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Book of Abstracts

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The impact of organizational change on firm efficiency: evidence from the healthcare sector

Title: The womb at work: the impact of maternal labour market participation on newborn health

Authors: Caroline Chuard[*1]

[1] University of Zurich

Abstract:

Several pregnancy conditions have been shown to influence health at birth, but also long-term outcomes such as educational attainment and future labor market status of the child itself. In this paper, I study the effects of maternal labor force participation during pregnancy on newborn health outcomes. I use administrative data from Austria on the working history of women and merge it with the full Austrian birth register. In combination with three reforms, that change the duration of parental leave for the first child and therefore the likelihood of working during pregnancy with the consecutive child, I can identify the effects of prenatal employment on the exposed offspring. Maternal employment during pregnancy with the second child reacts strongly to the policy changes, with no significant effects on newborn health measured via birth weight, a dummy for low birth weight, and an indicator for a preterm birth. This effect pattern suggests that prenatal employment does not affect the fetus for measures visible at birth.

Keywords:

Newborn health, maternal labor market status, pregnancy conditions, parental leave

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Title: Pränatales Screening in Österreich: Combined Test versus zellfreier DNA-Test

Authors: Lena Glöckner[1], Jennifer Haas

[1] Hauptverband der österreichischen Sozialversicherungsträger

Abstract:

Hintergrund

Das allgemeine Risiko, dass ein Fetus eine Aneuploidie aufweist, wird mit etwa 1:1000 beziffert. Als "Hochrisiko" (z.B. Alter ≥35, vorangegangene Schwangerschaft mit Anomalien, bekannte familiäre Häufung oder erbliche Belastung der Eltern) wird eine Wahrscheinlichkeit von 1:300 angegeben. In Österreich werden zur frühzeitigen Erkennung von Aneuploidien verschiedene pränatale Testverfahren, unter anderem der Combined Test und der nichtinvasive zellfreie DNA-Test (NIPT), für Schwangere angeboten.

Ziel

Ziel dieser Arbeit ist es, herauszufinden, durch welchen Screeningtest die meisten invasiven Eingriffe in der Pränataldiagnostik, und dadurch die Zahl der iatrogenen Aborte, verringert werden können. Basierend auf einer Übersichtsarbeit zu pränataler Testung (Wilbacher 2017) werden die Effektivität und die Kosten von Combined Test und NIPT anhand von konkreten Zahlen für Österreich verglichen.

Methodik

Es wurde ein entscheidungsanalytisches Modell erstellt und drei unterschiedliche Screening- Strategien zur Erkennung von Aneuploidien miteinander verglichen: (1) die aktuelle klinische Praxis mittels Combined Test, (2) der NIPT als nachgeschaltete Ergänzung zum Combined Test und (3) der NIPT als primäre Screening-Strategie.

Ergebnisse

Strategie 1 ist die preiswerteste Option, erzielt aber auch den geringsten Effekt, während Strategie 2 den höchsten Effekt aufweist. Die beiden Alternativstrategien weisen höhere Kosten als die aktuelle Praxis auf, wobei Strategie 3 die teuerste der drei Strategien ist. Hinsichtlich der Kosten und des Effekts wird Strategie 3 von Strategie 2 dominiert und somit in der Kosten-Effektivitätsanalyse nicht weiter berücksichtigt. Beim Vergleich der ersten mit der zweiten Strategie ergibt sich ein ICER (incremental cost-effectiveness ratio) von 38.803 Euro pro vermiedener Fehlgeburt. Strategie 3 erkennt fast doppelt so viele richtig-positive Ergebnisse wie Strategie 1, während Strategie 2 mit nur 4 von rund 88 tatsächlich erkannten Fällen in diesem Bereich das schlechteste Ergebnis bietet. Dennoch werden in dieser Strategie über 99% als richtignegativ identifiziert. Bezüglich der falsch-positiven Ergebnisse schneidet die Strategie 2 als beste und die Strategie 1 als schlechteste ab. In Letzterer kommen knapp 3000 Schwangere fälschlicherweise für eine invasive Untersuchung in Frage. Hinsichtlich der

Komplikationen aus invasiven Untersuchungen zeigt Strategie 2 die wenigsten invasiven Untersuchungen und damit auch die wenigsten Fehlgeburten: in einem Zeitraum von zwei Jahren wären nur 3 Schwangere von einem Abort betroffen. Zudem liegt der Anteil an Fehlgeburten aus einem falsch-positiven Ergebnis in dieser Strategie bei unter 15%, im Gegensatz zu 98,5% bzw. 43,8% in Strategie 1 bzw. 3.

Schlussfolgerungen

Es kann keine klare Empfehlung für eine der Strategien gegeben werden. Liegt die Betonung auf der Vermeidung von Fehlgeburten ist die Strategie 2 klar überlegen. Liegt der Fokus jedoch auf der korrekten Identifizierung möglichst vieler Fälle von Aneuploidien, sind Strategie 1 und (bei sehr hohen Kosten) vor allem Strategie 3 führend.

Title: Cutting fertility? Effects of cesarean deliveries on subsequent fertility and maternal labor supply

Authors: Martin Halla[1], Harald Mayr[2], Gerald J. Pruckner [1, 2], Pilar Garcia-Gomez[4]

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[2] Christian Doppler Laboratory of Aging, Health and Labor Market, Linz

[3] University of Zurich

[4] Erasmus University Rotterdam

Abstract:

In recent decades, the incidence of Cesarean delivery (CD) has substantially increased in almost all OECD member countries. On average, CD rates (i. e., the percentage of all c-section live births) increased from 14 percent in 1990 to 20 percent in 2000 and almost 28 percent in 2013. By contrast, the recommended CD rate by the World Health Organization is between 10 and 15 percent. It seems indisputable that this upward trend in CD rates can only be partly explained by changes in the incidence of medical indications. Possible complementary explanations are older women experiencing first-time motherhood, increased in-vitro fertilization, malpractice liability concerns, reductions in CD risk, doctors' and patients' scheduling convenience, and changes in patient preferences. Despite the growing incidence of cesarean deliveries (CDs), procedure costs and benefits continue to be controversially discussed. In this study, we identify the effects of CDs on subsequent fertility and maternal labor supply by exploiting the fact that obstetricians are less likely to undertake CDs on weekends and public holidays and have a greater incentive to perform them on Fridays and days preceding public holidays. As a result, despite nature's almost uniform distribution of births across time, we find differential likelihoods of CDs across days of the week. This holds true after excluding planned CDs, which are always scheduled on working days. The difference in CD rates across weekdays is used as exogenous variation in the first stage of an instrumental variable (IV) approach. Our empirical analysis is based on high quality administrative data from Austria. We observe all births between 1995 and 2007, along with information on mode of delivery, health indicators for newborns, and mother's socioeconomic information. We focus on nulliparous mothers and match information on their subsequent fertility and maternal labor supply up to 2013. There is a 5 percentage point lower likelihood of a CD on weekends and public holidays and a 1 percentage point higher likelihood on Fridays and working days preceding public holidays. Our main result is that non-medically indicated CDs (triggered by hospitals' free surgical capacity or obstetricians' demand for leisure) reduce subsequent fertility permanently and increase maternal labor supply over a period of about six years. The probability of a second birth decreases by about 16:5 percentage points and the likelihood of a third birth by 6:2 percentage points after 10 years.

This translates into a 12:5 percent reduction in lifecycle fertility. The estimated treatment effects on fertility do not vary by mothers' characteristics. By contrast, the labor supply effects are driven by highly educated mothers

and are in line with the availability of childcare institutions in Austria. Profound public efforts are being made in all high-income countries to foster fertility. In 2014, OECD member countries spent an average of 2:6 percent of GDP on families. Many of these countries implement specific policies to increase fertility such as fully subsidized assisted reproduction. Our analysis shows that one sensible policy to increase fertility is to reduce CD rates to the recommended level. To achieve this goal, healthcare market regulations need to reduce monetary supply-side incentives for CDs. The reimbursement of obstetric care in diagnoses-related groups based on hospital funding systems could be changed in favor of vaginal births. To reduce the demand for CDs to a healthy level, public health campaigns should be implemented.

