The English Longitudinal Study of Ageing
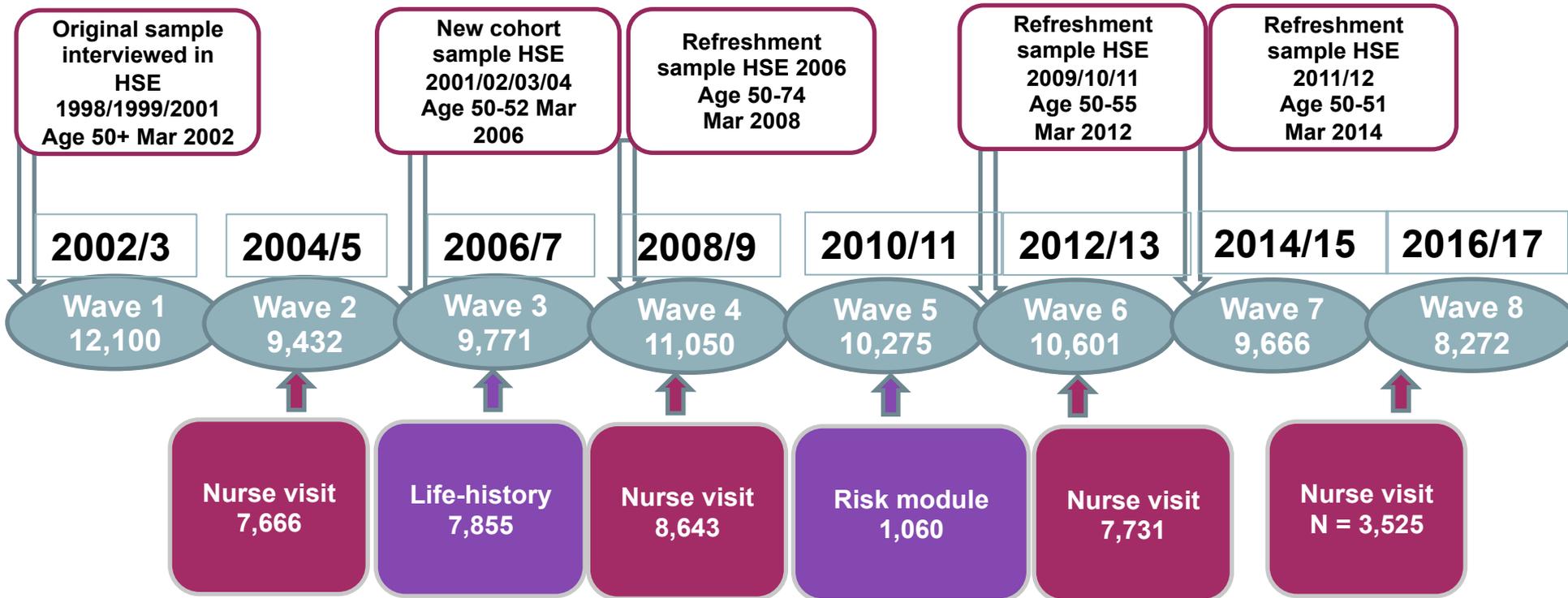## *Plans and selected findings*

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ELSA

Multidisciplinary: health, economic and social circumstances

| Original sample interviewed in HSE 1998/1999/2001 Age 50+ Mar 2002 | New cohort sample HSE 2001/02/03/04 Age 50-52 Mar 2006 | Refreshment sample HSE 2006 Age 50-74 Mar 2008 | Refreshment sample HSE 2009/10/11 Age 50-55 Mar 2012 | Refreshment sample HSE 2011/12 Age 50-51 Mar 2014 |

| 2002/3 | 2004/5 | 2006/7 | 2008/9 | 2010/11 | 2012/13 | 2014/15 | 2016/17 |

| Wave 1 12,100 | Wave 2 9,432 | Wave 3 9,771 | Wave 4 11,050 | Wave 5 10,275 | Wave 6 10,601 | Wave 7 9,666 | Wave 8 8,272 |

| Nurse visit 7,666 | Life-history 7,855 | Nurse visit 8,643 | Risk module 1,060 | Nurse visit 7,731 | Nurse visit N = 3,525 |

NatCen — National Centre for Social Research

MANCHESTER 1824

Institute for Fiscal Studies

ELSA: UK Data Archive

"Explore the UK's largest collection of UK and international social, economic and population data."

