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1 *The recommodification of healthcare? A case study of user charges and inequalities in*  
2 *access to healthcare in Sweden 1980-2005*

3 **Abstract**

4 Background: User charges in Swedish healthcare have increased during recent decades.  
5 This can be seen in terms of the recommodification of healthcare: making healthcare access  
6 more dependent on market position. This study investigates whether the increase in user  
7 charges had an impact on educational inequalities in access to healthcare in Sweden between  
8 1980 and 2005.

9 Methods: Data from the Swedish Living Conditions Survey were used to calculate the  
10 odds ratios of access to healthcare for the low and higher educated in Sweden, and the results  
11 were stratified by health status (*Good* and *Not good* health) for each year 1980-2005. These  
12 odds ratios were correlated with the average user charge for healthcare.

13 Results: There were no educational differences in healthcare access in the group with  
14 *Good health*. In the group with *Not good health*, the higher educated had higher rates of  
15 healthcare access than the lower educated. Inequalities in access to healthcare were relatively  
16 stable over time, with a slight increase among those with *Not good health*.

17 Discussion: Recommodification has had only a small association with access to  
18 healthcare in Sweden. The Swedish system has integral protections that protect the vulnerable  
19 against rising healthcare costs. This is an important caveat for other countries that are  
20 considering introducing or raising user charges.

21 **Introduction**

22 Access to healthcare is a well-recognised social determinant of health [1], and  
23 inequalities in access to healthcare exacerbate problems caused by wider social inequalities  
24 [2]. Access to healthcare affects inequalities in avoidable mortality, which is defined as the  
25 number of deaths that could be avoided through the timely application of medical care. There  
26 are significant socio-economic inequalities in avoidable mortality across Europe [3].  
27 Healthcare usage is lower in lower socio-economic groups, even though their health needs are  
28 higher [4]. European healthcare systems have been substantially reformed during the past few  
29 decades. The reforms largely served to increase the market's role in healthcare provision, and  
30 have included changes to system financing (away from general taxation and social insurance),

1 the introduction of direct purchasing arrangements (an increase in co-payments and user  
2 charges), and changes in the organisation of service provision (privatisation, outsourcing and  
3 marketization of services) [5]. It can be argued that such reforms have recommodified  
4 healthcare – making access more dependent on an individual’s ability to pay, and thus largely  
5 on his or her labour market position. Many have speculated on the impact of such changes,  
6 but little research has been carried out into how recommodification has affected inequalities in  
7 access to healthcare [5]. The research that has been carried out has not employed a theoretical  
8 framework of recommodification. This paper presents a case study of reforms in the Swedish  
9 healthcare system and examines longitudinally the association between increases in user  
10 charges and inequalities in healthcare access between 1980 and 2005. It also examines  
11 whether recommodification has taken place.

## 12 Healthcare Reform as the Recommodification of Health

13 Over the last 25 years, the healthcare systems of most European countries have  
14 experienced extensive – and commonly market-based – organisational and financial reforms.  
15 These changes have been remarkably similar between different countries and under  
16 successive governments, regardless of their political affiliation. The emphasis has  
17 unswervingly been on promoting choice, competition and the role of markets in healthcare.  
18 The stated aims have been improving quality, stimulating innovation and promoting equity.  
19 Critics of the reforms have consistently questioned whether these aims have been achieved,  
20 contesting the evidence base for them and arguing that the reforms increase inequalities in  
21 access and reduce quality [5]. This has affected healthcare systems of different types,  
22 including national health systems (as in Sweden and the UK) and social insurance ones (as in  
23 Germany and France) [6].

24 Sweden has strong local government with tax-raising capabilities [7]. The 20 county  
25 councils own and run both hospitals and primary care clinics, although some county councils  
26 have sold their primary care clinics to the private sector [7, 8]. User charges were set centrally  
27 until 1991, when the decision was devolved to the local level. At the same time, choice  
28 reforms were implemented by many county councils [9, 10]. Between 1970 and 1998, user  
29 charges in healthcare increased faster than the consumer price index [11]. The average user  
30 charge for a visit to the primary care system is roughly 200 SEK and the charge for outpatient  
31 specialist care is roughly 350 SEK [12].

