K3.3 The effect of the development of outpatient health care services on workers – the example of a social infrastructure development project

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Investment in health care services can have indirect labour market effects, as the health status of local residents might improve leading to higher employability, as well as by decreasing the time spent on sick leave for those employed. We aim to measure these potential effects in the case of a development project funded by the European Union (Social Infrastructure Operative Project 2.1.2), whereby local outpatient units were established between 2010 and 2012 in twenty micro-regions which did not have such specialised services previously.[1] In previous papers (*Elek et al.*, 2015, 2019) we showed that, thanks to these investments, an additional 310 thousand persons could access outpatient care with a car ride of no more than 20 minutes, and as a result, the number of outpatient care visits increased by 19 percent. We also found results which point to positive health effects: the number of impatient stays decreased by 1.6 percent and potentially avoidable hospitalisation (PAH) decreased even more, by 5 percent. In this short piece, we look at the distribution of these effects across groups of the working age population defined by labour income; as well as estimating the effect of the investment on the number of days spent on long-term sick pay and on the employment probability. Similarly to our earlier papers, we compare the outcomes of individuals in the twenty micro regions affected by the development with those of control microregions which were matched on the basis of pretreatment characteristics using propensity score matching.

We use the Admin3 database provided by the Databank of the Centre for Economic and Regional Studies [CERS (KRTK)], which contains labour market data for the years 2003–2017 and health care data for the years 2009–2017 for a 50 percent random sample of the Hungarian adult population.[2] In *Table K3.3.1*, we show the effect of the development for all persons aged 25–59, as well as effects separately for four groups of roughly equal size defined based on their average labour market incomes between 2007–2009. As a result of the investment, the number of outpatient care visits increased by 18–23 percent for the working age population, irrespective of labour incomes. By contrast, the increase in spending (in HUF) on outpatient care was more than 50 percent higher for individuals with no labour market income than for persons in the highest income category, which is due to the fact that the first group is in worse health, hence health spending in the baseline period was already much higher for them. We can observe some substitution between inpatient and outpatient services, as the probability of hospitalisation (more precisely: the odds of hospitalisation) decreased by 3 percent. The number of drug prescriptions and the number of visits to GPs also increased by a few percent, primarily for the groups with low labour income.

Our hypothesis is that if quality health care becomes accessible in a micro-region, then the health status of residents will improve and hence they will be out of work due to illness less (among those employed). We measured this by the number of days on long-term sick leave,[3] but we found no effects (see *Table K3.3.2*). We also estimated the potential effect on employment rate, which is relevant for three reasons. First: due to improvement in health condition, more persons can work. Second, if more persons work, then the pool of employed persons is less positively selected based on health status, hence estimated effects on sickness absence can be biased.

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1 At the time of the infrastructural development, the 'subregion' administrative system was in place, this was changed to the 'district' system in 2012. We use the latter coding system, due to data availability.
2 See the Appendix to the 'In Focus' section for a detailed description of the database.
3 We only included individuals who worked at least three months in a given year in the sample.

Table K3.3.1: The effect of the establishment of new outpatient care units on different health care utilisation variables, by labour market income groups

	All age 25–59	Average monthly labour income in 2007–2009 (thousand HUF)			
		0	1–600	600–1320	1320+
Yearly totals (logarithm)					
Number of outpatient care visits	0.217***	0.231***	0.228***	0.221***	0.183***
	(0.0060)	(0.011)	(0.012)	(0.012)	(0.012)
Inpatient stay odds	–0.034**	–0.047*	–0.048*	0.018	–0.047
	(0.013)	(0.025)	(0.025)	(0.027)	(0.030)
Number of drug prescriptions	0.033***	0.037***	0.041***	0.031***	0.017*
	(0.0047)	(0.0083)	(0.0106)	(0.0093)	(0.0091)
Number of GP visits	0.025***	0.021***	0.041***	0.030***	0.0032
	(0.0035)	(0.0071)	(0.0074)	(0.0069)	(0.0068)
Yearly total spending (HUF)					
Outpatient spending	2433***	3165***	2361***	2305***	1905***
	(80)	(179)	(150)	(148)	(163)
Inpatient spending	–849	–2160	–1369	–768	716
	(604)	(1395)	(1,326)	(981)	(1117)
Spending on medications	–392	–944	385	–1408	552
	(690)	(1725)	(1165)	(1342)	(1257)
Number of observations	1,403,478	346,804	372,952	358,657	325,065
Number of individuals	249,358	68,510	68,235	59,201	53,412

Notes: Standard errors clustered at the individual level (except logit models).
Estimated models were fixed-effect Poisson for number of visits, fixed effects logit for probability of hospitalisation, fixed effects linear models for spending. Control variables: cubic function of age; calendar year, individual fixed effect.