English Longitudinal Study of Ageing

Year	Modality	Sample	Refreshment
Wave 1 (2002/3)	CAPI	12,100	
Wave 2 (2004/5)	CAPI + Nurse visit	9,432	
Wave 3 (2006/7)	CAPI	9,771	HSE 2001-4
Wave 4 (2008/9)	CAPI + Nurse visit	11,050	HSE 2006
Wave 5 (2010/11)	CAPI	10,274	
Wave 6 (2012/13)	CAPI + Nurse visit	10,437	HSE 2009-11
Wave 7 (2014/5)	CAPI	9,666	HSE 20011-12
Wave 8 (2016/17)	CAPI + Nurse visit (50%)	8,445	
Wave 9 (2018/19)	CAPI + Nurse visit (50%)		HSE 2014-15

English Longitudinal Study of Ageing

Year	Modality	Sample	Refreshment
Wave 1 (2002/3)	CAPI	12,099	
Wave 2 (2004/5)	CAPI + Nurse visit	9,432 (7,666)	
Wave 3 (2006/7)	CAPI	9,771	HSE 2001-04
Wave 4 (2008/9)	CAPI + Nurse visit	11,050 (8,218)	HSE 2006
Wave 5 (2010/11)	CAPI	10,274	
Wave 6 (2012/13)	CAPI + Nurse visit	10,437 (7,699)	HSE 2009-11
Wave 7 (2014/5)	CAPI	9,666	HSE 2011-12
Wave 8 (2016/17)	CAPI + Nurse visit (50%)	8,445 (3,525)	
Wave 9 (2018/19)	CAPI + Nurse visit (50%)		HSE 2014-15

Biomarkers in ELSA

Wave 2 (2004/5)	Wave 4 (2008/9)	Wave 6 (2012/13)	Wave 8 (2016/17)
Weight, height, waist	Weight, height, waist	Weight, height, waist	Weight (in main interview) Waist (nurse visit)
Grip, balance, chair rise, tandem stand, leg raise, timed walk	Grip, balance, chair rise, tandem stand, leg raise, timed walk	Grip, balance, chair rise, tandem stand, leg raise, timed walk	Grip Timed walk
Blood pressure, lung function	Blood pressure, lung function	Blood pressure, lung function	Blood pressure
Lipids, triglycerides, HbA1c, glucose	Lipids, triglycerides, HbA1c, glucose	Lipids, triglycerides, HbA1c, glucose	Lipids, triglycerides HbA1c, glucose
C-reactive protein, fibrinogen	C-reactive protein, fibrinogen, white cell count	C-reactive protein, fibrinogen, white cell count	C-reactive protein, fibrinogen, white cell count
Haemoglobin, ferritin	Haemoglobin, ferritin	Haemoglobin, ferritin	Haemoglobin, ferritin
(DNA)	(DNA)	(DNA)	(DNA)
	IGF-1, DHEAS	IGF-1, Vitamin D	Vitamin D
Apolipoprotein E		Cortisol, DHEA, cortisone, testosterone, progesterone (hair)	PAXgene tubes
N = 7,666 (88%) Bloods = 6,231	N = 8,218 (86%) Bloods = 6,438	N = 7,699 (88%) Bloods = 6,180; Hair = 2,602	N = 3,525 Bloods = 2,762

Wave 9: timing and content

- Started in June 2018

- Nurse visit for the 50% who did not have one in wave 8

- Nutrition assessment
  - ➤ HRS FFQ: used in NICOLA

    Self-completion, no pictures

  - ➤ Oxford WebQ: used in UK Biobank, BCS70

    Internet-based 24 hour recall

Oxford WebQ

Did you eat any bread or crackers yesterday? ○ No ⊙ Yes

E.g. toast, sandwiches, rice cakes, bread rolls, hotdog roll, crumpets, tortilla wraps.

