Avoidable Hospitalisations of Patients in the Oldest Age Groups (80+) in Austria

Please address comments or questions to: a*ndrea.schmidt@goeg.at*

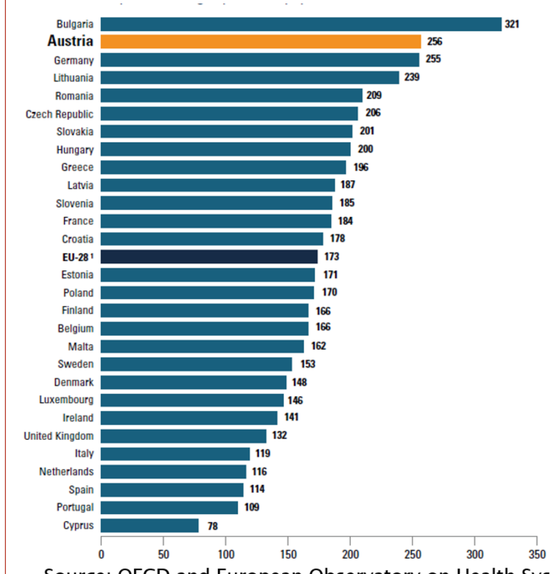
L. Rainer, A.E. Schmidt, M. Zuba, S. Mathis-Edenhofer

– *Austrian Public Health Institute, Stubenring 6, 1010 Vienna*

Background

- **Health risks due to unnecessary hospitalisations may occur particularly for older patients.** Prevalence of ambulatory care sensitive conditions (ACSC) treated in hospitals[1] is a common proxy for avoidable hospitalisations.
- **Avoidable hospitalisations in older age groups are influenced by availability and quality of long-term care (LTC) services**. Studies in Europe show association between expansion of LTC and reduced hospital discharge rates both for older people living at home (Spiers et al., 2019; Jansen et al., 2019; Costa-Font et al., 2018) and in nursing homes (Fernandez & Forder, 2008; Gaughan et al., 2013; Holmas et al., 2013; Herrin et al., 2015; Forder, 2009).
- **Avoidable hospitalisations are tackled in current health reforms** in many countries including Austria – a country with very high hospital discharge rates (Fig. 1) and lack of integrated care.

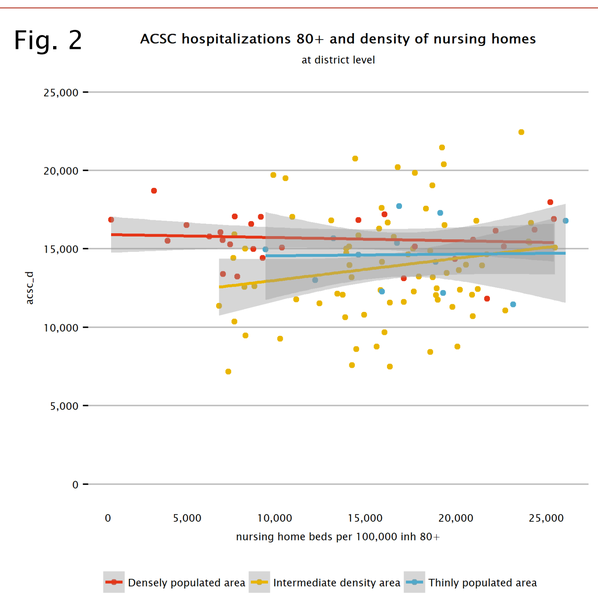
Fig. 1: Hospital discharges per 1000 population in the EU, 2015



Source: OECD and European Observatory on Health Systems and Policies, 2017

Research question and empirical approach

Fig. 2 ACSC hospitalizations 80+ and density of nursing homes at district level



- RQ: **What drives variation in avoidable hospitalisations and hospital bed days among older people (80+) across Austrian districts?**
- Design: Observational study using Austrian **DRG-data at district level** 2012-2017 with linear mixed-effects models (excl. Vienna).
- Explanatory variables: *availability of health care* (density of GPs 'gp_contr', home visits of GPs 'visits', density of hospital beds 'beddens'); *and of LTC* (density of nursing home places 'rescaredens'); *and socio-economic status* (income, life exp., % females, % single hh, degree of urbanisation)
- Descriptive analysis: Nursing home places show no bivariate association with ACSC (Fig. 2), income is inversely associated with ACSC in areas with intermediate degree of urbanization in bivariate analysis.
- Limitations: No mobile care data, no individual level data, no causal inference

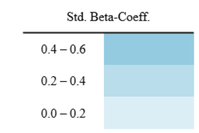
Results and discussion

Main results from multivariate analysis (excl. Vienna):
(1) Low-income districts associate with higher ACSC hospitalization rates
(2) Residential care density associated neither with ACSC bed days nor ACSC hospitalization rates
(3) Share of single housholds (proxy for informal care) associated neither with ACSC bed days nor ACSC hosp. rates
(4) Within health care, inverse association bw GP density and ACSC bed days – substitution effect
(5) ACSC rates significantly higher in urban areas (w/o VIE)

Discussion:
- Avoidable hospital admissions affect the oldest in economically disadvantaged regions more than elsewhere
- Drivers of care at home and hospital use need to be investigated further

Linear mixed effects

Dep. Var.	BED DAYS	ACSC
year fixed-effects	YES	YES
state fixed-effects	YES	YES
district effects	random	random
beddens	67.381***	0.525
	(19.808)	(0.415)
gp_contr	-174,463.900*	958.387
	(94,806.040)	(1,462.366)
visits	-8.583	-0.125
	(13.880)	(0.307)
rescaredens	0.128	0.039
	(3.542)	(0.078)
lifeexp	8,299.508	-147.125
	(8,444.485)	(97.068)
income	-2.112	-0.383**
	(6.877)	(0.152)
pop_fem	-708,383.800	-12,783.860
	(691,919.400)	(10,495.830)
single	78,259.290	-5,813.218
	(362,549.900)	(8,007.783)
urban_area	245,841.100***	3,580.553**
	(75,464.480)	(1,640.462)
rural_area	86,139.110*	275.121
	(44,000.820)	(978.287)
Constant	491,428.900	46,903.730***
	(860,800.000)	(11,586.880)
Obs.	552	552
Log Lh	-7,261.783	-4,870.467
AIC	14,575.570	9,792.934
BIC	14,687.720	9,905.086
Note:	*p<0.1; **p<0.05; ***p<0.01	



Gesundheit Österreich GmbH

Project in cooperation with
E. Reininghaus, Department of Psychiatry & Psychotherapeutic Medicine, Medical University Graz

Gesundheit Österreich GmbH, Stubenring 6, 1010 Wien www.goeg.at

[1] ACSC hospitalizations are those where one of the following is the main diagnosis: cardiac insufficiency, influenza/pneumonia, back pain, hypertension, dehydration and gastroenteritis, asthma/COPD/emphysema, angina pectoris, diabetes mellitus with complications, osteoporosis, respiratory diseases, decubitus and skin ulcers, ear/nose/throat infections – according to the Austrian list of ACSC (cf. Eglau & Wachabauer, 2015).