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Book of Abstracts

7th ATHEA Conference

„Looking beyond borders: Global health economics"

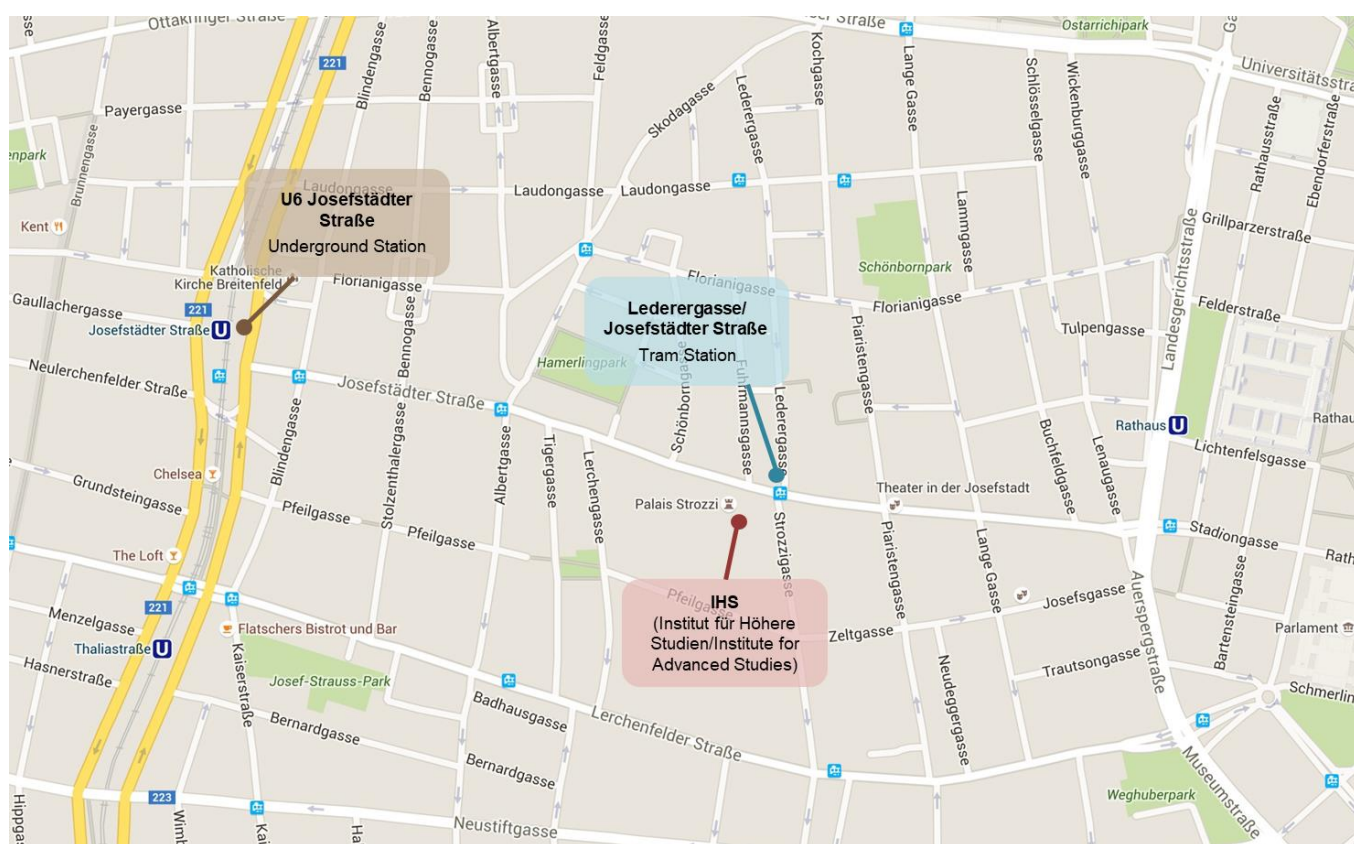Vienna, 23rd and 24th February 2023

Conference venue

Address:

Institute for Advanced Studies (IHS)

Josefstädter Straße 39

1080 Vienna

Austria

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Parallel Session 1: Experimental and survey data

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Title: Beliefs about social norms and vaccination readiness

Authors: Silvia Angerer[1], Daniela Glätzle-Rützler[2], Philipp Lergetporer[3], Thomas Rittmannsberger[2]

[1] UMIT Tirol

[2] University of Innsbruck

[3] Technical University of Munich

[4] Institute for Advanced Studies, Vienna, Austria

Abstract:

Vaccinating is one of the most promising prevention strategies for infectious diseases. During the COVID-19 pandemic many countries have been struggling with refusal of COVID- 19 vaccination in sizeable shares of their populations. Consequently, strategies to increase vaccination readiness are at the forefront of health policy discussions in many countries.

From an economics perspective, a potentially powerful tool to foster vaccination readiness are social norms, as they are key to facilitate economic transactions by sustaining cooperation among strangers in society and govern a wide range of behavior, from labor supply decisions, charitable giving, political engagement to school choice. Recent evidence suggests that a non- negligible part of society misperceives existing social norms, and that alleviating these misperceptions can modify economic behavior. If people are misinformed about the social norm to get vaccinated, correcting their misbeliefs through information provision may be a promising approach to foster vaccination readiness in the short run. This is the hypothesis we test in this paper.

We conducted a two-stage information provision experiment in Germany between March and April 2021, a time when large parts of the population were still unvaccinated against COVID-19. We elicited (descriptive and injunctive) social norms in the first survey (N1 = 2,030) and use the information on descriptive norms in the second survey (N2 = 3,045) as information treatment. Both surveys were conducted with distinct quota-representative samples of the German population. We measure treatment effects on perceived social norms (injunctive and descriptive) and various measures of vaccination readiness, in particular intention to vaccinate (ITV), willingness to pay for vaccination (WTP), and revealed behavior by retrieving information about vaccination registration.

We find that randomly providing information about the existing norm succeeds in correcting biased beliefs, but does not affect vaccination readiness on average, and neither if differentiating between prior perceptions. A subgroup analysis of respondents' characteristics, however, shows pronounced gender-differences — while women state higher intentions to vaccinate after learning that more people than expected intend to get vaccinated, men, in the same situation, decrease theirs. These differential treatment effects are largely explained by differences in the perception of the information provided on social pressure, trust in the vaccine, benefits of the vaccine as well as cooperative preferences. Taken together, our findings speak against the use of norm-nudging in the realm of vaccination, as indiscriminately correcting biased beliefs may backfire.

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Title: Costs of obesity in Austria

Authors: Stephanie Reitzinger[1], Thomas Czypionka[1]

[1] Institute for Advanced Studies, Vienna, Austria

Abstract:

Background

Excess body weight has been increasing over the last decades worldwide. Obesity constitutes not only a risk to health of the individuals concerned but yield a major cost burden for the society. Previous studies estimated the direct and indirect costs of obesity considering the costs of some associated diseases, for instance, cardiovascular diseases, different types of cancer, diabetes, and arthrosis. For various diseases, though, evidence on a higher risk associated with obesity has not been included in cost analyses yet. Most existing cost analyses differentiate between overweight and obesity defined by body mass index (BMI) categories, however, do not specifically differentiate between obesity classes.

Aim

The aim of our research is to approximate the costs associated with overweightness for Austria, where 3.8 million adults were overweight or obese in 2019 (50 % of adult population). Our study also brings along two methodological novelties. First, we cover a wider range of co-morbidities in our analysis aiming to include the most current epidemiological evidence of obesity associated diseases. Second, we consider a non-linear dose-response relationship per BMI unit up to a BMI of 40.

Method

We use population-weighted survey data (ATHIS 2019) on the distribution of BMI for Austria and data on relative risks regarding 83 obesity related diseases. Using fractional polynomial regressions, we estimated relative risks per BMI unit for 23 cost-intensive diseases regarding morbidity risk and for 11 main diseases regarding mortality risk. Data for various cost categories came mainly from administrative data of the year 2019. The approach for the cost analysis was based on the use of population-attributable fractions applied to direct medical, direct non-medical and indirect costs.

Results

We estimated that 11.7 % of all deaths under the age of 85 are related to overweight (25 %) or obesity (75 %) in 2019. In our analysis, almost half of obesity associated deaths are related to cardiovascular diseases. The direct medical costs amount to EUR 2,063 million; a third of these costs are related to cardiovascular diseases, 15 % to diabetes and another 15 % to diseases of the musculoskeletal system and connective tissue. The indirect costs amount to EUR 602 million. We estimated that nearly 1,300

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new entries into disability pension (7.5% of all entries) are associated with co-morbidities of excess body weight in 2019, amounting to costs of about EUR 18 million. About 3,900 full time equivalents were on sick leave yielding costs of about EUR 23 million. In total, the costs amount to EUR 2,708 million associated with overweight (29 %) and obesity (71 %).

Conclusion

The costs arising from overweight and obesity for the society are substantial for the year 2019. The maximum of obesity prevalence is projected to be reached around 2035, therefore, the financial impact on the Austrian health system and the economy will further rise. Our methodological advancement considering the risks per BMI unit allows us to estimate public health intervention programs in forthcoming research investigating ways to control the obesity epidemic.

