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Distributional implications of the (public) health system in Austria

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Content

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2. The cross-sectional view: The distributive impact of public health care services in Austria
   (results from the WIFO study on 'Redistribution through the State' - Rocha-Akis et al. 2019)

3. The longitudinal perpective: Inequality and cumulative lifetime healthcare costs
   (results from a dynamic microsimulation - Horvath, Leoni, Reschenhofer & Spielauer 2022)

4. Conclusions

Background – what do we know?

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- Socioeconomic inequalities in virtually all dimensions of health (Feinstein 1993; Deaton 2003; Marmot 2005)
- Inequalities translate into higher healthcare costs for more vulnerable social groups, at least within universal or nearly universal public health systems (Jayatunga et al. 2019; Loef et al. 2021)
- Substantial distributive effects of healthcare services (Verbist et al. 2012):
  - Value of healthcare services increases disposable income by some 14% (OECD average)
  - Considerable drop in inequality measures when public health care services included in income concept

Background – what do we know? /2

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- Inequalities in healthcare access & use, with differences by country and particularly type of service (Van Doorslaer et al. 2004; Erreygers & Van Ourti 2011; OECD 2019; Lueckmann et al. 2021):
  - Social gradient concerning specialist doctor visits (particularly dentists) and preventive services
  - Needs-adjusted social inequalities are much lower for GP visits and not significant for hospitalisations

Needs-adjusted distribution of healthcare services

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Population aged 50+

	GP visits	Specialist visits	Hospital stays
	Health inequality index		
Austria	-0.001	0.129**	0.013
Germany	-0.022	0.077**	0.009
Sweden	-0.067	0.087**	0.037
Netherlands	-0.011	0.033	0.077
Spain	0.043**	0.146**	0.046
Italy	-0.018	0.039	0.026
France	-0.018	0.103**	-0.015
Denmark	-0.042*	0.127**	0.001
Switzerland	0.010	0.050	0.088
Belgium	0.001	-0.046	-0.029

Source: Leoni (2015); SHARE Wave 4 (2011). Positive values: concentration in groups with higher SES, negative values: concentration in groups with lower SES. * . . . significant at 5%-level, ** . . .significant at 1%-level.

Background – what do we know? /3

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- Little evidence from a cumulative lifecourse perspective (exception: Asaria et al. 2016)

- Differences in health status by socioeconomic group do not necessarily translate into corresponding differences in lifetime healthcare costs:

  -> inequalities in life expectancy affect the lifetime use of the healthcare system

The distributive impact of public health care services in Austria

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Analytical approach

- Analysis based on the public health expenditure according to SHA and microdata from EU Statistics on Income and Living Conditions (EU-SILC)

- Insurance-value approach to attribute to individuals the benefits from public healthcare services, two variants :
  - (A) Attribution based on gender and age profiles by Austrian National Public Health Institute (GÖG)
  - (B) Attribution based on gender, age and self-rated health

- € 24.1 bn allocated to households included in EU-SILC 2015 (= current public health expenditure according to SHA without LTC)

