



# The Longitudinal Aging Study Amsterdam and the challenge of informing policy and practice

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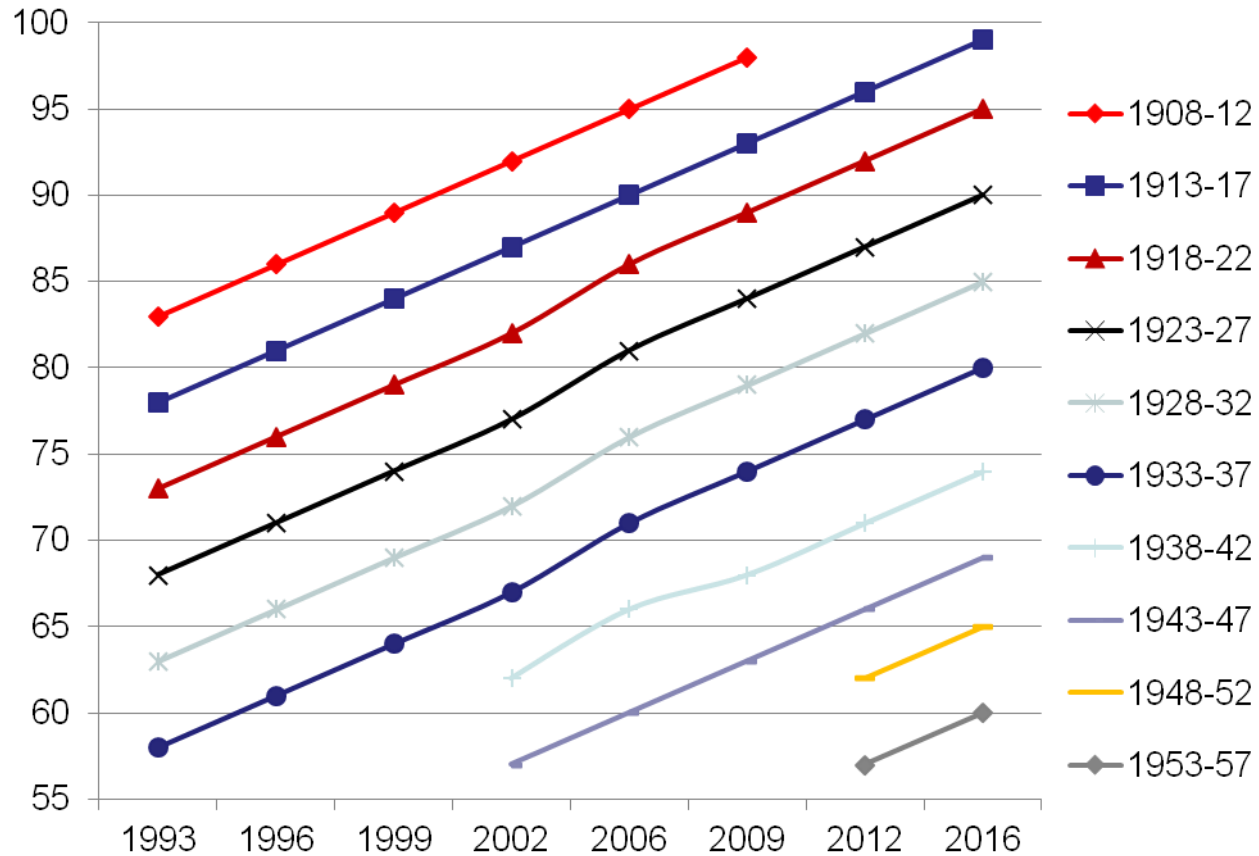




