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- Markus Kraus, Institut für Höhere Studien
- Monika Riedel, Institut für Höhere Studien
- Claudia Royc, Institut für Höhere Studien
### Session overview

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Title: Valuation Methods in Costing for International, Multi-sectoral Health Economic Evaluations: a Structured Scoping Review

Authors: Claudia Fischer\textsuperscript{1}, Susanne Mayer\textsuperscript{1}, Nataša Perić\textsuperscript{1}, Judit Simon\textsuperscript{1}

\textsuperscript{1}Medical University of Vienna, Department of Health Economics, Center for Public Health, Medical University of Vienna

Abstract:

Objective and Background

A prerequisite for the validity and usability of health economics evidence is sound costing methodology. Next to the identification, definition and measurement of costs, a critical part of the costing process is the valuation method. To achieve comparability and harmonization in methods across studies, sectors (i.e. the healthcare sector, education and criminal justice sector, employment sector and patient and family domain) and countries, an overview of the areas of controversy in cost valuation is a prerequisite. Therefore, a structured scoping review was conducted to map the concepts underpinning costing methods and to provide an overview of issues of concern when aiming for harmonization of the valuation process. Mental health was selected as exemplary disease area and issues particularly relevant for this field were synthesised.

Methods

Firstly, economic evaluation guidelines and unit cost(ing) manuals, costing guidelines and unit cost programmes from the six European PECUNIA (ProgrammE in Costing, resource use measurement and outcome valuation for Use in multi-sectoral National and International health economic evaluAtions) partner countries (DE, NL, UK, AT, ES, HU) were searched and relevant health economics and HTA websites were screened. Secondly, we conducted a targeted search in the electronic databases PubMed and Embase to identify reviews of costing methods published in the past ten years.

Results

Recommendations in terms of costing methods for the different economic sectors were found to vary and may in practice largely be driven by e.g. data availability. Country-specific heterogeneity with a major impact on cost valuation may stem from the general lack in guidance in terms of specific costing methods, double-counting between sectors, the impact of the analytical study perspective, recommended costing sources and hierarchies, variations in terminology, discounting, handling of overhead costs as well as the availability of established, standardized unit costing estimates in some countries.
Discussion

This scoping review draws attention to several methodological factors that influence cost valuation methods across different sectors and countries. Highlighting, addressing and incorporating sector-specific issues that may have an impact on cross-sectorial comparisons is a crucial first step towards more comparability in health economic evaluations. For instance, the introduction of harmonised, sector specific units of analysis for the valuation of unit costs should be considered across countries, so that societal costs can be built up without double-counting and allowing better acceptance of cost estimations by decision makers.

Acknowledgements: The PECUNIA project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 779292.
Title: Cost-effectiveness Analysis of an Ambulant Psychiatric Rehabilitation Programme in Austria

Authors: Alexandra Schosser, Andreas Affenzeller, Birgit Senft, Marion Rauner

1 Zentrum für seelische Gesundheit BBRZ-Med Wien, 
2 Medical University of Vienna, University Hospital of Psychiatry, Department of General Psychiatry, 
3 University of Vienna, Faculty of Business, Economics, and Statistics

Abstract:

Introduction

Psychiatric rehabilitation promotes recovery, full community integration, and improved quality of life for people diagnosed with any mental health condition that seriously impairs their ability to lead meaningful lives. In Austria, psychiatric rehabilitation has been established since 2002, initially as inpatient treatment programmes. In 2010, the Zentren für seelische Gesundheit BBRZ-Med initiated ambulant psychiatric rehabilitation in Vienna.

Aim

The aim of the study was to perform a cost-effectiveness study of this ambulant psychiatric rehabilitation programme.

Methods

The cost-effectiveness study presented includes all patients treated in the context of a standardized 6-weeks multimodal ambulant rehabilitation programme (WHO phase 2) in Vienna (Zentrum für seelische Gesundheit Wien-Leopoldau) from January 2014 to December 2016, that is in total 2,486 patients (63.4% females). Patients with missing data and rehabilitation dropouts were excluded from further analyses, resulting in a final sample size of 1,952 patients. Treatment was performed as a standardized 6-weeks rehabilitation programme (142 treatment units), composed of the following treatments: 1) group and individual psychotherapy (cognitive behavioural therapy), 2) occupational therapy, 3) physiotherapy, 4) social work, and 5) weekly psychiatrist consultations. Questionnaire-based surveys (e.g., BSI, BDI, WHODAS) were performed at the time of pre-contact, at the time of admission, at the time of discharge, as well as 6 months and 12 months after discharge. In the cost-effectiveness analysis, data were compared for the period of 12 months before admission to the rehabilitation programme and the period of 12 months after the end of the rehabilitation programme.

For the cost calculation, both direct costs (treatment by specialist in psychiatry/general practitioner/psychotherapist/psychological treatment, costs of psycho-pharmacological treatment, inpatient treatment costs, and costs of rehabilitation) and indirect costs (productivity loss measured in non-working days depending on the average income of each rehabilitant) were considered.
Results

Out of the 2,482 patients admitted from 2014 to 2016, 1,781 rehabilitants were included after thorough data cleaning. Significant improvements were found in the effectiveness measures BDI, BSI, GAF, WHODAS 2.0, and ICF-AT-3F, especially regarding rehabilitants that were employed at admission. Unemployed rehabilitants showed improvement to a less successful extent, and the worst outcome was found for patients receiving rehabilitation allowance. Besides, a significant reduction in treatment days after rehabilitation was found for all patients except for patients receiving rehabilitation allowance.

The total average costs within the 13.5 months before admission were calculated to be 30,740.84 Euros per rehabilitant, as compared to 22,868.74 Euros within the 13.5 months after admission. This corresponds to a cost saving of on average 7,872.10 Euros per rehabilitant which seems to be a clear consequence of the treatment programme. In conclusion, the results of the current study clearly show that ambulant psychiatric rehabilitation is highly effective, both in sense of clinical effectiveness and cost savings.
Title: Multi-sectoral Costs and Benefits in Health Economic Evaluations across Europe: The PECUNIA Project

Authors: Simon J¹, König H-H², Brodzsky V³, Evers SMAA⁴, Hakkaart-van Roijen L⁵, Serrano Aguilar PG⁶, Salvador-Carulla L⁷, Park A-L⁸, Hollingworth W⁹ on behalf of the PECUNIA Group

1 Department of Health Economics, Center for Public Health, Medical University of Vienna, Kinderspitalgasse 15, 1090 Vienna, Austria
2 Department of Health Economics and Health Services Research, University Medical Center Hamburg-Eppendorf Martinistr. 52, D-20246 Hamburg, Germany
3 Department of Health Economics, Corvinus University of Budapest, Fővám tér 8. H-1093, Budapest, Hungary
4 Department of Health Services Research, Maastricht University, Duboisdomein 30 6229 GT Maastricht, The Netherlands; CAPHRI Care and Public Health Research Institute, Maastricht University, Universiteitssingel 40 6229 ER Maastricht, The Netherlands; Trimbos Institute Centre of Economic Evaluation, Da Costakade 45, 3521 VS Utrecht, The Netherlands,
5 Erasmus School of Health Policy & Management, Erasmus University Rotterdam, Burgemeester Oudlaan 50, 3062 PA Rotterdam, the Netherlands
6 Fundación Canaria de Investigación Sanitaria (FUNCANIS) Camino Candelaria Nº 44, 1ª planta, 38109 El Rosario, Santa Cruz de Tenerife, Spain ; Red de Investigación en Servicios de Salud en Enfermedades Crónicas (REDISSEC), Spain; Centro de Investigaciones Biomédicas de Canarias (CIBICAN), Universidad de La Laguna, Spain
7 Centre for Mental Health Research, Research School of Population Health, ANU College of Health and Medicine, Australian National University, 63 Eggleston Rd, Acton ACT 2601, Canberra, Australia,
8 London School of Economics (LSE), MSC, PSSRU, Department of Health Policy, London School of Economics and Political Science, Houghton Street, London, UK (post code: WC2A 2AE
9 Department of Population Health Sciences, Bristol Medical School, University of Bristol, 1-5 Whiteladies Rd, Bristol, BS8 1NU, United Kingdom

Abstract:

Background

PECUNIA (ProgrammE in Costing, resource use measurement and outcome valuation for Use in multi-sectoral National and International health economic evaluAtions) aims to establish standardised costing and outcome assessment measures for optimised healthcare provision in national healthcare systems in the European Union. The consortium coordinated by the Medical University of Vienna brings together ten partners from six countries with complementary methodological expertise. It represents differing health care systems with varying feasibility and acceptability of economic evaluations in evidence-informed decision-making. Some countries have established national unit cost programmes (DE, NL, UK), some early stage initiatives (AT, ES, HU). Availability of health utility value sets for outcome evaluations and requirements in terms of the primary analytical perspective of economic evaluations (health & social care vs. societal) also differ.