Title: The health knowledge mechanism: evidence on the link between education and health lifestyle in the Philippines

Authors: Roman Hoffmann[1], Sebastian U. Lutz[2]

[1] Wittgenstein Centre (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences

[2] Vienna University of Economics and Business

Abstract:

Studies have found substantial differences in health-related behavior and health care usage between educational groups, which may explain part of the well-documented educational gradient in health.

The allocative efficiency hypothesis offers a behavioral explanation for these reported differences.

According to this theory, the educated possess more health knowledge and information, allowing them to make better health choices. We perform a mediation analysis to study this mechanism using original survey data from the Philippines, a lower-middle-income country. As an extension of previous empirical research, we construct a comprehensive index that captures different dimensions of health knowledge. Using generalized propensity scores, we find strong support for the allocative efficiency argument. Schooling is significantly associated with health knowledge levels which explain up to 69% of the education effect on health lifestyle. This corresponds to twice the mediation strength of economic resources, suggesting an important role of this factor in explaining education effects on health decisions.

Keywords:

Education, health knowledge, health lifestyle, allocative efficiency, developing country, Philippines

Title: Following the peers: the role of social networks for health care utilization in the Philippines

Authors: Roman Hoffmann[1]

[1] Wittgenstein Centre (IIASA, VID/ÖAW, WU), Vienna Institute of Demography/Austrian Academy of Sciences

Abstract:

Social networks can influence the acceptance and uptake of health services in various ways. Among others, they can provide information, shape beliefs, and make individuals imitate each other. This paper studies peer effects on the use of essential health care services offered by a microfinance institution in impoverished neighborhoods in the Philippines. We apply a novel IV identification strategy to overcome the well-known challenges in the estimation of peer effects in non-experimental, cross-sectional settings. The strategy uses structural information from social networks and the existence of overlapping peer groups for an unbiased estimation. We find positive and substantial peer effects in the communities. An increase in program uptake of 10% in the peer group leads to a 6.6% increase in individual health care utilization. We estimate hazard models to further explore underlying mechanisms. Peer effects are found to be strongest immediately after first exposure to the intervention and to fade out over time. While the strength of the relationship with the peer does not seem to matter for the adoption decision, the peers' structural position in the network does. Interestingly, peers with fewer connections seem to have a particularly strong influence on individuals with a central position in the network.

Keywords:

Peer effects, social networks, health care utilization, microfinance, developing country, Philippines

Title: Survival of the weakest? Culling evidence from the 1918 flu pandemic

Authors: Harald Mayr[1], Joël Floris[1], Kaspar Staub[1], Ulrich Woitek[1]

[1] University of Zurich

Abstract:

Whenever a negative shock affects a cohort in utero, two things may happen: firstly, the population suffers detrimental consequences in later life; secondly, some will die as a consequence, either in utero or early in life. The former effect is in line with the fetal origins hypothesis, famously proposed by Barker (1990). The latter is usually referred to as 'culling'.

Culling can induce a bias in estimates of later life outcomes. This bias is absent if culling is unrelated to the outcome variable. However, if culling affects the weak subpopulation disproportionately, the estimated effects of a negative health shock are biased towards zero. This view is expressed in many studies on fetal health shocks. In their excellent review, Almond and Currie (2011) provide the typical argument: '[...] estimates of the effects of fetal health shocks are generally conservative when the shock also increases mortality.' Almond (2011).

Indeed, this is highly plausible if the intensity of the health shock is constant. We depart from this assumption and allow for heterogeneous intensity of the health shock. We find that, when the health shock disproportionately affects the strong subpopulation, the sign of the bias can switch sign. In such cases, a positive coefficient might be found when the true effect is zero.

The Spanish Flu provides a setting where exposure intensity is plausibly increasing in health status. In contrast to all other known flu pandemics, the mortality pattern of the Spanish Flu was highly unusual as '[…] a so called cytokine storm […] could have contributed to the […] excessive number of deaths among the young and otherwise healthy […]' (Morens and Fauci 2007). This cytokine storm constitutes an overreaction of the immune system that is particularly harmful in people with a strong immune system.

We use historical birth records from the city of Berne, Switzerland, to assess this concern empirically. These data allow us to observe stillbirths as a measure of culling. Our results demonstrate that a careful consideration of the nature of culling is paramount for the evaluation of fetal health shocks. For any given context, whether the intensity of the health shock potentially varies with mothers' health status must be thoroughly evaluated.

Title: Volume-outcome revisited: the effect of hospital and surgeon volumes on multiple outcome measures in oesophago-gastric cancer surgery

Authors: Claudia Fischer [1, #a], Hester Lingsma [1], Niek Klazinga [2], Richard Hardwick [3], David Cromwell [4], Ewout Steyerberg [1], Oliver Groene [4,5]

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Abstract:

Background

For many surgical procedures, patient outcomes have been found to be related to surgical volume, with studies typically showing that higher volumes are associated with lower postoperative mortality. However, it is unclear whether a volume-outcome relationship is still detectable given that, in a centralized setting, all trusts may exceed recommended thresholds.

This study evaluated the relation between hospital- and surgeon volume and different risk-adjusted outcomes after oesophago-gastric (OG) cancer surgery in England between 2011 and 2013.

Methods

In data from the National Oesophago-Gastric Cancer Audit from the UK, multivariable random-effects logistic regression models were used to quantify the effect of surgeon and hospital volume on three outcomes: 30-day and 90-day mortality and anastomotic leakage. The models included patient risk factors to adjust for differences in case-mix among hospitals and surgeons. The between-cluster heterogeneity was estimated with the median odds ratio (MOR).

Results

The study included patients treated at 42 hospitals and 329 surgeons. The median (interquartile range) of the annual hospital and surgeon volumes were 110 patients (82 to 137) and 13 patients (8 to 19), respectively. The overall rates for 30-day and 90-day mortality were 2.3% and 4.4% respectively, and the anastomotic leakage was 6.3%. Higher hospital volume was associated with lower 30-day mortality (OR: 0.94; 95% CI: 0.91-0.98) and lower anastomotic leakage rates (OR: 0.96; 95% CI: 0.93-0.98) but not 90-day mortality. Higher surgeon volume was only associated with lower anastomotic leakage rates (OR: 0.81; 95% CI: 0.72-0.92). Hospital volume explained a

part of the between-hospital variation in 30-day mortality whereas surgeon volume explained part of the between-hospital variation in anastomotic leakage.

Conclusions

In the setting of centralized O-G cancer surgery in England, we could still observe an effect of volume on short-term outcomes. However, the effect is inconsistent, depending on the type of outcome measure under consideration, and much smaller than in previous studies. Efforts to centralise O-G cancer services further should carefully address the effects of both hospital and surgeon volume on the range of outcome measures that are relevant to patients.

Title: A spatial panel data analysis of avoidable hospitalisations in Austria

Authors: Anna-Theresa Renner[1]

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Abstract:

In 1992, Weissman et al. proposed so-called "Ambulatory Care Sensitive Conditions" (ACSC) as a measure for accessible and effective primary health care. ACSCs are defined as acute and chronic clinical conditions for which hospitalisation can potentially be avoided by high-quality primary health care. Various researchers have studied the association between socioeconomic characteristics of a population and the rate of avoidable hospitalisations as a measure for timely and effective primary care has been studied. Most of them find that higher educational levels as well as family income are associated with lower ACSC hospitalisation rates on the regional level. Whether this is due to lower levels of service provision in these regions, or due to worse health care access of less educated/wealthy persons, is of high relevance for policies that aim at reducing costly hospitalisations and improving population health.

In Austria, the rates of hospitalisations due to ACSC differ substantially between the 117 political districts, ranging from under 30 to up to 65 avoidable hospitalisations per 1,000 inhabitants (2013). As patients in Austria are not restricted to a certain district or service supplier when seeking care, the geographic structure of the districts can reasonably be assumed to be of importance and might therefore bias the estimated coefficients of non-spatial panel data models. This is especially relevant for the estimation of the effects of outpatient healthcare provision on avoidable hospitalisation. Following this reasoning, spatial lags using contiguity-based and distance-decay weight matrices are taken into account to obtain unbiased estimates. Different spatial panel data models, such as Spatial Durbin, Spatial Durbin Error and the Spatial Error model, are estimated using regional fixed effects and tested for their goodness-of-fit.