Health expenditure profile by age, gender and self-rated health

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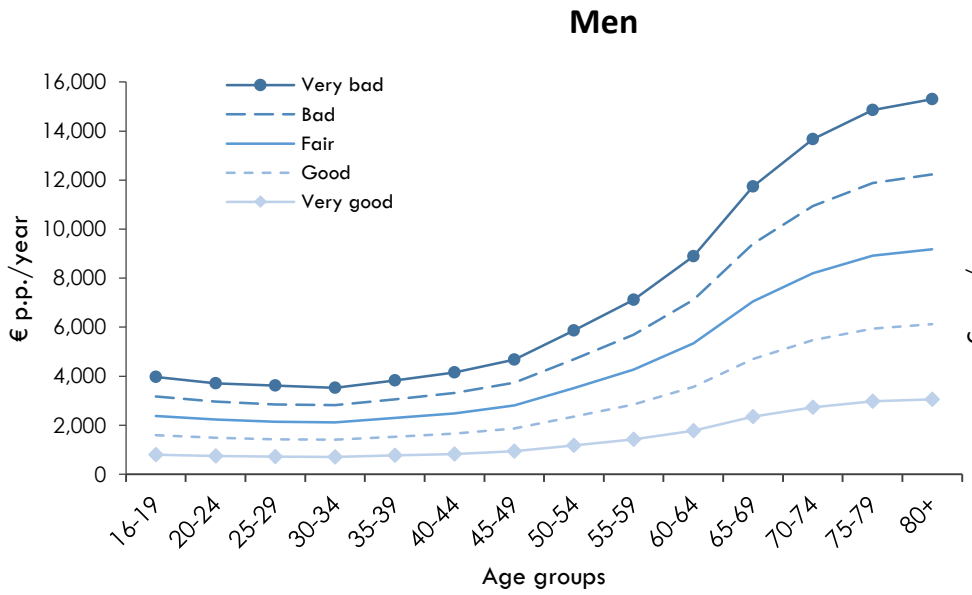

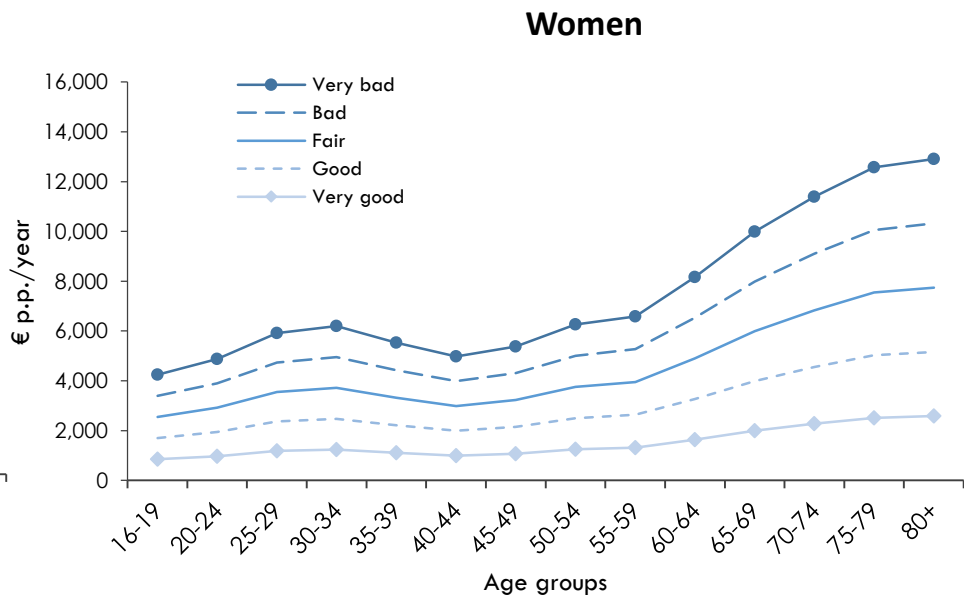

Source: Adapted from Rocha-Akis et al. (2019) and Leoni (2015).