Aims

Between 2018 and 2020, PECUNIA will develop standardized, harmonized and validated multi-sectoral, multinational and multi-person methods, tools and information for 1) self-reported resource use measurement, 2) reference unit cost valuation, 3) cross-country health utility assessment, and 4) broader wellbeing measurement.
Methods

To achieve this, PECUNIA works alongside four cross-sectoral horizontal activities around the harmonised identification, definition, measurement and valuation of costs in multiple sectors (health care, social care, criminal justice, education, employment, patient and family). Considering feasibility and relevant societal challenges in the European health systems, selected mental disorders (depression, schizophrenia, PTSD) are used as illustrative examples for cost assessment.

Results

The project has now developed its concept paper within the framework of the multi-sectoral ‘PECUNIA service atom’, which looks at transferable generic units of analysis for economic evaluations. This serves as the basis for the comparative country reports from the six European countries, which are currently in progress. Relevant status quo in the form of scoping reviews, a roadmap to the work plan and preliminary results from the country reports will be discussed as part of the presentation.

Conclusions and Implications

The PECUNIA project will lead to better understanding of the variations in costs and outcomes within and across countries, improve the quality, comparability and transferability of economic evaluations in Europe, and support the feasibility of broader economic and societal impacts measurement and valuation in multi-sectoral economic evaluations also for HTA.

Funding acknowledgement

The PECUNIA project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 779292.
Title: Einkünfte von Ärztinnen und Ärzten in Österreich – Eine Analyse anhand von Lohn- und Einkommensdaten

Authors: Thomas Czyponka¹, Markus Pock¹, Miriam Reiss¹

¹ Institut für Höhere Studien (IHS), Josefstadter Straße 39, 1080 Vienna, Austria

Abstract:

Hintergrund


Methode


Ergebnisse

Der Median der relevanten ärztlichen Einkünfte aus selbstständiger Arbeit/Gewerbebetrieb und unselbständiger Arbeit lag im Jahr 2015 für KAV-SpitalsärztInnen bei EUR 57.287, für § 2-VertragsärztInnen bei EUR 142.772, für ÄrztInnen mit nur kleinen Kassen bei EUR 90.513 und für WahlärztInnen bei EUR 75.524. Eine Regressionsanalyse

**Diskussion**

Title: Life-cycle Behaviour in the Face of Large Shocks to Health

Authors: Michael Freiberger\textsuperscript{1}, Michael Kuhn\textsuperscript{1}, Stefan Wrzaczek\textsuperscript{1}

\textsuperscript{1} Wittgenstein Centre (IIASA, ÖAW/VID, WU), Vienna Institute of Demography

Abstract:

Introduction

Different approaches have been used to model health-related life-cycle behaviour. Grossman (1972) first modelled the development of a health stock over the life-cycle assuming that it depreciates over time/age, but can also be accumulated through specific investments. Alternative and more recent approaches approximate the development of the health flow via the mortality process (Ehrlich 2000; Kuhn et al. 2015) or the accumulation of health deficits over the life-cycle (Dalgaard 2014). These models take an ex-ante stance, where individuals foresee the development of their health perfectly. While this can be rationalized for a representative individual, health shocks with significant impacts, such as severe life-threatening diseases or accidents as well as chronic diseases, should not be averaged into a mean value. This is because they typically put the entire life-course on a different trajectory by introducing new constraints (e.g. change in income, assets), affecting personal characteristics (e.g. drop in health status, productivity) or changing preferences.

Methods

We introduce a dynamic optimal control framework incorporating a stochastic health shock with individuals allocating their resources to consumption and different types of health investments over their life-cycle. Distinguishing between general health care and shock specific prevention, acute and chronic care, we analyze (i) how the risk of a shock shapes individual behaviour with respect to the different types of health expenditures, (ii) how shocks change the behavioural trajectories, and (iii) what are the effects of biases in the anticipation of a health shock. Newly developed transformation techniques by Wrzaczek et al. (2017) allow us to investigate not only optimal decisions in anticipation of a potential health shock, but also the optimal reaction at each age, depending on the duration of the illness.

Results

We obtain analytic expressions for consumption and health investment profiles before and after the shock and identify the underlying incentives. We derive the value of life, as is commonly known, but also a value of prevention and a value of mitigating the consequences of a health shock for various scenarios. We provide first numerical simulations to illustrate the individual behaviour regarding two potential health shocks: Cancer (as a progressive disease) and heart attacks (as a shock-like disease with a chronic phase following after).
Conclusions

Our model provides new insights into the health and prevention behaviour of individuals who take potential life-changing health shock into consideration. The introduction of different types of health care (general, preventive, acute and chronic care) enables us to characterize a rich set of optimal health care strategies.
Title: On the Valuation of Health and Education in Life-cycle Models with Deficit Accumulation, Random Life Expectancy and Endogenous Labour Supply

Authors: Michael Kuhn\textsuperscript{1,2}, Miguel Sanchez-Romero\textsuperscript{1,3}

\textsuperscript{1}Wittgenstein Centre (IIASA,ÖAW/VID,WU) and Vienna Institute of Demography
\textsuperscript{2}International Institute of Applied Systems Science (IIASA), Laxenburg
\textsuperscript{3}Technical University of Vienna

Abstract:

Introduction

Recently, life-cycle models of health and health behaviour have been developed (e.g. Dalgaard and Strulik 2014, JEEA; Schuenemann et al. 2017 JEBO; Dragone and Strulik 2018, CES-Ifo) upon the concept of deficit accumulation (e.g. Rockwood and Mitnitski 2007 JGeron). While these models are based on a well-grounded biological mechanism and have been demonstrated to lead to plausible empirical predictions, they are poorly linked with the literature on the statistical value of life as a measure that governs individual incentives to invest in their health (e.g. Hall and Jones 2007, QJE; Kuhn et al. 2015, JET) and education in a richer context (e.g. Sanchez-Romero et al. 2017, JEDC, Sanchez-Romero and Prskawetz 2017, JEOA).

Methods

In this paper, we construct a life-cycle model based on an process of deficit accumulation with stochastic survival, in which individuals decide on consumption, labour supply as well as investments in health and education. We derive from the optimality conditions tractable and intuitive expressions for the value of deficits, the value of life and the value of education and show how these values govern individual incentives over the life-course.

We calibrate the model to reflect realistic life-cycles and apply it to study the interaction of individual behaviours toward their health, education, labour supply/retirement and survival. More specifically, we apply our model to study how heterogeneous individuals, who differ by ability and initial health conditions, accumulate human capital, assets, social security wealth, and health deficits over the life cycle.

Results

We present rigorous and intuitively understandable expressions for the value of life and the value of education as well as the underlying value of health deficits. We provide numerical analysis to show how the valuations vary with underlying socio-economic conditions across individuals and over time and how this traces out in different patterns of life-cycle behaviours in regard to education, health and labour supply/retirement and life-cycle outcomes.
Conclusion

With our rigorous integration of the value of life and the value of education into a life-cycle model with deficit accumulation we bridge the gap between a model class based on realistic biological mechanisms and a large empirical and theoretical literature that employs the value of life concept to understand the incentives towards health, health care and education. The ability to calculate monetary values of health deficits as well as the value of health and survival within models of deficit accumulation should facilitate their use for future empirical and simulation-based research.
Title: Squaring a Circle? Identifying Outcome Indicators in Long-term Care and Palliative Care in an Applied Research Project in Austria

Authors: Andrea E. Schmidt¹, Lukas Rainer¹, Elisabeth Pochobradsky¹, Florian Bachner¹

¹ Austrian Public Health Institute (Gesundheit Österreich GmbH)

Abstract:

The evaluation of long-term care and palliative care policies carries some challenges, implicit in the ways in which these two areas differ from health care. While the main focus of healthcare is to cure, long-term care aims to compensate users for the loss of functional ability. Similarly, palliative care by definition addresses the needs of patients whose disease is not responsive to curative treatment. As a consequence, both long-term care and palliative care focus on maintaining or improving the well-being or quality of life of those in need. In addition, the importance of family caregivers and so-called informal carers highlights the significance of interpersonal experiences of users and carers for outcomes of care.