1           These reforms can be seen as part of a process of recommodifying the welfare state. The  
2 expansion of the welfare state and the incorporation of social rights into the model of  
3 citizenship that occurred during the post-war period resulted in a significant  
4 decommodification of health [13]. “Decommodification” refers to the extent to which  
5 individuals and families are able to maintain an acceptable standard of living, regardless of  
6 their market position [14]. Welfare states decommodify by providing both cash transfers and  
7 public services. Although transfers have received the most attention, Bambra [15] applied the  
8 concept to healthcare and constructed a healthcare decommodification index based on the  
9 proportion of private funding, the proportion of private provision of healthcare, and the rates  
10 of public coverage. “Healthcare decommodification”, therefore, refers to the degree of market  
11 involvement in healthcare. In more decommodified healthcare systems (largely national  
12 health systems), the role of markets is minimised and access to services is usually a right of  
13 citizenship. Markets are not simply another method of service delivery: for a market to work,  
14 there must be a commodity [16]. The establishment of market mechanisms in healthcare thus  
15 commodifies healthcare – or in a historical sense, recommodifies it [16]. The healthcare  
16 reforms in Europe since the 1980s must be understood within a wider context of the  
17 recommodification of labour and the retrenchment of social citizenship, and as part of a wider  
18 neoliberal project to rebalance the relationship between labour and capital [17].

#### 19           Case Study: User Charges in Sweden

20           User charges are one example of the commodifying character of recent healthcare  
21 reforms and one with particular implications for equity in healthcare. The use of user charges  
22 to make up the shortfall in tax financing can be considered to be an extra tax on the ill [18].  
23 Furthermore, vulnerable groups such as people on low incomes, single parents, unemployed  
24 people, and social assistance recipients are more likely to be price-sensitive than other groups,  
25 thus exacerbating socio-economic inequalities in healthcare access and consequently in health  
26 outcomes amenable to healthcare [11, 19]. There is evidence from both the US and European  
27 countries (France, Italy and Germany) that user charges have a greater impact on healthcare in  
28 low-income groups [20, 21]. A recent review [5] found that market-style reforms, and  
29 especially reforms to payment methods (increased use of out-of-pocket payments and private  
30 health insurance) in healthcare reduce equity, while evidence regarding the marketization of  
31 service provision is less conclusive.

1 User charges mainly act to control consumption, and contribute a very little to financing  
2 the healthcare system in Sweden [11]. A limit to the charges that any single user pays in any  
3 one calendar year has been implemented to avoid placing an undue burden on the chronically  
4 ill: once a person has reached the limit, any further healthcare during that year is free [21].

5 The Swedish healthcare system had a pro-poor bias during the 1980s, and people on low  
6 incomes were more likely to visit the doctor. By the 1990s, however, there was no difference  
7 in consumption rates by income [19, 22]. Similarly, in 1988/89 there were no significant  
8 differences in reported unmet care needs, while by 1996/97 the people in the lower-income  
9 quintiles had higher odds of reporting having care needs for which they had not sought help  
10 [22].

11 Economic reasons are cited by almost 20% of those who have refrained from seeking  
12 needed care [23]. More people in disadvantaged areas than in prosperous ones report that they  
13 have not sought needed care for economic reasons [19]

14 Since charges are frequently advanced as justification for not seeking medical care, such  
15 charges may be a major cause of inequality in healthcare access. This hypothesis led us to  
16 investigate the link between charges and determining access to healthcare. In particular, we  
17 have investigated whether user charges in the Swedish healthcare system are associated with  
18 inequalities in seeking care by educational level, and if so, to what extent. We have compared  
19 educational inequalities in access to healthcare before and after the 1991 increase in user  
20 charges, and tracked the developments in inequalities and charges until 2005.

21 This paper uses the Swedish experience as a case study, and (1) examines the  
22 association between user charges for healthcare consultations and educational inequalities in  
23 access to healthcare, both for the general population and for those with the highest health  
24 needs, and (2) frames this discussion within a discussion of the process of the  
25 recommodification of healthcare. We argue that user charges are a recommodification of  
26 healthcare, and, as such, are linked to increased educational inequalities in healthcare access.  
27 This is because such charges have the greatest effect for people of lower socio-economic  
28 status, who have less resources [19, 22].

