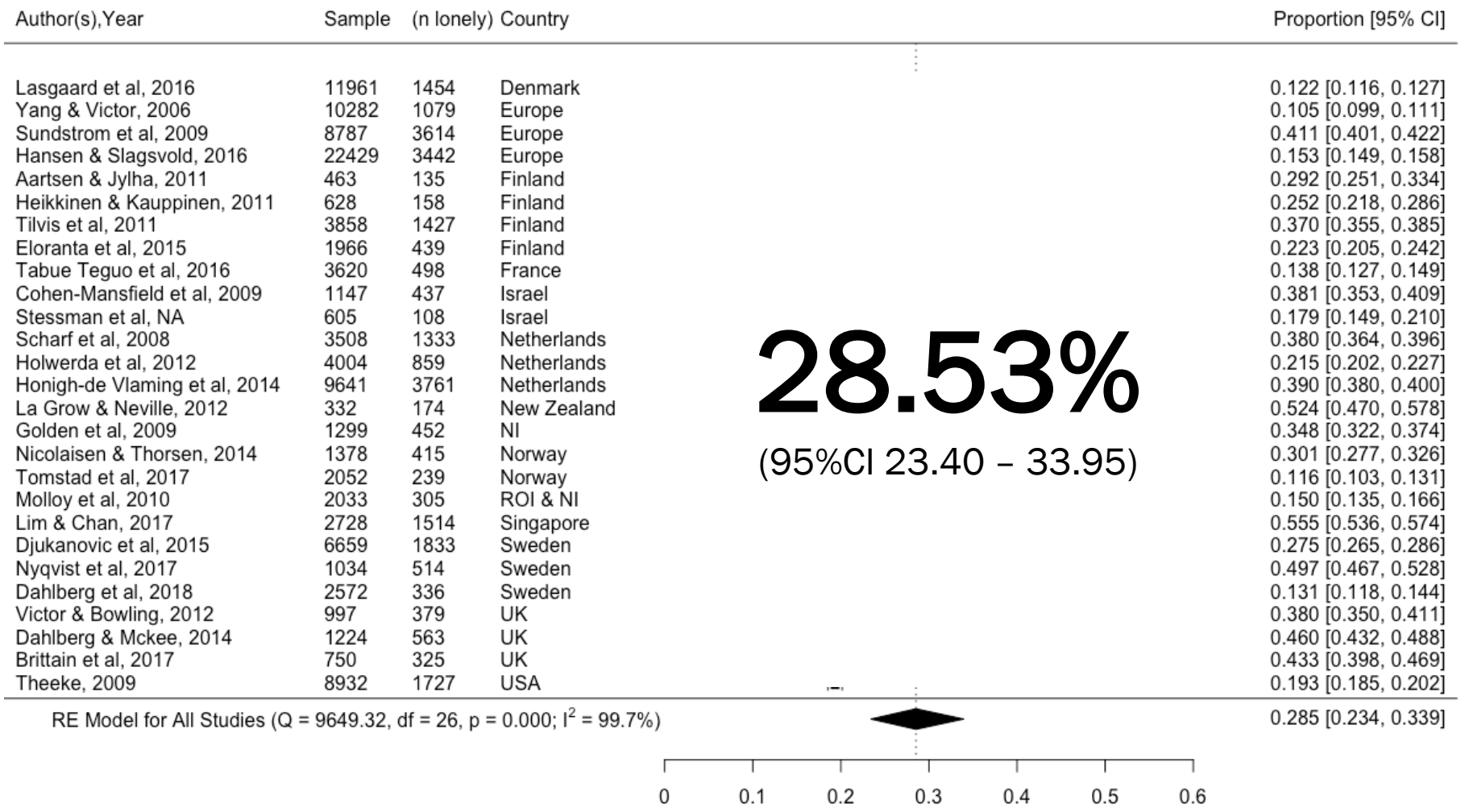


120,000 people

29 countries

- **What is the prevalence of loneliness?**
- Does prevalence vary by location?
- Does prevalence change in the older ages?
- Has the prevalence changed over time?