For the analysis, a panel data set containing information about hospitalisation rates for all Austrian political districts from 2008 to 2013 is exploited. Socioeconomic status of the population is measured using education, employment status, social benefit recipients and net income of each region. To investigate the effect of health care provision, a range of variables reflecting the in- and outpatient health care provision in each region was included in the regression (outpatient GPs and specialist density, age and gender of physicians, hospital beds, hospital physicians, average travel time to the hospital). A set of control variables is also included in the regression analysis in order to account for different regional morbidity and demographic structures.

Preliminary results show that there is a significant association between education and ACSC hospital admission rates, independent of the regional level of healthcare supply (inpatient and outpatient) and demographic

characteristics. Spatial dependencies seem to matter for the effect of outpatient specialists on avoidable hospitalisations, but not for that of GPs.

Title: Are psychiatric re-hospitalisation rates an appropriate indicator for comparing the quality of mental health care systems? Results of a comparative study of six European countries

Authors: Heinz Katschnig[1], Christa Straßmayr[1], Florian Endel[1], Michael Berger[1] & the CEPHOS-LINK group

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Abstract:

The de-institutionalisation movement and the emergence of community psychiatric services over the past decades have been accompanied by a continuing interest in measuring and comparing psychiatric re-hospitalisation rates. The OECD has recently recommended using re-hospitalisation rates for schizophrenia and bipolar disorder as a quality indicator of mental health care systems in different countries. However, it is still unclear whether such rates can be compared across countries and what they mean, because of differences in the metrics used for re-hospitalisation rates, the lack of comparability of study designs concerning such aspects as the selection of study cohorts, the array of hospitals covered or the duration of follow-up.

The EC FP7 project CEPHOS-LINK (Comparative Effectiveness Research of Psychiatric Hospitalisation by Record Linkage of Large Administrative Data Sets; no 603264) was set up with the purpose of increasing the comparability of psychiatric re-hospitalisation rates across six European countries (Austria, Finland, Italy, Norway, Slovenia, Romania) by using national electronic registry data with record linkage capabilities. Ascertaining their interoperability and developing a common study protocol, was a core task before analysing data. 225.600 adult patients with a main "functional" psychiatric diagnosis (excluding organic and substance use disorders) were followed up after hospital discharge over the subsequent 12 months. In a retrospective cohort study design predictors for re-hospitalisation were to be identified.

The largest proportion of psychiatric re-hospitalisations occurred in the first few weeks and months after discharge. 30 day rates varied between 8% in Romania and 16% in Austria, 365 day rates between 36% in Slovenia and 48% in Norway. In nearly all countries patients with a main diagnosis of a psychosis and young patients had the highest risk for psychiatric re-hospitalisation. Gender and length of stay were only weak and inconsistent predictors. For re-hospitalisation to any hospital (i.e. including somatic hospitals) physical comorbidity was a strong predictor. Analyses using a higher granularity of time intervals showed some peculiar results. For instance, in Romania, in contrast to all other countries, the re-hospitalisation rates did not gradually decrease over time but showed a marked increase over the final few weeks of the follow-up year.

In conclusion, because of the efforts to increase interoperability between routine health care registry data in different countries with different health care systems and different data reporting routines and because of the use of a common study protocol, it can be trusted that the cross-country differences found for psychiatric re-

hospitalisation rates are largely free from methodological noise. However, observational data are limited concerning causal inferences, and the meaning of the differences found is not clear. They can give rise to further questions and analyses, as well as to hypotheses about which factors not measured in the study might contribute to the differences. A prime candidate for explaining the discovered differences potentially resides in the differences in psychiatric care systems, with all their different dimensions, such as the degree of development of community mental health services or differences in provider payment mechanisms. Some of these aspects will be discussed.

Title: Equity in health care: A field experiment on the effect of socioeconomic status on access to outpatient care

Authors: Silvia Angerer[1], Christian Waibel[2], Harald Stummer [1,3]

[1] UMIT – University for Health Sciences, Medical Informatics and Technology, Institute for Management and Economics in Healthcare

[2] ETH Zurich

[3] University Seeburg Castle, Institut für Gesundheitsmanagement und Innovation.

Abstract:

Background

Inequality in access to health care for different socioeconomic groups may have a variety of underlying reasons. One of the potential factors impeding equal access is the discriminatory treatment of patients based on their socioeconomic background. In this study, we investigate this potentially significant channel of inequality in access to health care – namely, discrimination based on socioeconomic status.

Method

Making use of a randomized controlled field experiment, we study the impact of patients' education on access to outpatient care in Austria. The experiment involved fictitious patients asking more than 1,200 physicians to schedule a regular check-up appointment via email. The patients varied according to their educational background between (i) no university degree (NO TITLE), (ii) a doctoral degree (DR TITLE) and (iii) a medical degree (DR MED TITLE). Access to healthcare was measured on three dimensions: (i) the receipt of an appointment via email, (ii) the response time from the dispatch of the email to the answer from the physician and (iii) the waiting time for the appointment.

Results

Our results show that, overall, patients with a university degree (either a DR TITLE or a DR MED TITLE) have a higher probability of receiving an appointment via email than patients without a university degree. This difference is primarily driven by assistants as responders. Physicians, in contrast, do not discriminate with respect to offering an appointment via email; however, they favor higher socioeconomic groups in terms of response times and waiting times.

Discussion/Conclusion

This differential treatment in access to outpatient care contributes to the existing waiting-time gradient by socioeconomic status and may discourage people from lower socioeconomic groups from making use of health care services – primarily in the crucial field of preventive health care.

Furthermore, we argue that our results are consistent with implicit bias for practice assistants and statistical discrimination based on financial incentives for physicians. However, because our experimental design precludes the possibility of unambiguously disentangling statistical from taste-based discrimination, future research should further investigate the mechanisms underlying the results provided in this paper.

Title: Cost and economic burden of illness over 15 years in Nepal: a comparative analysis

Authors: Khin Thet Swe[1],Mizanur Rahman[1], Shafiur Rahman[1], Eiko Saito[2], Sarah K. Abe[1]; Stuart Gilmour[1], Kenji Shibuya[1]

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[2] AXA Department of Health and Human Security, Graduate School of Medicine, The University of Tokyo, Japan

Abstract:

Background

With an increasing burden of non-communicable disease in Nepal and limited progress towards universal health coverage, country- and disease-specific estimates of financial hardship related to healthcare costs need to be evaluated to protect the population effectively from healthcare-related financial burden.

Objectives

To estimate the cost and economic burden of illness and to assess the inequality in the financial burden due to catastrophic health expenditure from 1995 to 2010 in Nepal.

Methods

This study used nationally representative Nepal Living Standards Surveys conducted in 1995 and 2010. A Bayesian two-stage hurdle model was used to estimate average cost of illness and Bayesian logistic regression models were used to estimate the disease-specific incidence of catastrophic health payment and impoverishment. The concentration curve and index were estimated by disease category to examine inequality in healthcare-related financial hardship.

Findings

Inflation-adjusted mean out-of-pocket (OOP) payments for chronic illness and injury increased by 4.6% and 7.3%, respectively, while the cost of recent acute illness declined by 1.5% annually. Injury showed the highest incidence of catastrophic expenditure (30.7% in 1995 and 22.4% in 2010) followed by chronic illness (12.0% in 1995 and 9.6% in 2010) and recent acute illness (21.1% in 1995 and 7.8% in 2010). Asthma, diabetes, heart conditions, malaria, jaundice and parasitic illnesses showed increased catastrophic health expenditure over time. Impoverishment due to injury declined most (by 12% change in average annual rate) followed by recent acute illness (9.7%) and chronic illness (9.6%) over 15 years. Inequality analysis indicated that poorer populations with recent acute illness suffered more catastrophic health expenditure in both sample years, while wealthier households with injury and chronic illnesses suffered more catastrophic health expenditure in 2010.

Conclusion

To minimize the economic burden of illness, several approaches need to be adopted, including social health insurance complemented with an upgraded community-based health insurance system, subsidy program expansion for diseases with high economic burden and third party liability motor insurance to reduce the economic burden of injury.