Title: Navigational health literacy - a special challenge in Austria: results from the Austrian Health Literacy Survey 2019-2021

Authors: Robert Griebler[1] and Christa Straßmayr[1]

[1]Competence Centre for Health Promotion and Healthcare, Austrian National Public Health Institute, Vienna, Austria

Abstract:

Background

Low health literacy is associated with higher health care costs, more use of health care services and less favorable health outcomes. To measure and monitor population health literacy, Austria has participated in the European Health Literacy Population Survey 2019 – 2021 (HLS19), which was conducted in a total of 17 countries in the WHO European Region. In HLS19, specific health literacies were measured in addition to general health literacy (navigational health literacy, digital health literacy, communicative health literacy with physicians in health care services and vaccination health literacy). This presentation will focus on navigational health literacy, which has proven to be particularly challenging for the general Austrian population.

Methods

Navigational health literacy was measured by a new measurement instrument (HLS19-NAV; see Griese et al. 2022[*]) developed by the HLS19 consortium based on the common theoretical concept of health literacy developed by Sørensen et al (2012)[†]. It focuses on accessing, understanding, appraising, and applying information about the healthcare system. Data on navigational health literacy were collected as part of HLS19, in Austria by telephone from around 3,000 people aged 18 and over in 2020. Based on the individual items, a sum score was calculated, adding up the number of items that were classified as "easy" or "very easy", standardized to 0 to 100, with higher values indicating a higher levels of health literacy. Associations with sociodemographic and socioeconomic factors were examined using bivariate and multivariate statistical procedures.

Results

On average, 33 percent of the Austrian population experience difficulties in navigational health literacy. The most challenging navigational health literacy tasks are (percentages of "difficult" and "very difficult" answers combined) "to find out about rights as a patient or user of the healthcare system" (44 %), "to judge to what extent the health insurance covers a particular health service" (43 %) , "to understand information on ongoing health care reforms that might affect health care" (40 %), "to find out about support options that may help to orientate in the healthcare system" (39 %) and to "locate the right contact person within a health care institution" (36 %).

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[*] https://doi.org/10.3390/ijerph192113863

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Low navigational health literacy is associated with age, lower education, financial deprivation, and long-term illness/health problems.

<u>Conclusions</u>

The HLS19 study reveals that the Austrian population faces major challenges in navigating the Austrian healthcare system. The complexity and fragmentation of the healthcare system, as well as the lack of easily accessible information that could help to navigate the healthcare system, increase the demands on patients and users to access the right care, at the right time, at the right place.

Efforts to strengthen navigational health literacy should not only focus on individuals but also on the information environment and healthcare services by developing the latter into health literate organizations.

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Title: Can we predict the need for long-term care? A case study of the Austrian cash-for-care system using administrative data

Authors: Ulrike Famira-Mühlberger[1], Klaus Nowotny[1,2]

[1] Austrian Institute of Economic Research

[2] University of Salzburg

Abstract:

The need for long-term care imposes financial challenges on many elderly and disabled people. To support those in need of long-term care, Austria introduced the "Pflegegeld" (long-term care allowance) in 1993, a needs (but not means) tested cash-for-care transfer. The benefit level depends on the hours of professional care required per month and is – inter alia – contingent on the applicant's health status and her ability to perform (instrumental) activities of daily living. Given the demographic challenges of the coming decades, which are expected to increase the number of people in need of long-term care, financial pressures on public long-term care systems and health budgets will doubtlessly increase. Understanding the empirical relationship between health care services and the long-term care system is thus crucial. This paper studies the relationship between the individual consumption of health services and the receipt of long-term care allowance in Austria. We use detailed administrative data that covers the universe of all 550,960 receivers of long-term care allowance in Austria who were 60 years or older between 2016 and 2018. In addition, we also have access to a case-control sample of 435,332 non-receivers matched by age, gender and NUTS-3 region of residence.

The data gives information on age, gender, region of residence and the level of long-term care allowance received (if any), but also on all their doctor visits, hospital stays (including the diagnoses and the types of medical services received) and all the drugs prescribed to them in Austria. We use this detailed information on health services to analyse the first-time receipt of the long-term care allowance, using regularization and supervised machine learning methods to train a classification algorithm to predict a person's prospective care requirements in the short run based on previous health services, doctor visits and drugs prescribed on an individual level. Furthermore, in a second step we analyse the correlation between the transfer to a higher care allowance level and the health benefits provided prior to the transfer. In a third step, we analyze how recipients' probability of entering into inpatient care can be explained by the consumption of health services. Our results show that the first-time receipt of long-term care benefits can be predicted relatively well from the data in the short run. Age, inpatient stays in hospitals, the frequency of contacts with general practitioners and the use of drugs affecting the nervous system correlate most strongly with the subsequent first-time receipt of long-term care benefits. The most important factors preceding the move to a higher long-term care allowance level are the previous long-term care allowance level, age and – again – the use of drugs for the nervous system. The level of long-term care allowance also correlates strongly with entry into inpatient care, as does the frequency of contacts with general practitioners and

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age. The analysis reveals several avenues for health policy that can be drawn from the conclusions of the paper, but also shows that further research is necessary in order to improve the quality of the predictions.

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Title: Understanding carers' quality of life: Using a preference-weighted measure to gain insight into informal carers' QoL

Authors: Assma Hajji[1], Ulrike Schneider[1], Birgit Trukeschitz[1]

[1] Vienna University of Economics and Business, Vienna, Austria

Abstract:

Background

In Austria, the vast majority of care for elderly persons is provided by informal carers, mainly family members and friends. Austria is not unique in that respect - this is also the case for many other countries, and the pressure on informal care is expected to grow further as societies age. We know that caring comes at a price (in terms of personal health, social and economic costs). However, we lack empirical evidence on what is necessary to create sustainable arrangements to promote and enhance informal carers' quality of life. This paper investigates factors associated with carer QoL in Austria and aims to create a starting point for discussions around carers's QoL in general.

Methods

We used data from about 300 standardized face-to-face interviews with informal carers of persons using home care services in Austria. We performed a regression analysis looking into the relationships between informal carers' QoL and personal and environment characteristics. Carers' QoL was measured using the ASCOT-Carer (Adult Social Care Outcomes Toolkit for Carers), a multi-domain preference-weighted score covering seven care-related quality of life domains. Explanatory variables were chosen based on the informal carer risk model.

Results

Results indicated that carers' health issues as well as service users' cognitive impairment were negatively related with carer QoL. On the other hand, carer QoL was higher in carers with sufficient social involvement, access to information and respite care, and enough time for themselves.

Discussion

The results may serve as a starting point for policy interventions aimed at maintaining or improving carers' QoL. Services aimed directly at carers may include preventive health measures, information provision and easier access to and/or different models of respite care to relieve the carers' time burden and enable them to pursue healthy social relationships.

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Title: Depends on whom you ask: discrepancies in reporting spousal care between women and men across European welfare states

Authors: Ricardo Rodrigues[1,2] Cassandra Simmons[2], Eszter Zolyomi[2], & FutureGEN project consortium

[1] SOCIUS, Research Centre in Economic and Organizational Sociology, Lisbon School of Economics and Management (ISEG), University of Lisbon, Portugal
[2] European Centre for Social Welfare Policy and Research, Vienna, Austria

Abstract:

Background:

Analysis of gender inequalities in caregiving for older adults across different welfare states using quantitative data hinges on the assumption that survey instruments appropriately measure care and identify informal carers. Empirical research has found a consistent gender care gap, with women more likely to be caregivers than men, although the magnitude of this gender care gap varies across welfare states. However, results from limited research in UK-based data investigating the reliability of survey instruments to measure informal care, indicated an underestimation of the scale and scope of care measured in surveys, as well as discrepancies in the reporting of care based on health, care tasks and crucially, gender (Rutherford and Bu, 2017; Urwin et al. 2021). We extend this research by taking a comparative and gender-focused view in investigating discrepancies in the reporting of provision and receipt of personal care within co-residing heterosexual spousal care dyads across Europe.

Data and Methods:

We use a pooled sample of observations aged 50 and older from the Survey on Health, Ageing and Retirement in Europe (SHARE) living with a spouse/partner, more specifically wave 6 (2015) and wave 8 (2019/20), focusing on the variables assessing self-reported personal caregiving and receiving within the household (i.e. sp019d1 and sp021d1). We then carry out bivariate and multivariate statistical analysis to estimate differences in the prevalence rate of informal caregiving and in the gender care gap (difference in the probability to provide care between women and men), as well as factors associated with these differences – chiefly among these, gender.

Results

Considering reports of care by both care receivers and caregivers, a large share of spousal care is underreported. Prevalence of spousal care and of the gender gap is sensitive to the definition of care (i.e. who is asked to identify the carer), and varies across care regimes. Accounting for these gender discrepancies and assuming care is provided within a relationship if at least one partner reports it, we find that the gender gap in informal caregiving would marginally widen from that based on informal carers' reports themselves. Results from the multinomial regressions show that men are more likely to underreport either providing or receiving personal care from their spouse, while

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conversely, agreement on care being provided/received most commonly occurs when women are caregivers. Finally, we find systematic differences in discrepancies in reporting care across care regimes.

Discussion

The findings suggest some degree of underreporting of care, particularly that provided by men, that is heterogeneously distributed across countries or care regimes. The latter may likely reflect differing social norms dictating gender roles in care and acceptability of men as carers, although the effect of these is not unequivocal across different strands of familialism. The gender care gap reported across a number of studies using SHARE seems robust to this underreporting, although the care regime gradient of the gender care gap may have be to reconsidered in light of the results.