## 29 **Methods**

30 The data used in this study were taken from the Swedish Survey on Income and Living  
31 Conditions (ULF) from 1980 to 2005. ULF became part of the EU-SILC project (European

1 Union Survey of Income and Living Conditions) in 2005, and was modified such that the  
2 outcome variable of interest to us (healthcare visits during the preceding three months)  
3 became available. ULF is a cross-sectional study that interviews between 5500 and 7500  
4 participants each year. In total, 114,227 participants have been included in the analysis. Due  
5 to a lack of information on prices, the years 1982-1987 and 1990 have been excluded from the  
6 analysis.

7 Healthcare usage was measured by the question “Have you at any point during the past  
8 three months visited a doctor?” and was coded into a dichotomous variable with the answers  
9 “Yes” or “No”. This question is worded very broadly, since different counties have different  
10 arrangements with regards to seeking care: in some counties primary care serves as a strict  
11 gatekeeper to hospital care, whereas in others it is possible to make appointments directly  
12 with hospital specialists. Asking whether someone has sought care at a specific level (such as  
13 primary care or secondary care) would thus bias the result. The variable thus measures any  
14 kind of healthcare usage.

15 Socio-economic status was measured by education, coded into three categories: “Low”  
16 (no qualifications, or solely compulsory school qualification), “Intermediate” (upper  
17 secondary school qualification or equivalent), and “High” (degree qualification or above). The  
18 analyses compared the lowest educated with the highest, with the highest educational group as  
19 the reference category. The highest educated are called Group A, and the lowest Group B. By  
20 comparing the two extremes to each other, the pattern of inequalities is seen most clearly,  
21 even though some nuance of the gradient is lost. Since health status influences the frequency  
22 of visits to doctors, and health status is influenced by social status, the relation between social  
23 status and healthcare access may be confounded by the intermediate variable, health status.  
24 This led us to run the analysis three times – once without accounting for health status, once  
25 selecting only respondents with self-reported *Not good health* (*Fair, Poor or Very poor*), and  
26 once selecting only respondents with self-reported *Good health* (*Good or Very good*). The  
27 effect of the difference in care-seeking behaviour due to differences in need was thus reduced.  
28 The measure of need, however, was rather crude, and the method did not entirely remove the  
29 effects of the differences. The higher educated with *Good health* we called Group A1, and  
30 those with *Not good health* we called A2. Similarly, the lower educated with *Good health*  
31 were called B1, and those with *Not good health* were called B2.

	Higher educated	Lower educated
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<i>Good health</i>	A1	B1
<i>Not good health</i>	A2	B2

1

2           The data were analysed in two stages. In stage 1, we calculated rates of inequality in  
3 access to healthcare over time, and in stage 2, we investigated the correlation between  
4 inequalities in access to healthcare and the user charge of a healthcare visit. In stage 1, odds  
5 ratios were computed for the probability of having visited a doctor during the preceding three  
6 months. We considered a two stage model because the recommodification data is only  
7 available as a single data point per time. Note that this is a repeated cross-sectional data with  
8 different participants at each time and with no information on clusters that can be specified as  
9 random effects in a multilevel model. Since this procedure involves multiple comparisons, it  
10 increases the risk of a Type 1 error. The multiplicity adjustment method known as “False  
11 Discovery Rate” was used to combat this risk [24].

12           In stage 2, the inequalities found in stage 1 were then examined for any correlation to  
13 the user charge of a primary care visit in the Swedish healthcare system using linear  
14 regression with the (log)odds ratios found in stage 1 as the dependent variable and user  
15 charges for healthcare as the independent variable. Since each county council can set its own  
16 rates, the average cost was used. These data were provided by the Swedish Association of  
17 Local Authorities and Regions for the period 1980-2005. However, very limited data is  
18 available from before 1991, and data are available only for 1980, 1981, 1988, and 1989.  
19 Inflation was controlled for by converting prices into 1991 value SEK. We adjusted for time-  
20 varying effects by including the year as a control variable in the analysis. Since the changes in  
21 the composition of the groups may have introduced bias in the association between education  
22 and health inequalities, we also controlled for the proportion of higher educated in the  
23 population.

24           **Results**

25           Table 1 shows the number and proportion of higher educated and lower educated  
26 respondents each year, as well as the number and proportion of respondents with *Good* and  
27 *Not good health*, respectively.