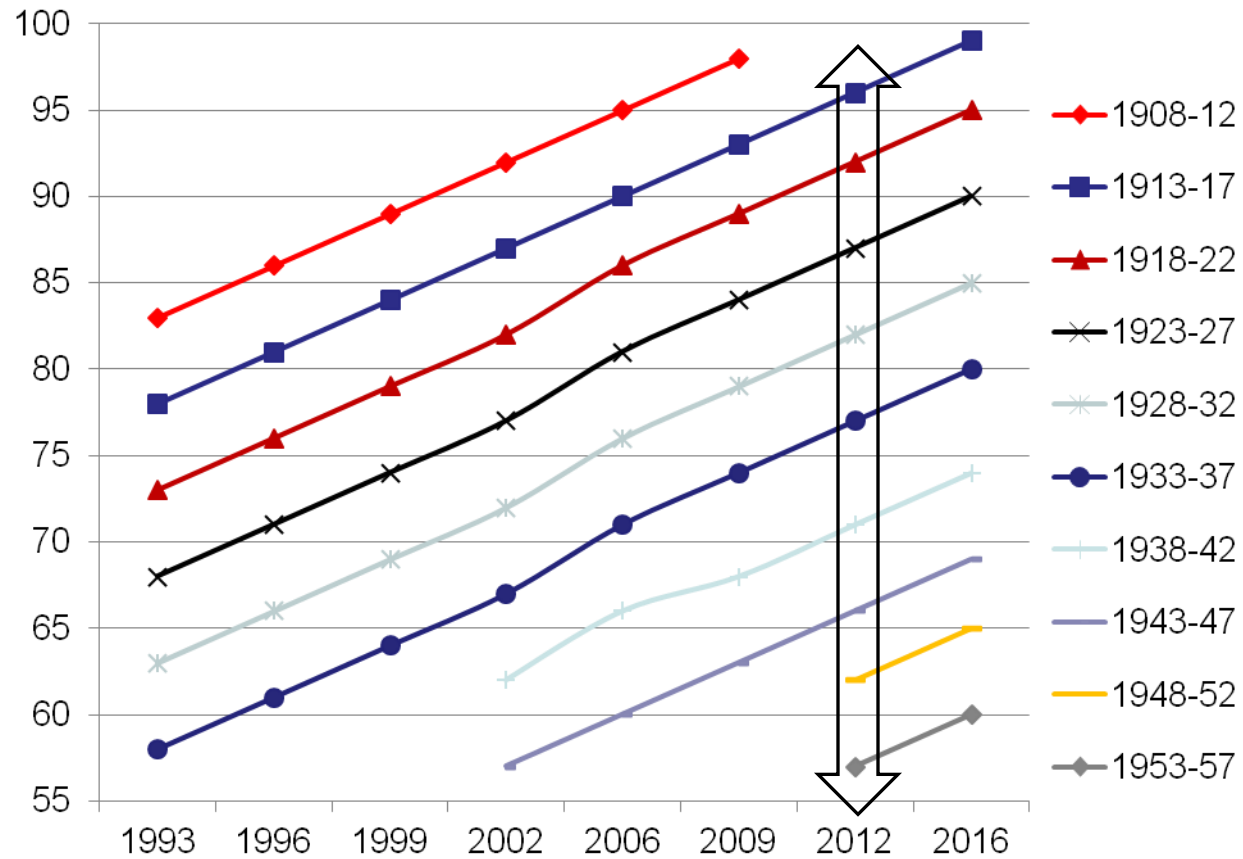
# Longitudinal Aging Study Amsterdam



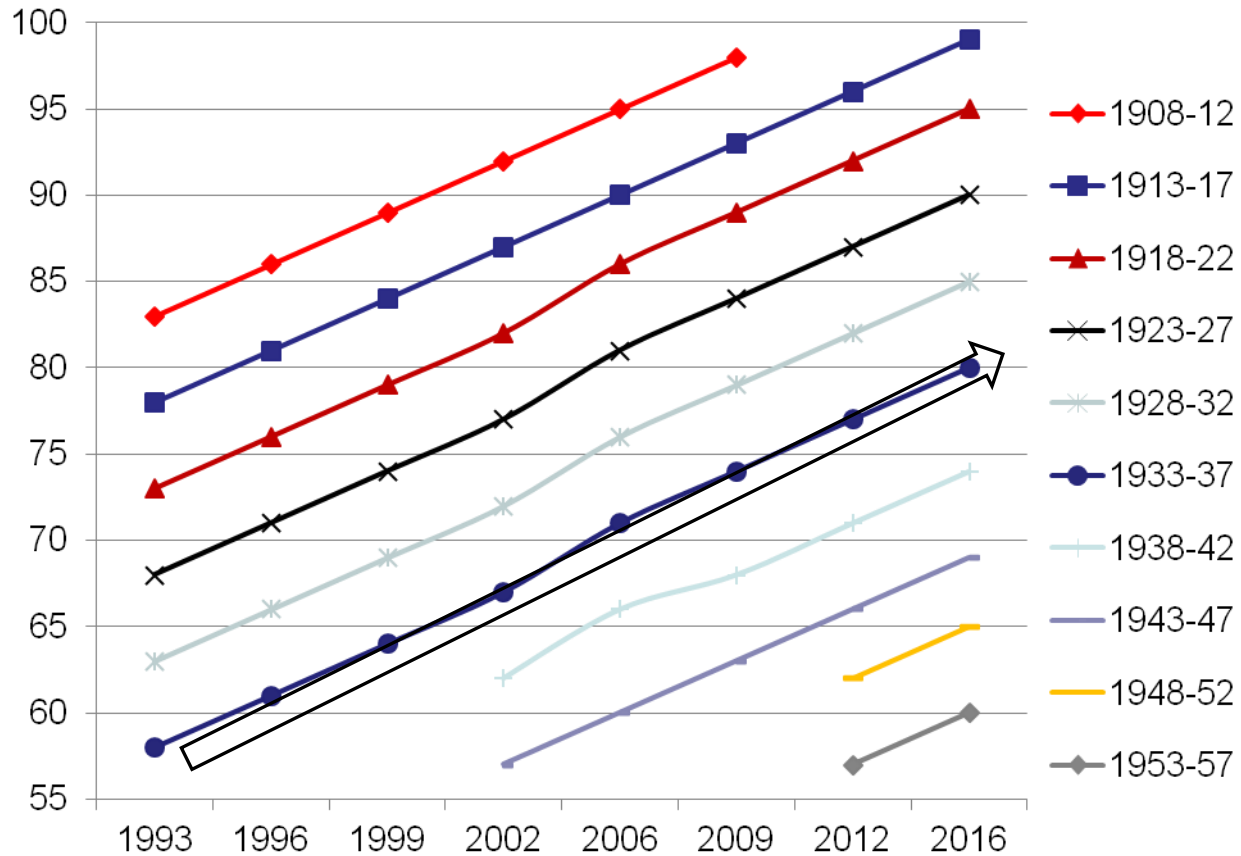
# Birth cohorts in LASA



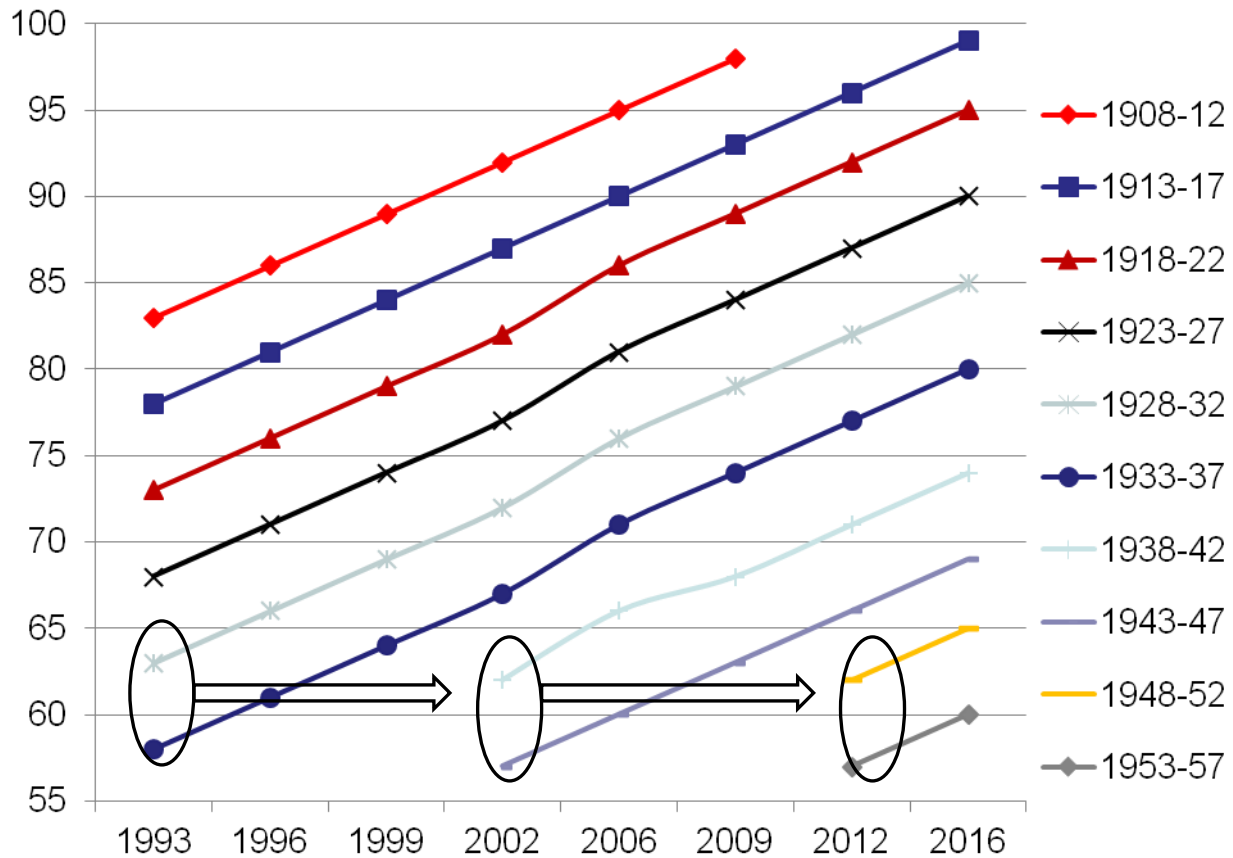
# Cross-sectional



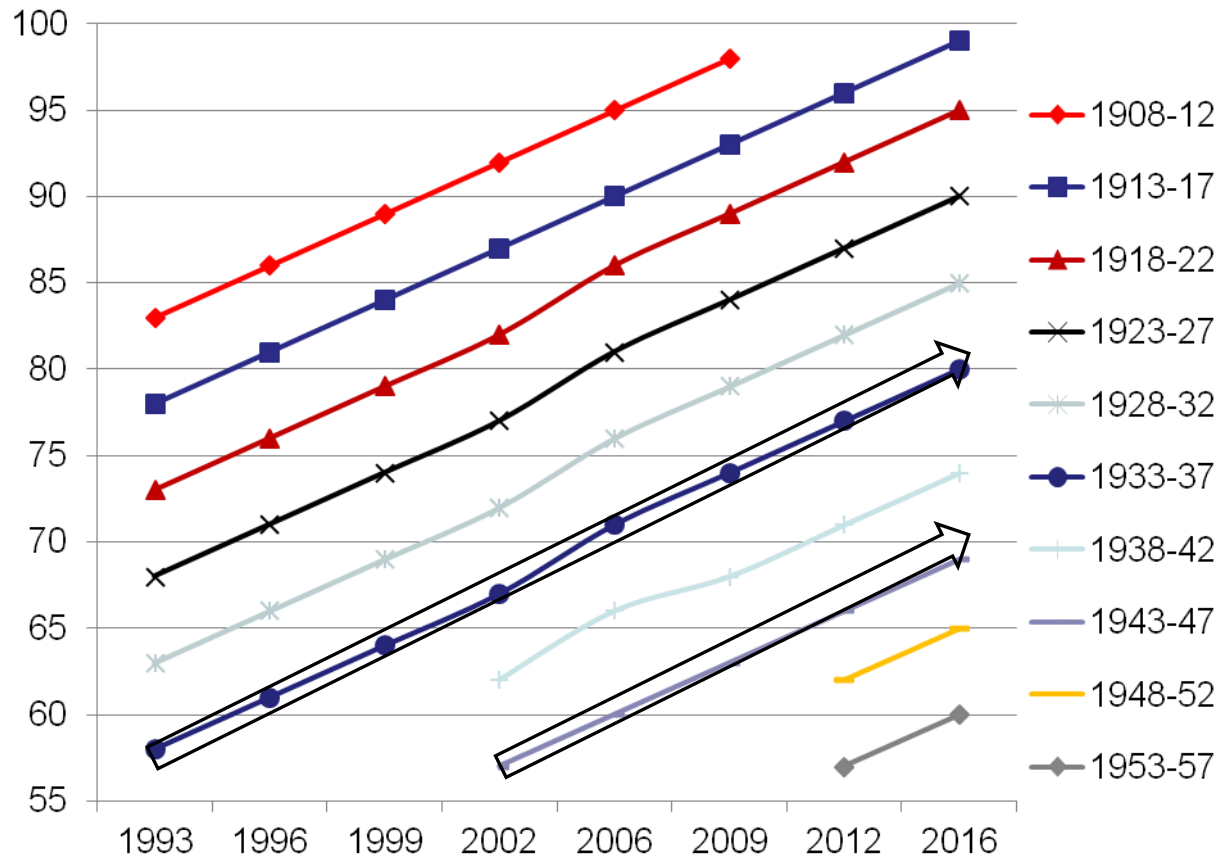