This applied research project aimed at identifying outcome indicators in long-term care and palliative care, deemed suitable to be used for performance assessments in the Austrian policy context.

For selection of indicators, a matrix framework was tested, previously applied for health care, in which content-related criteria versus criteria related to data availability are balanced against each other. An OECD framework was adapted to highlight indicators in different outcome dimensions: access, care effectiveness/user safety, patient-centredness, care coordination, quality of life/well-being. Methods included literature review, an adapted Delphi process and stakeholder consultations.

For each (i) long-term care (home care and residential care) and (ii) palliative care (limited to inpatient care for adults) a narrow set of indicators was selected. The matrix framework used to evaluate appropriateness of indicators for (i) long-term care and (ii) palliative care was found to be a useful instrument for applied research projects for the identification of outcome indicators. For palliative care, indicators focus on dimensions of access to care and quality of life/well-being. For long-term care, selected indicators span across almost all outcome dimensions (access, care effectiveness/user safety, care coordination, quality of life/well-being).
Title: How Does She Do it All? Inequalities in Education Attainment and Reconciliation of Employment and Caregiving to Frail Older People among Middle-aged Austrian Women

Authors: Stefania Ilinca\textsuperscript{1,2} and Ricardo Rodrigues\textsuperscript{1}

\textsuperscript{1} European centre for Social Welfare Policy and Research, Vienna
\textsuperscript{2} Global Brain Health Institute, Trinity College Dublin

Abstract:

Background

Austria has witnessed a marked and sustained growth in employment rates of middle-aged women (50+), particularly after 2004, with the introduction of several pension system reforms. However, employment rate growth was strongly differentiated by education achievement, with marginal changes among lower-educated and substantial increases among secondary and tertiary-educated groups. Despite these dynamics, Austria remains a conservative welfare state with caring responsibilities for frail older people borne primarily by families, particularly women. Within this context, our study investigates how changes in labour market participation of Austrian women have affected informal care provision in the last decade, with particular attention to the effect of education achievement and strategies to reconcile paid employment and caregiving of middle-aged women.

Methods

We use data from the first and sixth waves of the SHARE survey (collected in 2004 and 2016) to analyse changes in the probability to provide informal care for women aged 50 to 65, by education achievement. Differences between primary-, secondary and tertiary-educated women are analysed using average marginal effects within a logistic regression framework. We investigate three reconciliation strategies: i) compensation through reduction of care provisions (probability and intensity); ii) compensation through shifting more caregiving responsibility towards men; iii) compensation through reduction in leisure time. Furthermore, we analyse the impact of these changes on the well-being of employed female caregivers.

Results

Our results indicate that increases in labour market participation among secondary and tertiary educated women between 2004 and 2016 have not led to reductions in the probability of providing informal care. However, the probability of providing high intensity care has significantly decreased for higher-educated women. We find no evidence that men have taken on more care responsibilities, nor that the demands of reconciling work and caregiving have led to significant reductions in leisure activities among higher-educated women.
Discussion

While opportunities for work have increased over the last decade for middle-aged women in Austria, there are clear indications of unequal opportunities by education achievement. On one hand, higher-educated women are more likely to engage in paid work and in low-intensity caregiving, hinting at better ability to reconcile care and work. Lower-educated women, on the other hand, seem locked-in a cycle of low employment rates and high-intensity caregiving. These results have important policy implications. Firstly, fears that increased labour market participation of women may lead to unsustainable care gaps in the future may be overstated. Labour market attachment of women and caregiving may be compatible, particularly if formal care services can replace more intensive care tasks. Secondly, the results suggest there is a need to target active labour market policies towards particular groups of women (in Austria, lower-educated women) in tandem with improved access to formal care services and caregiving support, in order to compensate for the higher caregiving burden they bear. Finally, there is little evidence that the gender-gap in caregiving is narrowing in Austria. The familialistic nature of the Austrian care system remains unchanged, suggesting new approaches are necessary in order to achieve gender equity in paid and unpaid work.
Title: Demand for Long-term Care Insurance in Singapore

Authors: Marcel Bilger\textsuperscript{1}, Wan Chen Kang\textsuperscript{2}

\textsuperscript{1} Vienna University of Business and Economics, Austria
\textsuperscript{2} Duke-NUS Medical School, Singapore

Abstract:
Due to rapid population aging, long-term care financing is a pressing concern globally. Voluntary long-term care insurance generally has low uptake due to numerous reasons such as adverse selection and difficulties forecasting future long-term care demand. With approximately two-thirds of its population enrolled, Singapore stands apart with the highest take-up rate of voluntary long-term care insurance in the world. However, its basic insurance package only covers a fraction of formal long-term care costs and only about a fifth of its population opted for a more generous coverage. This study analyzes the demand for long-term care insurance in Singapore in efforts to identify factors that might increase the depth of coverage and further increase uptake.

We analyze the demand for long-term care insurance by means of a randomized discrete choice experiment. We surveyed a total of 1,600 respondents aged 35-39 by presenting them 12 to 14 choice sets of two alternative hypothetical insurance plans plus an opt-out alternative. We used a best-best design in order to obtain the full ranking of all alternatives presented. The discrete choice experiment includes 4 attributes relating to pay-in options into the insurance plan, and 4 attributes relating to the insurance benefits. We randomly assigned each respondent into 1 of 4 equally-sized treatment groups in efforts to test the effectiveness of information on uptake and willingness-to-pay for long-term care insurance. We followed a fractional design to allocate information regarding probability and duration of disability, and future costs of various long-term care services.

We further randomly split each study group into 4 subgroups according to a fractional design in order to study methodological issues arising when conducting discrete choice experiments. Given the complexity involved in choosing insurance plans that include 8 attributes, the first comparison analyzes differences between standard D-efficient and a novel and less complex design for the discrete choice experiment. The other comparison analyzes differences between computer-assisted interviewing of a national representative sample and an online panel of similar respondents to determine whether the latter can give similar results at a fraction of the cost of the former.

In addition to the discrete choice experiments, we asked respondents to self-report actual long-term care coverage along with a large variety of factors that might affect uptake. These factors notably include risk aversion, preference for the present, and expectations in terms of informal care supply.

We analyze all data using a mixture of revealed and stated preferences by means of rank-ordered logit models with random parameters. All attributes are dummy coded and interaction terms between all pay-in attributes,
and between all benefit attributes are included. Results are expressed as the willingness-to-pay in terms of yearly insurance premium as well as increased insurance uptake for specific plans.
Title: Avoidable Hospitalisations of Elderly Patients in Austria. Empiric Findings on the Intersection of the Health and Long-term Care System

Authors: Lukas Rainer¹, Stefan Mathis-Edenhofer¹, Andrea Schmidt¹

¹ Austrian Public Health Institute (Gesundheit Österreich GmbH)

Abstract:

Background

Unnecessary hospitalisations may be problematic as they cause risks and discomfort, particularly for older patients. Secondly, they cause inefficiencies because expensive inpatient care could be substituted by less expensive ambulatory care, which is addressed in current health reforms in many European countries including Austria. Thus reducing avoidable hospitalisations has expected gains for both patients and public welfare systems. To evaluate quality of ambulatory care, most researchers use ambulatory care sensitive conditions (ACSC). Avoidable hospitalisations of patients in older age groups are however also strongly influenced by availability and quality of long-term care (LTC) services, making the case to take the LTC sector into account.

Research question

This analysis attempts to explain the variation in avoidable hospitalisations of patients aged 80 years and above across political districts in Austria.