The distributive impact of public health care services in Austria

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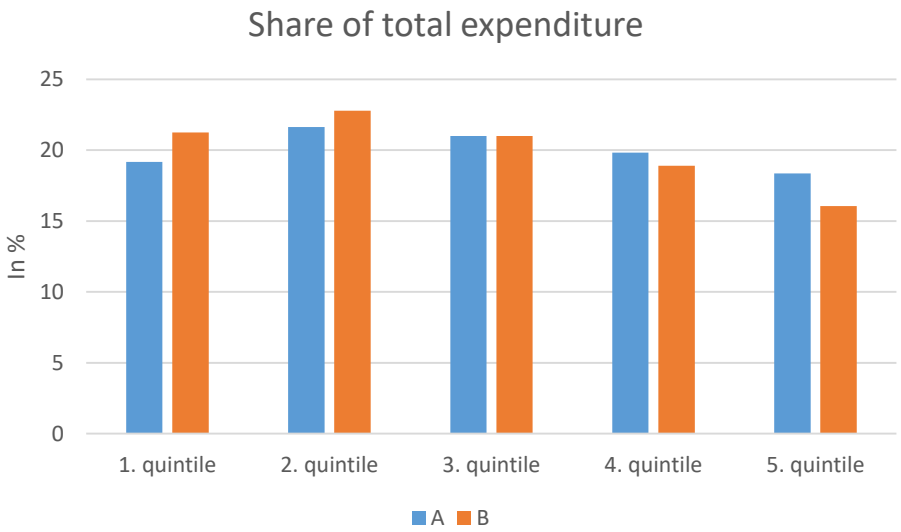
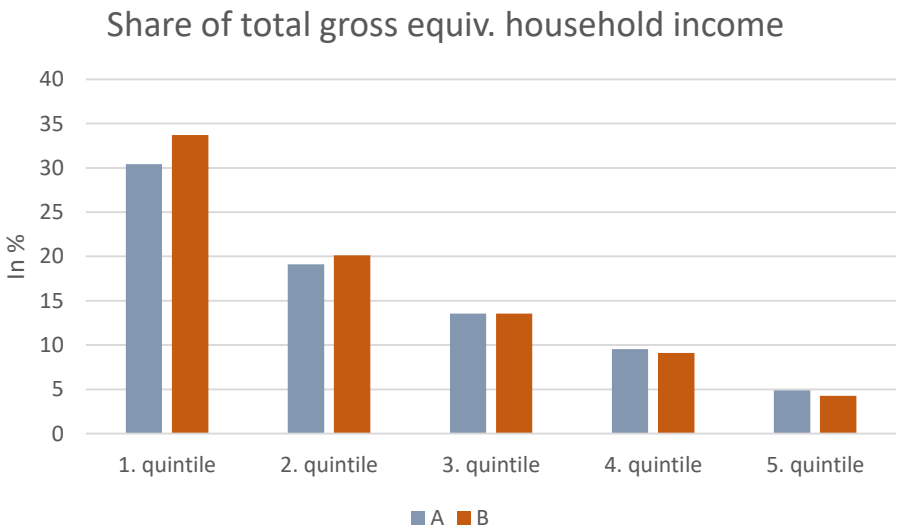
Results by quintile of (equiv.) household income distribution





Source: Adapted from Rocha-Akis et al. (2019) and Leoni (2018); A = based on average expenditure profiles by age and gender; B = based on expenditure profiles by age, gender and self-rated health status.

Distribution of healthcare costs over time

Comparison of results, 2000 to 2015

HH income	2000	2005	2010	2010	2015
	Share in %			Share in %	
1. quartile	29.2	28.0	27.6	26.4	24.1
2. quartile	26.6	25.7	26.4	26.9	27.1
3. quartile	23.1	23.7	23.8	24.0	25.5
4. quartile	21.1	22.7	22.2	22.8	23.2
Total	100	100	100	100	100

Methodological and data differences

Source: Rocha-Akis et al. (2019).

Inequality and healthcare costs over the life course

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Analytical approach

- Combination of survey data and aggregate information from register data to model the healthcare costs (without LTC) with a dynamic microsimulation model:
  - Step 1: Price weights for healthcare services combined with information on healthcare consumption from ATHIS survey to calculate cost profiles by gender, age and education
  - Step 2: Calibration of cost profiles to ensure correspondence to the average SHA expenditure profiles for personal healthcare service by gender and age group
  - Step 3: Dynamic microsimulation to project cumulative healthcare costs over the entire lifecycle for the 2019 birth cohort in different scenarios