Loneliness: pooled prevalence

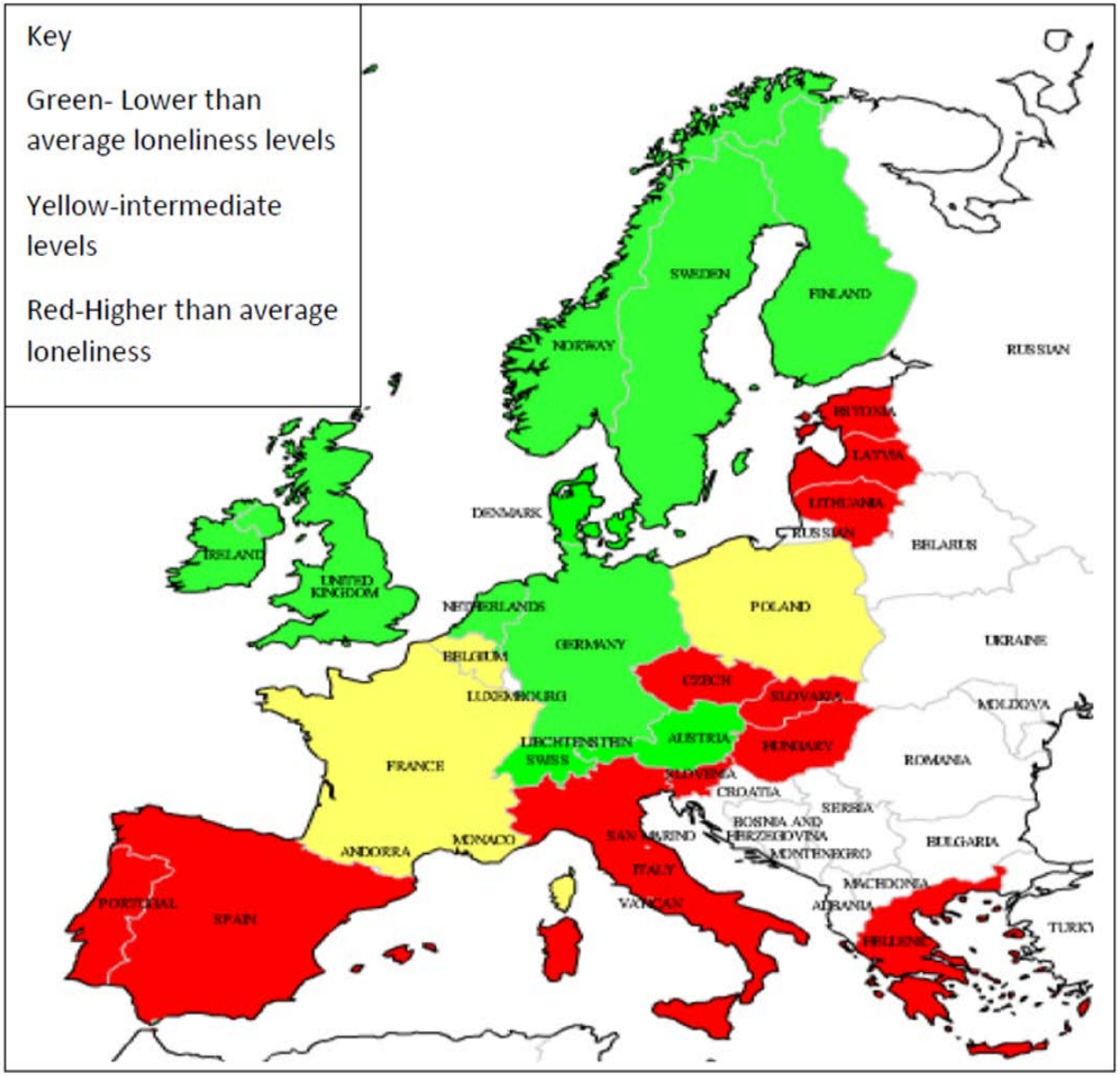


- The pooled estimate for severe loneliness (frequency or intensity) was 4.82% (95% CI 3.47 to 6.38%)

- Almost 1 in 20 older adults are severely lonely in the included studies

- What is the prevalence of loneliness?
- **Does prevalence vary by location?**
- Does prevalence change in the older ages?
- Has the prevalence changed over time?

Geographic variation



- What is the prevalence of loneliness?
- Does prevalence vary by location?
- **Does prevalence change in the older ages?**
- Has the prevalence changed over time?

Age variation

Author(s),Year	Sample	(n lonely)	Country	Group	Proportion [95% CI]
Yang et Victor- N.EU, 2006	10282	1079	Europe	65	0.105 [0.099, 0.111]
Tabue Teguo et al, 2016	1870	208	France	65	0.111 [0.097, 0.126]
Lasgaard et al, 2016	8874	994	Denmark	65	0.112 [0.106, 0.119]
Tomstad et al, 2017	2052	239	Norway	65	0.116 [0.103, 0.131]
Molloy et al, 2010	2033	305	ROI &NI	65	0.150 [0.135, 0.166]
Hansen & Slagsvold, 2016	22429	3442	Europe	65	0.153 [0.149, 0.158]
Stessman et al, NA	605	108	Israel	65	0.179 [0.149, 0.210]
Theeke, 2009	8932	1727	USA	65	0.193 [0.185, 0.202]
Holwerda et al, 2012	4004	859	Netherlands	65	0.215 [0.202, 0.227]
Eloranta et al, 2015	1966	439	Finland	65	0.223 [0.205, 0.242]
Heikkinen & Kauppinen, 2011	628	158	Finland	65	0.252 [0.218, 0.286]
Djukanovic et al, 2015	6659	1833	Sweden	65	0.275 [0.265, 0.286]
Aartsen & Jylha, 2011	463	135	Finland	65	0.292 [0.251, 0.334]
Nicolaisen & Thorsen, 2014	1378	415	Norway	65	0.301 [0.277, 0.326]
Golden et al, 2009	1299	452	ROI	65	0.348 [0.322, 0.374]
Scharf et al- Netherlands, 2008	3508	1333	Netherlands	65	0.380 [0.364, 0.396]
Victor & Bowling, 2012	997	379	UK	65	0.380 [0.350, 0.411]
Honigh-de Vlaming et al, 2014	9641	3761	Netherlands	65	0.390 [0.380, 0.400]
Sundstrom et al, 2009	8787	3614	Europe	65	0.411 [0.401, 0.422]
Dahlberg & Mckee, 2014	1224	563	UK	65	0.460 [0.432, 0.488]
La Grow & Neville, 2012	332	174	New Zealand	65	0.524 [0.470, 0.578]
Lim et Chan, 2017	2728	1514	Singapore	65	0.555 [0.536, 0.574]
Dahlberg et al, 2018	2572	336	Sweden	75	0.131 [0.118, 0.144]
Lasgaard et al, 2016	3087	460	Denmark	75	0.149 [0.137, 0.162]
Tabue Teguo et al, 2016	1750	290	France	75	0.166 [0.149, 0.184]
Tilvis et al, 2011	3858	1427	Finland	75	0.370 [0.355, 0.385]
Cohen-Mansfield et al, 2009	1147	437	Israel	75	0.381 [0.353, 0.409]
Brittain et al, 2017	750	325	UK	75	0.433 [0.398, 0.469]
Nyqvist et al, 2017	1034	514	Sweden	75	0.497 [0.467, 0.528]
RE Model for All Studies (Q = 9713.61, df = 28, p = 0.000; I^2 = 99.7%)					0.274 [0.224, 0.326]