Keywords:

Cost of illness, catastrophic health expenditure, impoverishment, Bayesian statistics, Nepal.

Title: The closer the better: the impact of better access to outpatient care on hospitalization

Authors: Péter Elek[1*], Tamás Molnár[2], Balázs Váradi[3]

[1] Department of Economics, Eötvös Loránd University, Budapest

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Abstract:

Introduction

In 2010-2012 new outpatient service locations were established in poor Hungarian micro-regions, which had lacked such capacities before. In this paper we exploit this quasi-experiment to estimate the extent of substitution between outpatient care and (later) inpatient care, with a focus on potentially avoidable hospitalization.

Material and methods

Building upon an earlier paper of ours that concentrated on immediate effects on the frequency of doctor-patient interactions, we use individual-level administrative panel data on ambulatory and hospital care for years 2008-2015 covering the population of 20 treated and 20 control micro-regions (altogether around 10 per cent of the population of Hungary). The control group was chosen by propensity score matching. We estimate the effect of the establishment of new outpatient units on hospitalization, potentially avoidable hospitalization and its various subcategories with fixed-effects logit models; on the number of outpatient cases with fixed-effects Poisson models, and on outpatient and inpatient expenditures with fixed-effects linear models. Finally, we use the development of the new locations as an instrumental variable to measure the structural effect of increased outpatient care use on various indicators of inpatient care use.

Results

Controlling for demographic and supply-side factors, the number of (non-laboratory) outpatient visits increased by about 19 per cent as a result of the establishments, and higher than average growth was observed for cardiology- and diabetes-related conditions. Meanwhile, the probability of overall hospitalization decreased (odds ratio = 0.985), which was driven by a marked reduction of potentially avoidable hospitalization (OR = 0.93) and, in particular, avoidable hospitalization due to cardiologic (OR = 0.91) and diabetes-related (OR = 0.93) conditions. Per capita outpatient expenditures grew by about 1400 HUF, while inpatient expenditures decreased by 900 HUF. According to our dynamic models, the indicators of outpatient care use reacted almost instantaneously to the

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availability of the new locations, while inpatient expenditures and the probability of hospitalization started to decrease with a one-year lag. The instrumental variable estimates suggest that a one unit increase in outpatient care expenditures implies an around 0.7 unit decrease in inpatient care expenditures, with most of the effect occurring after a lag.

Conclusions

Our quasi-experimental estimates indicate that bringing outpatient care closer to a previously underserved population may yield considerable health benefits in the medium term. What is more, those benefits, we find, come at a lower overall healthcare provision cost than previously estimated: the increased outpatient expenditures are to a great extent offset by a reduction in inpatient expenditures, especially in hospitalization due to ambulatory care sensitive conditions.

Title: Hinter den Kulissen – Wie funktionieren Best-Worst Experimente für die Berechnung von erwarteten Präferenzen bei Pflegebedürftigkeit und welche Faktoren beeinflussen die Ergebnisse?

Authors: Assma Hajji[1], Birgit Trukeschitz[1], Laurie Batchelder[2], Eirini Saloniki[2], Peter Burge[3], Lu Hui[3], Ismo Linosmaa[4], Juliette Malley[5], Julien Forder[2]

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[3] Rand Europe
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Abstract:

Best-Worst Modelle haben in letzter Zeit vor allem als Alternativen zu den komplexen Discrete Choice Modellen in verschiedenen Disziplinen an Interesse gewonnen. Im Gegensatz zu Discrete Choice Experimenten werden bei Best-Worst Experimenten nicht zwei oder mehr Entscheidungssets miteinander verglichen. Vielmehr sind es - wie im Falle von „profile case“ best-worst Experimenten – einzelne Attribute in einem gegebenen Entscheidungsset, aus denen das Beste und das für die jeweilige Situation schlechteste Attribut ausgewählt werden. Der kognitive Anspruch solcher Entscheidungsexperimente soll damit deutlich reduziert werden und verlässlichere Ergebnisse sicherstellen helfen. Für die Ermittlung von Präferenzgewichten für ASCOT-S – ein Erhebungstool zur Erfassung der Lebensqualität von betreuungs- und pflegebedürftigen Menschen – wurden 1000 in Österreich lebenden Menschen in ein Best-Worst Experiment eingebunden. Methodisches Ziel dieser Forschung ist es, das Best-Worst Experiment kritisch zu reflektieren und Faktoren zu erarbeiten, die die Ergebnisse beeinflussen. Erste Befunde zeigen, dass ein grundsätzliches Verständnis der Lösungswege des jeweiligen Best-Worst Experiments durch kognitive Interviews vorab der eigentlichen Datenerhebung wichtige Hinweise für die spätere Auswertung liefern. Zudem werden verschiedene Faktoren auf Ebene der Individuen und der Entscheidungssets berechnet, die die Konsistenz der Antwortmuster beeinflussen (positioning effects, Schwierigkeitsgrade der Entscheidungssets, soziodemografische Merkmale etc.).

Title: Hospital-based treatment in child and adolescent psychiatry: Does reimbursement reflect resource use?

Authors: Ingrid Zechmeister-Koss[1,2], Heinz Tüchler[1], Roman Winkler[1], Corinna Fritz[3], Leonhard Thuh-Hohenstein[2,4]

[*] Ludwig Boltzmann Institute for Health Technology Assessment,

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[3]University Department for Child and Adolescent Psychiatry, Christian-Doppler-Klinik/SALK, Paracelsus Private Medical University

[4] KNIFFE, Institute for Research and Education in Child and Adolescent Psychiatry

Abstract:

Background and objective

Concerns have been raised whether diagnosis-related groups (DRGs) are adequate for reimbursement in psychiatry. In Austria, child and adolescent hospital psychiatry has been reimbursed via the 'LKF-system' (a modified DRG-system) since 1997. In consecutive admissions to a child and adolescent hospital ward, we analyse the current reimbursement patterns and whether reimbursement corresponds with the actual resource use.

Method

We express resource use in terms of length of stay, services provided and hours spent, as well as personnel costs, and contrasted it to reimbursement via the LKF-system using different measures (e.g., the coefficient of homogeneity) in addition to regression approaches.

Results

The data show that resource use is neither homogeneous within diagnoses nor within diagnosis-oriented case groups. Despite being intended as a DRG-system, reimbursement is dominated by length of stay. Even after adaptations of the system into a more 'per-diem-based system', reimbursement does not match resource use in some patient groups: The youngest patient groups, planned admissions and those with long duration exhibit a low cost coverage.

Discussion and Conclusion

While it seems warranted to exclude child and adolescent psychiatry from DRG-based reimbursement, an alternative that reflects cost differences between patients and avoids unintended consequences is difficult to establish in this population with complex needs. In the current per diem-based funding trends, attention should be paid to avoid unnecessary hospitalisation of patients.

Title: Kardiologische Rehabilitation: Eine Evaluation zu anfallenden Kosten der Phase III

Authors: Stefan Fischer[1]

[1] Ludwig Boltzmann Institute for Health Technology Assessment

Abstract:

Hintergrund

Ergänzend zu den Ergebnissen einer multizentrischen, prospektiven Kohortenstudie zur Wirksamkeit der ambulanten kardiologischen Phase III Rehabilitation, wurden die, im Zusammenhang mit der Behandlung kardiovaskulär erkrankter PatientInnen, anfallenden Kosten im Gruppenvergleich dargestellt (PatientInnen mit kardiologischer Phase III Rehabilitation im Vergleich zu PatientInnen ohne kardiologische Phase III Rehabilitation).