Microsimulation model

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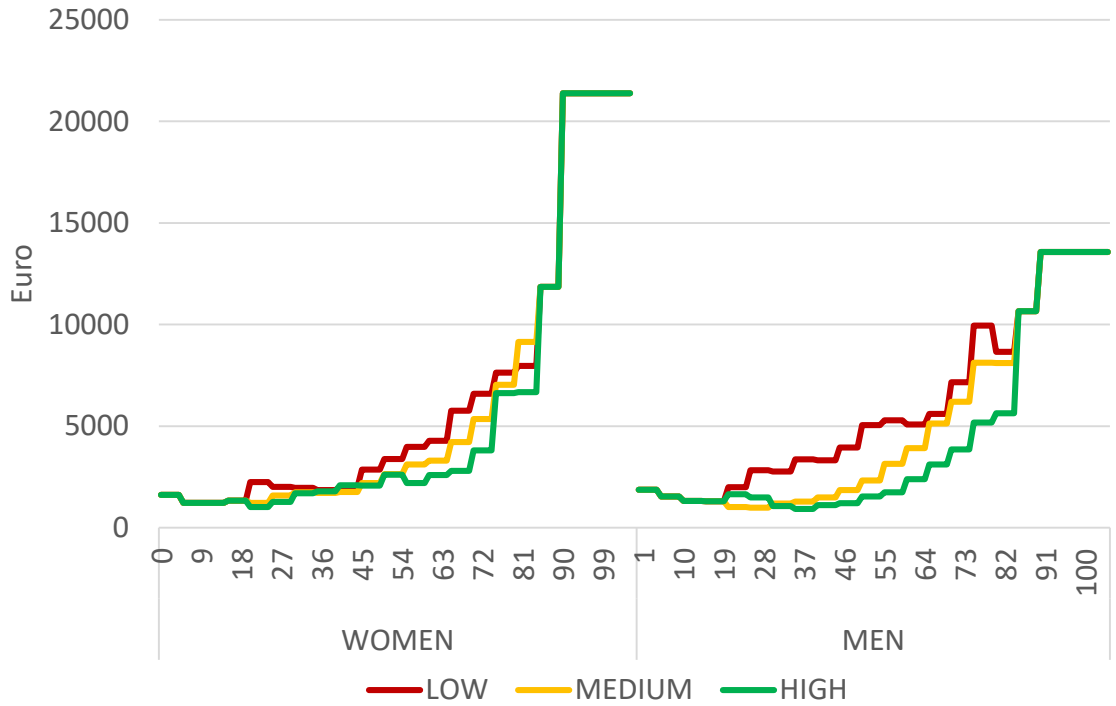
- Continuous time model with starting population based on EU-SILC, consisting of interconnected family demographic, health, and socioeconomic modules
- Healthcare cost profiles by gender, age and education combined with gender- and education-specific survival probabilities for each age
- Estimates that are consistent with SHA for aggregate healthcare costs and with official demographic projections
- Separation and quantification of effects due to healthcare use patterns, socioeconomic differences in mortality, and increases in life expectancy
- Analysis limited to inpatient, outpatient, and daycare services (accounting for 90% of personal healthcare service costs and 71% of total expenditure)