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Title: Suburban blues: A spatial exploration of regional variation in admission rates for depressive episodes in Austria

Authors: Michael Berger[1,2], Martin Zuba[3], Judit Simon[1,4,5]

[1] Department of Health Economics, Center for Public Health, Medical University of Vienna
[2] Institute for Advanced Studies, Vienna
[3] Gesundheit Österreich GmbH, Vienna
[4] Department of Psychiatry, University of Oxford and Oxford Health NHS Trust, Oxford, United Kingdom
[5] HERC, Nuffield Department of Population Health, University of Oxford, Oxford, United Kingdom

Abstract:

Objectives

Medical practice variation is a key target for policy makers aiming to improve the efficiency of healthcare expenditure. Studies have shown strong regional variation in healthcare service utilization in Austria owing to a plethora of reasons, though not always rooted in epidemiology. In this study, we explore the influence of hospital location and availability of services on the regional variation in hospital admissions for depressive episodes between (sub)urban and rural regions in Austria.

Methods

We use a set of routine healthcare data on hospital admissions for depressive episodes (ICD-10 F320-F329) of Austrian patients from 2009 to 2014 on the municipality level to investigate the extent of medical practice variation over time. The dataset covers 93,302 hospital episodes of 65,908 patients in 2,114 municipalities. We estimate the influence of hospital supply with a random effects spatial autoregressive (SAR) model for panel data controlling for municipality-level characteristics with respect to urbanicity, socioeconomics (education, unemployment), demographics (sex, age), economic factors (municipality debt, health and social expenditure), as well as hospital characteristics (number of beds, acute versus non-acute care).

Preliminary Results

We find that hospital admission rates per 1,000 inhabitants in the population for depressive episodes vary strongly between municipalities and years (min=0, max=37.7, mean=1.9, standard deviation=1.8), with a downward trend in the average admission rate and regional variation over time. Admission rates are roughly 10% higher in suburban and 27% higher in urban regions compared to rural municipalities. Our data suggests that hospitals supply is a key factor for elevated admission rates in the population, regardless of hospital size. The spatial structure further suggests positive spill-over effects on the hospital admission rates both between neighbouring municipalities in general and neighbouring hospitals.

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Discussion

Our preliminary results suggest that hospital admissions for depression in Austria follow Roemer's law that 'a bed built is a bed filled' regardless of the size of the hospital or urbanicity. Nevertheless, admissions for depression remain a seemingly suburban phenomenon where we find the highest mean hospital admission rates. The Austrian healthcare system is traditionally heavy on inpatient care, but a priori, it is not clear whether the regional variation in medical practice reflects rural under- or urban oversupply of hospital care. In fact, it may signal either. Promoting the access to timely primary care interventions and early-stage treatments could reduce both the burden of avoidable hospitalizations for patients and public budgets by reducing the mismatch of patient and available services. Due the limited availability of control variables on epidemiology and outpatient care, as well as methodical challenges, we caution that our preliminary findings are only explorative.

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Title: Prescriptions of antidepressants and labor market outcomes

Author: Katrin Zocher[1]

[1] Johannes Kepler University Linz

Abstract:

Antidepressant use has been steadily increasing to address the major health challenge of treating mental illness. Yet, the long-term consequences of antidepressant use both on health and on labor market outcomes have not been fully explored. The latter is of particular interest with respect to the question whether antidepressants are self-financing: Are the costs offset increased attachment to the labor market, higher tax revenues for the government and lower expenses on other social programs. Therefore, in this paper, we estimate the causal impact of antidepressant use on health behavior as well as long-term labor market outcomes. Specifically, we focus on individuals exposed to a shock that negatively affected their mental health. Therefore, we analyze a situation in which antidepressants are expected to be beneficial. This paper combines a quasi-experimental estimation approach with administrative data to assess and compare the desirability of various forms of treatments. We proceed in several steps: First, we estimate to what extent medication improve a wide range of individual outcomes. For example, we assess impacts on suicides, physical health, or labor supply. Second, we focus on spending: we analyze the treatments' associated costs. Notably, we account both for the treatments' direct costs and assess their indirect impacts on the societal budget constraint. For example, we study impacts on (i) medical follow-up costs, (ii) tax revenues, and (iii) welfare spending. These indirect effects depend on the treatments' effectiveness and their labor market effects. Third, we determine the welfare implications of the different treatments by calculating their marginal value of public funds (MVPF). The MVPF approach allows us to compare the welfare implications of the different modes of treatments directly and furthermore enables us to test which treatments are self-financing. Studying these effects together in a single setting is challenging: Researchers frequently miss not only identifying variation in treatments but also detailed administrative data to estimate effects at many margins. Our paper tackles these empirical challenges by relying on the Austrian setting as a testbed. On the one hand, this setting offers administrative data well suited to study all the mentioned effects. On the other hand, it enables us to exploit an identification approach that allows us to compare effects across treatments.

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Title: Socio-economic inequality in healthcare utilization: Evidence from Health Shocks

Authors: Wolfgang Frimmel[1], Felix Glaser[1]

[1] Johannes Kepler University Linz

Abstract:

Health equality is an essential objective in public healthcare systems. Yet one observes substantial socio-economic inequality in the utilization of healthcare services. Understanding the determinants behind this inequality is therefore critical to enhancing health equality in our societies. In this paper, we analyse the SES gradient in healthcare utilization after suffering a health shock by decomposing the raw gap into health demand and health supply factors.

We use high-quality administrative health register data for the entire population in Upper Austria, providing detailed information on hospitalizations including diagnoses, length of stay, treatments, departments and readmissions. Subsequently, we follow patients on their pathway through the healthcare system by utilizing information on the outpatient sector and prescriptions for medication. We compare patients with high and low SES who are otherwise identical in important individual characteristics, diagnosed disease, within-hospital treatment, prior health status and health behaviour, the timing of hospitalization as well as hospital and GP fixed effects.

Overall, we find that the raw socio-economic differences are reduced substantially by up to 50 percent once accounted for individual characteristics, time trends and the exact diagnosis. Ac- counting for health status and health behaviour prior to the health shock further reduces the SES gap and even eliminates the difference entirely for certain components of healthcare utilization. Among cancer diagnoses we find significantly shorter hospital stays for high-SES patients but no differences in the number of services, short-term mortality and readmissions once controlling for prior health status and behaviour. This indicates that for a given diagnosis, hospitals do not treat cancer patients differently according to their socio-economic status. However, the SES gradient widens after patients leave the hospital. High-SES patients reduce the number of medication prescriptions and are more likely to consult specialist doctors rather than GPs. Mortality significantly increases for low-SES patients and the gap widens over time. For cardiovascular diseases we do not find an SES gradient during the initial hospitalization and doctor-visiting behaviour, although high-SES patients tend to improve their health status more and reduce their drug prescriptions.

We estimate the socio-economic gradient in healthcare utilization during and after hospitalization. Our results indicate that after suffering a health shock, there is no evidence for an SES health supply gradient. However, differential health behaviours are reinforced after the shock. High-SES patients tend to benefit from their overall better health status, leading to better long- term health outcomes.

Title: Hospital closures and patient outcomes: Evidence from AMI emergency admissions in Italy

Authors: Anna-Theresa Renner[1], Simone Ghislandi[2], Benedetta Scotti[3], Nirosha Varghese[3,4]

[1] Technical University of Vienna, Austria

[2] Bocconi University, Milan

[3] CDP, Roma; and Bocconi University, Milan

[4] J&J, Bruxelles

Abstract:

In the European Union, cost containment strategies following the financial crisis in 2008 have been particularly targeted towards reorganization of the inpatient sector given that hospitals account for large shares of healthcare budgets. Despite the increasing numbers of hospital closures and mergers, few empirical studies have provided credible evidence on the consequences for patient health. This paper uses a difference-in-differences approach to study the causal effect of hospital closures on AMI patient outcomes including in-hospital mortality, readmission and length of stay. In particular, the outcomes of all AMI patients aged 65 and over in Italy admitted from 2008 – 2015 that were exposed to a hospital closure are compared with those that were not. Results show that hospital closures significantly increase in-hospital mortality by 0.7 – 1.1%, and length of stay by up to 0.42 days. There is no statistically significant effect on readmissions although, home hospital closures increase 30-day and 90-day readmission when considering only small municipalities with a population size less than 50k. Heterogeneity analyses show that these adverse effects are largely driven by women and patients above 80 years. The effect of hospital closure on in-hospital mortality and readmission is persistent across the post-closure years indicating that there is no short- to medium-term adaptation. We further investigate travel time to the hospital as potential mechanism for the identified effects. We propose three different methods to disentangle the direct from the indirect effects of hospital closures: (1) closure as instrumental variable for travel time, (2) analysis of never-takers, and (3) blocking the travel time channel. Our results indicate that it is not only increased travel time that explains the effect of hospital closures on patient outcomes but that other channels, such as bed congestion due to spill-overs, should also be considered.

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Title: Kommunale Gesundheitspolitik – Herausforderungen und Lösungsansätze

Authors: Sophie Fößleitner[1], Martin Giefing[2]

[1] Österreichische Gesundheitskasse (ÖGK)

[2] Sozialdemokratischer GemeindevertreterInnenverband Österreich (GVV Österreich)

Abstract:

Hintergrund

Die österreichische Gesundheitspolitik steht – auch abseits der Corona-Pandemie – vor großen Herausforderungen. Diese betreffen nicht nur die demographischen Entwicklungen und den damit verbundenen drohenden Pflegenotstand, sondern auch Probleme in der öffentlichen Gesundheitsversorgung und die oftmals damit einhergehende zunehmende gesundheitliche Ungleichheit. So treten vermehrt soziale und regionale Unterschiede beim Zugang zur Gesundheitsversorgung auf, welche sich einerseits aus der Entwicklung der Anzahl an Kassen- und WahlärztInnen und andererseits aus der unterschiedlichen Dichte an KassenärztInnen im ländlichen, intermediären und städtischen Raum ergeben. Hinzu kommt, dass vor allem im ländlichen Bereich immer mehr Kassenstellen nicht (nach-)besetzt werden können, da nicht nur ein allgemeiner Trend hin zur Urbanisierung („Landflucht") besteht, sondern für viele ÄrztInnen sowohl Kassenstellen als auch eine Niederlassung im intermediären bzw. ländlichen Bereich eher unattraktiv sind. Folglich kann somit jedoch der Zugang zur öffentlichen Gesundheitsversorgung sowie eine wohnortnahe Gesundheitsversorgung nicht für die gesamte Bevölkerung gewährleistet werden.