# Trajectories of functioning



# Cohort comparisons



# Diversity in ageing



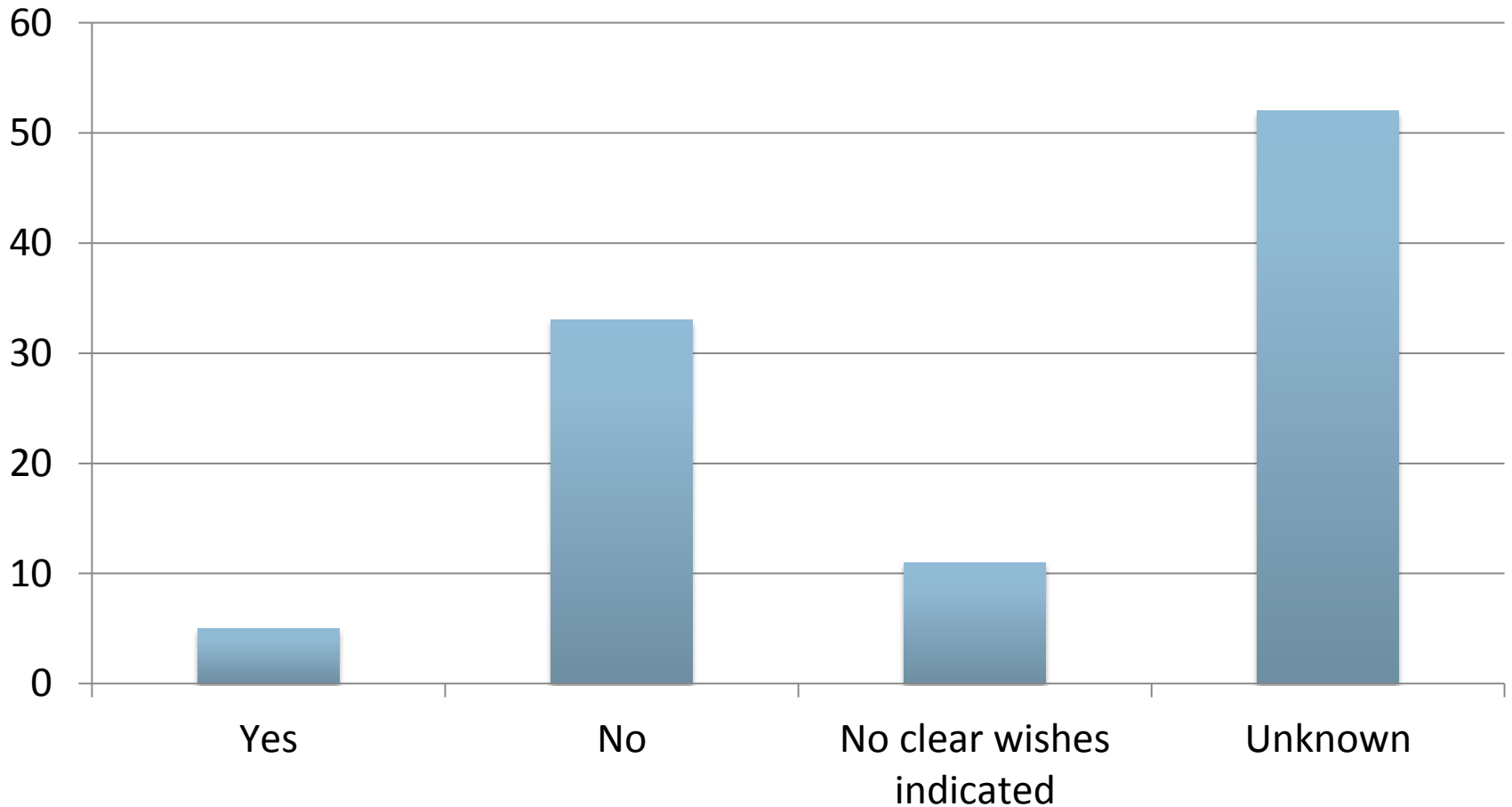


# The economist's view of (population) aging



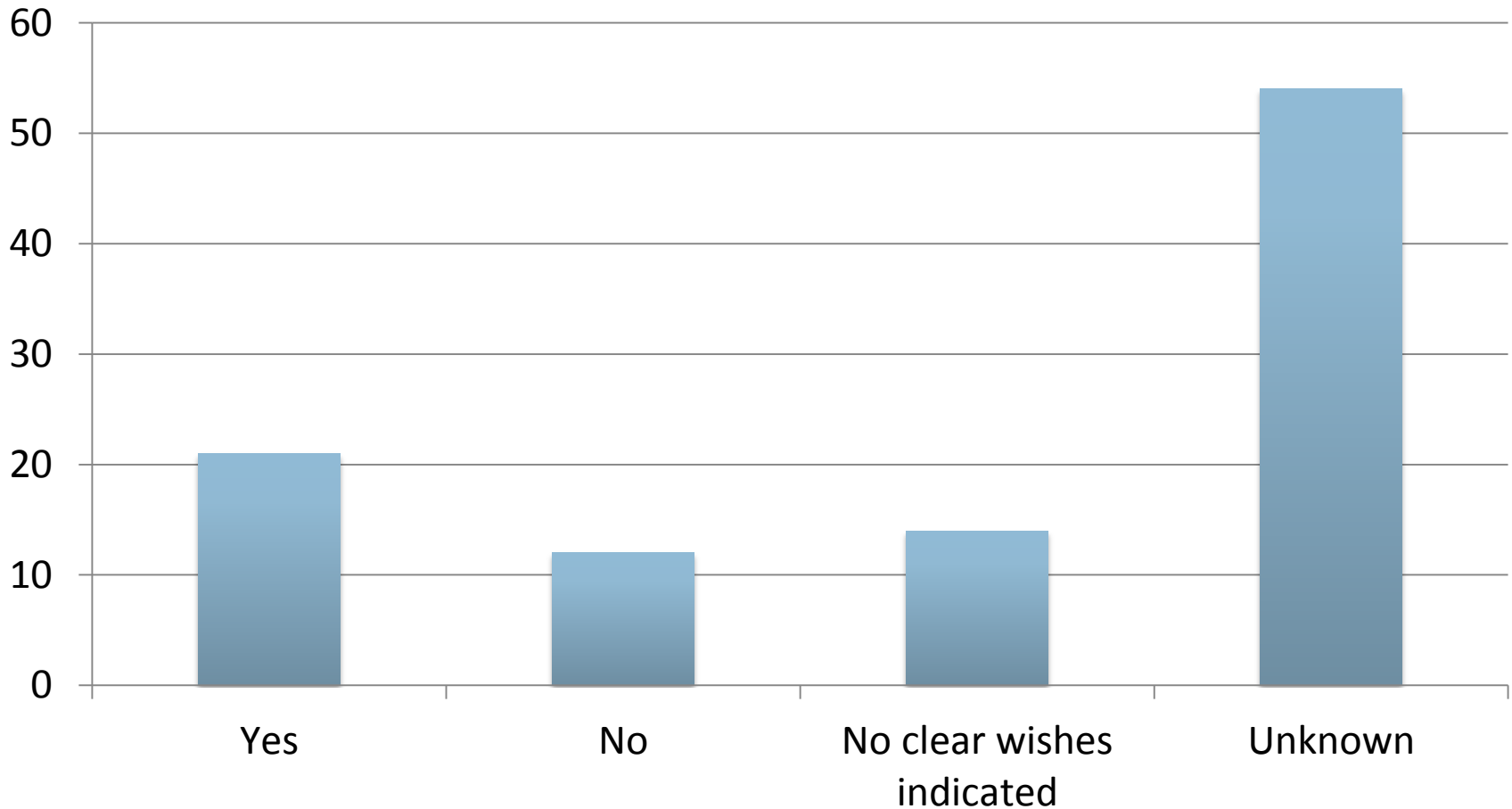