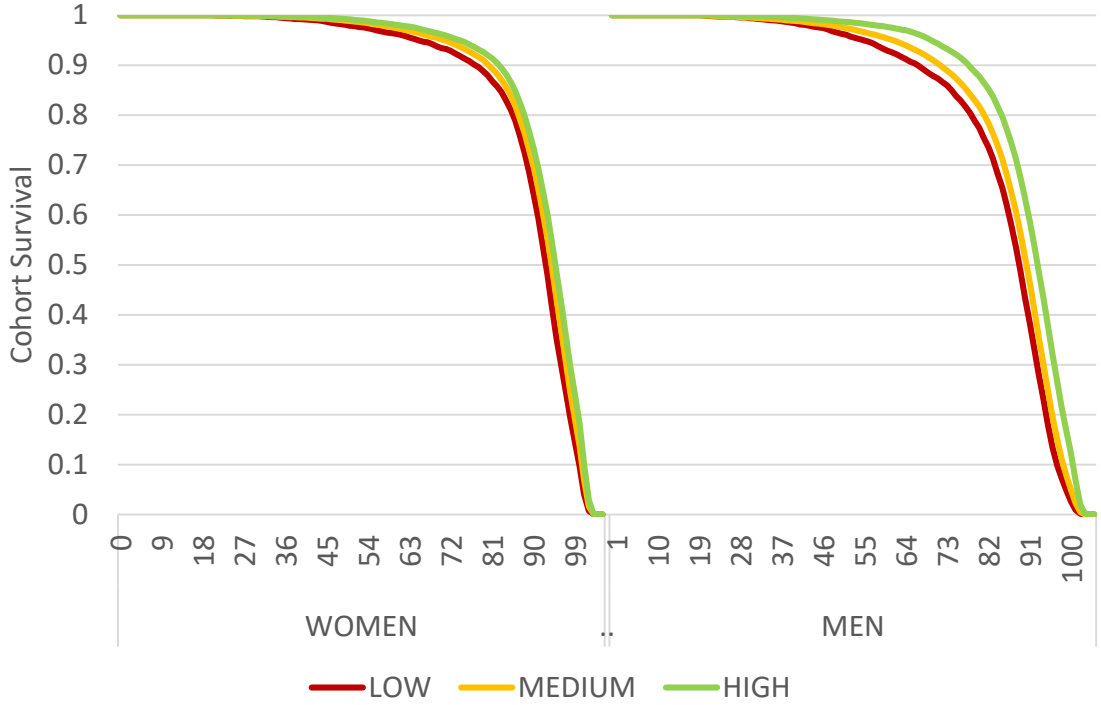
Health expenditure age profiles, by gender and education



Source: Horvath et al. (2022). Data refer to birthcohort 2019. Based on ATHIS survey data and SHA expenditure profiles by gender and age group covering healthcare functions HC.1 to HC.5.

Survival curves (with mortality improvements)

2019 birth cohort, by education



Source: Horvath et al. (2022). based on remaining life expectancy by education for 25- and 65-year-olds by Murtin et al. (2017) and actuarial life tables provided by Statistics Austria (2019), assuming constant age-specific mortality.