Method

Panel regressions are used to analyse avoidable hospitalisation rates at district level for the period 2012-2016 using Austrian hospital data. Explanatory variables include proxies for the accessibility of ambulatory care, inpatient care and long-term care as well as socio-economic factors. In order to account for spill-over effects of care services between neighbouring districts a two-step floating catchment area algorithm is employed. Thus incorporating the supply of care services of neighbouring districts should lead to better proxies for the regional accessibility of care services.

Discussion

Due to the lack of external variation, only suggestive rather than causal effects can be derived. Data availability regarding the accessibility of long-term care at district level is limited which complicates empirical analyses. Furthermore, literature does not provide clear-cut solutions for defining avoidable hospitalisations for elderly patients. As a starting point we use the Austrian ACSC list used for all age groups.
Title: The Effects of a Soft Budget Constraint on Hospital Performance

Authors: Michael Berger\textsuperscript{1}, Margit Sommersguter-Reichmann\textsuperscript{2}, Thomas Czypionka\textsuperscript{1}

\textsuperscript{1} Institut für Höhere Studien (IHS), Josefstädter Straße 39, 1080 Vienna, Austria
\textsuperscript{2} Universität Graz

Abstract:

Objectives

In recent decades, policy makers worldwide have implemented reforms targeting efficiency of health service provision in hospitals. Yet, effectiveness of such reforms is undermined by soft budget constraints when hospital managers can count on being bailed out by (subnational) governments in case deficits occur. The purpose of this paper is to examine the relationship between a de facto gradual tightening or relaxation of soft budget constraints mirroring the ability of governments to provide a bailout in consequence of increased fiscal regulation, and changes in hospital efficiency in a decentralized healthcare system. We add to the existing literature by exploring the possibility of using the debt burden of governments as a proxy for the credibility of imposing tighter budget constraints and greater budgetary discipline on the hospital level. This paper further aims to analyse whether private hospital owners respond differently to changes in budgetary constraints compared to public owners.

Methods

This study uses cost accounting data on publicly financed, non-profit hospitals in Austria from 2002 to 2015. We employ a two-stage study design: First, input-based, non-radial Malmquist productivity index and its components are used to quantify the development of hospital performance over time. In the second stage, the efficiency changes are analysed using two distinct estimation strategies to capture the effect of the budget constraint on hospital performance. Modelling the budgetary constraint as a time-invariant characteristic on the state level in a pooled OLS regression is more robust to the unclear timing of the hypothesized effect, but is more prone to bias from unobserved confounders. In contrast, using the states’ debt ratio lagged by one year in a fixed-effects regression is more robust to unobserved confounders, but could be biased by unclear timing and size of the effect. Employing two estimation strategies is a more conservative approach in terms of revealing a causal effect.

Results

We find support for the hypothesized effects in the time-invariant set-up, where hospitals in states in a comfortable budgetary situation have roughly 1% lower efficiency change compared to hospitals in states in a critical situation. Further support is found in the descriptive statistics. However, the effect of the debt ratio is not
statistically significant in the time-variant set-up. Moreover, the effect is only present in the sub-period following the economic crisis of 2008/2009. We find no difference in the behaviour of private and public hospital owners. Our analysis yields inconclusive results, likely related to the debt data not capturing the true debt burden, i.e. assets vis-à-vis financial liabilities.

Discussion

Our results highlight that for reforms aimed at improving efficiency to unfold their potential, the credibility and commitment of governments is critical. It is likely that these depend on the general economic environment. The economic crisis made public debt a bigger concern for policy makers. When lower political risks are associated with hospital bailouts, lower credibility is attached to a government’s ‘no-bailout’ announcement and deficits are more likely. When policy makers react more strongly to public debt, hospital managers are likely to adapt their behaviour accordingly.
Title: Exploring the Weekend Effect Following Stroke by Using Austrian DRG Data

Authors: Authors: Florian Bachner¹, Martin Zuba²

¹ Austrian Public Health Institute (Gesundheit Österreich GmbH)

Abstract:

Objectives
One of the main policy targets in many European health care systems is to provide constant quality of health care across time and space without discrimination of patients. Many studies show that the risk of mortality after admission to a hospital following acute diseases such as stroke is significantly higher on weekends than on weekdays. However, from a medical point of view the burden of disease should be consistent throughout the week. Literature calls this phenomenon weekend effect, which has caused great attention by experts and the public since the 1970s. The independent effect has been found in all inpatient settings of care irrespective of elective or emergency care. The weekend effect is well documented, however the reasons are still discussed controversially. Evidence for variation of health outcomes overnight, at holidays or at the weekend is still scarce and in many cases speculative. This study aims to analyse whether there is constant service quality measured by health outcomes in inpatient care across weekdays when controlling for patient and hospital characteristics in Austrian acute care hospitals.

Methods
The study analyses secondary datasets from all public acute care hospitals in Austria from 2010 to 2014 (Austrian DRG Data). The study cohort includes all patient episodes suffering from acute ischaemic stroke admitted to public Austrian acute care hospitals (approx. 88,500 episodes in 130 hospitals). The data sources contain patient characteristics and aspects of quality of care allowing a retrospective study by performing multivariate regression analysis controlling for important patient-level as well as hospital characteristics. The primary outcome variable is case fatality rate within 30 days after admission to an acute care hospital and the primary independent variable is admission on weekends (Saturday, Sunday, and holidays) versus weekdays.

Results
Admissions following stroke on weekends are significantly lower than on weekdays. At the same time, the risk to die after an admission at a weekend is significantly higher. The results show a significant weekend effect on stroke mortality. Hospital as well as patient characteristics on weekends differ significantly with regard to treatment, patient demographics, infrastructure and staffing. The weekend effect might be attributed to higher
stroke severity in weekend patients (case mix on weekends) but further analysis and rigorous risk adjustment is needed to show clearer evidence.

Discussion
Patients admitted to Austrian acute care hospitals following stroke show a higher mortality than patients admitted on weekdays. Disparities in quality and patient characteristics may explain the observed differences in weekend mortality. The dataset allows only the calculation of covariates that mix quality and severity proxies which makes a clear attribution challenging. The findings should initiate further research and critical evaluation whether resources, expertise and staff should be provided for critical care in the same quantity and quality throughout the week.
Title: Caesarean Delivery and the Use of Antidepressants

Authors: Anikó Bíró 1, Péter Elek 2,1, Gábor Kertesi 1

1 Institute of Economics CERS, Hungarian Academy of Sciences
2 Department of Economics, Eötvös Loránd University (ELTE), Budapest, Hungary

Abstract:

Introduction
The high ratio of caesarean sections is a major public health issue in the developed world. Its short- and medium-term implications for maternal mental health are not well understood, partly due to the lack of appropriate data.

Objectives
Based on individual-level administrative data from Hungary, we analyse the relationship between caesarean delivery and maternal antidepressant use, an objective indicator of maternal mental health.

Methods
We use anonymized administrative data on birth records and on the consumption of antidepressants for the years 2010-2016, covering the entire population of Hungary. The birth records contain the monthly date and location of birth and the inpatient diagnosis history (ICD codes) of the mother, including the mode of delivery and the major complications during pregnancy and delivery. We also know the age of the mother and the zip code of her address. The individual pharmaceutical records contain the exact type and amount (days of therapy – DOT) of medications in the ATC group "N06A" (antidepressants) that were purchased through pharmacies. Based on these data, we follow maternal antidepressant use before and after each birth event, and analyse it with panel and duration models.