Bread		Amount	None	½	1	2	3	4	5	6+
	Sliced bread	Slice	○	○	○	○	○	○	○	○
	Sandwich baguette, ciabatta, panini, or sub	Bread item	○	○	○	○	○	○	○	○
	Large sandwich bap, stotty, pitta bread	Bread item	○	○	○	○	○	○	○	○
	Bread roll, bap, burger bun, hotdog roll, bagel	Bread item	○	○	○	○	○	○	○	○

Other bread and crackers		Amount	None	½	1	2	3	4	5	6+
	Naan bread	Bread item	○	○	○	○	○	○	○	○
	Garlic bread	Slice	○	○	○	○	○	○	○	○
	Crackers, crispbread, rice cakes, corn cakes (e.g. Ryvita)	Biscuit / Item	○	○	○	○	○	○	○	○
	Oat cakes	Biscuit	○	○	○	○	○	○	○	○
	Other bread (e.g. crumpets, tortilla wraps, breadsticks)	Slice / Item	○	○	○	○	○	○	○	○

Wave 9: content

- Nutrition assessment
- Food insecurity
- Expected retirement age and working beyond 70
- Citizenship

Reintroduce
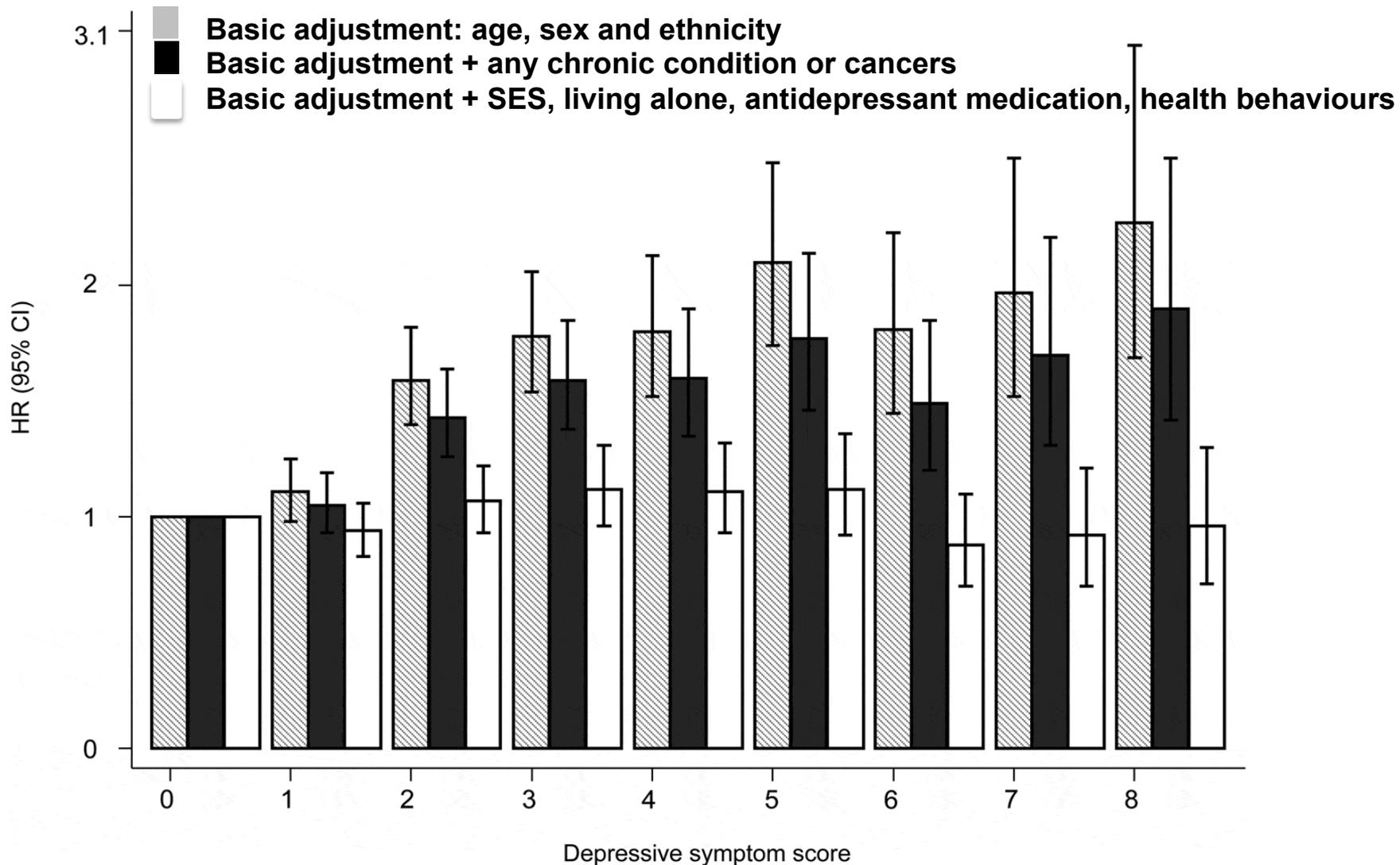- ➢ Religious attendance
- ➢ Time use