Methode

Die Kostenberechnung erfolgte aus der Perspektive öffentlicher Kostenträger im Gesundheitswesen und für einen Zeithorizont von 18 Monaten (1,5 Jahre) nach Beendigung der Phase II. Die Kosten für die Phase III wurden anhand der Abrechnungsdaten der entsprechenden Sozialversicherungsträger ermittelt. Die Kosten für Arztbesuche, Untersuchungen und physiotherapeutische Leistungen basieren auf gezahlten Honoraren oder Tarifen. Zur Ermittlung der Kosten für Medikamente wurde je Medikamentengruppe das am häufigsten verschriebene Medikament definiert und anschließend die jeweiligen Packungskosten sowie die durchschnittliche Dosierung pro Tag zugeordnet. Die kalkulierten Kosten für neuerliche Rehabilitationen basierten auf dem Tagespauschalsatz für eine stationäre kardiologische Rehabilitation. Die Kosten für etwaige Krankenhausleistungen wurden aus den entsprechenden Bepunktungen der Fallpauschalen, die für die jeweiligen Gründe für stationäre Aufnahmen infrage kommen, generiert. Als Maß für den Gesundheitseffekt wurde ausschließlich das Ergebnis für den primären Endpunkt der o. g. Wirksamkeits-Studie (der Gruppenvergleich in der Änderung offener Rehabilitationsziele) verwendet.

Ergebnisse

Insgesamt wurden die Daten von 164 PatientInnen ausgewertet (78 Interventionsgruppe/IG, 86 Kontrollgruppe/KG). Die durchschnittliche Beobachtungsdauer lag bei rund 16 Monaten.

Die Kosten für die Phase III Rehabilitation selbst betrugen im Mittel 2.457 Euro pro (IG-) PatientIn. Die mittleren Kosten pro PatientIn waren für Re-Rehas (IG 185 Euro; KG 491 Euro), Arzt-/Ambulanzbesuche (IG 128 Euro; KG 174 Euro) und nicht-kardiovaskuläre Medikamente (IG 159 Euro; KG 175 Euro) in der IG geringer als in der KG, während in der IG mehr Kosten für kardiovaskuläre Medikamente (IG 528 Euro; KG 481 Euro) und Untersuchungen (IG 381 Euro; KG 339 Euro) anfielen. Die höchsten Kosten verursachten stationäre Behandlungen

(1.213 Euro in der IG und 1.196 Euro in der KG), die geringsten physiotherapeutische Leistungen/physikalische Anwendungen (48 Euro in der IG und 45 Euro in der KG). Die Gesamtkosten der o. g. Leistungen beliefen sich in der KG im Mittel auf 2.900 Euro pro PatientIn, in der IG (inkl. Phase III) auf 5.099 Euro pro PatientIn.

Diskussion und Schlussfolgerung

Insgesamt konnte durch die ökonomische Betrachtung festgestellt werden, dass die Kosten einer Phase III Rehabilitation im Anschluss an eine Phase II Rehabilitation einen wesentlichen Anteil des Gesamtaufwandes im Rahmen der ersten eineinhalb Jahre nach Ende der Phase II Rehabilitation ausmachen.

Unter den gegebenen Annahmen überwiegen die Kosten für die Phase III Rehabilitation potenzielle Kosteneinsparungen deutlich (Einsparungen sind vor allem für neuerliche Rehabilitationsmaßnahmen, aber beispielsweise auch für Arztbesuche zu erwarten).

Title: Reimbursement for medicines - Similarities and differences of reference price systems in six European countries

Authors: Peter Schneider[1*], Sabine Vogler[1]

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

Abstract:

Background

A reference price system (RPS) is a reimbursement policy in which a third-party payer (e.g. Health Insurance) funds a maximum amount (reference price) of the price of a medicine that has been clustered into a group of therapeutically identical or similar medicines (reference group). Patients pay for the difference between this reference price and the pharmacy retail price. The aim of the PRS policy is to enhance price competition between comparable medicines and promote generic uptake, as patients are usually inclined to choose medicines with the lowest co-payments. Over the last 30 years, several European countries have introduced a RPS.

The aim of this study is to explore possible similarities and differences in the design of a reference prices system in selected European countries.

Methods

A survey about methodological approaches applied for the design of a RPS was conducted with competent authorities for reimbursement in six European countries (Belgium, Denmark, Germany, Finland, France, the Netherlands). The survey had been pre-filled with information available to the authors from the Pharmaceutical Pricing and Reimbursement Pricing (PPRI) network and collected during a literature review. Additionally, interviews were held to clarify open issues.

Results

Countries defined different criteria to establish reference groups. Belgium, Denmark, Finland and France consider medicines of the same active ingredient (e.g. generic equivalents) as eligible to be put into a cluster, while Germany and the Netherlands have a broader understanding and also include medicines with comparable therapeutic outcomes into the same group. Germany furthermore includes on-patent medicines that are neither innovative nor were able to demonstrate additional therapeutic benefits, into a reference group whereas in the

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other countries, reference groups are set up after the patent expiry of a medicine. All surveyed countries include copy-products, me-too products and parallel imports.

In Finland and Denmark the maximum amount for reimbursement is determined through the lowest price in a reference group, whereas in Germany, France and the Netherlands the reference price is set higher, usually calculated according to a kind of weighted average. Belgium is the only one of the six countries that determines the reference price based on defined markdowns.

In the Netherlands reference prices have not been adjusted since 1999. In the other countries, the intervals for updating reference prices usually vary between 14 days (Denmark) and a year (Germany). France has no defined intervals, and updates reference prices on an ad-hoc basis. There are no updates of the reference prices in Belgium, since they are based on mark-ups determined at patent expiry.

Conclusion

In the examined countries, RPS are embedded in the respective national pharmaceutical policy framework, and they have been designed to meet different requirements. As a consequence, the countries have opted for different approaches with regard to reference price, reference group and intervals. We have also seen changes over time, since some methodological approaches (e.g. a broader definition of what to include into a RPS) tend to be implemented at a later stage in time, after countries have already had experience with the system.

Title: How high is the financial co-payment burden of out-patient medicines in Austria compared to other European countries? Policy overview and illustrative examples

Authors: Sabine Vogler[1†], Manuel Alexander Haasis[1], Guillaume Dedet[2], Hanne Bak Pedersen[2]

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

[2] World Health Organisation, Regional Office for Europe, Denmark

Abstract:

Background and objective

High out-of-pocket payments, including co-payments, can limit affordable access to medicines since patients might forego needed medication. In European countries, there are different practices to ensure financial coverage for medicines. The actual co-payment a patient pays depends on the co-payment model in legislation and may also depend on the price of the product (in case of a price-oriented co-payment) and the respective income level of a country.

The aim of this research is to explore patient co-payment's burden for medicines in European countries, including Austria.

Methods

As a first step, co-payment policies for medicines, including reductions of and exemptions from co-payments, were surveyed across countries of the WHO European region. This was done through a survey questionnaire sent to competent authorities responsible for pharmaceutical pricing and reimbursement that are members for the Pharmaceutical Pricing and Reimbursement Information (PPRI) network.

In a second step, we will determine the actual financial amount of co-payment for defined medicines for chronic and non-chronic diseases and for defined patient groups (children 0-18 years, low-income people, pensioners, unemployed and people with expenses for medicines above a defined threshold) in Austria and in France, Germany, Greece, Hungary, Kyrgyzstan, Sweden and the UK. The comparator countries were chosen based on the findings of the survey, and they represent countries of different income levels, health care systems and co-payment regulation.

Results

Findings about co-payment policies are available for 36 countries. 17 countries have a fixed co-payment, typically in the form of a prescription fee. The most common co-payment type (26 countries) is a percentage co-payment:

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depending on the therapeutic benefit of a medicine, patients are asked to cover a specific share of the medicine's price. In Denmark, Finland, Iceland, the Netherlands, Norway, Sweden and Switzerland, patients have to pay a deductible before out-patient medicines are dispensed to them either free of charge or at a subsidized rate. Common exemptions from or reductions of co-payments are for defined diseases (e.g. terminal illnesses, chronic conditions) and disabilities, low-income groups and/or socially disadvantaged people, children and youth, pensioners, war veterans and pregnant women.

The analysis of actual co-payments for user case examples is still on-going at the time of the submission of the abstract.

Conclusion

Austria is one of the few countries that do not charge co-payments in the form of a share of the medicine price. This could result in lower co-payments in value compared to other countries. This hypothesis, however, still needs to be verified, by specific examples currently analysed. Final results will be available at the time of the conference.