60+

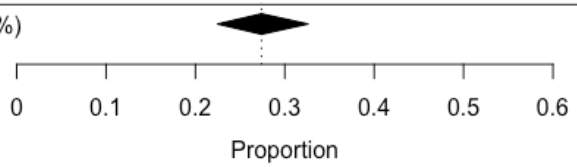
26.80%

(95% CI 21.23 to 32.8)

75+

29.29%

(95%CI 18.51 – 41.39)



- What is the prevalence of loneliness?
- Does prevalence vary by location?
- Does prevalence change in the older ages?
- **Has the prevalence changed over time?**

Are we getting more lonely?

- **4 Studies** were repeated cross sections over time
- Gap of between **5 and 22 years**
- Found **no difference** in prevalence of loneliness

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- **3 in 10** adults over 60 feel lonely at any one time
- **1 in 20** adults over 60 are severely lonely
- Prevalence appears to be **constant across time**
- Geographical variation remains unexplained

Kavita.chawla@nhs.net

Acknowledgements: Professor Barbara Hanratty, Professor Dawn Craig, Patience Kunonga, Daniel Stow, Robert Barker, Sarah Khan, Aalya Al-Assaf

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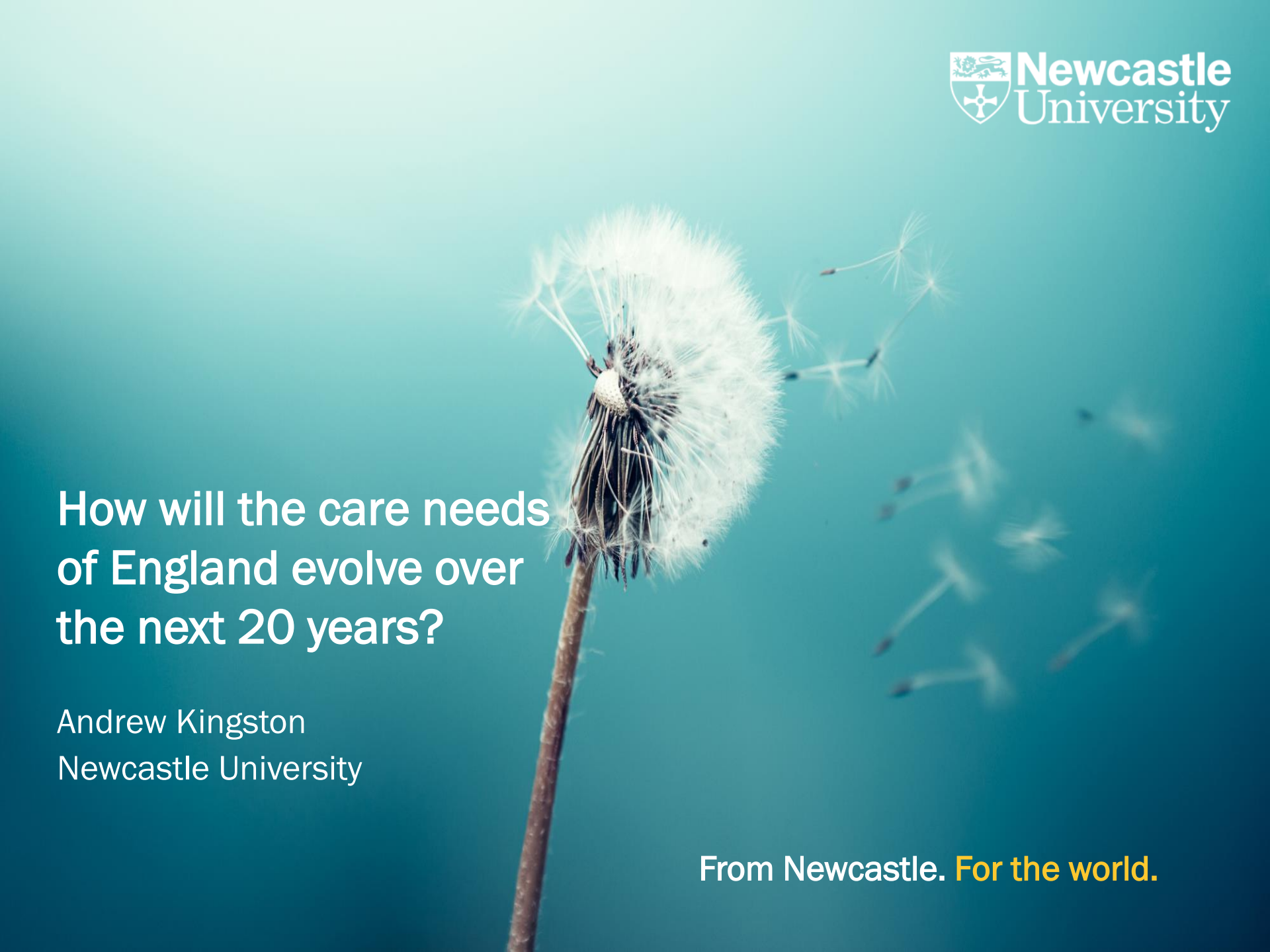
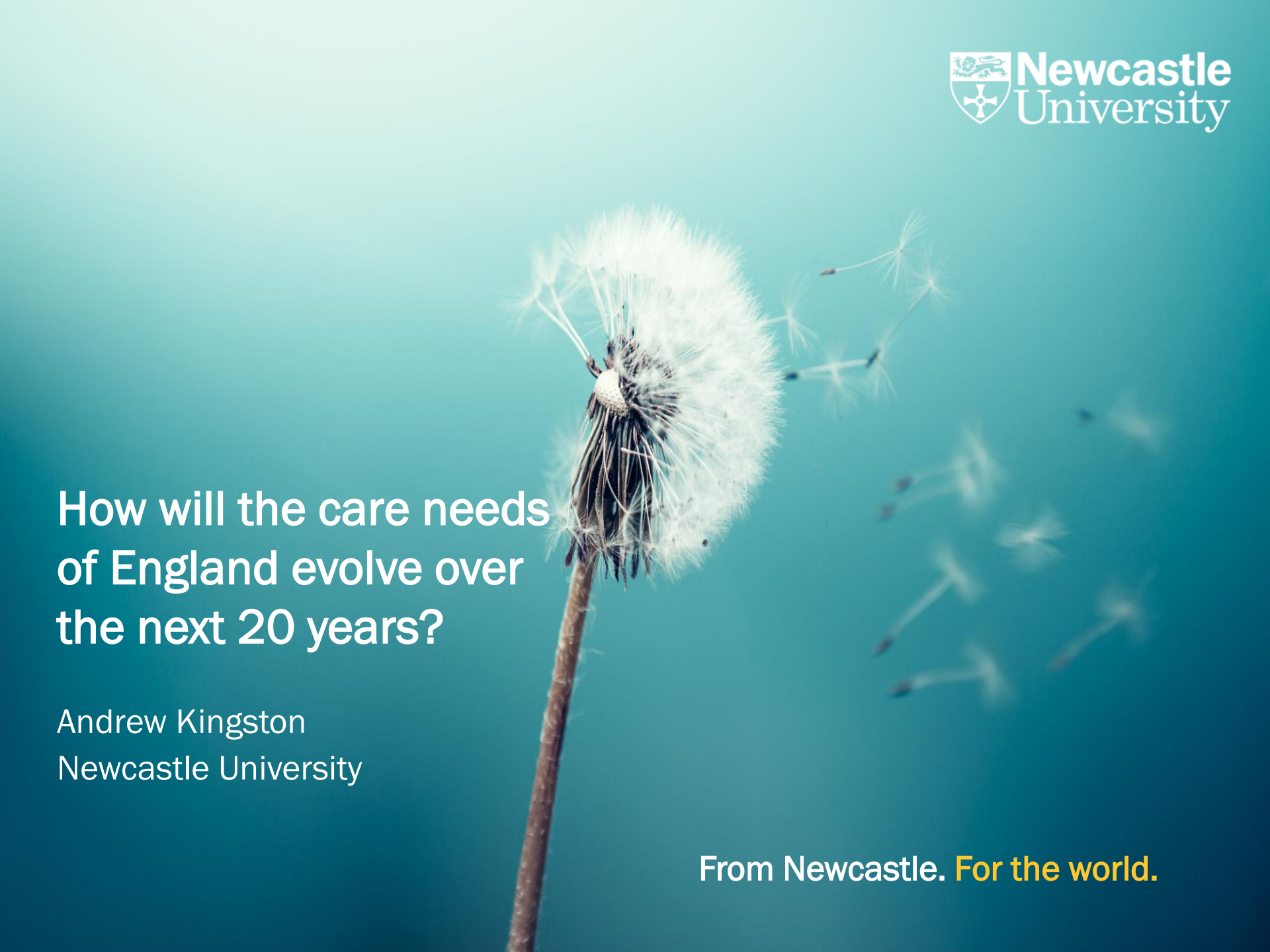


How will the care needs of England evolve over the next 20 years?

Andrew Kingston
Newcastle University

Newcastle University

From Newcastle. For the world.



How will the care needs of England evolve over the next 20 years?

Andrew Kingston
Newcastle University

Newcastle University

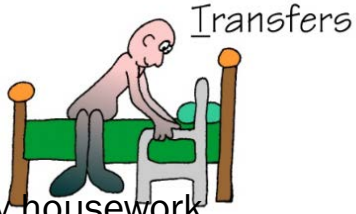
From Newcastle. For the world.