Cohort profile of healthcare expenditures

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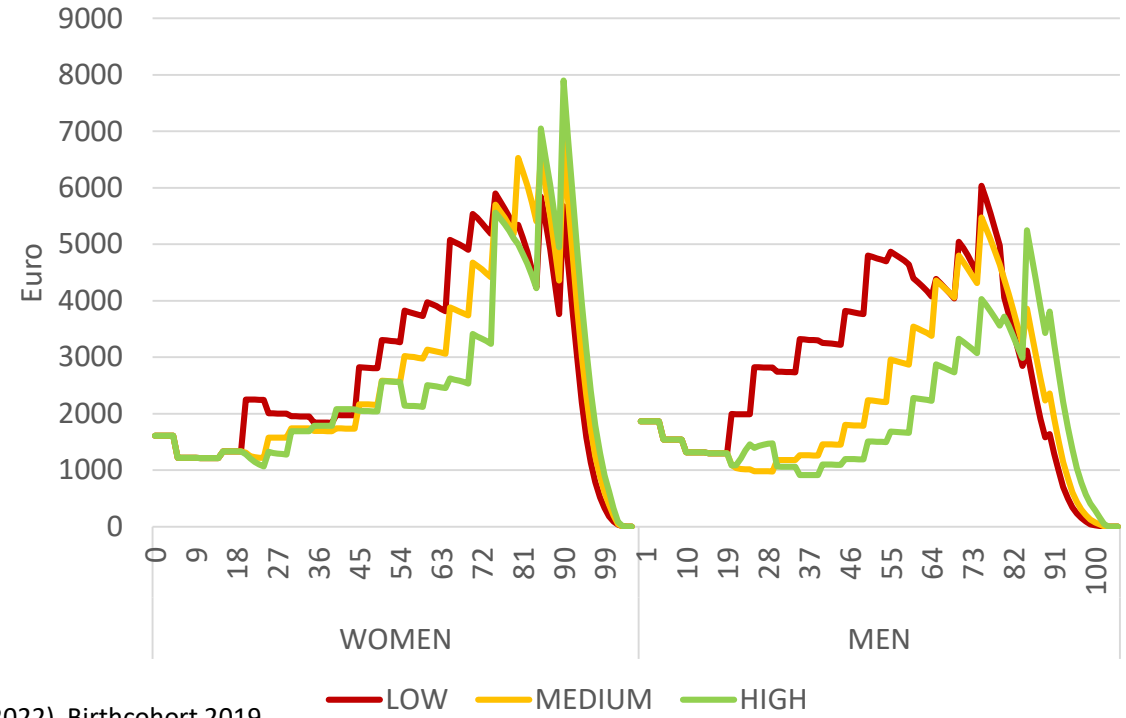
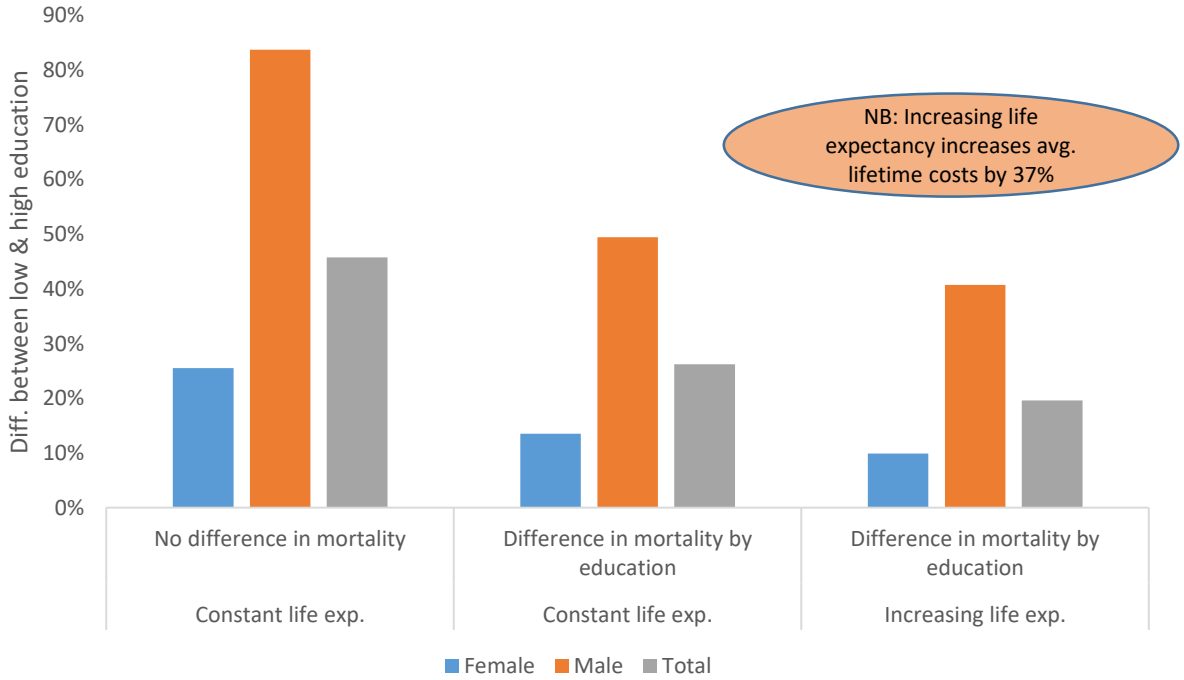
Average expenditure levels per member of the birth cohort



Source: Horvath et al. (2022). Birthcohort 2019.

Lifetime healthcare costs by gender and education

Scenarios for birthcohort 2019, differences by education



Source: Based on data from Horvath et al. (2022).

Conclusions

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- Public health system has a clear progressive distributional impact
- Healthcare services represent largest in-kind transfer, with shares over 30% of gross equivalent income in bottom quantiles of the distribution
- Progressive effect smaller than in the past -> more young persons in most vulnerable households
- Redistributive impact of healthcare system is overestimated if we neglect socioeconomic differences in life expectancy
- Limitations…

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APPENDIX – additional slides

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