28

1 **Table 1: Frequencies and proportions of high, intermediate and lower educated, and frequencies**  
 2 **and proportions of *Good* and *Not good health* for each year in the study population.**

Year	<i>Higher education</i>		<i>Intermediate education</i>		<i>Lower education</i>		<i>Good health</i>		<i>Not good health</i>	
	n	%	n	%	n	%	n	%	n	%
1980	979	13.50%	2187	30.20%	4081	56.30%	5158	71.10%	2096	28.90%
1981	1109	14.40%	2457	32%	4119	53.60%	5539	71.90%	2158	28%
1982	1096	15%	2921	40.10%	3267	44.90%	5555	76.30%	1721	23.60%
1983	1079	16.20%	2636	39.60%	2941	44.20%	5057	76.10%	1592	23.90%
1984	1225	17%	2875	39.90%	3101	43.10%	5481	76.20%	1711	23.80%
1985	1146	17.40%	2617	39.80%	2807	42.70%	5005	76.20%	1560	23.80%
1986	899	18.90%	1946	40.80%	1920	40.30%	3656	76.70%	1110	23.20%
1987	1304	18.50%	2821	40.10%	2908	41.30%	5282	75.10%	1748	24.90%
1989	1308	20.20%	2624	40.60%	2539	39.20%	4893	75.70%	1574	24.30%
1990	1294	20.90%	2657	43%	2228	36.10%	4635	75.10%	1535	24.90%
1991	1259	21.70%	2541	43.70%	2012	34.60%	4397	75.70%	1404	24.20%
1992	1408	23.60%	2636	44.10%	1930	32.30%	4339	72.70%	1632	27.30%
1993	1482	24%	2718	44%	1981	32%	4472	72.40%	1698	27.50%
1994	1538	25.70%	2531	42.30%	1917	32%	4540	75.90%	1445	24.10%
1995	1427	23.80%	2618	43.60%	1957	32.60%	4500	75%	1497	25%
1996	1365	23.30%	2667	45.50%	1825	31.20%	4520	76.80%	1367	23.20%
1997	1460	25.20%	2625	45.30%	1712	29.50%	4497	77.50%	1305	22.50%
1998	1473	25.70%	2644	46.10%	1613	28.20%	4407	77%	1318	23%
1999	1547	27%	2585	45.10%	1595	27.90%	4307	75.20%	1417	24.80%
2000	1544	27.20%	2627	46.30%	1506	26.50%	4305	75.80%	1374	24.20%
2001	1591	27.40%	2683	46.30%	1522	26.30%	4272	73.70%	1527	26.30%
2002	1850	31%	2557	42.90%	1559	26.10%	4408	73.90%	1556	26.10%
2003	1862	30.90%	2510	41.70%	1650	27.40%	4481	74.30%	1548	25.70%
2004	1784	32%	2405	43.10%	1390	24.90%	4094	73.30%	1488	26.70%
2005	2919	27.20%	4837	46.30%	2441	26.50%	7806	75.80%	2495	24.20%

3



1           The proportion of people with higher education increased substantially over the course  
2 of the study period, from about 14% to 27%, while the proportion of people with intermediate  
3 education increased from 30% to 46%. The proportion of people with lower education  
4 decreased from 56% to 27% over the course of the study. The proportion of the population  
5 with *Good health* increased slightly from 71% to 76%, and the proportion with *Not good*  
6 *health* decreased correspondingly.

7           Table 2 shows the respondents that reported having visited a doctor during the past three  
8 months for Groups A and B. The lowest educated were always more likely to have visited a  
9 doctor, but the difference was greater in the 1980s than in the 1990s. The rates of healthcare  
10 visits in Group A increased from 28% in 1980 to 36% in 2005. However, the rates in Group B  
11 were at 42% in both 1980 and 2005. The absolute rate difference in healthcare use between  
12 Groups A and B decreased with time, and was thus lower in the mid-2000s than in the 1980s.  
13 The relative rate ratio, however, fluctuated between 1.35 and 1.21 during the 1990s, and  
14 became slightly smaller during the 2000s. Those with lower education were more likely to  
15 visit the GP than the higher educated, but the difference decreased over the study period.