# Preferences with regard to reanimation



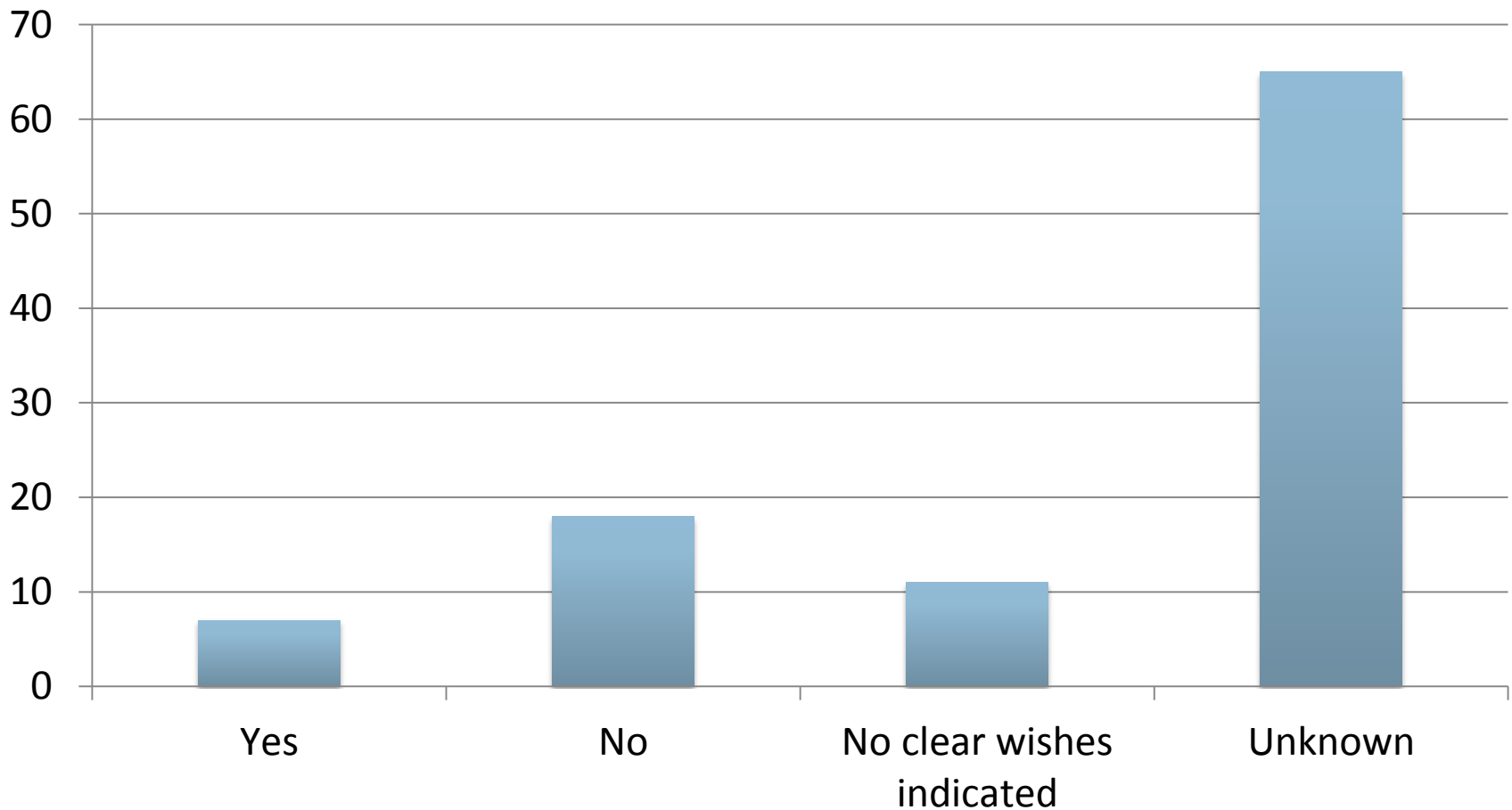
Source: H. R.W. Pasman, B.D. Onwuteaka-Philipsen en D.J.H. Deeg. De laatste levensmaanden van ouderen in Nederland. Access via: [www.lasa-vu.nl](http://www.lasa-vu.nl)