Fragestellung und Ziele:

Ziel des vorliegenden Papiers ist es, einen Überblick über die Herausforderungen in der kommunalen Gesundheitspolitik zu geben. Im Zuge dessen wird auch der Frage nachgegangen, welche sozialen und systemischen Ungleichheiten im österreichischen Gesundheitswesen existieren, wie sich diese auf der kommunalen Ebene bemerkbar machen und welchen Transformationen die kommunale Gesundheitspolitik unterworfen ist. In einem weiteren Schritt soll darüber hinaus festgehalten werden, was notwendig ist, um eine gerechte, nachhaltige und zukunftsorientierte öffentliche Gesundheitsversorgung sicherzustellen.

Methodik

Um die Fragestellungen ausreichend beantworten zu können, wird einerseits eine Literaturrecherche durchgeführt und andererseits stark auf Erfahrungen aus der politischen Praxis zurückgegriffen. Letztere sind unumgänglich für eine effektive kommunale Gesundheitspolitik und werden mithilfe einer Umfrage unter sozialdemokratischen BürgermeisterInnen sowie durch Interviews mit PolitikerInnen eingeholt.

Ergebnisse

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Sowohl die Ergebnisse der Literaturrecherche als auch die Erfahrungen aus der politischen Praxis zeigen, dass die steigende gesundheitliche Ungleichheit in Österreich, insbesondere beim Zugang zur öffentlichen Gesundheitsversorgung, zunehmend ein Problem darstellt. Demnach bestehen die größten Herausforderungen in der zu geringen Anzahl an KassenärztInnen, der Mehr-Klassen- Medizin sowie im oftmals fehlenden Zugang zur öffentlichen Gesundheitsversorgung, was zu regionalen gesundheitlichen Ungleichheiten führt. Der Mangel an KassenärztInnen macht sich dabei insbesondere in der fachärztlichen Versorgung (Kinder- und Jugendheilkunde, Frauenheilkunde und Geburtshilfe sowie Innere Medizin) bemerkbar und wird dadurch verschärft, dass es vermehrt Nachbesetzungsprobleme sowie unbesetzte Planstellen gibt. Hinzu kommt zudem auch die oftmals eingeschränkte Mobilität der Menschen, vor allem im ländlichen Bereich, wodurch der Zugang zur öffentlichen Gesundheitsversorgung abermals erschwert wird.

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Title: Equal in ashes? Association between socioeconomic position and life span based on data collected from published obituaries in Vorarlberg (Austria)

Authors: Susanne Mayer[1], Michael Berger[1,2], Moritz Oberndorfer[3,4]

[1]Department of Health Economics, Center for Public Health, Medical University of Vienna, Austria
[2]Institute for Advanced Studies, Austria
[3]Department of Social and Preventive Medicine, Center for Public Health, Medical University of Vienna, Austria
[4] MRC/CSO Social and Public Health Sciences Unit, School of Health and Wellbeing, University of Glasgow, UK

Abstract:

Background

Socioeconomic inequalities in mortality are a major challenge for healthcare systems worldwide. To improve the understanding of the conditions that cause these health disparities, robust, long-term local data are a prerequisite. In terms of the timeframe and level of detail, obituaries in newspapers are an unprecedented, yet unexplored data source compared to official statistics, with the potential to shed light on previously overlooked markers of socioeconomic status and social connections of the deceased. Drawing on obituaries published in the Vorarlberger Nachrichten (VN), a daily newspaper with the highest regional market share, this research sets out to conduct a proof-of-concept study by estimating the association between the life span and socioeconomic position in Vorarlberg.

Methods and data

Our sample is based on obituaries in the VN published between 1 October 2022 and 31 December 2022. Extracted and double-checked data include date of birth, date of death, sex, number of obituaries and several potential markers of socioeconomic status: size of the obituary notice as proxy for its price, academic title for the deceased's education, professional title for the (former) occupational status, and voluntary/honorary engagement for the social connections. The association between life span and the socioeconomic indicators is assessed in a multivariate linear regression with sex as control variable.

Results:

According to preliminary findings from a subsample of obituaries published between 13 October 2022 and 12 November 2022, 246 deaths were reported in 338 death notices. 20% (n=48) of the obituaries were small, 77% (n=190) medium, 3% (n=8) large, corresponding to prices of €210-€1626. Mean age of death was 82 years. According to the regression analysis, individuals with medium-sized obituaries lived 6.1 years (95% CI [2.4, 9.8]) and individuals with large obituaries 13.8 years (95% CI [4.8, 22.8]) longer than individuals with small-sized obituaries. While being female and voluntary/honorary engagement yielded a longer life span by 2.9 years (95% CI [-0.1, 6.0]) and 6.4 years (95% CI [0.3, 12.4]), respectively, having multiple obituary announcements was associated with a

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shorter life span by 8.5 years (95% CI [-15.3, - 1.73]). Neither the academic nor the professional title were statistically significantly related to life span.

Discussion

With larger, more expensive obituaries being associated with longer lives, our results are in line with national and international findings based on other proxy indicators for socioeconomic position, suggesting that obituary size could be used as a marker of the deceased's (family's) financial ability. Potential limitations of obituaries as data source include selection bias (e.g. for certain population groups) and non-reporting of certain information (e.g. academic titles). However, comparisons with official statistics and data of a regional mortician point at close to full coverage of the deceased and their information. Data collected from obituaries may thus proof to be a potentially valid alternative source to study inequalities in life span when administrative records are unavailable. Future data extraction and analyses are planned to cover obituaries published between 1945 and 1985, a period for which official data is scarce.

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Title: Multidisciplinary theoretical framework for defining premature mortality and lifespan inequity

Author: Magdalena Muszynska-Spielauer[1]

[1] Department of Public Finance and Infrastructure Policy, TU Wien

Abstract:

The aim of this work is to build a comprehensive framework, based on philosophical investigations and definitions of related concepts in two disciplines: healthy inequality and poverty studies, for defining and measurement of the concepts of premature mortality and lifespan inequity in demographic investigations. The theoretical framework in the proposed study is structured according to the necessary steps of the theoretical and empirical framework of the measurement of health in- equities proposed by Asada (2005): Definition, Operationalization, Quantification.

This study is based on the philosophical perspective from health inequity studies of a just society, based upon the philosophical perspectives of Martha Nussbaum's capability approach (Nussbaum, 2007), Norman Daniels' normal human functioning based on Rawls' theory of justice (Daniels et al., 1985), and Jonathan Mann's human right to health (Mann, 1997).

The operationalization step of the framework is structured according to the standard procedures in poverty and health inequity studies and consists of two further steps: identification and aggregation. In the identification step, the definition of premature mortality is developed, while in the aggregation step - lifespan inequity. In health inequity studies, the just society perspective implies the existence of a minimally adequate level of health that each member of a society should be entitled to meet (Asada, 2006). Accordingly, the just society perspective implies the existence of minimally adequate length of life (MALL). MALL is a threshold length of life that separates premature deaths and lives of full length. Next, analogous to studies of poverty, we are interested in specifying lifespan inequity by (1) the share of the population whose lives are prematurely, and hence unfairly, shortened, i.e. incidence of premature mortality and (2) the extent to which these lives are shortened, i.e. depth of premature mortality. Lifespan inequity is defined as the incidence of premature mortality following the theoretical framework of Suffcientarianism in health inequity studies. Lifespan inequity is defined as depth of premature mortality, following the concept of Prioritarianism. According to Sufficientarianism, a priority in public policy should be given to those who are below a certain threshold, while according to Prioritarianism - to those who are worst off (James, 2011; Parfit, 1991). By defining inequity as the incidence of premature mortality, we focus on the division of lifespans between those shorter and longer than MALL. By defining inequity as the depth of premature mortality, we are interested in how many years of life, on average, are lost by those who die prematurely.

In the quantification step of the proposed framework, we define MALL is defined as the lower bound of the normal length of life according to Lexis (1877). Lifespan inequity as incidence is measured by the Headcount Index, and as depth - by an index of years of potential life lost.

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In the empirical application of the theoretical framework, we study the development of MALL and lifespan inequity over calendar years, and differences between countries, sexes in developed countries in the last two centuries based on the Human Mortality Database (2022).

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Title: Education and inequities in health insurance utilization: Evidence from Pakistan

Authors: Vendula Stepanikova[1], Andreas Landmann[1]

[1] University Erlangen-Nürnberg, Institute of Economics

Abstract:

This paper investigates the role of education as a possible barrier to the utilization of pro-poor social protection programs. We focus on a large-scale free hospitalization insurance innovation in the province of Khyber Pakhtunkhwa, Pakistan. We are able to combine household panel data including detailed health information as well as household census data with administrative data on insurance enrollment and utilization. We show descriptively as well as controlling for temporal and spatial differences in the enrolment campaign, that education positively correlates with the utilization of the scheme, and that this correlation also exists for female education. Moreover, we explore school construction data as a local schooling supply shocks to instrument for female education and estimate its causal effect on health insurance utilization. We find evidence that female education significantly increases health insurance utilization on the individual as well as household level.