Sample: individuals aged 25–59 living in micro-regions with outpatient unit development and control micro-regions. Sample period: 2009–2015. Significant at the *** 1 percent, ** 5 percent, * 10 percent levels.
Source: Own estimation based on the Admin3 database.

Table K3.3.2: The effect of the establishment of new outpatient care units on employment outcomes

	Number of days on long-term sick pay (log effect)	Employed for at least 3 months (log odds)	Number of days in insured employment (linear effect)
After the establishment	0.0059	–0.0189*	0.502
	(0.0205)	(0.0108)	(0.517)
Number of observations	508,531	372,952	1,820,493
Number of individuals	76,664	68,235	267,919

Notes: Standard errors clustered at the individual level (except logit models).
Estimated models were fixed-effect Poisson for number of days on sick leave, fixed effects logit for probability of employment, fixed effects linear model for number of days employed. Control variables: cubic function of age; calendar year, individual fixed effect. Sample: individuals aged 25–59 living in micro-regions with outpatient unit development and control micro-regions. The estimation for number of long-term sickness pay days was done on a sample which included those who were insured for at least 3 months in a given year. The number of observations differ across estimations since the logit model does not use those individuals whose outcome did not.
Sample period: 2009–2015.
Source: Own estimation based on the Admin3 database.

Third, the investment in health care infrastructure can lead to an increase in employment (irrespective of the population's health outcomes). We examine effects on two outcomes: the probability that a person worked for at least 3 months, and the total number of days in (insured) employment in a given year. We find no statistically significant effect on employment (see *Table K3.3.2*). In future work, we plan on estimating effects on employability for persons suffering from specific long-term health conditions.

References

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K3.4 Health of Central and Eastern European Migrants[*]

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I analysed the health level of migrants from Central and Eastern Europe and Turkey (CEE, broadly defined) living in Germany, and how their health changes during the years spent in Germany. On average, population health in CEE is worse than in Germany. After moving to Germany, the health behaviours and healthcare use of the migrants might change, possibly affecting their health status.

The data used in my analysis originate from the German Socio-economic Panel (SOEP) database. The German SOEP is an annual panel survey of a representative sample of households living in Germany. I used data from years 1984–2013. The data cover lots of different topics, including demographic, socio-economic and health indicators, the country of origin and the integration to the host country. The first SOEP sample oversampled households with a Turkish, Greek, Yugoslavian, Spanish or Italian household head, which then constituted the main groups of foreigners in Germany. The first wave included 1,393 immigrant households and 4,528 native households. An immigrant sample was added to the SOEP in 1994–1995. This additional sample of 531 households consisted of households in which at least one household member had moved from abroad to West Germany after 1984. Finally, in year 2013, a migration sample of around 2,700 households was added, each household containing at least one person who had either immigrated to Germany since 1994 or whose parents had done so.

First, I conducted a descriptive analysis of the differences in health status in 2013 by the country of origin. On average, except for Turkish migrants and except for the indicators related to being overweight, the migrants with origins in CEE have better health than the native population. The better health of the immigrants can be due to the so-called *healthy migrant effect*, which is widely documented in the related literature (*Antecol–Bedard*, 2006, *Janevic et al.,* 2011). According to the healthy migrant effect, healthy individuals are more likely to migrate from a sending country, thus the immigrants in the host country have typically above average health status.

Next, I analysed with the help of regression models, how the estimated relation between the country of origin and health changes if individual level factors are netted out (age, gender, marital status, education level, labour force status, earnings, German language skills). The health differences remain even

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[*] This chapter summarises the main results of *Bíró* (2018).