# Preferences with regard to antibiotics

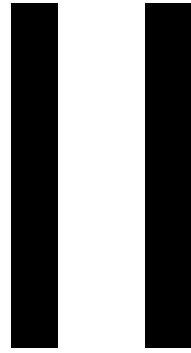


Source: H. R.W. Pasman, B.D. Onwuteaka-Philipsen en D.J.H. Deeg. De laatste levensmaanden van ouderen in Nederland. Access via: [www.lasa-vu.nl](http://www.lasa-vu.nl)

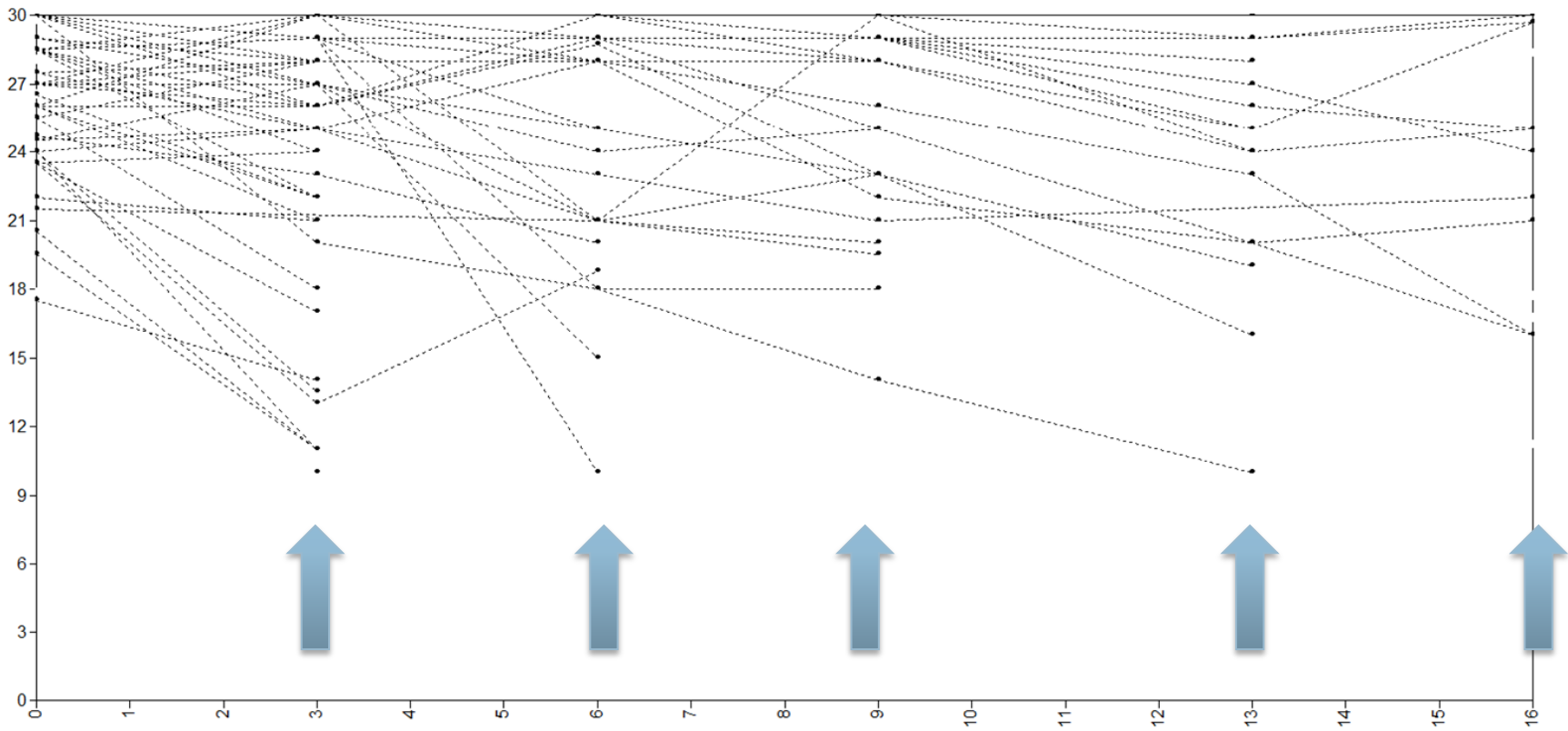
# Preferences with regard to artificial respiration



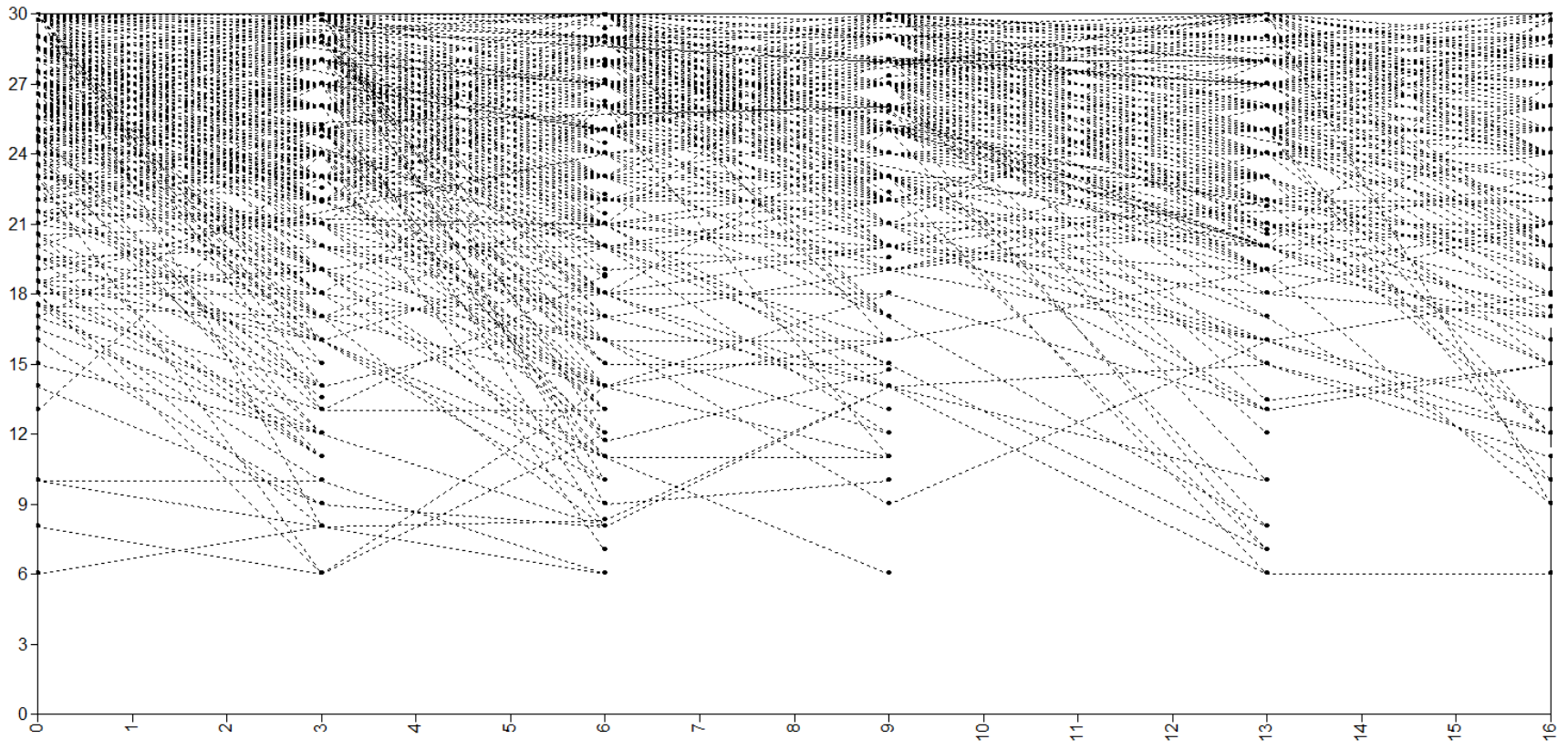
Source: H. R.W. Pasman, B.D. Onwuteaka-Philipsen en D.J.H. Deeg. De laatste levensmaanden van ouderen in Nederland. Access via: [www.lasa-vu.nl](http://www.lasa-vu.nl)