Parallel Session 3: Socio economics and health

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Title: Socio-economic variables in the German risk equalization model

Authors: Gerald Lux[1], Florian Buchner[2,3], Theresa Hüer[3], Jürgen Wasem[3]

1 Essener Forschungsinstitut für Medizinmanagement GmbH, EsFoMed

2 Fachhochschule Kärnten

3 Lehrstuhl für Medizinmanagement, Universität Duisburg-Essen

Abstract:

Background

There is an open question in current risk equalization development: In the last two decades many countries implemented sophisticated systems of (direct) morbidity indicators into their risk adjustment formula like the Netherlands, Belgium, Germany. In the times before when facing no or incomplete information on individual health status, socio-economic variables have been very helpful substitutes or alternatives in most of the systems. Now the question rises, whether socio-economic variables are nevertheless necessary or at least helpful or, on the contrary, do create perverse incentives in these systems.

The current German risk adjustment formula includes age, gender, Hierarchical Morbidity Groups and regional variables. So, in the current formula no socio-economic variables are explicitly included, but until 2020 six groups for reduced earning capacity interacted with age and gender were included. Regional variables are based on a selection process out of a pool of variables including socio-economic variables as regional unemployment rate or reginal GDP per inhabitant.

Objective

We investigated whether the four socio-economic groups of insured with co-payment exemption (1), who receive basic income support for unemployed (2), who receive benefits of social long-term-care-insurance (3) and who receive reduced earning pension (4) are systematically under- or over-compensated under the present risk equalization system. We present several approaches of including these socio-economic variables into the German risk adjustment formula.

Data and methods

We used a sample of about 9.2 mio. insured of a big sickness-fund network which was adapted with regard to several variables in order to simulate the total social health insurance. Classification data of 2018 and expenditure data of 2019 were used to avoid biases by Covid-19-effects. The most recent risk equalization model of 2022 including the newly introduced high-cost-pool was applied for calculations. For groups (1) and (2) one dummy variable was included into the formula in the respective approach. Three different approaches were calculated for group (3): one dummy variable for all those, who receive benefits of social long-term-care-insurance, two variables (ambulatory and stationary setting) and five variables according to the five degrees of need the long-term-care-

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insurance clusters its patients into. For group (4) we used the same approach that was used before 2021. We also calculated several models for different combinations of these variables.

Results

We find a substantial undercompensation for all four groups: predictive ratios between 85,5% and 95,4% and mean financial results per person per year between -1.772€ and -118€. The only overcompensated subgroup are the recipients of benefits of social long-term-care-insurance in the stationary setting. There are plausible explanations for this phenomenon as services paid by long-term-care-insurance in the statutory but not in the ambulatory setting.

The fit of the different models measured by R^2 and CPM (Cummings prediction measure) did not improve overwhelmingly from a status quo of 28,09% (R^2) and 24,98% (CPM) to a maximum of 28,46% (R^2) and 25,47% (CPM) by the best performing combined model, and respectively from 52,44% (Payment System Fit) and 27,31% (CPM) to a maximum of 52,77% (PSF) and 27,80% (CPM) when including the high-cost-pool.

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Title: A conceptual framework to evaluate the socioeconomic impact of in-silico models for implantable medical devices

Authors: Thomas Czypionka[1], Siegfried Eisenberg[1], Markus Kraus[1], Miriam Reiss[1], David Rösler[1]

[1] Institute for Advanced Studies, Vienna, Austria

Abstract:

Background, Aim and Scope

The use of in-silico technologies for implantable medical devices has gained importance in the last decade. From a medical perspective, the term 'in-silico' mainly refers to computer simulations of clinical trials based on virtual cohorts. So far, the focus has been on development, verification and validation of in-silico models but impacts on the economy and society have been hardly investigated. Further, there is a lack of a concept how the impact of in-silico models on socioeconomic factors can be evaluated. As part of the EU-funded project SIMCOR, we therefore developed a conceptual framework to describe the impact channels from primal effects along the product development cycle to numerous socioeconomic endpoints. We will also report on our current state of work to develop quantitative assessment models.

Methods

We applied an iterative process to build concepts from data (literature, interviews) and set them in relation to each other using the method described in Jabareen (2009). Initially, we conducted a comprehensive literature research on the topic of in-silico technologies and their impact on product development that will be published as a scoping review. Information from the literature were complemented with expert interviews from academia, companies and regulatory bodies. Repeated steps of literature work, exploratory interviews and frequent discussion sessions among the research team led to the presented framework. The resulting framework was validated through feedback from experts from the project consortium.

Results

The conceptual framework describes the whole chain of impacts from the technical changes brought about by the use of in-silico technologies (primal effects) along the product development cycle up until the socio-economic endpoints. These are allocated to four different levels, namely 'Firm', 'Market', 'Health System' and 'Society'.

The conceptual framework indicates that in-silico methods could not only accelerate product development and reduce costs, but also patient safety is expected to be improved, innovations are supported and the price for a medical treatment might decrease. Underrepresented patient groups may also benefit from the use of the technology, as it expands the possibilities to augment the number of individuals in clinical trials and model rarer anatomical configurations.

Since the whole conceptual framework has multiple complex impact channels that create a kind of network, each

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impact channel is explained with its ramifications.

Conclusions

The conceptual framework serves as a basis for the quantification of the impacts of in-silico technologies on firm, market, health system, and society and, consequently, the potential benefits as well as disadvantages can be estimated and better classified from different perspectives. Therefore, as a next step in the SIMCOR project, the conceptual framework will be populated with empirical information and used to develop models to assess the actual impact that might arise from using in-silico technologies. The talk will therefore also present the state of model development at the time of the conference.

Parallel Session 3: Technology-based assistance

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Title: Measuring the impact of active and assisted living (AAL) technologies

Authors: Albert Luger[1,2], Julia Himmelsbach[3], Birgit Aigner-Walder[1,2], Johannes Oberzaucher[1,2]

[1] Carinthia University of Applied Sciences (CUAS)

[2] Institute for Applied Research on Ageing (IARA)

[3] AIT Austrian Institute for Technology, Center for Technology Experience

Abstract:

Background

Due to the aging of the population, maintaining or increasing the quality of life of older adults and sustainable health and care systems are, amongst others, of special interest. In the past, innovations enabled ICT-based products and services in the health and care sector, enabling prolonged autonomous life at home. Though many years of publicly funded research and development (R&D), it is unclear if such Ambient or Active and Assisted Living (AAL) solutions are effective. AAL products and services might create additional value for stakeholders at the individual, the social, and the institutional level. However, specific goals pursued at varying stakeholder levels may collude or interfere, especially considering countries with differing social systems.

Method

Against this background, the EvAALuation project series (EvAALuation, EvAALuation²r, and 3vAALuation) aimed at identifying and developing concrete instruments to evaluate the effects and effectiveness of AAL solutions (with a special focus on the application areas "health", "care & support" and "being active & human potential"). These fields of application make it possible to demonstrate the versatility of AAL solutions and allow a concrete operationalization for the measurement of the broad effects of AAL. The developed instruments are characterized by a multi-perspective approach as well as high practicability to motivate the application. The measuring instruments were generated through an iterative process, including stakeholder workshops, expert interviews, and qualitative and quantitative pre-tests for validation and reliability examination.

Findings

These iteratively developed and validated measuring instruments are divided into reactive data collection through questionnaires and non-reactive methods that describe detailed instructions for the collection of key figures. The reactive method descriptions contain, among other things, instructions on the use of questionnaires and the avoidance of process errors, instructions for test persons on how to answer questions and evaluation notes, while non-reactive measurement instructions describe relevant data sources, measurement objects, measurement times, and measurement modes. Furthermore, we highlight national differences and draw attention to methodological implications of cross-national studies.

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Discussion

In general, a great number of potential indicators exists but a suitable measurement system for an overall assessment of the impact of AAL technologies and systems is still lacking. Hereby, various obstacles have been identified (e.g., differentiation of AAL, measurement tools, operationalization). Moreover, various stakeholder groups (e.g., older adults, social insurance agencies, companies) might be affected by new technologies in different ways and pursue diverse goals depending on their own specific characteristics.

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Title: Study protocol: health economic evaluation of a European eHealth intervention applying cost-consequence analysis and cost-utility analysis

Authors: Florian Trauner[1], Gerald Gredinger[1]

[1] Austrian Public Health Institute (Gesundheit Österreich GmbH), Vienna, Austria

Abstract:

Across Europe the number of diagnosed cancer cases may increase by more than 20% over the next 15 to 20 years. Receiving a timely cancer diagnosis, treatment and care is crucial for survival and quality of life. However, global shocks such as the COVID-19 pandemic can hinder access to health care services. In the pandemic socioeconomic inequalities aggravated and became more apparent and especially patients living in remote areas faced challenges to receive the best possible care. eHealth tools such as teleconsultations and remote monitoring can facilitate access to health care and may reduce health care costs but often require large implementation cost thus discouraging decision makers to invest. Furthermore, health economic evaluations of eHealth tools and interventions are scarce and lack comparability.