16

1 **Table 2: Proportion of people who have visited a doctor during the past three months in Sweden,**  
 2 **absolute rate difference and relative rate ratios between groups A (highest educated) and B (lowest**  
 3 **educated).**

Year	Highest educated (Group A)	Lowest educated (Group B)	Absolute rate difference (B-A)	Relative rate ratio (A/B)
1980	27.8%	41.9%	14.1	1.51
1981	30.1%	42.4%	12.3	1.41
1988	29.9%	40.4%	10.5	1.35
1989	27.5%	37.2%	9.7	1.35
1991	30.2%	37.4%	7.2	1.24
1992	34.2%	40.2%	6.0	1.18
1993	35.8%	38.4%	2.6	1.07
1994	33.2%	39.7%	6.5	1.20
1995	32.5%	41.8%	9.3	1.29
1996	30.4%	40.1%	9.7	1.32
1997	30.6%	38.7%	8.1	1.26
1998	36.3%	41.7%	5.4	1.15
1999	34.0%	41.0%	7.0	1.21
2000	36.1%	40.0%	3.9	1.11
2001	36.8%	41.6%	4.8	1.13
2002	33.5%	43.7%	10.2	1.30
2003	35.0%	42.3%	7.3	1.21
2004	34.9%	42.2%	7.3	1.21
2005	35.6%	42.1%	6.5	1.18

4

5

1

2           Table 3 presents the results from stage 1 of the analysis, in the form of odds ratios and  
3 95% confidence intervals for having made a visit to the doctor during the past three months  
4 (using the highest educated as reference category) for the same time period. We stratified the  
5 results by health status. When we looked at the entire population, the lowest educated were  
6 slightly more likely than the highest educated to have visited the doctor, as Table 2 confirms.  
7 There were no significant differences in healthcare access by education in those with *Good*  
8 *health, than is between groups A1 and B1*. However, when we looked at those rating their  
9 health as *Not good*, the highest educated (group A2) were more likely than their less educated  
10 counterparts (group B2) to have visited the doctor. This means that part of the higher  
11 propensity for the low-educated to seek healthcare was due to their poorer health status, and  
12 when this was accounted for, they were less likely to seek care.

13

1 **Table 3: The odds ratios and 95% confidence intervals of the likelihood of a doctor visit in the last 3 months by**  
2 **education, using the group of highest educated (group A) as reference and lowest education (B) as comparison, in the**  
3 **entire population and stratified by health status. Group A1 is those with highest education with *Good health* and**  
4 **Group A2 is those with highest education with *Not good health*.**

Year of survey	<i>Entire population (Group A as reference)</i>		<i>Good health (Group A1 as reference)</i>		<i>Not good health (Group A2 as reference)</i>	
	OR	95% CI	OR	95% CI	OR	95% CI
1980	1.3	(1.11, 1.54)	1.02	(0.85, 1.24)	1.12	(0.73, 1.69)
1981	1.2	(1.03, 1.40)	1.14	(0.95, 1.37)	0.43	(0.27, 0.66)
1988	1.27	(1.09, 1.48)	1.12	(0.93, 1.35)	0.59	(0.40, 0.89)
1989	1.24	(1.06, 1.44)	1.14	(0.95, 1.36)	0.63	(0.43, 0.91)
1991	1.22	(1.04, 1.42)	1.03	(0.86, 1.23)	0.98	(0.69, 1.38)
1992	1.14	(0.99, 1.33)	0.94	(0.78, 1.12)	0.91	(0.66, 1.24)
1993	0.94	(0.81, 1.09)	0.84	(0.70, 1.01)	0.65	(0.48, 0.87)
1994	1.15	(1.00, 1.33)	0.97	(0.81, 1.15)	0.75	(0.54, 1.05)
1995	1.26	(1.09, 1.45)	1.08	(0.90, 1.29)	0.78	(0.56, 1.09)
1996	1.25	(1.07, 1.40)	1.08	(0.90, 1.30)	0.94	(0.67, 1.34)
1997	1.2	(1.03, 1.40)	0.93	(0.77, 1.12)	1.01	(0.71, 1.42)
1998	1.1	(0.95, 1.28)	1	(0.83, 1.19)	0.73	(0.51, 1.03)
1999	1.24	(1.06, 1.43)	1.08	(0.90, 1.29)	0.93	(0.67, 1.27)
2000	1.08	(0.93, 1.26)	0.94	(0.79, 1.13)	0.84	(0.60, 1.17)
2001	1.07	(0.92, 1.24)	1.03	(0.86, 1.23)	0.54	(0.39, 0.75)
2002	1.4	(1.22, 1.62)	1.25	(1.05, 1.50)	0.98	(0.72, 1.34)
2003	1.24	(1.08, 1.43)	1.15	(0.97, 1.37)	0.74	(0.55, 1.01)
2004	1.17	(1.01, 1.41)	0.94	(0.78, 1.14)	0.91	(0.66, 1.24)
2005	1.19	(1.01, 1.42)	0.98	(0.80, 1.21)	1.04	(0.72, 1.51)