ELSA: Data linkage

- NHS Central Register (mortality and cancer incidence)

- Hospital Episode Statistics

- Genetic data

- National Insurance contributions

- Benefits incl. state pensions and tax credits

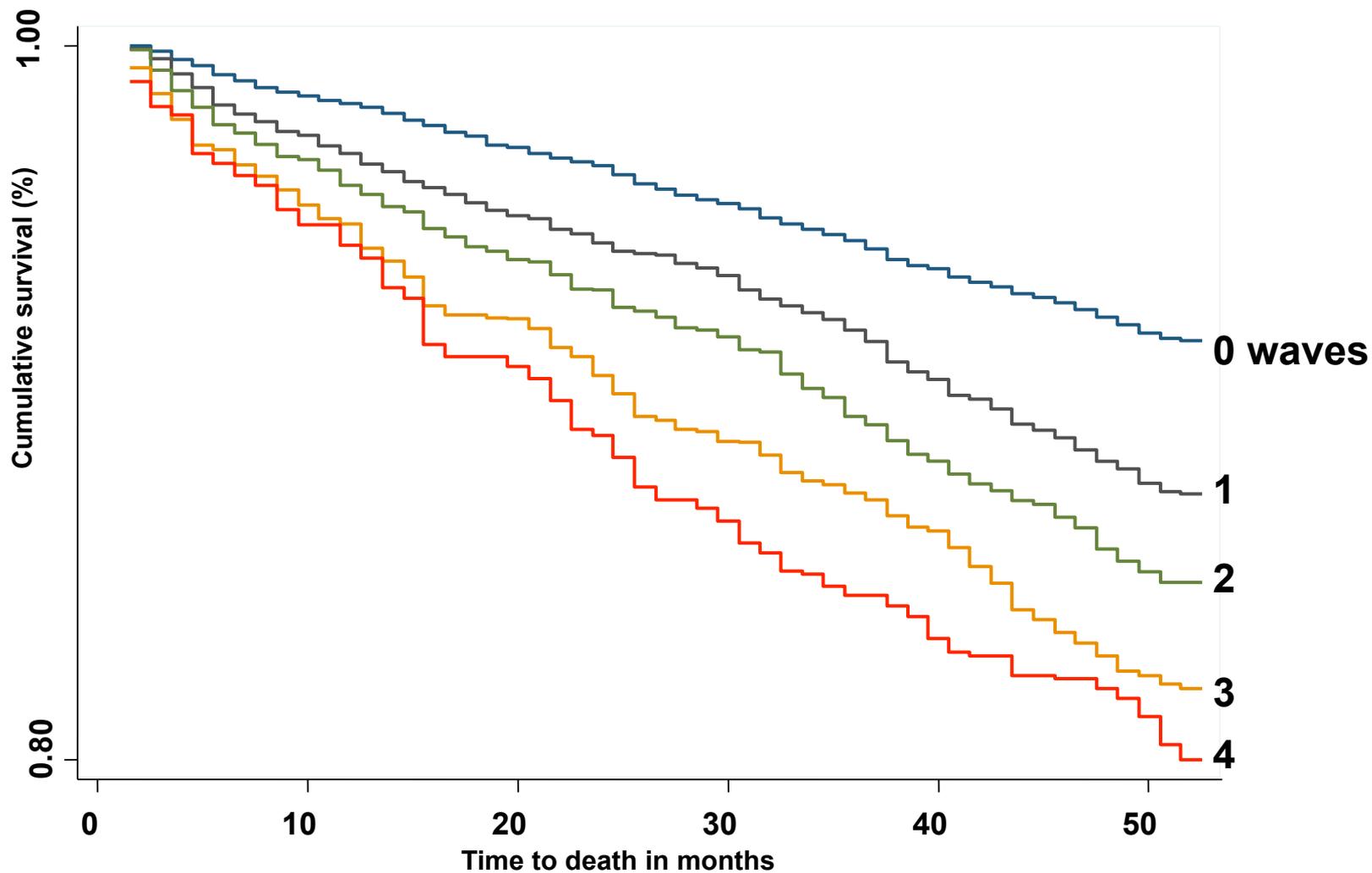- Tax records, savings, private pensions

Some advantages of ELSA

- Breadth of data (rather than depth) / multidisciplinary
- Policy-orientated questions
- Remains representative of general population
- Modest levels of attrition
- Data linkage
- Repeat measures across older age life course

Severity of depressive symptoms as a predictor of mortality

Legend:
- Basic adjustment: age, sex and ethnicity (grey)
- Basic adjustment + any chronic condition or cancers (black)
- Basic adjustment + SES, living alone, antidepressant medication, health behaviours (white)

Y-axis: HR (95% CI)
X-axis: Depressive symptom score

White et al. Batty. Psychological Medicine, 2015

Duration of Depressive Symptoms and Mortality

Survival according to number of waves with depression (Kaplan-Meier survival curves)

White et al. Batty, Brit J Psychiat, 2016

Number of waves with depression in relation to mortality in ELSA (N=9773)

	0* (6630)	1 (1595)	2 (738)	3 (444)	4 (366)	P for trend