The EU has funded randomized clinical trials for cancer related eHealth interventions in 10 European countries which will start in 2023. We propose a health economic evaluation of these pilot trials by applying both cost-consequence analysis (CCA) and cost-utility analysis (CUA). In the first trial, patients newly diagnosed with breast cancer or head and neck cancer who have undergone surgery will be randomly assigned to intervention or control group. The intervention group will receive post-surgery tele-rehabilitation over the course of 8 weeks instead of the usual rehab care. The second trial evaluates weekly psycho-oncological teleconsultations over 8 weeks instead of usual on-site care in patients affected by advanced cancer at recurrence.

The analyses will be performed by applying four different perspectives (patient's, hospital's, health care system's and societal perspective) and will therefore include different cost categories. The acquisition of cost data will rely on questionnaires and interviews with health care providers and administrative personnel of the hospital pilot sites. A survey addressing both patients and caregivers will ask about their costs concerning time spent for health care, productivity loss, travel and out-of-pocket fees. The outcomes will be investigated using validated questionnaires inquiring quality of life, levels of pain, distress, depression, and anxiety. Furthermore, we suggest evaluating satisfaction of staff and possible reductions in number of emergencies and readmissions.

While CCA will provide a descriptive summary in form of a cost-consequence balance sheet with all costs and outcomes listed separately, CUA results in one cost-utility-ratio, presented as cost per quality adjusted life year (QALY) gained, to improve comparability with other health economic evaluations.

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In addition to the cost-utility analysis, the cost-consequence analysis will allow decision makers in the respective countries to direct their attention to the outcome of their choice since the investigated eHealth interventions will result in several different outcomes.

Parallel Session 3: Technology-based assistance

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Title: Innovations in times of crises: Remote assistance of home care workers as a tool for coping with staff shortage and reducing CO2 emissions?

Authors: Birgit Trukeschitz[1], David Schermann[1], Lara Arth[1], Cornelia Schneider[2]

[1] WU Vienna, Research Institute for Economics of Aging

[2] University of Applied Science Wiener Neustadt, Institute of Computer Science

Abstract:

Background

In many countries, home care service provision faces a range of challenges. Policies prioritising home care over care homes have not only increased the need for home care and nursing staff but also the need to cope with more difficult care situations in private homes. The COVID-19 pandemic but also the recent energy crises have substantially affected professional home care provision. Solutions are required to reduce the number of staff needed and the kilometres driven to provide professional care. As part of the European project "Care about Care", we are developing and evaluating an innovative remote assistance system for home care service provision. Augmented-reality apps on their company phones and mixed- reality glasses should enable care workers to receive support immediately when needed from experienced colleagues in care expert centres. By sharing visual information, they can assess and work on solutions for difficult situations in home care service users' homes.

Objectives

This paper presents the results of two field trials of remote-care-assistance prototypes. It particularly focuses on the capability of such prototypes to reduce the number of staff needed and travel-related CO2 emissions. In addition, we investigate the system's potential to improve care quality and discuss its challenges.

Methods

Data were collected in two field trials in three regions in Lower Austria (Austria) in March and November/December 2022. We use more than 50 personal semi-standardised observations and 9 qualitative interviews with care staff who (i) used the mixed-reality glasses (HoloLense 2) or (ii) who worked in the care expert centre and used the newly developed software on their computers.

Results

First results show useful use cases for the digital remote support system in home care settings. They also provide insight into time savings due to the reduction of travel time of care experts. First estimations indicate savings equal to the distance Vienna to Budapest (for 9 days testing the system). We discuss the potential of digital remote support and starting points for improvements in technical development and organizational implementation.

Conclusions: While digitalization in long-term care is lagging behind, this prototype for providing support remotely indicates that technologies have the potential to provide more home care service users with special expert

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knowledge (e.g., wound management). In addition, time-consuming travel times and travel-related emissions can be reduced. Implementation has not only to consider technical but also organisational requirements.

Parallel Session 4: Selected topics -- a European perspective

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Title: Are existing patient-reported outcome measures suitable for broader quality of life assessment in health care evaluations?

Authors: Agata Łaszewska[1], Timea Helter[1], Natasa Perić[1], Judit Simon[1,2]

[1] Department of Health Economics, Center for Public Health, Medical University of Vienna, Vienna, Austria

[2] Department of Psychiatry, University of Oxford, Oxford, UK

Abstract:

Background

Assessment of patient-reported outcomes is important in improving quality of care and health outcomes. Furthermore, evaluating broader wellbeing outcomes beyond health gained prominence in the recent years especially in the mental health field. Several Patient Reported Outcome Measures (PROMs) exist but compilation of their full characteristics and their practical applications in particular contexts, for example, in economic evaluations or for broad wellbeing assessment, is missing. The objective of this study was to synthesize the meta-information and compile an electronic database of generic PROMs used in mental health research with the focus on their applicability in broader wellbeing assessment in health (economic) evaluations.

Methods

The study was part of the European PECUNIA (ProgrammE in Costing, resource use measurement and outcome valuation for Use in multisectoral National and International health economic evaluAtions) project. A systematic literature review was conducted in March 2020 covering period between 2008 and 02/2020. Existing online PROM databases and references of identified studies were additionally searched to complete the list of PROMs. Inclusion criteria for PROMs were: i) generic, ii) used in mental health research, iii) used for quality of life/wellbeing assessment. Thirty-four different types of characteristics for each instrument were extracted and the PECUNIA PROM-MH Compendium was compiled in Excel. PROMs were specifically assessed against three criteria: i) for their applicability in economic evaluations (i.e. availability of preference-based value sets), ii) for broader wellbeing assessment (i.e. assessing outcomes beyond health-related quality of life) and iii) for practicability in international research (i.e. availability of translations).

Results

From the 717 studies included in the full-text screening, 108 PROMs met the inclusion criteria, of which 43% were used in one study only, 45% were used in 2 to 10 studies, and the remaining 12% used in more than 10 studies, suggesting a large proportion of instruments developed/used in one study only. An additional 96 instruments were added from the grey literature search resulting in 204 individual PROMs included in the PROM-MH Compendium. Out of the total 204 instruments, 12% (n=26) had preference-based valuation and 6% (n=12) preference-based valuation in more than one country; 73% (n=148) had at least one translation available; and 7% (n=15) measured

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broader concepts of quality of life, including capabilities, caregiver, family and social care outcomes. Three instruments met all three criteria.

Conclusions

Although several PROMs exist, there are only a few with potential for broader quality of life assessment in health care evaluations. The PECUNIA PROM-MH Compendium offers evidence-based, systematic and comparable information that can assist the researchers in choosing an instrument suitable for their needs.

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Title: Prerequisites and response strategies for tackling a pandemic: Lessons for secondary care from five European countries

Authors: Monika Riedel[1], Markus Kraus[1], Miriam Reiss[1], Thomas Czypionka[1]

[1] Institute for Advanced Studies, Vienna, Austria

Abstract:

Background & objective

The COVID-19 pandemic clearly highlighted the limited capacities in health systems including hospitals. This study collates experience and insights on challenges and strategies in secondary care management during the pandemic. The gained knowledge should help to facilitate pandemic preparedness in hospital care.

Methods

52 semi-structured interviews with managers and executive staff of hospitals in Denmark, France, Germany, Hungary and Italy were conducted in Summer 2022 and were analysed by researchers in the respective countries. Subsequently, an overarching analysis was conducted to identify key themes and derive recommendations for improved preparedness.

Results

Despite marked differences between their national health systems, the investigated countries encountered similar problems. Concerning prerequisites, experts from most countries noted lack of up-to-date or sufficiently tested pandemic plans, too scarce resources dedicated to information transfer, including insufficient availability or usability of IT systems within and across organisations. Pandemic responses worked best in case of pre-existing cooperations and due to highly motivated staff. Often, in-house solutions for emerging problems were developed before support from authorities arrived. Keeping staff motivated and healthy got increasingly difficult due to the duration of the crisis, burden of work, diminishing societal support, poor governance regarding administrative burdens and (monetary) recognition of work.

Conclusion

The pandemic intensified pre-existing problems in the hospital sector – most notably, staff shortages and information deficits – and accelerated developments that had begun already pre- pandemic. Experts from all five countries agreed that better equipped and integrated primary care and more suitable e-health solutions could take strain off hospitals. Professional managerial support for health organizations could improve processes. Regular practical tests of pandemic plans would point out needs for updates as well as trainings and other resources, thus enabling providers to concentrate on their core tasks in times of crisis.

Parallel Session 4: Selected topics -- a European perspective

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Title: How to optimise public procurement of medicines? Lessons from a study on public procurement practices in 32 European countries

Authors: Maximilian Salcher-Konrad[1], Katharina Habimana[1], Sabine Vogler[1]

[1] WHO Collaborating Centre for Pharmaceutical Pricing and Reimbursement Policies, Pharmacoeconomics Department, Gesundheit Österreich (Austrian National Public Health Institute/GÖG)

Abstract:

Objectives

Public procurement of medicines has the potential to improve patient access to medicines and as such features as a potential policy lever in the Pharmaceutical Strategy for Europe. European Union (EU) legislation provides for a variety of procurement practices and techniques. We aimed to review procurement systems, including the use of different practices and techniques, in European countries and to assess their potential to help achieve affordable and sustainable access to effective medicines.

Methods

Country-specific literature searches were conducted to identify publicly available information on public procurement systems and practices in 32 European countries (all EU member states, Iceland, Liechtenstein, Norway, Switzerland, United Kingdom). Information was validated by procurement experts in the study countries. Data on pharmaceutical consumption (IQVIA) and public procurement data from Tenders European Daily (TED) were analysed. Stakeholder (procurers, pharmaceutical pricing and reimbursement authorities, industry) views were elicited through workshops and an online survey.