Measuring dependency

Interval of need (Isaacs and Neville, 1975):

- **High (requires 24-hour care)**
  bedbound or chairbound, or unable to get to or use the toilet without help, or need help feeding, or be often incontinent and need help dressing, or have severe cognitive impairment (MMSE < 10)

- **Medium (requires help at regular times daily)**
  need help preparing a meal, or dressing



- **Low (requires help less than daily)**
  need help to wash all over or bath, or cut toenails, or shop, or do light or heavy housework

- **Independent**

Population Ageing and Care Simulation (PACSim): Outline

Data Set Harmonisation

+

+

Survival
ONS 2014 population projections

Lifestyle factors
Smoking, physical activity, BMI

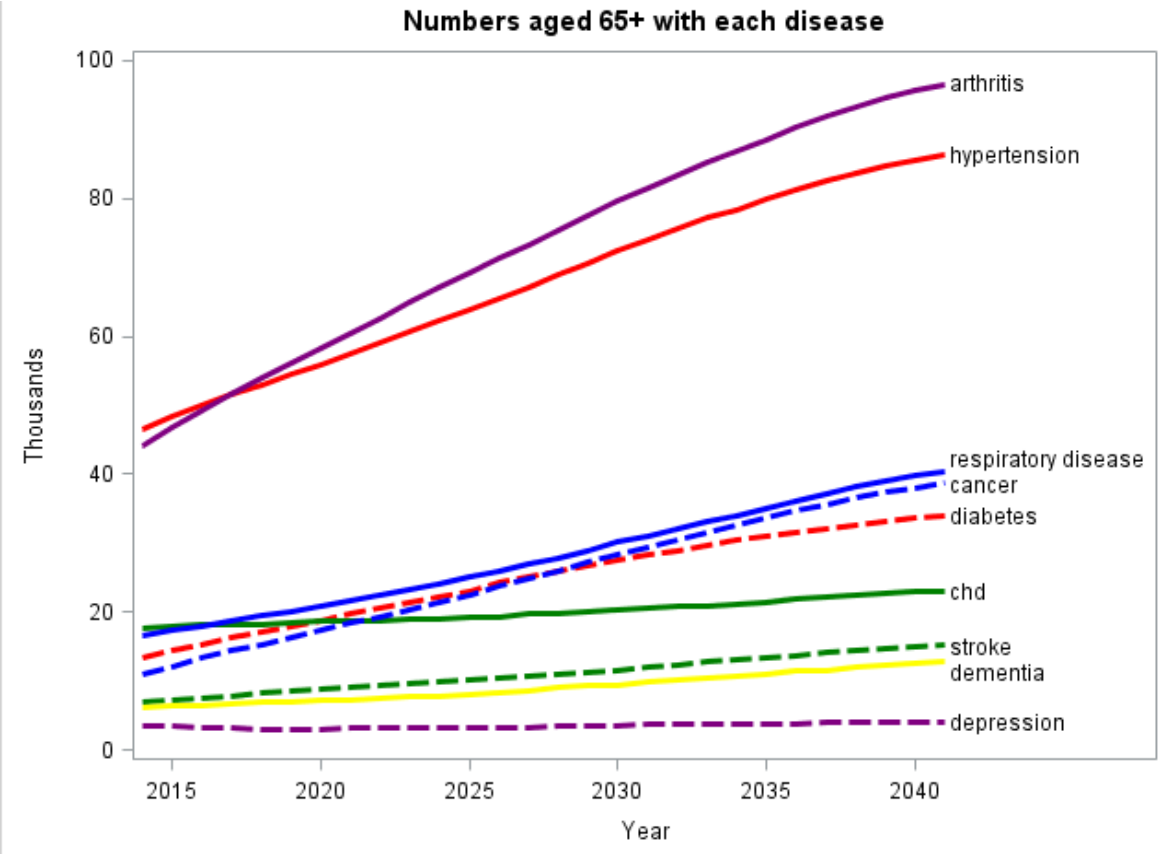
Morbidity
CVD, hypertension, diabetes, arthritis, stroke, respiratory disease, cancer, depression, visual impairment, hearing impairment, cognitive impairment, *dementia*

Sociodemographic factors
Age, sex, education, marital status, occupation

Dependency
High (requires 24 hr care)
Medium (requires care daily)
Low (requires care < daily)
Independent

Based on help required with (I)ADLs, cognitive impairment and incontinence

What does the future hold?