Results
We focus on births without observed medical risk factors for caesarean section. We document that antidepressant use before delivery is associated with an elevated risk of caesarean section. We also show that caesarean delivery is associated with higher odds (by around 20%) and higher amounts of antidepressant use within one, two and three years after delivery, conditional on a rich set of individual and region specific covariates. This relationship holds irrespective of antidepressant use before pregnancy. The instrumental variable estimates do not contradict these results, where we use the conditional rate of caesarean deliveries in the nearby hospital with territorial supply obligation as an instrument. We also provide evidence that lower subsequent fertility can be a driving mechanism behind the positive relationship between caesarean delivery and antidepressant use.
Parallel Session 3a: Before and (long time) after Birth

Conclusions

Our results suggest a negative mental health effect of caesarean section over the 1-3 year horizon after birth, if mental health is measured with the consumption of antidepressants, an indicator of major depressive or anxiety disorder. This relationship is particularly important if a caesarean delivery is not necessary due to medical reasons, and expectant mothers should be made aware of the potential mental health implications of the mode of delivery.
Title: Environmental Disasters and Birth Outcomes: Impact of a Tailings Dam Breakage in Brazil

Authors: Matías Mrejen\textsuperscript{1}, Julian Perelman\textsuperscript{2}, Danielle Carusi Machado\textsuperscript{3}

\textsuperscript{1} PhD candidate, Graduate Program in Economics, Fluminense Federal University.
\textsuperscript{2} National School of Public Health, Nova University of Lisbon.
\textsuperscript{3} Graduate Program in Economics, Fluminense Federal University

Abstract:

Background

There is a documented relationship between maternal exposure to stress during pregnancy and adverse birth outcomes. A frequently studied source of maternal stress is exposure to natural disasters and other kinds of catastrophic events, like acute armed violence. However, the evidence is ambiguous about the link between disasters and birth outcomes, and mainly limited to high-income countries. The breakage of a tailings dam in Mariana, a municipality in southeastern Brazil, generated a huge flow of polluted mud that reached directly four nearby municipalities and indirectly, through the stream of the Rio Doce river, 34 more. The event was one of the largest environmental disasters in Brazilian history and the largest worldwide involving tiling dams. This study aims at examining how this event affected birth outcomes of children conceived after its occurrence.

Methods

We used data on birth records from the Brazilian National Vital Statistics System, containing information on birth outcomes and maternal characteristics, and official reports about the dam breakage to identify all affected municipalities. We identified all newborns exposed in utero to the event, as well as the timing and the intensity of that exposure (n = 13,763). We additionally identified newborns whose mothers resided in affected municipalities, but were born before the event (n = 23,189). We used data on newborns from nearby, non-affected, municipalities as a control group (n = 32,872). We used a difference-in-differences framework to exploit the combination of geographical and intertemporal variation of in utero exposure and birth outcomes, controlling for maternal characteristics, and seasonal and municipal factors.

Results

We found that in highly affected cities (i.e. cities that were directly reached by the mudflow), in utero exposure to the dam breakage during the first two trimesters of gestation was associated with an increased probability of being born with low birthweight (<2500 grams) (1st trimester: average marginal effect = 0.044, CI95%: 0.019-0.070; 2nd trimester: average marginal effect = 0.057, CI95%: 0.029-0.085).
Conclusion

Results confirm that exposure to traumatic events during pregnancy is associated to worse birth outcomes, which may due to stress, reduced access to prenatal care, or adverse living conditions after the event. These findings highlight the need for specific interventions on pregnant woman in presence of natural disasters, mainly during the early gestation period.
Title: Birth Order, Parental Health Investment and Health in Childhood

Authors: Gerald Pruckner\textsuperscript{1,2}, Nicole Schneeweis\textsuperscript{1,2,3,4}, Thomas Schober\textsuperscript{1,2}, Martina Zweimüller\textsuperscript{1,2}

\textsuperscript{1} Johannes Kepler University Linz, Austria
\textsuperscript{2} Christian Doppler Laboratory for Aging, Health and the Labor Market, Austria
\textsuperscript{3} IZA, Institute for the Study of Labor, Bonn, Germany
\textsuperscript{4} CEPR, Centre for Economic Policy Research, London

Abstract:

Public interest and cross-discipline research in birth order effects have greatly increased in recent years. The analysis of the impact of birth order on individual outcomes may help to better understand the causes of long-term child outcomes and implement appropriate policies to enhancing equality of opportunity of children. In this project, we analyze birth order effects on health from birth to adolescence based on Austrian individual-level data. There are a number of potential mechanisms that could explain birth order differences with respect to health. Apart from biological reasons such as maternal immune reactions during pregnancy and effects on the immune system (hygiene hypothesis), parental investment and behavior reflect an important channel for health-related birth order effects. First-born children have full attention of parents until another sibling is born. As parents face constraints in time and financial resources and collect parenting experience over time, they can be expected to invest differently in their children depending on the birth order.

We estimate family fixed effects models for the impact of birth order on a number of health outcomes and control for the sex of the child and for year of birth by month of birth dummies. The sample includes Austrian families with 2-4 children born between 1984 and 2015. We finally observe 1.7 million children from 700,000 families. The health outcomes to be analyzed include health at birth (birth weight, Apgar scores, perinatal hospital visits . . .), health in childhood (age 1-10) and adolescence (age 11-25). Health in childhood and adolescence is captured by healthcare expenditure for hospitalization, medical drug intake, and physician visits. Moreover, we use data from school health examinations and observe children’s preventative screening participation. The latter is a strong indicator for parents’ health behavior. We utilize comprehensive individual-level data linking together the Austrian birth register, the Austrian Social Security Database (ASSD), health register data from the Upper Austrian Health Insurance fund, and school health examination data from the Upper Austrian provincial government.

Estimation results indicate large differences in health at birth in favor of later-born children which is in accordance with the existing literature. Moreover, based on healthcare service utilization, we find evidence for better health of second-born children during child- hood. Further, the results reveal that infectious diseases hit
later-born children earlier, which is attributable to the nursery school attendance of their older sibling. And finally, the results on screening participation clearly indicate less health investment in later born children. This pattern in parental health behavior is consistent with our finding that most long-term effects are quantitatively and statistically not significant.

JEL Classification: I11, I12, J13

Keywords: Birth order, parental health investment, parental health behavior, health at birth, health in childhood, health care utilization.
Title: Interregional Patient Flows and the Spatial Accessibility of Primary Healthcare Services

Authors: Dieter Pennerstorfer\textsuperscript{1}, Anna-Theresa Renner\textsuperscript{2}

\textsuperscript{1} Johannes Kepler University, Linz
\textsuperscript{2} Vienna University of Economics and Business

Abstract:
A sick person’s decision if, where and when to utilize healthcare depends on the probability that the health problem will dissolve (need), individual preferences (demand) and the disutility of visiting a doctor (supply). This theoretical reflection on healthcare utilization is quite well-known, and also empirical models incorporating need, demand and supply-side factors are not uncommon. However, the spatial dimension of healthcare supply is often ignored or insufficiently regarded. Furthermore, most existing literature on geographic accessibility and distribution of healthcare services focusses on hospital services and comes from the US, Australia or China.

We aim to fill this gap and add to the methodological development in this field by linking research methods from health economics with regional science and geography. Empirically, we investigate the availability and spatial accessibility of public outpatient healthcare services and their predictive power for interregional patient flows within a healthcare system. We want to gain insight into why patients choose to seek care in one region rather than another, and how we would expect them to reallocate if the level of service provision changes. Methodologically, we argue that the usually employed model for explaining spatial interactions, the gravity model, is not suitable for explaining variations in patient flows and propose a measure that incorporates spatial accessibility and availability of physician services: so called Two-Step Floating Catchment Areas (2SFCA). The advantage of the proposed 2SFCA is that (1) they take into account the precise location of physicians and the distribution of potential patients within a district, (2) they can predict the redistribution of patients in case of a change in supply without posing any assumptions about causality, under/overutilization or changes in the magnitude of utilization, and (3) they do not require patient level data. The first argument is especially relevant for regions with an uneven population and/or physician distribution, where the regional physician density can be a misleading measure of accessibility.

For the analysis, we link different datasets on various levels of observation. The first consists of all patient flows between the 115 political districts in the Austrian public primary care sector. We are therefore able to obtain the share of patients from each district seeking care in each of the 114 other districts. Furthermore, commuters from one district to another are used to account for social and economic ties between two districts. For the computation of the 2SFCA for public and private outpatient GPs, we use the exact location and other characteristics of all outpatient physicians in Austria from a web-scraping process, and 250m×250m grid-level
data on the population distribution. The grid-level 2SFCA can be aggregated to the district level to obtain the relative accessibility of one region’s physicians for another region’s potential patients. The preliminary results of the fixed effects regression show that adding the 2SFCA as a measure of accessibility of public and private outpatient physicians to a standard gravity model significantly increases its explanatory power.
Title: Public Spending on Orphan Medicines: a Review of the Literature

Authors: Sabine Vogler¹, Margit Gombocz¹

¹ WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Pharmacoeconomics Department, Gesundheit Österreich GmbH, Austria

Abstract:

Background and objective

Orphan medicines are medicinal products for rare diseases; these are conditions and illnesses that affect a comparably small number of patients. National and regional differences, however, exist in defining a rare disease. Little is known about the share of orphan medicines expenditure of total pharmaceutical expenditure. This study aimed at identifying globally published expenditure data on orphan medicines and at synthesising the range of shares of orphan medicines expenditure of total pharmaceutical expenditure.