# Patterns of functional decline in 100 men in LASA



# Diversity in ageing; patterns of functional decline in LASA

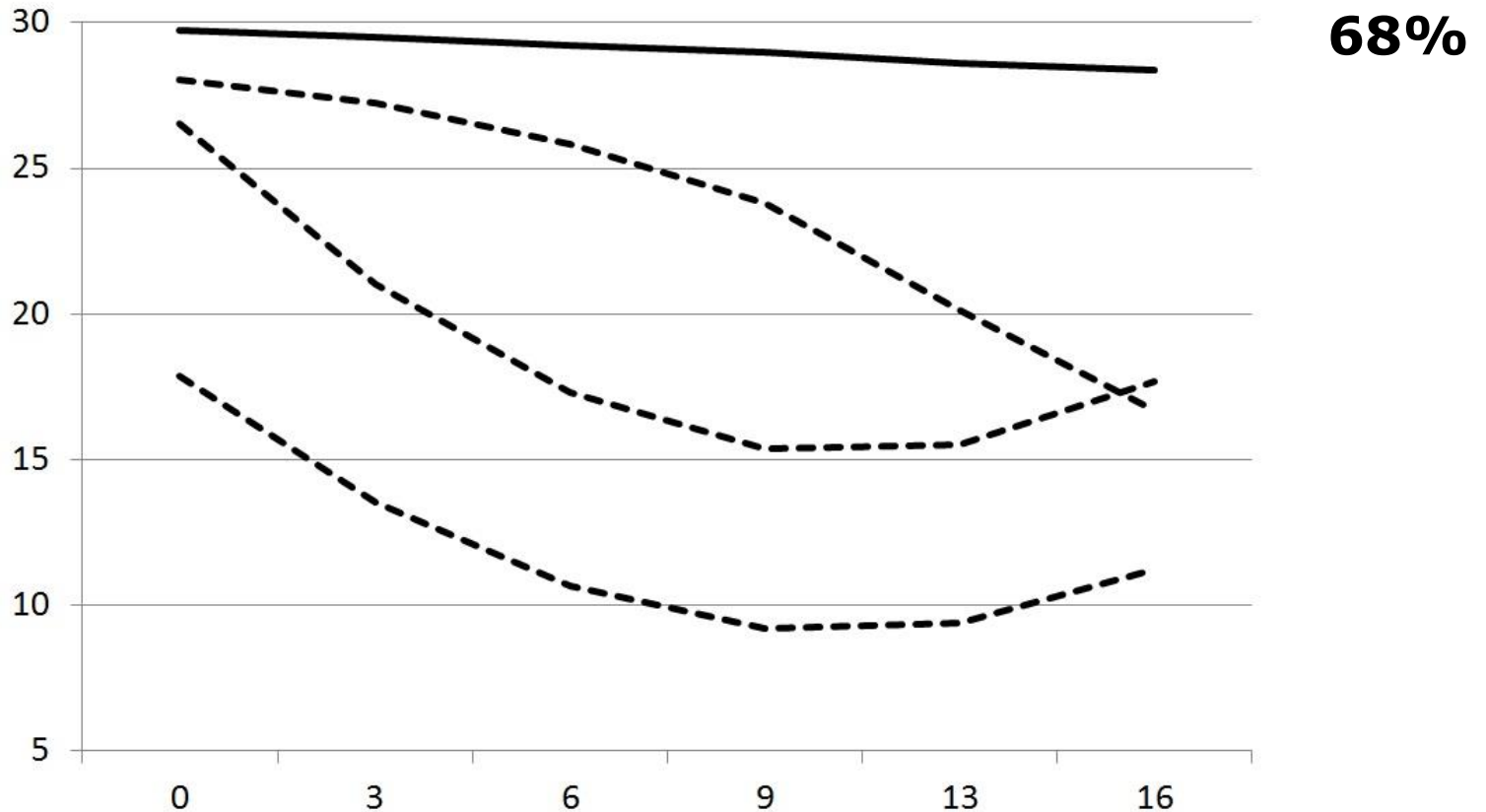




# Latent Class Growth Analysis

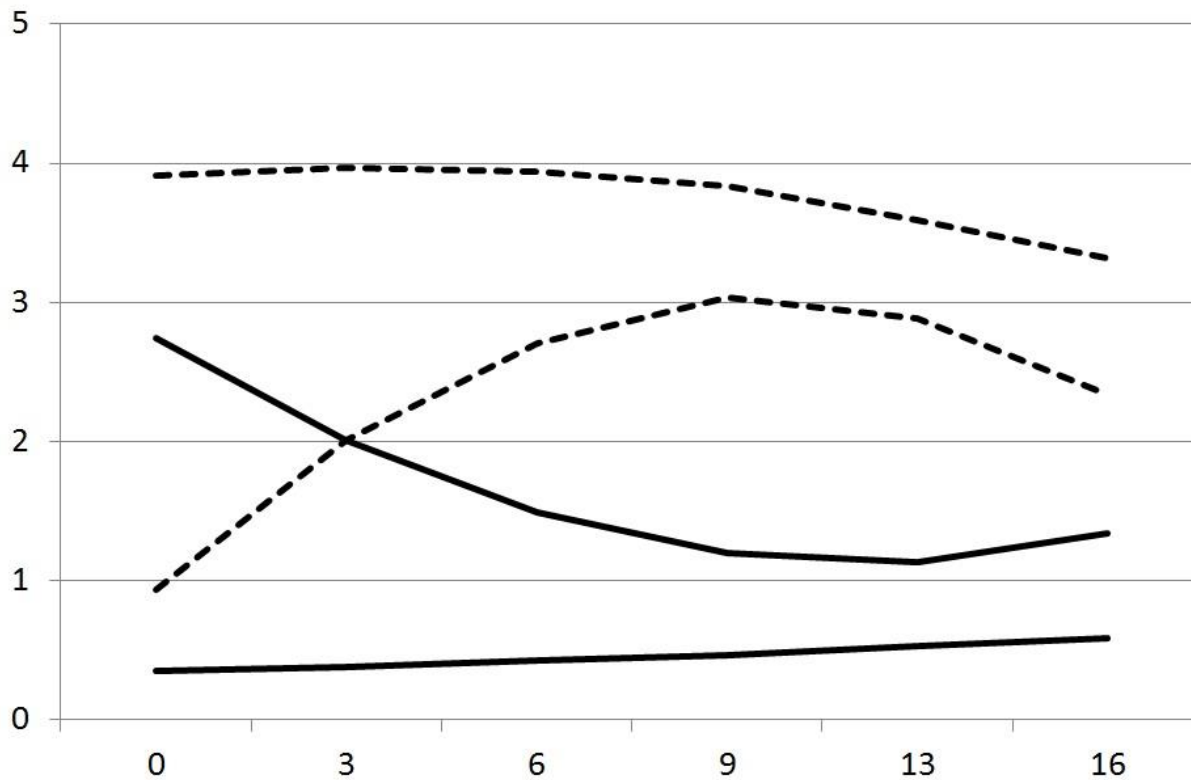
## Functional Limitations (men)