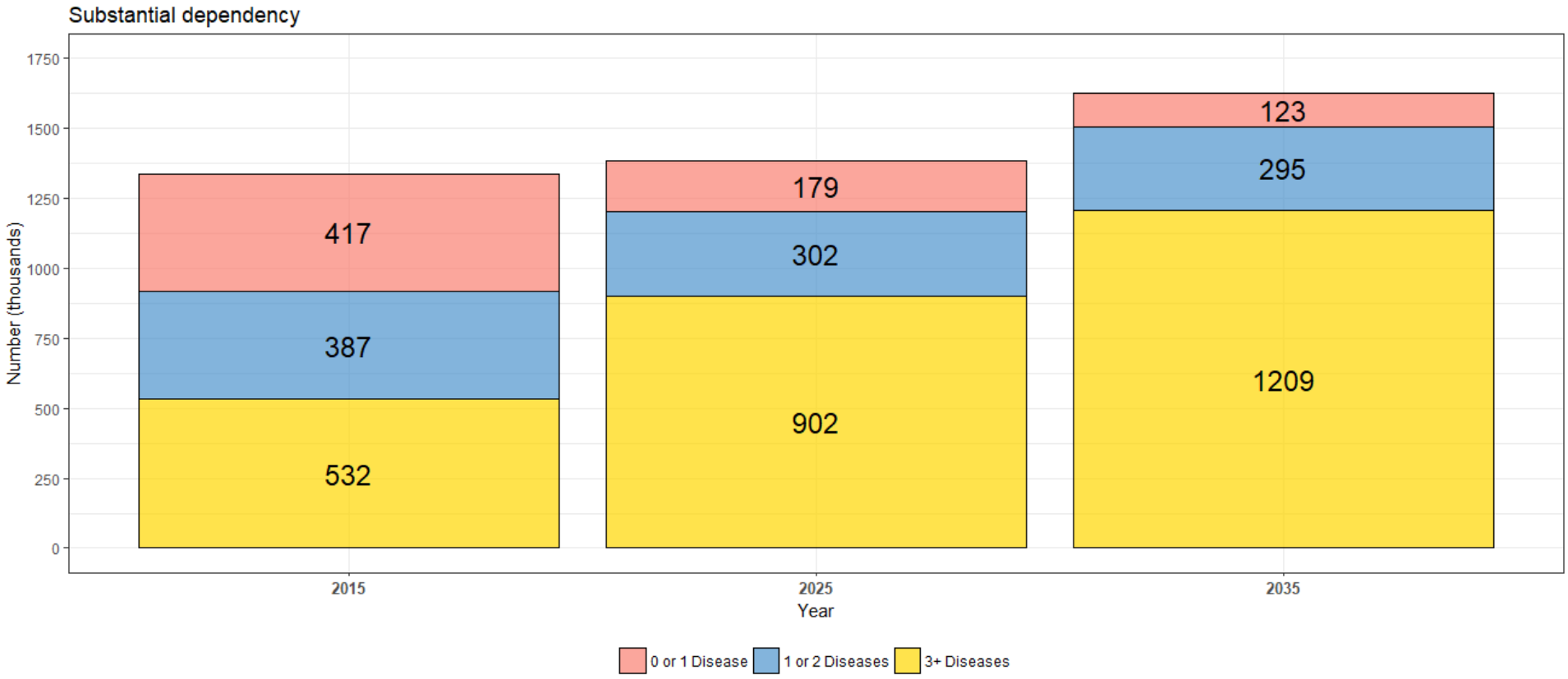
Age and Ageing 2018; 47: 374–380
doi: 10.1093/ageing/afx201
Published electronically 24 January 2018

Projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model

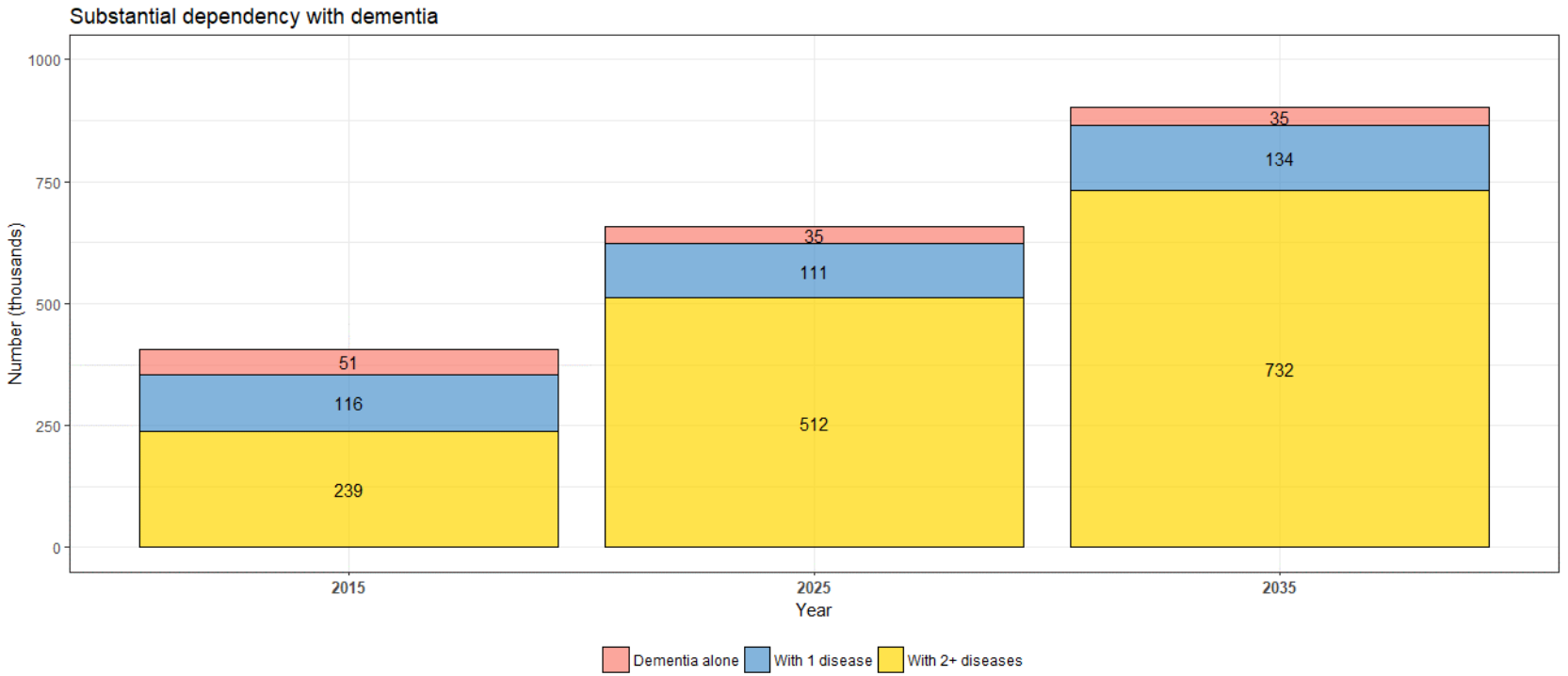
Andrew Kingston[1], Louise Robinson[1], Heather Booth[2], Martin Knapp[3], Carol Jagger[1], for the MODEM project