Title: Shining some light on confidential arrangements: Relevance of discounts for pharmaceutical pricing in European countries

Authors: Nina Zimmermann[1‡], Sabine Vogler[1], Margit Gombocz[1]

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

Abstract:

Background

There are strong indications that official medicine list prices are impacted by discounts, rebates and similar arrangements that pharmaceutical industry offers to public payers. Confidential discounts also undermine the commonly used practice of external price referencing (international price benchmarking) where countries set medicine prices by comparing to list prices in other countries. Given the confidential nature of such contracts, there is little evidence on this matter. The aim of this study was to survey the relevance and extent of discounts and similar arrangements in pharmaceutical pricing in European countries.

Methods

We did a primary data collection with competent authorities involved in the Pharmaceutical Pricing and Reimbursement Information (PPRI) network. After a pilot with one country (Austria) launched in August 2016, the survey ran from September till December 2016. Preliminary findings were discussed with the respondents during a face-to-face meeting in November 2016. Due to the sensitivity of this matter, respondents were offered anonymity if they wished so.

Results

18 European countries responded to the survey. All 18 countries reported that public payers were granted discounts and similar price reductions by pharmaceutical industry for some new medicines. Discount arrangements were particularly common in the indications of oncology, multiple sclerosis, hepatitis C, and TNF alpha inhibitors. Most frequently reported arrangements included 'simple' dis-counts on list prices of medicines as well as price-volume agreements; some countries also informed about performance-based agreements. The extent of the price reductions varied between countries and products; it was reported to be up to 50% for some medicines. In 14 of the 18 responding countries, the discount arrangements were subject to confidentiality.

Conclusion

The study confirmed that confidential discounts and similar arrangements play a major role in pharmaceutical

‡ Submitting Author

pricing, in particular related to new high-priced medicines. As a result, published list prices do not necessarily reflect the actually paid prices. Policy-makers that set their medicine prices with reference to list prices of other Countries, without accounting for possible discounts, risk over-paying.

Title: The impact of cash or services on the equitable use of home care by older people

Authors: Ricardo Rodrigues[1] and Andrea E. Schmidt[2*]

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[2] Gesundheit Österreich GmbH

Abstract:

Cash-for-care benefits of different nature have been introduced in the past decades as a means to provide publicly-funded support for frail older people in several European countries, including Austria. These cash-for-care benefits may create incentives for the substitution of formal home care services by informal care, depending on their design regarding eligibility and amount. Despite this, there is a lack of empirical studies on inequalities in use of long-term care (LTC) and in particular on inequalities linked to different cash-for-care arrangements. Applying an instrumental variable framework (IV), data from a comparable international dataset (Survey on Health, Ageing and Retirement) is used to test for the existence of a socio-economic gradient, specifically linked to income, in both the probability and intensity of LTC service use among community-dwelling people aged 65 years and older in different European countries (Austria, Germany, Italy, Denmark, Sweden, France, the Netherlands). Findings suggest that different cash-for-care benefits play a role in the socio-economic differences in use of home care services found across Europe and the policy implications of this are further discussed.

Keywords:

Inequalities, long-term care, endogeneity, cash-for-care benefits

[*] Presenting Author

Title: Economic linkages of long-term care services

Authors: Gerhard Streicher[1†] , Ulrike Famira-Mühlberger[1], Matthias Firgo[1], Oliver Fritz[1]

[1] Austrian Institute of Economic Research (WIFO)

Abstract:

Recent projections of long-term care costs across Western societies show a significant rise in the upcoming decades. This is mainly due to demographic developments, but also due to a reduction of families' capacities to deliver informal care. Thus, an expansion of both formal home and in-patient care is inevitable. As the increasing demand alters both public and private expenditures, it is worth taking a look beyond the conventional costs-based evaluation of long-term care developments and to evaluate the economic effects induced by this growing sector: The increasing demand for care services implies chances for as well as challenges on other sectors of the economy that go beyond the immediate effects and costs for long-term care.

Against this background this paper presents a first analysis of the macroeconomic linkages of the long-term care sector for the case of Austria. For the estimation of indirect and induced economic effects of long-term care services we employ ASCANIO, a regional Input-Output model of the Austrian economy. This model simulates the economic linkages between 65 sectors (with long-term care services being part of one of these sectors) and the 9 Austrian regions (Bundesländer) as well as 42 other countries.

The model estimates that through direct and indirect economic interlinkages, private and public expenditures on long-term care services in Austria of 3.4 bn € in 2015 were associated with direct, indirect and induced value added of 5.9 bn € and 115,000 jobs. These were further associated with tax revenues of 1.1 bn € and social security contributions of 1.3 bn €. The latter roughly correspond to a combined 70% of the direct expenditures on long-term care services. The economic multiplier of long-term care services is comparatively high due to the high share of wages in the direct expenditures and the related high direct value added.

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Title: Gutes Essen oder nette Gesellschaft oder…? – Eine Best-Worst-Analyse zu den erwarteten Präferenzen bei Pflegebedürftigkeit in Österreich

Authors: Birgit Trukeschitz[1], Assma Hajji[1], Laurie Batchelder[2], Eirini Saloniki[2], Peter Burge[3], Lu Hui[3], Ismo Linosmaa[4], Juliette Malley[5], Julien Forder[2]

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[3] Rand Europe
[4] National Institute for Health and Welfare
[5] London School of Economics, PSSRU

Abstract:

„Warm-satt-sauber" hat als Devise der Erbringung von Betreuungs- und Pflegedienstleistungen ausgedient. In den Mittelpunkt der Dienstleistungserbringung rückt zunehmend das Bedürfnis, die Lebensqualität betreuungs- und pflegebedürftiger Personen zu verbessern. ASCOT-S ist ein Erhebungsinstrument, mit dem betreuungsbezogene Lebensqualität für acht Bereiche des Lebens erfasst werden kann. Methodisch stellt sich die Herausforderung, wie die Werte der acht Lebensbereiche zu einem Gesamtwert zusammengeführt werden können. Die einfache Aufsummierung greift dabei zu kurz. Gesucht werden daher sogenannte Präferenzgewichte, die bei der Aufsummierung die relative Bedeutung der jeweiligen Lebensbereiche berücksichtigen. Für die deutschsprachige Version von ASCOT-S sind solche Präferenzgewichte nicht verfügbar. Ziel der Forschung ist es daher, Präferenzgewichte für die deutschsprachige Version von ASCOT-S zu erstellen, um einen Gesamtwert der Veränderung der Lebensqualität durch Betreuungs- und Pflegedienstleistungen errechnen zu können. Zugleich wird dargestellt, welche Bedeutung den einzelnen Lebensbereichen in Österreich zugeschrieben wird. Erste Ergebnisse weise darauf hin, dass einigen Bereichen der Versorgung durch Betreuungs- und Pflegedienstleistungen mehr Bedeutung zu kommt als anderen und dass von der Annahme äquidistanter Skalen Abstand genommen werden sollte. Die Kenntnis der relativen Bedeutung der Lebensbereiche bei Pflegebedürftigkeit kann dazu beitragen, Dienstleistungsangebote bedürfnisorientiert auszurichten.

Title: Efficient Reinsurance in Health Insurance Markets

Authors: Anastasios Dosis[*1]

[1] Department of Economics - ESSEC Business School and THEMA

Abstract:

This paper studies a general, community-rated, private health insurance market. It proposes a government reinsurance scheme that discourages risk selection and promotes efficient competition. Under the proposed reinsurance scheme, the state provides insurance to insurers against losses caused by risk selection. The reinsurance scheme is entirely budget balanced, as it does not call for government subsidies, and requires the regulator to hold minimal information in order to implement it. Equilibrium is shown to exist and be efficient in any environment with finite number of types, states and multidimensional heterogeneity even if single-crossing is not satisfied.

Keywords:

Health insurance, risk selection, reinsurance, efficiency

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Title: Health plan payment in Germany

Authors: Florian Buchner [1,2] ,Jürgen Wasem [2,3], Gerald Lux [2,3], Sonja Schillo [2,3]

[1] Carinthia University of Applied Sciences,
[2] CINCH
[3] Alfried Krupp von Bohlen und Halbach-Stiftungslehrstuhl für Medizinmanagement, Universität Duisburg-Essen

Abstract:

In Germany, social health insurance is offered by about 110 sickness funds and covers about 90 % of the population. Income-related contributions are the main source of funding, supplemented by payments from the federal government. The resources are collected in a Central Health Fund and distributed through a prospective risk adjustment approach that includes the risk factors age, gender, reduced earning capacity and morbidity. Morbidity is operationalized in 50-80 expensive, severe and/or chronic diseases. Different risk adjustment formulas are used for the “insured residing abroad” and the sick leave payment. A number of ongoing issues, such as using citizens’ region as a risk factor and implementing some risk-sharing elements, are under consideration.