Methods

A two-step literature review was undertaken using Medline, the Orphanet Journal of Rare Diseases and Google Scholar in order to identify published information about pharmaceutical expenditure on rare diseases covered by third party payers. Articles were screened (title and abstract) and full texts of qualified literature were reviewed for inclusion.

Results

643 articles excluding duplicates were identified in Medline. After screening of title and abstract, 615 articles were excluded, and in a further analysis of full texts another 28 articles were eliminated. No further references were found through a focused search in the Orphanet Journal and in Google Scholar. Eventually, 13 articles qualified for in-depth analysis.

The 13 articles identified were published between 2010 and 2018. Survey periods varied between one and 12 years. Up to 22 countries were investigated in one survey. Expenditure data was available for five out of the 13 articles, eight articles used ‘expenditure proxies’. Data was provided from public institutions in four studies, from private providers in six studies. A combination of both public and private data providers was identified in two studies and in one study the source was not clearly stated. In all included articles solely secondary data were analysed.

12 of the 13 studies reported shares of orphan medicines expenditure of pharmaceutical spending. In most of the studies the shares were below 3%. Countries with higher shares included the United States of America, Canada, the Netherlands and Bulgaria, the latter reporting spending on orphan medicines as high as 9% of total...
pharmaceutical spending. One study displayed solely absolute figures in which Germany ranked highest in per capita spending on orphan medicines.

Conclusions

Few studies that inform on medicines spending for orphan medicines have been published. The scope of included medicines has not been sufficiently specified in some studies, and some methodological limitations prevent a comparison of data of different studies.
Title: Does Cross-country Cooperation Improve Access to Medicines? Analysis of Government Collaborations in Pharmaceutical Policy in the WHO European Region

Authors: Sabine Vogler¹, Fatima Suleman²,³

¹ WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Pharmaco- economics Department, Gesundheit Österreich GmbH, Vienna, Austria
² Discipline of Pharmaceutical Sciences, School of Health Sciences, University of KwaZulu-Natal, Durban, South Africa
³ Faculty of Science, University Utrecht, Utrecht, the Netherlands

Abstract:

Background and objective

Increasingly, high-income country governments are challenged to ensure affordable access, in particular to high-priced medicines, without jeopardizing the financial sustainability of the health care system. As one policy option, collaboration in the field of pricing and procurement of medicines has been proposed, and in recent years some cross-country collaborations of public authorities for pharmaceutical pricing and reimbursement were established.

The study aims to identify and understand existing cross-country collaborations in the WHO European Region, including their intent and objectives as well as to assess their performance and analyse facilitating and challenging factors.

Methods

For the purpose of this project a cross-country collaboration is defined as two or more national governments working jointly on an issue that promotes the access to medicines (e.g. health technology assessment, procurement, pricing policies).

Five European cross-country collaborations were selected: Baltic Procurement initiative (Estonia, Latvia, Lithuania), Beneluxa initiative (Belgium, the Netherlands, Luxembourg, Austria, Ireland), Nordic Pharmaceutical Forum (Denmark, Norway, Sweden and Iceland), Valletta Declaration (Croatia, Cyprus, Greece, Ireland, Italy, Malta, Portugal, Romania, Slovenia and Spain) and the Visegrad collaboration (Eastern European countries including Czech Republic, Hungary, Poland and Slovakia).

In addition to a literature and documents review, semi-structured interviews were held with representatives involved in the collaborations. A total of 19 interviews with 26 interviewees took place between July and October 2018. Using an analysis matrix, responses were examined with a view to exploring overarching patterns.
Results

In most cases, there was one country that led the initiative to form a collaboration. Four of the studied collaborations are political ones, with strong engagement at high political levels, whereas the Nordic Pharmaceutical Forum (NPF) is a bottom-up initiative of technical experts. Three of the collaborations aim at performing joint price and/or reimbursement negotiations while joint procurement is included in the mission of the Baltic Procurement Initiative (procurement limited to vaccines) and the NPF. Cooperation in health technology assessment and horizon scanning form further activities in most of the studied initiatives, and the importance of information sharing has been stressed by all collaborations.

Since most collaborations were rather new (e.g. Valletta Declaration and Visegrad established in 2017), ‘tangible results’ (e.g. joint procurements, joint negotiations) were not yet available. It is thus hard to assess the performance of the collaborations in terms of endpoints and efficiency. Nonetheless, officials involved in the collaborations clearly considered them as ‘success’ or ‘work towards success’. Facilitating factors include trust between the members, strong commitment of highly qualified technical experts, political backing, a structure within which to work (procedural rules) and information technology (e.g. videoconferences).

Conclusions

Information sharing is considered as a major value of the collaborations. Interviewees advised further governments to join existing collaborations or set up their cross-country cooperation. However, the starting phase is challenging, and it takes some time until the collaborations will be able to produce deliverables that are also regarded as successes by those not involved.

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- Veronika Wirtz (WHO Collaborating Centre for Pharmaceutical Policy, Boston) – involved in the development of the methodology of the study
- The interviewees of the five cross-country collaborations
Title: Unterstützung von Kindern mit psychisch erkrankten Eltern in Tirol: Eine Ist-Situationsanalyse

Authors: Ingrid Zechmeister-Koss¹, Melinda Goodyear², Heinz Tüchler¹, Jean Paul³,⁴

¹ Ludwig Boltzmann Institute for Health Technology Assessment, Wien, Austria
² School of Rural Health, Monash University, Australia
³ Mental Health Research Group Programme, Ludwig Boltzmann Gesellschaft, Innsbruck, Austria
⁴ Department of Psychiatry, Medical University of Innsbruck, Innsbruck, Austria

Abstract:

Hintergrund


Methoden


Ergebnisse

aufgrund zu geringer Kapazität bei Psychotherapie). Etwa die Hälfte der Kinder, die selbst psychische Probleme haben (und häufig psychisch erkrankte Eltern haben), nehmen keine Leistungen in Anspruch.

Gemäß Auswertung von Kassendaten könnten über die Primärversorgung die meisten betroffenen Eltern erreicht werden, während auf psychiatrischen Abteilungen oder Tageskliniken lediglich 5 % Derjenigen, die kassenfinanzierte psychiatrische Leistungen in Anspruch nehmen, anzutreffen sind. Diese haben aufgrund der größeren Krankheitsschwere jedoch möglicherweise den höheren Unterstützungsbedarf für ihre Kinder. Es besteht auf Seiten der ExpertInnen Konsens über einen Handlungsbedarf, allerdings fehlen standardisierte Unterstützungsprozesse.

**Schlussfolgerung**

Title: Health Status of Minor Refugees

Authors: Thomas Schober¹, Katrin Zocher¹

¹ Christian Doppler Laboratory Aging, Health and the Labor Market, Department of Economics, Johannes Kepler University of Linz, Austria.

Abstract:

Many refugees, who have sought protection in recent years, are children. In the EU the share of minor asylum seekers is about 31%. In Austria the percentage is even larger with around 42% of 0-13 and around 11% of 14-17 year old asylum seekers. Although, there is a medical examination in most host countries directly after the arrival, little is known about the further health development of this vulnerable group. In this project, we compare the health status of children with different migration backgrounds. In Austria, all children of the appropriate age group are required to attend school. In 2009 the Upper Austrian government introduced a novel program to promote school health. In this program, physicians examine and document the health state of children in public schools. This setting enables us to clearly determine the individual health status of a child and additionally exclude self-selection to certain health services. Additional administrative data allow us to infer the migration background of children. The sample includes 98 thousand examinations from more than 41 thousand children aged 6-15. Preliminary results suggest that refugee children on average have a better physical constitution than Austrians and are more likely to have normal weight and better motor skills. We further analyze heterogeneity with respect to sex, age and time in Austria.
Title: Why Don’t You Tell Me The Truth? Determinants of Biases in Health Reported by Older Europeans

Authors: Sonja Spitzer\textsuperscript{1,2}, Daniela Weber\textsuperscript{1,3}

\textsuperscript{1}Wittgenstein Centre for Demography and Global Human Capital
\textsuperscript{2}Vienna Institute of Demography at the Austrian Academy of Sciences (VID)
\textsuperscript{3}International Institute for Applied Systems Analysis (IIASA)

Abstract:

Vast areas of research and policy-making are concerned with the health of the generation 50+ and its variation between countries, age groups, education groups and gender. For this purpose, most studies have to rely on self-reported survey measures of health, which have the advantage that their collection is less time and money intensive than that of performance-based health indicators. However, self-reported health measures are prone for biases.