Basic model (age & sex)	1	1.51 (1.24, 1.84)	1.62 (1.24, 2.12)	1.88 (1.39, 2.55)	2.29 (1.71, 3.06)	<0.001
Basic model + SES	1	1.44 (1.18, 1.75)	1.52 (1.15, 2.01)	1.71 (1.25, 2.34)	2.03 (1.51, 2.72)	<0.001
Basic model + behaviours	1	1.35 (1.10, 1.64)	1.33 (1.02, 1.75)	1.44 (1.06, 1.97)	1.58 (1.16, 2.15)	0.003
Basic model + illness	1	1.46 (1.20, 1.77)	1.55 (1.16, 1.98)	1.73 (1.26, 2.37)	2.00 (1.49, 2.68)	<0.001
All covariates	1	1.18 (0.96, 1.46)	1.08 (0.83, 1.41)	1.09 (0.80, 1.49)	1.05 (0.76, 1.43)	0.62

*referent category

32% of cohort members reported depression 'caseness' at some point in 8 year period

Other examples of papers using trajectories

Lassale et al, Association of 10-year C-reactive protein trajectories with markers of healthy aging. J Gerontol A Biol Sci Med Sci 2018

Stringhini et al., Socio-economic trajectories and cardiovascular disease mortality in older people. Int J Epidemio 2018

Zheng et al. Persistent depressive symptoms and cognitive decline in older adults. Brit J Psychiat 2018

Hamer et al. Physical activity and trajectories in cognitive function. J Epidemiol Comm Health 2017

ELSA publications

ELSA: Future

- Current funding (NIA and Government Departments) until spring 2020

- Applications for waves 10 and 11 not yet submitted

- Wave 10 planning this year