The presentation is based on a comprehensive chapter on the German Risk adjustment mechanism in a forthcoming book on worldwide risk adjustment concepts. It illustrates the latest version of the German mechanism illustrating some interesting and less familiar details as the highest and lowest subsidies for disease clusters and discusses the reform options of the current political debate. It concludes with some comparative considerations on the much less-known Austrian Risk Adjustment system and its logic.

Title: The aggregate impact of insurance expansion on health expenditures in the US 1965 to 2005

Authors: Ivan Frankovic[1], Michael Kuhn[1]

[1] Wittgenstein Centre (IIASA, VID(ÖAW), WU) and Vienna Institute of Demography

Abstract:

The introduction and subsequent expansion of Medicare and Medicaid has considerably reduced out-of-pocket (OOP) health expenditures, leading to an increase in the utilization of medical care. According to some evidence this insurance expansion created strong incentives for R&D investments of medical firms and consequently led to the development and diffusion of new and more effective medical technology. We study the aggregate impact of Medicare and Medicaid on health expenditures, taking account not only of the direct effect through decreases in OOP spending but also the indirect effect through induced development and diffusion of medical technology and the associated rise in health care expenditures.

We do so by developing a continuous time economy of overlapping generations subject to endogenous mortality. The economy consists of three sectors: final goods production, a health care sector, selling medical services to individuals and a R&D sector, using profits accruing in the health care sector in order to develop medical technology. Individuals demand health care with a view to lowering mortality over their life-cycle. We derive the age-specific individual demand for health care based on the insurance setting as well as the value of life and determine the resulting aggregate health expenditures across the population.

We calibrate the model to match the US development from 1965 to 2005 and study by way of numerical simulation the impact of Medicare and Medicaid on health expenditures, medical progress and the overall economy. We find that these public programs can account for a large share of the dramatic rise in US health spending.

Title: The Austrian long-term care allowance: Some empiric evidence on expenditures and valorisation.

Author: Lukas Rainer[1]

[1] Gesundheit Österreich

Abstract:

Background

In 1993 a need-based and tax-financed cash allowance system for long-term care (LTC) was introduced in Austria. One of the main rationales for choosing an in-cash benefit was to enable individuals to freely choose the kind of service they prefer. However, substantial private co-payments or public in-kind benefits are needed to fund LTC. Hence, it is unclear whether individuals are actually able to choose their preferred service. Insufficient valorisation of the LTC allowance amplifies this concern.

Aim

This paper aims at quantifying the change in the purchasing power of the LTC allowance for care services between 1993 and 2016. Additionally, it analyses the LTC allowance expenditures and compares the price development of selected LTC services.

Methods

In order to isolate price effects from volume effects the growth in LTC allowance expenditures is split up according to changes in the allowance scheme, the number of recipients and the average allowance benefit. Then the price development is contrasted with different reference prices such as the consumer price index or a price index for institutional care. A case study on nursing homes in Vorarlberg provides in-depth information on the price development of institutional care.

Results

In the period 1993-2015 the real value of the LTC allowance decreased by between 25% (referring to the consumer price index) and 45% (referring to selected health care services' prices).

Discussion

The insufficient valorisation of the LTC allowance raises several concerns. In the context of Baumol´s cost disease, spending cuts typically lead to a decline in quality. This is particularly relevant in the absence of systematic quality monitoring. Additionally, a change in relative prices likely leads to a shift in consumption. From a micro-perspective informal care becomes more expensive because of increasing opportunity costs while the price of formal care does not change (or even becomes cheaper in the face of recent reforms such as the abolition of

recourse claims). Informal care may be substituted by public in kind-services hyphenation such as institutional care. Thus there may be adverse effects of LTC allowance spending cuts on total LTC expenditures.

Title: The Austrian and the Hungarian healthcare systems from an efficiency point of view

Authors: Nikoletta Malbaski[1], Tímea Helter[1]

[1] Main Association of the Austrian Social Security Institutions, Austria

Abstract:

A number of international studies have recently been published that aim to compare the performance and efficiency of healthcare systems. In terms of the efficiency of healthcare systems, the WHO's ranking of 191 countries places Austria at No.9, whilst Hungary is ranked 66th. In the EHCI ranking of 33 countries, Hungary is at place No. 30, as opposed to Austria scoring in the top third of the list. However, the difference in efficiency is not so significant between the two countries according to the Bloomberg Index, where Austria is at the 28th place and Hungary is at the 33th place. As a consequence, diverse country rankings are reported due to the multiple dimensions and difficulty of determining outcomes in the healthcare sector. Thus, the idea of conducting a comparison analysis between the Austrian and Hungarian healthcare systems emerged, along the following main dimensions: funding and spending (incl. considering efficiency aspects), centralized vs. decentralized system, healthcare delivery system, utilisation, health status, satisfaction. However, both healthcare systems are based on similar principles and face several similar challenges; multiple differences can be observed. Austria, based on a federalist and decentralised structure, spends 10.4% of its GDP on health, which means 5,016 PPP $ per person, whereas the Hungarian spending level is only about one third of this amount through a proportionate (7%) health spending of the GDP. Hungary lags almost six years behind Austria in terms of life expectancy; however, Hungarian women spend 3 years and Hungarian men 1 year longer in good health than their Austrian counterparts. According to a recent Eurobarometer survey, 95% of Austrian and only 28% of Hungarian respondents consider their respective health sector to be „good“. This presentation aims to explore the facts and contexts behind the indicators used by ranking and the challenges faced by both countries in terms of efficiency. The authors benefit from the insight which they gained into both the Hungarian and the Austrian healthcare systems and health administration, not only as patients, but also as health economists.

Title: Headline indicators for monitoring the performance of healthcare systems: Findings from the European Health Systems_Indicator (euHS_I) survey

Authors: Natasa Perić[1], Maria M. Hofmarcher[1,2], Judit Simon[1]

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Abstract:

Background

Cross-country comparisons of healthcare system performance have become increasingly important. Clear evidence is needed on the prioritization of healthcare system performance assessment (HSPA) indicators. Selected "leading" or "headline" HSPA indicators may provide early warnings of policy impacts. The goal of this paper is to propose a set of headline indicators to frame and describe healthcare system performance.

Methods

We identified overlaps and gaps in the availability of reported indicators by looking at HSPA initiatives in Member States (MSs) of the European Union (EU), the European Commission as well as international institutions (e.g. OECD, WHO-EUR). On that basis, we conducted a two-stage online survey, the european Health System_Indicator (euHS_I) survey. The survey sought to elicit preferences from a wide range of HSPA experts on i) the most relevant HSPA domain(s), i.e. access, efficiency, quality of care, equity, for a specific indicator, and ii) the importance of indicators regarding their information content, i.e. headline, operational, explanatory. Frequency analysis was performed.

Results

We identified 2168 health and health system indicators listed in 43 relevant initiatives. After adjusting for overlaps, a total of 361 indicators were assessed by 28 experts in the 1st stage of the survey. In the 2nd stage, a more balanced set of 95 indicators was constructed and assessed by 72 experts from 22 EU MSs and 3 non-EU countries. In the domains access and equity, experts assessed share of population covered by health insurance as top headline indicator. In the domain efficiency, the highest rank was given to Total health care expenditure by all financing agents, and in the domain quality of care to vaccination coverage.

Conclusions

HSPA indicators from different initiatives largely overlap and public health indicators dominate over health systems aspects. The survey allowed quantifying overlaps and gaps in HSPA indicators, their expert allocation to domain areas and establishment of an informed hierarchy structure. Yet, results show that more multidisciplinary work is needed to ensure the availability of accurate efficiency indicators which are comparable across countries.