Results

Public procurement of medicines in Europe is most commonly conducted at the facility level (mostly in the inpatient sector, where individual hospitals conduct their own procurement) or through a central purchasing body (CPB) at the national level (often only used for selected categories of medicines, such as medicines for national health programmes and vaccinations). Cross-country joint procurement has been successfully piloted by some countries, but is not used widely throughout Europe. Joint procurement for medical counter-measures coordinated by the European Commission has been legally possible since 2014 but is rarely used for medicines. During the pandemic, however, it gained momentum; in particular through the EU joint procurement of COVID-19 vaccines. Countries applying a mix of advanced procurement practices (higher levels of joint procurement, application of the Most Economically Advantageous Tender (MEAT) criteria, use of a range of procurement practices and techniques, as well as supporting policies, such as health technology assessment) tend to be countries that have better overall availability of medicines and generally lower unit prices of medicines.

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Conclusion

European countries typically apply a mix of organisational forms for procurement of medicines and there is heterogeneity in the use of different procurement practices and techniques across and even within countries (including differences across sectors and for specific categories of medicines). However, use of some of the most promising practices to improve access to medicines such as joint procurement, MEAT criteria, and awarding contracts to more than one winner, remains limited, opening substantial room for optimising public procurement of medicines in Europe. The study also found a need to strengthen capacity-building to realise the potential of public procurement as policy tool for improving access to medicines.

Title: Estimating the public health impact of excess physical health conditions potentially associated with mental health disorders in Europe: Population-level extrapolation of existing epidemiological evidence

Authors: Dennis Wienand[1], Lena I. Wijnen[1], Daniel Heilig[1], Christoph Wippel[1], Celso Arango[2], Gitte Moos Knudsen[3, 4], Guy M. Goodwin[5], Judit Simon[1, 5]

[1] Department of Health Economics, Center for Public Health, Medical University of Vienna, Vienna, Austria

[2] Department of Child and Adolescent Psychiatry, Institute of Psychiatry and Mental Health, Hospital General Universitario Gregorio Marañón, IiSGM, CIBERSAM, School of Medicine, Universidad Complutense, Madrid, Spain

[3] Neurobiology Research Unit, Copenhagen University Hospital, Rigshospitalet, Copenhagen, Denmark

[4] Institute of Clinical Medicine, University of Copenhagen, Copenhagen, Denmark

[5] Department of Psychiatry, University of Oxford, Warneford Hospital, Oxford, United Kingdom

Abstract:

Introduction

Individuals with mental health disorders (MHDs) have considerably worse physical health than the general population. While previous studies have investigated the increased risk for some specific physical health conditions (PHCs), so far no comprehensive overview exists about the overall epidemiological evidence, neither has the extent of the associated excess public health burden been estimated. The aim of present study was to estimate the number of excess PHCs associated with selected MHDs in the European working-age population for 2019.

Methods

We estimated population attributable fractions of the excess PHCs associated with selected MHDs in the European working-age population (20-64 years) for year 2019. Evidence on excess risk was synthesized via a structured literature review for depressive disorder (DD), bipolar disorder (BD), schizophrenia (SZ), and alcohol use disorder (AUD). Random-effects meta-analyses were conducted to quantitatively synthesise relative risk (RR) estimates for PHCs categorized by the WHO International Classification for Diseases (ICD-10). Prevalence data for the given MHDs and PHCs were retrieved from the Global Burden of Diseases 2019 study for the EU-27 member states plus Iceland, Liechtenstein, Norway, Switzerland and the United Kingdom. Matching working-age population data for all 32 countries were retrieved from Eurostat. Excess public health impact was calculated in a purposefully built Excel model, combining synthesised risk evidence with country-level population and prevalence data.

Results

Following literature search, 72 studies were included for the estimation of the levels of excess risk for PHCs associated with the selected MHDs. Most were focused either on DD (n=29, 40%) or SZ (n=26, 36%), with four studies focusing on multiple MHDs (13%). Resulting relative risk (RR) estimates ranged from 0.6 for eye diseases [95% CI: 0.41-0.88] to 5.72 for infectious diseases [95% CI: 3.47-9.43] for BD, from 0.29 for ear diseases [95% CI:

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0.26-0.34] to 3.01 for neurological diseases [95% CI: 1.65-5.51] for AUD, from 0.97 for cardiovascular diseases [95% CI: 0.83-1.12] to 2.38 for infectious diseases [95% CI: 0.99-5.74] for SZ, and from 1.09 for neoplasms [95% CI: 0.96-1.24] to 1.82 for neurological diseases [95% CI: 1.45-2.28] for DD. The excess PHC burden associated with the selected MHDs was an additional 24.6 million cases for AUD, 12.6 million cases for DD, 6.6 million to BD, and 0.9 million cases for SZ in the defined European working-age population for 2019.

Conclusion

This is the first estimation of excess PHC burden associated with MHDs in Europe. The developed methods are suitable for future systematic refinement and extension towards other MHDs, beyond Europe, or with the incorporation of the additional long-term mental health burden of the COVID-19 pandemic. Results of the study also support the first comprehensive estimation of the additional economic burden of excess PHCs, which is currently in progress, and assist in the identification of the most important integrated care priority areas for future policymaking.

Funding

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Title: Health economic analysis of prostate cancer treatment pathways using national-level Austrian hospital administrative data

Authors: Daniel Heilig[1, 2], Dennis Wienand[1], Martin Zuba[3], Markus Mitterhauser[2], Judit Simon[1, 2]

[1] Department of Health Economics, Centre of Public Health, Medical University of Vienna, Vienna, Austria

[2] Ludwig Boltzmann Institute Applied Diagnostics, Vienna, Austria

[3] Gesundheit Österreich GmbH, Vienna, Austria

Abstract:

Introduction

Prostate cancer (PrCa) is the most common male cancer in Austria. Due to its high incidence and high 5-year survival rates, PrCa is an important public health topic with high inpatient care costs. Surgery has been by far the most common inpatient procedure for intermediate risk, localized PrCa in Austria in the past decade even though clinical recommendations do not clearly indicate benefits over the alternative radiation therapy. So far, no health economic comparison of these procedures exist which took the time period after the treatment into account. This paper aims to close this gap and analyse the health economic implications of different treatment pathways over time following risk adjustment.

Methods

This retrospective administrative data analysis uses a large dataset of all inpatient PrCa patients who received either only surgery or only radiation therapy from 2005 to 2014 provided by the Austrian National Public Health Institute (GÖG). The data covers 34,286 individuals. Charlson Comorbidity Index (CCI) scores were calculated for all patients on a yearly basis to control for comorbidity burden. The health economic outcome variables used were inpatient health care costs, estimated with diagnosis-related-group (DRG) points and hospitalisation days as length of stay (LOS). These values were aggregated on a monthly basis for each patient for a ±12-month time span around the index procedure to allow for a difference in difference analysis using the OLS method.

Results

When looking at the unadjusted averages, patients in the surgery group were significantly younger (63 vs 71y) and had a lower comorbidity burden (2.4 vs 3.2 CCI) compared to the radiation group. Consequently, the surgery group had lower nominal average DRG points (283.2 vs. 375.8) and LOS (0.4 vs. 0.6) per month during one year starting with the index procedure. However, when controlling for age and comorbidity burden in a pre-post-comparison, we found the radiation treatment was actually more efficient in the same 12 months. The difference in difference estimation found a 0.13 day shorter average LOS per month and patient for the radiation treatment path compared to the surgery path (SE 0.014, P<0.001) during the 12 months post index treatment. The same analysis also shows

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a difference of -117 DRG points per patient per month for radiation compared to surgery treatment (SE 10.44, P<0.001) corresponding to 140€.

Conclusion

We found statistically significant additional costs and longer LOS times for surgical pathways following risk adjustment in Austria. This implies a potential additional burden of ~4,400 hospitalisation days and ~4 million DRG points (~€4.8m) per year for the health care system for the observed period. Considering international data on the generally higher patient side effects of surgical pathways, these additional findings may call for some clinical reconsiderations for optimisation of PrCa care. It is however still unclear if the additional costs are solely due to the procedure itself, which warrants further analysis with a suitably detailed dataset and exact information on hospital procedure costs which are currently not available in Austria.

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Title: Kosteneffektivität von Kommunikationstrainings für Gesundheitspersonal – Rapid Assessment zu ökonomischen Evaluationen

Authors: Heidi Stürzlinger[1], Richard Pentz[1], Isabel Soede[1]

[1] Gesundheit Österreich GmbH, Vienna, Austria

Abstract:

Ziele

Das Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz stellte Anfang 2022 eine Anfrage an die Gesundheit Österreich GmbH hinsichtlich der aktuellen Evidenzlage zu ökonomischen Auswirkungen, die sich durch eine verbesserte Gesprächsqualität bei der Interaktion zwischen Gesundheitspersonal und Patientinnen und Patienten ergeben können. Konkret ging es dabei um Kommunikationstrainings für Gesundheitspersonal, die zu diesem Zweck durchgeführt werden. Ziel dieses Rapid Assessments war es daher, die Kosteneffektivität solcher Trainings hinsichtlich relevanter Gesundheits- und Prozessqualitätsoutcomes anhand von publizierten ökonomischen Evaluationen zu untersuchen.