*higher score = better functioning*



# Latent Class Growth Analysis

**Loneliness (men)**  
*lower score = better functioning*



**79%**

# Successful Ageing index

- Functional limitations
- Self-assessed health
- Depressive symptoms
  - Loneliness
  - Satisfaction with life
- Cognitive functioning
  - Social activity
- Emotional support given
- Instrumental support given

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Research Article

# Capturing the Diversity of Successful Aging: An Operational Definition Based on 16-Year Trajectories of Functioning

Almar A. L. Kok, MSc, <sup>\*</sup>1,2, Marja J. Aartsen, PhD, <sup>2</sup> Dorly J. H. Deeg, PhD, <sup>1</sup>  
and Martijn Huisman, PhD <sup>1,2</sup>

<sup>1</sup>Department of Epidemiology and Biostatistics, Medical Faculty F-Wing, VU University Medical Center, Amsterdam, the Netherlands. <sup>2</sup>Department of Sociology, Faculty of Social Sciences, VU University Amsterdam, the Netherlands.

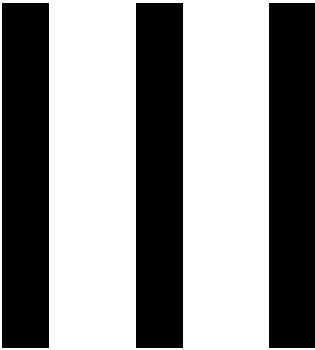
# Profiles based on combinations of health and social participation

<u>Social participation;</u> + Giving instrumental support, + Giving emotional support, OR + Social activity	<u>Good health;</u> - Functional limitations, & - Depressive symptoms, & + Cognitive functioning	
	YES	NO
YES	<i>SH</i>	<i>SnH</i>
NO	<i>nSH</i>	<i>nSnH</i>

# Profiles based on combinations of health and social participation

	Age (mean)	% Women	% with max. Primary education	% Living with partner
Total	69	53%	40%	65%
SH (29%)	64	45%	24%	84%
SnH (32%)	71	61%	48%	58%
nSH (9%)	66	35%	33%	77%
nSnH (29%)	73	58%	51%	50%

Source: Huisman, Kok, Aartsen, Deeg. Diversiteit in veroudering hanteerbaar maken voor beleid en praktijk. Geron, 3/2015



# Three health states

- **BLUE** = Most healthy; chronic disease, few physical impairments, few emotional and cognitive impairments
- **RED** = Intermediate healthy; chronic disease, some physical impairments, few emotional and cognitive impairments
- **GREEN** = Least healthy; chronic disease, multiple physical, emotional and/or cognitive impairments