Title: Curbing the Growth of Pharmaceutical Expenditure: A Panel-data Analysis of International Reforms

Authors: Michael Berger[1], Gerald Röhrling[1], Markus Pock[1], Miriam Reiss[1], Thomas Czypionka[1]

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Abstract:

In recent years a steady increase in expenditure on pharmaceuticals has posed a critical challenge to the financial stability of Austrian Social Health Insurance (SHI). From 2000 to 2015, public pharmaceutical expenditure per capita (US$, PPP) increased by 75%. Analysis of the composition of this rise in expenditure singles out increasing quantity as the main driver of this development. This phenomenon is not restricted to Austria.

In order to quantify the effectiveness of internationally undertaken policy measures aimed at controlling the growth of public pharmaceutical expenditure (PPE), we conducted a panel-data analysis using data for 12 OECD member countries for the period 1990-2013. In an econometric model we estimated the impact of six categories of policy measures together with a proxy for co-payments on the growth rate of PPE.

We found that countries with healthcare financed predominantly through SHI contributions experienced lower growth rates in comparison to countries with healthcare predominantly financed through taxes. Among the policy measures under consideration, co-payments had the strongest negative impact. Electronic prescription systems, too, were found to have a significant – albeit smaller – effect in virtually all model specifications. Information on prescription behavior and pharmaceutical budgets showed a significant mitigating effect only in some model specifications, while the mitigating effect of generic substitution with one year delay is significant only when European countries are considered. The goodness of fit was around 50% in all models.

The empirical analysis highlights that some, but not all, implemented policy measures indeed succeeded in effectively curbing pharmaceutical expenditure. In particular, the results show that monetary incentives cannot be avoided if a substantial effect is to be secured. As monetary and non-monetary measures are not mutually exclusive, a bundle of measures might be preferable to the introduction of single measures. In the Austrian context, an increase of (the comparably low) co-payments with more differentiation could be a viable policy option.

Title: Veränderung durch neue Versorgungsansätze – #Verbesserung der Diagnose und Therapie bei Morbus Parkinson #Telemedizin-gestütztes Versorgungsmanagement #Intersektorale und interdisziplinäre Zusammenarbeit #Kosteneinsparung und Qualitätsverbesserung

Authors: Daniel Dröschel[1,2*], Stefan Walzer[3], Gertjan Wilpshaar[4], Peter Lynch[4]

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Abstract:

Einführung

Die fachärztliche Versorgung von Parkinsonpatienten erfolgt heute vornehmlich in größeren Städten, während in vielen ländlichen Regionen in Deutschland eine Unterversorgung besteht. Ein häufiges Problem in fortgeschrittenen Krankheitsstadien sind motorische Fluktuationen, die von niedergelassenen Neurologen oft erst spät erkannt werden. Um diesen Herausforderungen im klinischen Alltag zu begegnen, ist konzeptionell eine neue Versorgungsform vorgeschlagen, welche, zusätzlich zu den derzeit angewandten Diagnosemöglichkeiten, durch den Einsatz eines objektiven Messverfahrens (Parkinson Kinetigraph PKG™) eine Verbesserung der ambulanten und stationären Parkinsontherapie erreichen soll.

Methodik

Versorgungskonzeption – Durch die Einführung eines Telemedizin-gestützten Versorgungsmanagements zur verbesserten Diagnose und Therapie bei Morbus Parkinson soll die intersektorale und interdisziplinäre Zusammenarbeit besonders in versorgungsschwachen Regionen nachhaltig verändert werden. Durch eine gesundheitsökonomische Evaluation auf Basis der Wirtschaftlichkeitsberechnung, wird eine prospektive Analyse von Einsparpotentialen und Qualitätsverbesserungen vorgenommen.

Ergebnisse

Das Versorgungskonzept basiert auf einem drei-stufigen Entscheidungssystem (Ampel) und der Begutachtung durch einen Experten, welcher dem niedergelassenen Neurologen eine Therapieoptimierung vorschlägt. Durch den telemedizinischen Einsatz eines kinetographischen Messverfahrens (PKG™) soll eine Verbesserung der ambulanten Parkinsontherapie erreicht werden. Nicht mehr der Patient muss transportiert werden, sondern nur noch die Daten. Mit diesem Ansatz kann die diagnostische Richtigkeit verbessert werden, da durch die Einbindung von Parkinsonexperten, das Wissen in die ambulante Versorgung transferiert wird. Ein konsequent strukturierter

[**] Presenting Author

und kontrollierter Versorgungsprozess über alle Versorgungseben (Intersektoral und Interdisziplinär), kann zur Verbesserung der leitliniengerechten Behandlung führen. Studien zeigen, nicht optimal eingestelltes Idiopathisches Parkinson Syndrom IPS (z.B. Dyskinesie, Fluktuationen) ist mit signifikant höheren Gesamtkosten verbunden, als optimal eingestelltes IPS. Das medikamentöse Therapie-Management kann dauerhaft verbessert werden, da Fluktuationen besser kontrolliert sind und die Zeit verlängert werden kann, bis die Patienten einer invasiveren Therapien bedürfen - Dudopa-Pumpe (intrajejunale Levodopa/Carbidopa-Infusion); kontinuierliche subkutane Apomorphin-Infusion; Tiefe Hirnstimulation (bilaterale elektrische Stimulation des Nucleus subthalamicus). Fachzentren und Kliniken werden so vermehrt nur Patienten behandeln die tatsächlich den Bedarf haben (z.B. Patienten mit komplexen Fluktuationen). Eine Fallverschiebung von Stationär nach Ambulant von 20-30% führt zu Einsparungen durch vermiedene Krankenhausfälle und zu Einsparung von durch assoziierte Nicht-Medikamentöse und Nicht-Medizinische Kosten. Für den Patienten kann das die Lebensqualität mit seiner Erkrankung verbessern, die Sicherheit erhöhen da unerwünschte Ereignisse wie Frakturen durch Sturz verhindert werden und dadurch Aufwand und Kosten vermieden werden können.

Diskussion und Fazit

Neueste Erkenntnisse zur Behandlung des Morbus Parkinson können in der lokalen Versorgung verfügbar gemacht und die Therapie optimiert werden. Dies führt zu Qualitätsverbesserung in der Versorgung und zu signifikanten Kosteneinsparung durch eine Fallverschiebung. Durch das das Telemedizin-gestützte Versorgungsmanagement wird die intersektorale und interdisziplinäre Zusammenarbeit besonders in versorgungsschwachen Regionen nachhaltig verändert werden können. Der Versorgungsansatz wird derzeit für Sachsen und Thüringen, zusammen mit der AOK Plus und den Unikliniken Dresden und Jena entwickelt und ist für die Förderung durch den G-BA Innovationsfond vorgeschlagen.

Title: The Impact of Organizational Change on Firm Efficiency: Evidence from the Healthcare Sector

Authors: Renáta Kosová[1], Giorgia Marini[2], Marissa Miraldo[1], Mujaheed Shaikh[†3]

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Abstract:

How organizational changes relate to firm performance has been the focus of research across disciplines. Yet, despite its importance, empirical evidence is scant. In healthcare - studies mostly focus on the impact of ownership on performance, but evidence is mixed. We argue that this ambiguity is due to two reasons: first, these studies compare performance across firms that operate in heterogeneous rather than homogeneous markets. Second, there is little assessment of how organizational change per-se relates to performance. We, on the other hand, assess the performance effects of organizational change in the context of a homogenous healthcare market by analyzing its impact on hospital costs and the extent to which efficiency gains from such change interact with scale and scope of hospital services. We also explore how such gains vary with planned vs. unplanned hospital activities and hospital heterogeneity, namely: hospital functional diversity and relative performance. Exploiting detailed 2001-2008 panel-data for English hospitals and the introduction of the Foundation Trust policy that triggered major organizational change - we find that hospitals exhibit economies of scale, but not scope; hospitals that underwent organizational change are more efficient than those that did not; and the organizational change facilitates economies of scope but not scale. However, efficiency gains vary importantly with hospital heterogeneity. Our results suggest that, the FT policy enabled cost-efficiencies, especially for worst performing and less functionally diverse hospitals. This highlights that organizational changes can be instrumental in promoting the long-term sustainability of healthcare system.

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Title: Book of Abstracts, Third ATHEA Conference for Health Economics „ Health service research in patients with complex needs “

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