Methoden

Die systematische Literatursuche erfolgte am 7. und 9. März 2022 in den Datenbanken CINAHL, EconLit, APA PsycInfo und MEDLINE. Verwendet wurden Schlagwörter und MeSH Terms zu: Training und Ausbildung, Kommunikation und Gesundheitspersonal-Patienten-Beziehung, Gesundheitsberufe, Kosten(-Nutzen)-Analysen. Eine Reviewerin screente die Resultate nach Vollpublikationen, die die Kriterien der Forschungsfrage erfüllten und in englischer oder deutscher Sprache vorlagen. Die Suche wurde durch eine Handsuche ergänzt. Jeweils eine Reviewerin extrahierte die Daten der identifizierten ökonomischen Studien; eine systematische Bewertung der Studienqualität erfolgte nicht.

Ergebnisse

Insgesamt wurden 18 Studien eingeschlossen: zwei Modellierungsstudien und 16 klinische (meist randomisierte kontrollierte) Studien mit Erhebung von Kosten beziehungsweise Ressourcenverbrauch. Sechs berechneten ein Kostenwirksamkeitsverhältnis, vier ein Kosten-Nutzwert-Verhältnis und drei ein Kostennutzenverhältnis. Die übrigen berichteten Kosten und Effekte getrennt. Inhaltlich deckten die Studien meist spezifische Krankheitsbereiche oder -themen ab (z. B. Antibiotikaverschreibungen, Verhaltensänderungen, Patientengruppen mit eingeschränktem Sprechvermögen). Die untersuchten Interventionen waren hinsichtlich Umfangs und Ausgestaltung sehr unterschiedlich. Acht Studien mussten aus der näheren Betrachtung ausgeschlossen werden, da das Kommunikationstraining nicht als isolierte Maßnahme betrachtet wurde. Kostenseitig wurden hauptsächlich direkte Kosten im Gesundheitssystem berücksichtigt. Nicht alle Studien erhoben dabei alle relevanten

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Kostenkategorien. Von den zehn Studien, die das Kommunikationstraining als getrennte Intervention untersuchten, stammten drei aus den USA, die restlichen aus Europa. Acht Studien zeigten, dass ein Kommunikationstraining gesundheitsrelevante Outcomes verbessern kann. Fünf davon kamen zu dem Ergebnis, dass es nicht nur höhere Effekte erzielt, sondern auch zu geringeren Gesamtkosten führt als ein vergleichbares Vorgehen ohne Kommunikationstraining. Bei einer Studie standen dem zu erzielenden Nutzen Kosten von rund 96.000 Pfund pro qualitätsbereinigtes Lebensjahr gegenüber und bei zwei wurden nicht alle relevanten Kostenkategorien erhoben. Zwei Studien fanden beim zusätzlichen Einsatz eines Kommunikationstrainings keine Verbesserung oder sogar eine Verschlechterung gesundheitsrelevanter Outcomes gegenüber der Vergleichsintervention bei gleichzeitig ähnlich hohen oder höheren Gesamtkosten.

Diskussion

Ein Kommunikationstraining für Gesundheitspersonal stellt sich als komplexe Intervention im Gesundheitswesen dar, die gesundheitliche Effekte sowohl aufseiten der Patientinnen und Patienten als auch aufseiten des beteiligten Gesundheitspersonals haben kann. Auch eine Multiplikatorwirkung ist denkbar. Die eingeschlossenen Studien berücksichtigten dies sehr unterschiedlich. Meist jedoch lag der Fokus auf den patientenseitigen Effekten, und in der Regel wurden nur Effekte innerhalb der eingeschlossenen Studienpopulation untersucht. Auch wenn die Übertragbarkeit der Einzelergebnisse zwischen verschiedenen Ländern und Settings nicht gegeben und allein durch die starke Heterogenität die Inkonsistenz in den Ergebnissen nicht verwunderlich ist, zeigte doch die Hälfte der Publikationen ökonomisch eindeutig positive Ergebnisse zugunsten der Intervention. Limitierend für dieses Rapid Assessment ist anzumerken, dass aus Ressourcengründen stark verkürzte methodische Verfahren angewendet wurden.

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Title: Use of DEA for measuring efficiency of service provision at hospital department level

Author: Martin Zuba[1]

[1] Gesundheit Österreich GmbH, Vienna, Austria

Abstract:

Background

In order to facilitate evidence-based decision on service provision, suitable methods that measure and compare efficiency of service providers need to be employed. We explore the use of various data envelopment analysis (DEA) approaches for measuring the performance of departments for urology, which is particularly suitable due the distinctive set of services provided in this speciality.

Data & Methods

We use patient data which includes diagnoses, services, patient demographics and cost-weights from the Austrian DRG system as well as hospital accounting data which has data on annual costs by cost centre any type of costs (e.g. personnel, materials, etc.) as well as number of staffing. From this data we calculate department-specific variables that describe inputs and outputs, as well as a set of quality indicators. These variables are used in various data envelopment analysis (DEA) models. Advanced methods, such as slack-based methods (SBM), super-efficiency, and regression-based DEA allow to investigate effects of certain variables on efficiency scores.

Results

Results reveal that various factors both within (e.g. pre-operative length of stay, bed occupancy rates) and outside (e.g. average patient comorbidity, ratio of patients transferred from other hospitals) the control of the departments drive efficiency scores. Ownership structure does not play a decisive role since there are efficient departments among both publicly and privately operated hospitals.

Discussion

Measuring efficiency of service provision is a complex task because it is difficult to correctly quantify inputs and outputs from available datasets. It is therefore vital to take into account the different structures that decision-making units (DMU) operate in, e.g., to include the relevant portion of costs operating rooms shared with other specialities. Advanced DEA methods, such as slack-based measures of efficiency and regression-based DEA reveal the importance of controlling for patient severity and other factors outside the control of the DMU. The analysis

can identify areas of potential improvement in non-efficient departments that can be used in further strengthening efficiency of healthcare provision.

Title: Kosteneffektivitätsanalyse der Anwendung von Künstlicher Intelligenz bei der radiologischen Diagnostik inzidenteller Nierenläsionen in Deutschland

Authors: Felix G. Gassert [1], Roland Polacsek-Ernst [2]

[1] Institut für diagnostische und interventionelle Radiologie, Klinikum rechts der Isar, Technische Universität München, Munich, Germany

[2] MBA Gesundheitsmanagement und Digital Health der E-Learning-Group in Kooperation mit dem Executive Education Center (EEC) der FH des BFI Wien

Abstract:

Ziel

Unklare Nierenläsionen treten oft als Zufallsbefunde bei verschiedenen bildgebenden Verfahren auf, da sie häufig vorkommen, insbesondere bei Menschen über 50 Jahren. Die korrekte Unterscheidung zwischen malignen und gutartigen zufällig gefundenen Nierenläsionen hat eine große Bedeutung für das Patientenmanagement. Wie in früheren Studien gezeigt wurde, sind moderne, auf künstlicher Intelligenz (KI) basierende Algorithmen bei der Differenzierung dieser Läsionen mit der korrekten Befundung von Radiologen vergleichbar oder übertreffen diese sogar. Ziel dieser Studie war es daher, die Wirtschaftlichkeit eines KI-basierten Systems im Rahmen der Auswertung zufälliger Nierentumore anhand von MR-Bildern zu evaluieren und maximal mögliche Kosten für Deutschland für die KI zu definieren.

Material und Methoden

Zur Schätzung der Qualityadjusted-life-years (QALYs) wurde ein Entscheidungsmodell erstellt, das die Optionen MRT mit und ohne Anwendung eines KI-Algorithmus enthält. Die Modelleingangsparameter wurden auf Basis der aktuellen Literatur generiert. Die Willingness-to-pay (WTP) wurde auf 80.000 €/QALY festgelegt. Im Base-Case-Szenario wurden Kosten von 0 € angenommen und in der Sensitivitätsanalyse entsprechend angepasst. Modellunsicherheit und mögliche Kosten des KI-Systems wurden mittels deterministischer Sensitivitätsanalyse bewertet. Die probabilistische Sensitivität wurde mithilfe der Monte- Carlo-Modellierung bestimmt.

Ergebnisse:

Im Base-Case-Szenario lagen die Gesamtkosten bei 7.353 € für die MRT und bei 7.262 € für den zusätzlichen Einsatz eines KI-basierten Algorithmus, während das Modell eine kumulierte Effektivität von 8,89 QALYs für die Nutzung der MRT sowohl mit als auch ohne Algorithmus ergab. Daher war das inkrementelle Kosten-Effektivitäts-Verhältnis negativ, und der Einsatz von KI war aus Kosten-Nutzen-Sicht die dominierende Strategie. Die probabilistische Sensitivitätsanalyse zeigte eine hohe Robustheit des Modells, wobei das inkrementelle Kosten-Effektivitäts-

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Verhältnis für einen weiten Bereich der Variabilität der Eingabeparameter unter dem WTP blieb. Bei steigenden Kosten für den Algorithmus wurde der Schwellenwert von 0 € / QALY bei 12 € überschritten und die definierte WTP bei 106 € überschritten.

Fazit

Der Einsatz einer KI-gestützten Diagnose ist bei der Klassifikation unklarer Nierentumoren mittels MRT unter Kosten-Nutzen-Gesichtspunkten praktikabel. Kosten von bis zu 106 € für den Algorithmus können bei hoher Robustheit des Modells akzeptiert werden. Die vorgestellten Ergebnisse haben medizinische und wirtschaftliche Auswirkungen auf die diagnostische Abklärung zufälliger Nierentumore und könnten dazu beitragen, die Patientenversorgung zu verbessern, indem sie die Anwendung von KI in die klinische Routine durch den Nachweis der Kosteneffizienz beschleunigen.

Supporters

We would like to thank the supporters of the 7th ATHEA Conference