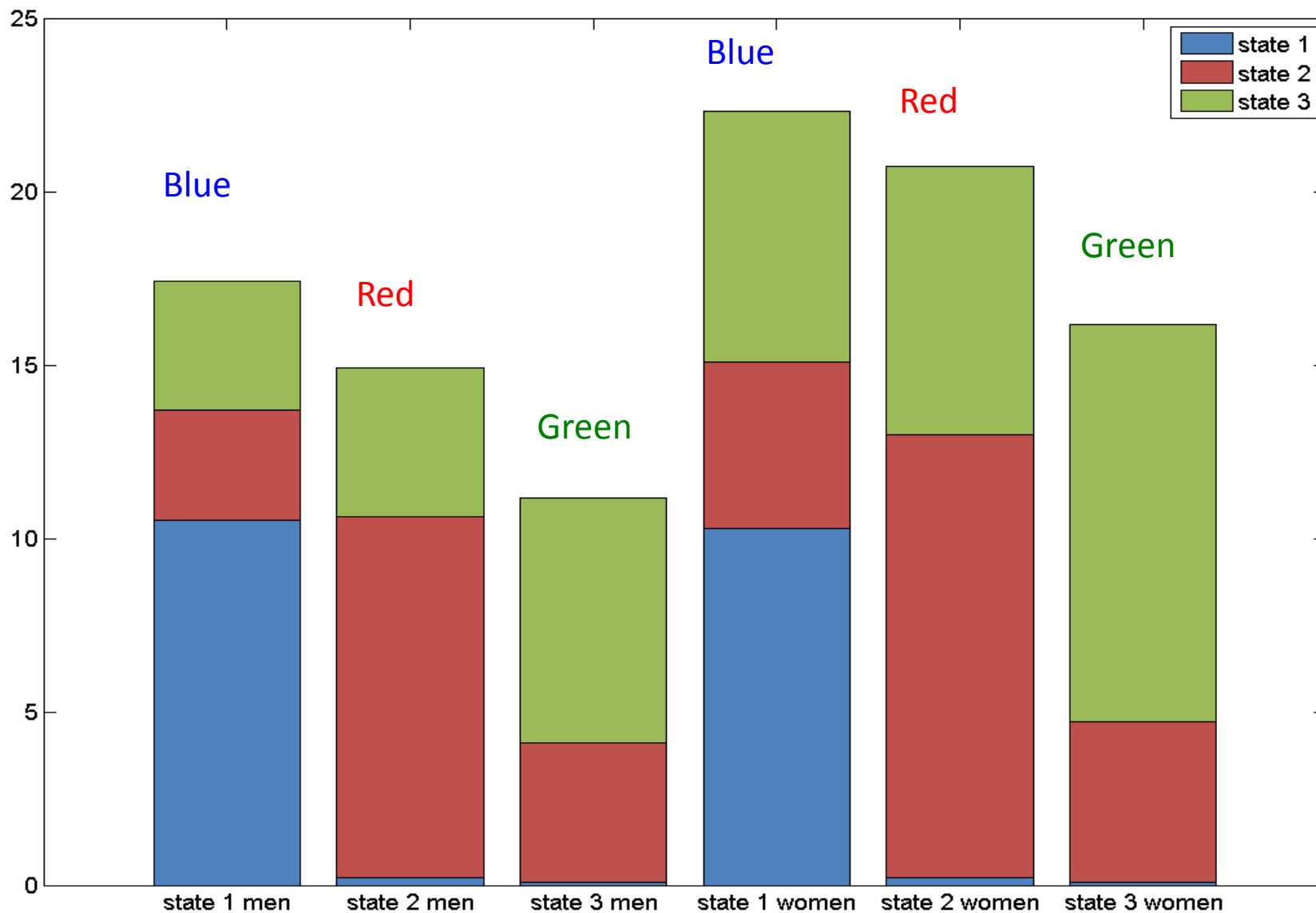


Estimate transitions from and to specific health states and mortality

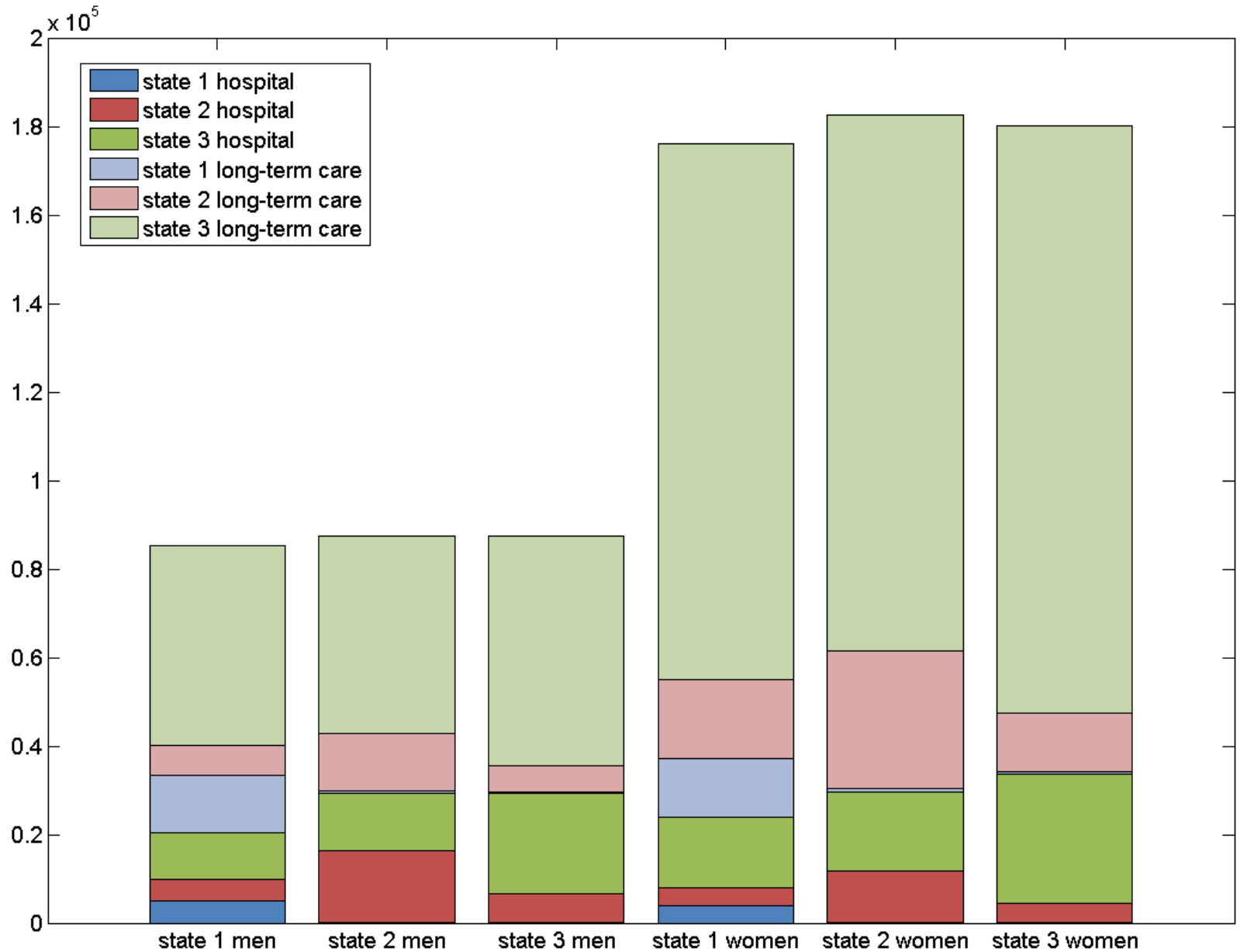
Through linkage with the National Medical Registry determine who received hospital care and for how long; also long-term care

Determine the costs of hospital care on the basis of data from the Cost of Illness Study

# Life expectancy in different health states, men and women, 65 years



# Care expenses per health state



# Life expectancy and expected health expenditure

		Men			Women		
		Most healthy	Intermed healthy	Least healthy	Most healthy	Intermed healthy	Least healthy
65	LE (good health)	17.4 (10.5)	14.9 (0.2)	11.2 (0.1)	22.3 (10.3)	20.8 (0.2)	16.2 (0.1)
	Expenditure	85,000	88,000	88,000	185,000	189,000	184,000
75	LE (good health)	11.1 (5.7)	9.5 (0)	6.0 (0)	14.9 (5.6)	13.7 (0)	9.6 (0)
	Expenditure	88,000	84,000	75,000	183,000	179,000	158,000
85	LE (good health)	6.8 (3.6)	6.6 (0)	4.0 (0)	9.2 (3.6)	9.1 (0.1)	6.3 (0)
	Expenditure	100,000	91,000	73,000	188,000	189,000	149,000

Source: Wouterse, Huisman, Meijboom, Deeg, Polder. Journal of Health Economics, 32, 2013.

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## COHORT PROFILE

# Cohort Profile: The Longitudinal Aging Study Amsterdam

Martijn Huisman,<sup>1,2,3,4\*</sup> Jan Poppelaars,<sup>1,2</sup> Marleen van der Horst,<sup>1</sup> Aartjan TF Beekman,<sup>4</sup> Johannes Brug,<sup>1,3</sup> Theo G van Tilburg<sup>2</sup> and Dorly JH Deeg<sup>1,2</sup>

<sup>1</sup>EMGO Institute for Health and Care Research, VU University Medical Center, Amsterdam, The Netherlands, <sup>2</sup>Department of Sociology, VU University, Amsterdam, The Netherlands, <sup>3</sup>Department of Epidemiology & Biostatistics, VU University Medical Center, Amsterdam, The Netherlands and <sup>4</sup>Department of Psychiatry, VU University Medical Center, Amsterdam, The Netherlands

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## How did the study come about?

The Longitudinal Aging Study Amsterdam (LASA) was initiated by the Dutch Ministry of Welfare, Health and Culture (currently Ministry of Health, Welfare and Sports). By the end of the 1980s, ministry officials recognized that ageing would be a major demographic driving force, shaping the need for health care in the Dutch population in the near future. Therefore, they became increasingly interested in the process of ageing and ageing-related determinants of health-care use, and wanted to develop policies for older people in The Netherlands who were in need of extra care and support. Maintaining independent functioning, quality of life and participation of older people were recognized to be major challenges for Dutch society. Multi-disciplinary and longitudinal scientific research was considered to be needed to inform the ministry's policy and monitor functioning and well-being of older Dutch people, leading to the start of the LASA study in 1991.

The study was designed by researchers from the VU University and VU University Medical Center in

to ageing. The following research questions were central to the general LASA framework at the outset.<sup>1</sup>

- Which changes over time take place in the physical, cognitive, emotional and social components of functioning in older persons?
- Which predictors of change can be recognized in these components of functioning?
- How are changes in the four components of functioning interrelated?
- What are the consequences of changes in functioning in terms of contributions to society, the necessity of adjustment, and the need for care?

## Who is in the sample, how long have they been followed and what is attrition like?

The LASA cohort is based on a nationally representative sample of older adults aged 55–85 years (years of birth 1908–37), based in three geographic regions in

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# Different clusters on the basis of multiple indicators of functioning