Dependency: the numbers

Moderate or high dependency

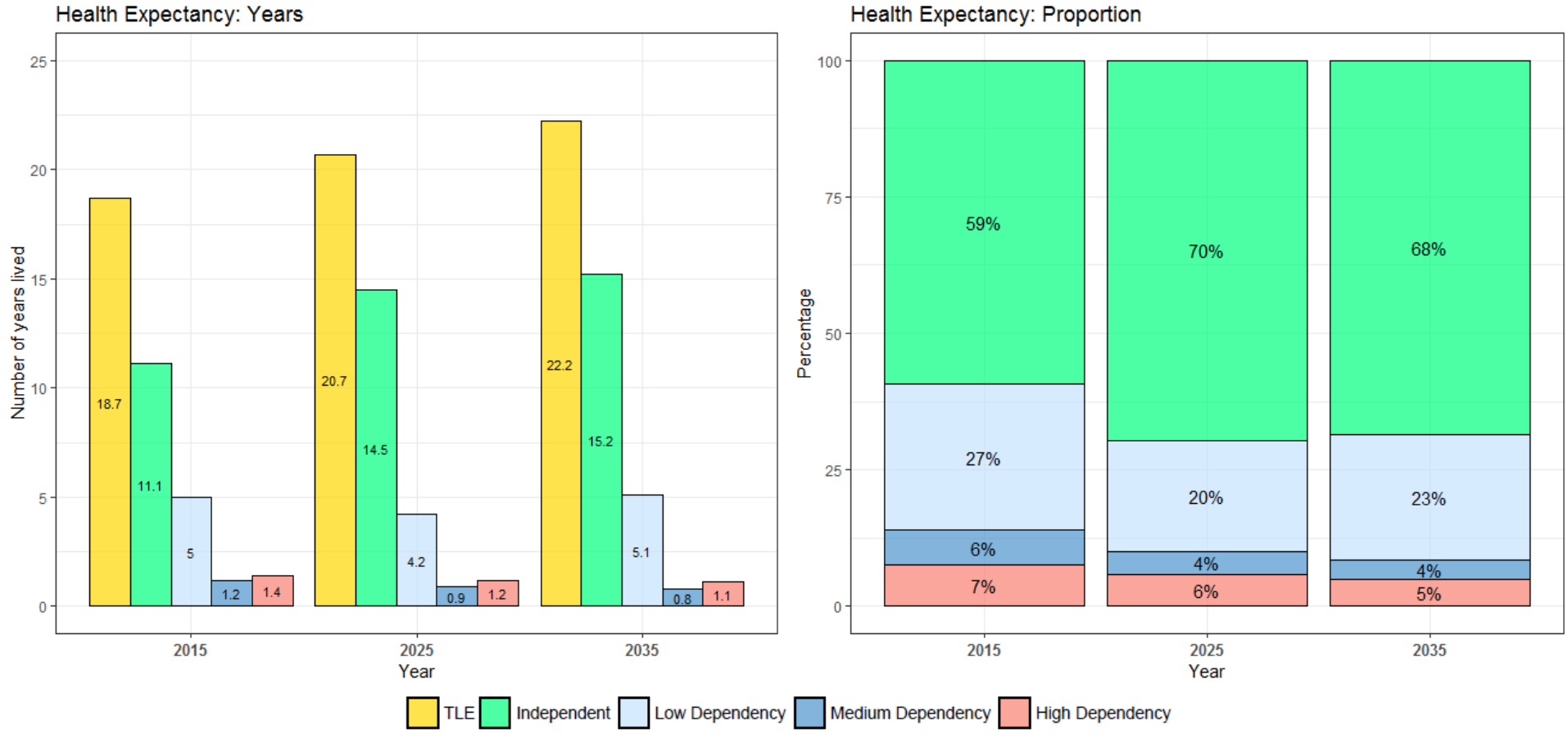


Moderate or high dependency

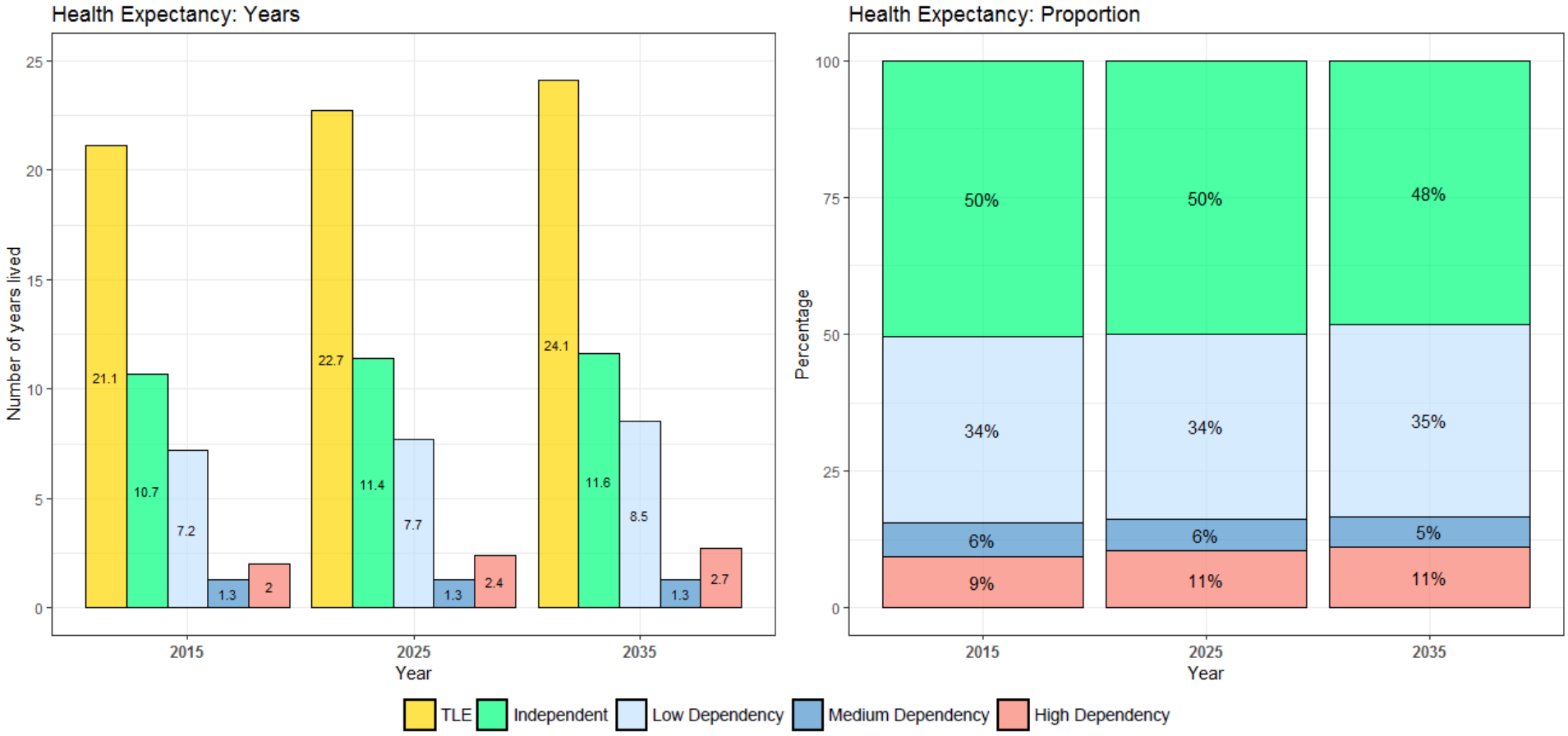


206% increase in those people with substantial care needs AND dementia AND complex multimorbidity

Health Expectancy at 65: Men



Health Expectancy at 65: Women



Conclusions (1)

1. The English population aged 65+ will see increases in the number of individuals independent but with complex care needs.

2. Trends for men and women are very different.

3. Men are predicted to experience a compression of dependency, whereas women are predicted to experience an expansion of low and high dependency.

Conclusions (2)

4. More individuals reaching 85 years or older who have higher levels of dependency, dementia, and comorbidity.

5. 206% increase (493 thousand people) in those people with substantial care needs AND dementia AND complex multimorbidity

6. Health and social care services must adapt to the complex care needs of an increasing older population.

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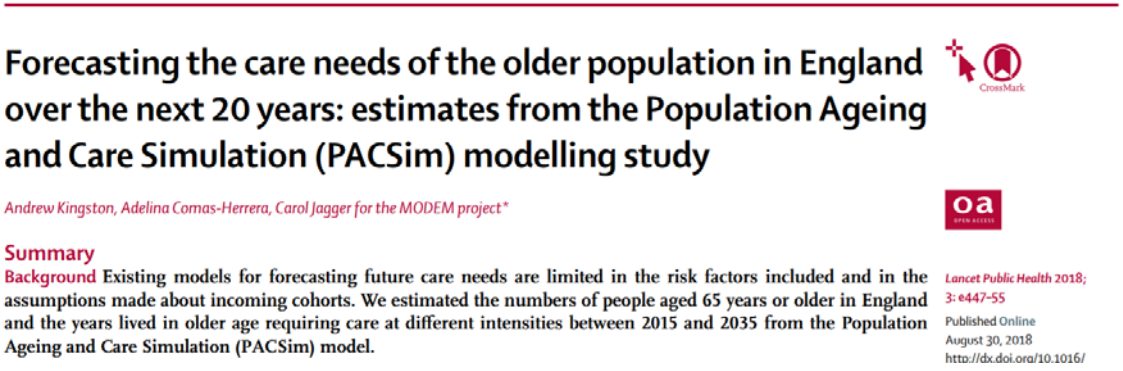
References & Questions



Forecasting the care needs of the older population in England over the next 20 years: estimates from the Population Ageing and Care Simulation (PACSim) modelling study

Andrew Kingston, Adelina Comas-Herrera, Carol Jagger for the MODEM project*

Summary

Background Existing models for forecasting future care needs are limited in the risk factors included and in the assumptions made about incoming cohorts. We estimated the numbers of people aged 65 years or older in England and the years lived in older age requiring care at different intensities between 2015 and 2035 from the Population Ageing and Care Simulation (PACSim) model.

Lancet Public Health 2018; 3: e447–55

Published Online August 30, 2018 http://dx.doi.org/10.1016/

Kingston, A., A. Comas-Herrera, and C. Jagger, *Forecasting the care needs of the older population in England over the next 20 years: estimates from the Population Ageing and Care Simulation (PACSim) modelling study.* The Lancet Public Health, 2018. **3**(9): p. e447-e455.

Kingston, A., et al., *Projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model.* Age and Ageing, 2018.

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