We quantify factors explaining the bias in self-reported physical and cognitive health of the population 50+ in 17 European countries. While interest in misreporting of health is large, to the best of our knowledge, no study has yet explored which characteristics are most relevant in explaining reporting biases. The analysis utilises data from the Survey of Health, Ageing and Retirement in Europe (SHARE) for over 200,000 observations from 17 European countries. We compare performance-based measures of mobility and memory with their self-reported equivalent to analyse which individuals report their actual level of health and which individuals are prone to over- or under-estimate their health. In particular, we analyse tested ability to stand up from a chair with self-reported ability to stand up from a chair, and tested ability to recall a list of words with self-reported memory.

Employing relative importance analysis, we find that the biggest bias in self-reported health is due to reporting heterogeneity between countries and age groups, while gender plays a relatively minor role in explaining the bias. Furthermore, education is an important factor in explaining biases is self-reported cognitive health. Multinomial logit regressions allow for clearly estimating the effect of individual characteristics on reporting behaviour. Persons from Southern as well as Central and Eastern European countries are much more likely to misreport their physical and cognitive health than persons from Northern and Western Europe. Furthermore, concordance of subjective and objective health decreases drastically with age, however, the direction of the bias depends on the definition of concordance. Overall, our results suggest that comparisons of self-reported health between countries and age-groups have to be treated particularly careful, while comparisons between genders seem credible for most countries.

Keywords:

Reporting bias, mobility, cognitive health, relative importance analysis, SHARE
Title: The Effect of Colorectal Cancer Screening Coverage Required by US State Laws

Authors: Nikola Jovanoski

1 University of Basel

Abstract:

Individuals who are between 50 and 75 years old should routinely screen for colorectal cancer. This is because it would provide them with the opportunity to prevent the cancer, or detect and treat it, while it is at an earlier stage. However, many of them do not routinely screen. Individuals who do not routinely screen can impede the prevention and avoidable treatment of the cancer, or confront a lower survival rate. Certain states in the US have introduced law that requires health insurers to cover the costs of colorectal cancer tests for these individuals. These states expect that this coverage should encourage them to screen for colorectal cancer. I exploit the use of a regression discontinuity design to analyse the effectiveness of the laws. Unlike previous research on the matter, I do so with the separation of the sample by affluence. The results show that the laws do not encourage less affluent individuals to screen, however, the probability that a more affluent individual screens increases by 6-17 percentage points. This shows that the laws have the capacity to encourage individuals to screen for the cancer, but that it may not influence every individual. This study may assist policy makers from countries with similar health systems that intend to introduce or amend similar policies.

JEL classification: I18

Keywords: cancer screening; health insurance laws; regression discontinuity design
Title: Analyse der Altersstruktur bei § 2-Vertragsärzten

Author: Evelyn Angerer-Mitteramskogler¹, Tim Teichert¹
¹ Main Association of the Austrian Social Security Institutions, Austria

Abstract:

Hintergrund

Die demographische Entwicklung hat neben der älter werdenden Bevölkerung auch eine älter werdende Ärztenschaft zur Folge. Für die Planung und Sicherstellung der Versorgung ist es notwendig zu wissen, wie sich die Alters- und Geschlechtsverteilung der niedergelassenen Vertragsärztinnen und -ärzte vom Zeitpunkt der Aufnahme eines Vertragsverhältnisses mit einem Krankenversicherungsträger (Invertragnahme) bis zu dessen Beendigung (Vertragsniederlegung) gestaltet. Die Analyse der Altersstruktur der Vertragsärztinnen und -ärzte trägt somit dazu bei, künftige Entwicklungen besser abschätzen und etwaige Lücken in der Versorgung identifizieren zu können.

Methode


Ergebnisse

Durchschnittsalter Invertragnahme


Durchschnittsalter/Altersverteilung Vertragsärztinnen und -ärzte

Der Vergleich der Altersverteilung 2017 mit der Altersverteilung 2007 verdeutlicht, dass das Durchschnittsalter der Ärztinnen und Ärzte im Aggregat aller Fachgebiete im Zeitraum von zehn Jahren gestiegen ist. Das Durchschnittsalter stieg von 52,7 auf 54,9 Jahre und das Medianalter von 52 auf 56 Jahre an. Der Anstieg des Durchschnitts- und Medianalters ist bei den allgemeinen Fachärztinnen und -ärzten und in der Zahnmedizin stärker ausgeprägt als in der Allgemeinmedizin. Im Jahr 2017 war ein Drittel der Ärztinnen und Ärzte (33,1%) bereits 60 Jahre und älter, der Anteil der unter 40-Jährigen lag bei lediglich 6,1%. Der größte Anteil (60,8%) war
40-59 Jahre alt. Die Anteile der Altersgruppen waren je nach Fachgebiet, Bundesland und Regionsklassifizierung (ländlich, intermediär und städtisch) unterschiedlich ausgeprägt.

Geschlechterverteilung Vertragsärztinnen und -ärzte

Insgesamt waren im Jahr 2017 rund zwei Drittel der Ärztinnen und Ärzte im Aggregat aller Fachgebiete männlich und ein Drittel weiblich. Während in den älteren Altersgruppen die männlichen Ärzte gegenüber den weiblichen dominierten, war das Geschlechterverhältnis bei den unter 40-Jährigen mit einem Anteil von 54% Ärzten und 46% Ärztinnen ausgeglichen.

1 § 2-Kassen: Gebietskrankenkassen, Betriebskrankenkassen und Sozialversicherungsanstalt der Bauern Alter bei Vertragsniederlegung

Derzeit liegt das Durchschnittsalter im Aggregat aller Fachgebiete bei Vertragsniederlegung bei 64,1 Jahren, unterscheidet sich jedoch zwischen Männern und Frauen sowie pro Fachgebiet. Der Ausblick zeigt, dass der Anteil der Ärztinnen und Ärzte, die in den nächsten Jahren das pensionsfähige Alter erreichen insgesamt hoch ist, jedoch in den kommenden zehn Jahren kontinuierlich abnehmen wird.

Schlussfolgerung

Title: Gender-Unterschiede in der Leistungserbringung durch Vertragsärztinnen und Vertragsärzte in Österreich

Authors: Reinhard Jung

1 Main Association of the Austrian Social Security Institutions, Austria

Abstract:


Vor diesem Hintergrund werden Routinedaten der Sozialversicherung des Jahres 2016 ausgewertet, um Unterschiede zwischen Ärztinnen und Ärzten mit § 2-Kassenvertrag in Bezug auf die Anzahl der pro Arzt/Ärztin behandelten Patientinnen und Patienten für verschiedene ärztliche Fachgruppen darzustellen. In der Regressionsanalyse werden zusätzlich weitere Einflussgrößen auf die Anzahl der behandelten Patientinnen/Patienten neben dem Geschlecht der Ärztinnen/Ärzte berücksichtigt.

Die Ergebnisse zeigen, dass in fast allen Fachgebieten Ärzte mehr Patientinnen/Patienten behandeln als Ärztinnen. Dieses Resultat bietet teilweise eine Erklärung dafür, dass Ärzte in Österreich höhere Einkommen haben als Ärztinnen. Verschiedene Hypothesen, wieso sich die Anzahl der pro Arzt behandelten Patientinnen/Patienten von der Anzahl der pro Ärztin behandelten Patientinnen/Patienten unterscheidet, können mit den vorhandenen Daten nicht überprüft werden.

In einem ersten Schritt konnten für Österreich Unterschiede zwischen Ärztinnen und Ärzten in der Versorgung anhand der durchschnittlich pro Arzt/Ärztin behandelten Patientinnen/Patienten festgestellt werden. Es besteht dringender Bedarf in einem nächsten Schritt der Frage nachzugehen, ob sich Ärzte und Ärztinnen auch in Bezug auf Behandlungsstil und Outcomes unterscheiden. Die Identifikation von geschlechtsspezifischen Unterschieden in der Versorgung könnte schließlich Möglichkeiten zur Verbesserung der Versorgung durch Ärztinnen und Ärzte aufzeigen.
Title: Wirkung und Nutzen von Frühen Hilfen

Authors: Brigitte Juraszovich

\(^{1}\) Austrian Public Health Institute (Gesundheit Österreich GmbH)

Abstract:

Haben sich die Frühen Hilfen bereits in der Praxis bewährt?


Die Dokumentation FRÜDOK zeigt einen sehr raschen Anstieg der durch die regionalen Frühe-Hilfen-Netzwerke begleiteten Familien. Die intendierten Zielgruppen von Frühen Hilfen werden sehr gut und früh erreicht.

Eine österreichspezifische Analyse zu Wirkungen und Kosten-Nutzen von Frühen Hilfen zeigt auf, dass der Gesamtnutzen der Begleitung durch die regionalen Frühe-Hilfen-Netzwerke deutlich höher ist als die damit verbundenen Kosten.

Evidenzen zu Frühen Hilfen


Die Lebenslauforschung (life course approach) belegt insbesondere einen starken Zusammenhang zwischen dem sozioökonomischen Status in der Kindheit (Bildung, Einkommen etc.) und dem Gesundheitszustand im Erwachsenenalter, und zwar unabhängig vom späteren sozialen Status. Ausreichend Unterstützung und Förderung in der frühen Kindheit können Lebensqualität, sozioökonomische Lage und Gesundheit bis weit ins Erwachsenenleben positiv beeinflussen.

Frühe Hilfen zielen darauf ab, Entwicklungsmöglichkeiten und Gesundheitschancen von Kindern und Eltern in Familie und Gesellschaft frühzeitig und nachhaltig zu verbessern, und leisten damit einen relevanten Beitrag zu sozialer und gesundheitlicher Chancengerechtigkeit.
Kosten-Nutzen-Analysen zu Frühen Hilfen


Title: Pharmaceutical Price Negotiations in Mexico – a Policy Mechanism towards Access to Innovative Medicines

Authors: D.D. Moye Holz1,2, J.P. van Dijk1, S.A. Reijneveld1, H.V. Hogerzeil1

1 Department of Community and Occupational Medicine, University Medical Center Groningen, University of Groningen, the Netherlands
2 WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Vienna, Austria

Abstract:

Background

In 2008, the Mexican government implemented price negotiations to improve access to innovative medicines, promote price uniformity across public health institutions, improve procurement efficiency and obtain savings in the pharmaceutical expenditure. This strategy applies only for public procurement prices of patented medicines included in the national formulary. We analyzed the impact of price negotiations in the price of innovative medicines and their accessibility in the public sector in Mexico.

Methods

We retrieved the public procurement prices, expenditure and volume of eight selected innovative medicines (using cancer medicines as example). We analyzed price changes and trends. We used drug utilization research methods to assess the use, as proxy of access, of these innovative cancer medicines from 2010-2016.

Results

From 2010 to 2016, negotiated prices of selected patented cancer medicines decreased in US dollars, while they remain almost constant for most medicines when expressed in national currency. The price decreases for most medicines in comparison to the previous year ranged approximately from 2% - 40%. For all medicines, prices did not become uniform - all medicines showed different procurement prices across and within health institutions. The use of innovative medicines supplied in the public sector increased throughout the period of study, suggesting better availability and access. However, we found that use (i.e. access) was better in social health institutions than at the ministry of health’s facilities. As well, the central region of the country used (i.e. access) more innovative medicines than the other regions.

Conclusion

The establishment of price negotiations seems to have led to reduced prices and an increase in the volume of medicines procured in the public sector. However, medicine procurement by public hospitals should be monitored to ensure that negotiated prices are respected and benefit all institutions. Although use and access to innovative medicines has increased over the years, their access is unequal across health insurance schemes and
geographic regions. Further efforts should be in place to guarantee equal access to innovative medicines in Mexico.
Title: There is No Such Thing as a Biosimilar Patent Cliff?!? – An Analysis of Price Developments of Biological Medicines after Patent Expiration

Authors: Peter SCHNEIDER

1 WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Pharmaco- economics Department, Gesundheit Österreich GmbH, Austria

Abstract:

Background

A medicine passes through different ‘product lifecycle’ stages, which may bring changes in the regulatory and policy environment of pharmaceuticals. Two key stages are the period under patent exclusivity, when the pharmaceutical product is on-patent, and the period when patents on the medicines expired and competitors enter the market. Those competitors are called generics for chemical entities and biosimilars for biological medicines. While there is abundant literature on prices and price developments of generic medicines, price studies on biosimilars are scarce. Existing studies focus on savings potential within national health care systems than price analysis or comparison. The recent patent expiration of biological medicines which are ‘blockbusters’ in terms of global sales, provides an opportunity to assess prices developments of biological medicines and identify possible driving factors. The aim of this study is to survey prices of biological medicines before and after the entry of the first biosimilar and examine which factors have an influence on the development of prices.

Methods

Price information for pharmaceutical specialities for five different active ingredients (Adalimumab, Etanercept, Infliximab, Rituximab, Trastuzumab) will be obtained through the Pharmaceutical Price Information (PPI) service located at the Austrian Public Health Institute. The prices will be collected 6 months before the first biosimilar entered the market and 6 to 12 months after. As a second step the price information will be structured for further analysis (descriptive analysis, time series analysis)

Results

Preliminary results will be available at the time of the conference, but we expect following results:

Average prices of biological medicines decrease after the entry of biosimilars on the market. However, the price reduction does not have the same magnitude as it has been observed for generic medicines. The conjectured reasons are:

- Price link: Several countries have introduced for generics and biosimilar a so-called price link, which is the practice of setting the price at a certain percentage lower than the originator/reference medicine price.
Most countries distinguish between biosimilars and generics and the price link for biosimilars has a lower percentage than for generics.

- **Demand-side measure**: A major driving force of price developments for generic medicines are so-called demand-side measures like generic substitution or reference price systems. Due to medical precautionary measures with regard to ‘immunogenicity’, in most of the countries such policies do not apply to biosimilars.

- **Point of administration**: Biosimilars are often administered in a hospital setting, and pricing in this sector may follow different principles than in the outpatient sector. Medicines are procured through tendering, either centralised by a procurement agency or decentralised by the respective hospital. These tender prices may not be publicly available and published list prices do not capture the dynamic of the inpatient sector.

**Conclusion**

The patent cliff of prices does also apply for biosimilars, but in contrast to generic medicines it is more difficult to estimate its magnitude.
**Title:** Arzneimittelerstattung im stationären Bereich: Ansätze für demokratische Entscheidungsprozesse

**Authors:** Sarah Wolf\(^1\), Claudia Wild\(^1\)

\(^1\) Ludwig Boltzmann Institute for Health Technology Assessment, Wien, Austria

**Abstract:**

**Einleitung**


**Methode**


**Ergebnisse**


**Konklusion:**

Im Sinne der Konzepte A4R und der „deliberativen“ Entscheidungsfindung scheint eine transparente, evidenzbasierte, faire und effiziente Allokation der vorhandenen Ressourcen zur Rechtfertigung von (schwierigen)
Entscheidungen zu Prioritäten unabdingbar. Diese Kriterien können sich jedoch diametral widersprechen: Methoden/Prozesse/Entscheidungen können einerseits evidenzbasiert, transparent und/oder fair, andererseits aber auch erheblich zeitaufwendiger sein. Bei der Abwägung der möglichen Handlungsoptionen ist jedenfalls die pragmatische Umsetzbarkeit der Handlungsoptionen innerhalb der existierenden österreichischen Rahmenbedingungen zu reflektieren.