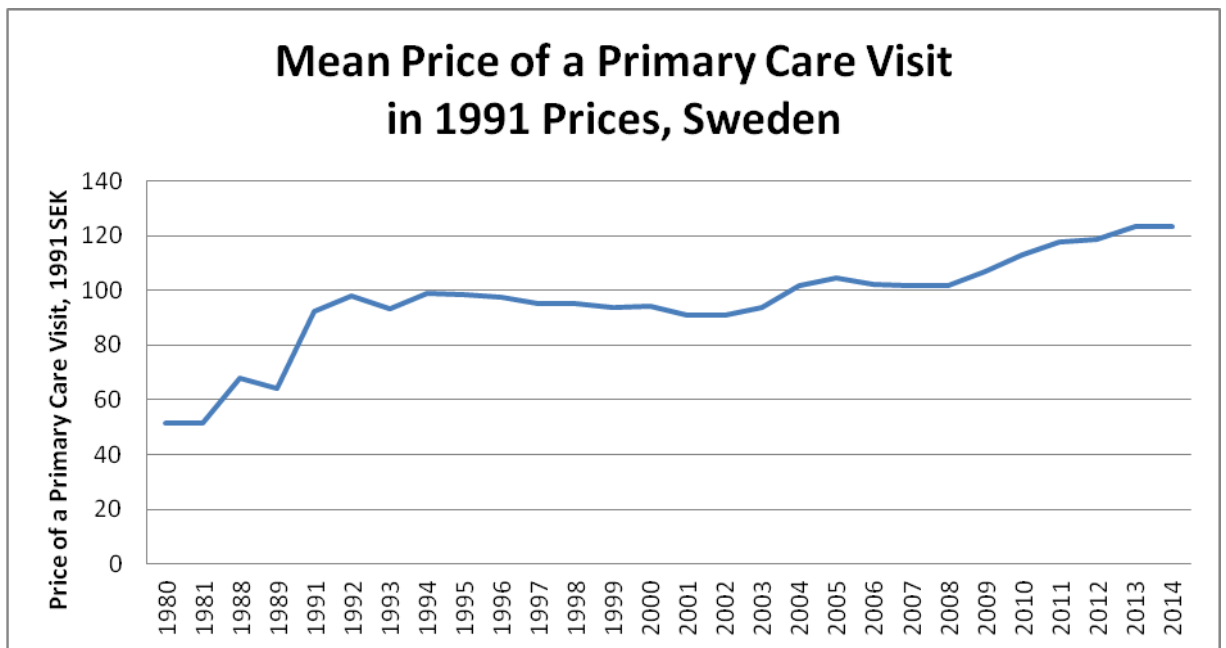
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6

1

2           Excepting 1980, the difference between the high-educated and low-educated in the  
3 propensity to seek care was greater in the 1980s than in the 1990s and 2000s in those with *Not*  
4 *good health*. This means that the inequalities between groups A2 and B2 were greater during  
5 the 1980s.

6           Table 3 shows that in the total population, the lowest educated were consistently more  
7 likely to have visited a doctor, and this does not change over the years. Similarly, the odds  
8 ratios between group A1 and B1 (those with *Good health*) hovered around 1. In the group  
9 with *Not good health*, the change is in the opposite direction from that expected: the  
10 difference between groups A2 and B2 was greater in the 1980s, and diminished during the  
11 1990s and early 2000s, despite the increase in user charges. By the end of our analysis period  
12 in 2005, there were no significant differences in the propensity to seek healthcare, even in the  
13 population with *Not good health*.



14

15           **Figure 1: Mean user charge for a primary care visit in 1991 value SEK**

16           Figure 1 shows the trend in user charges in the Swedish healthcare system, converted to  
17 1991 value SEK to adjust for inflation. The main increase occurred between 1989 and 1991.  
18 Most of the increase after 1991 occurred from 2008 onwards, for which we lack appropriate  
19 data about patient behaviour.

1           Table 4 shows the results from stage 2 of the analysis, in the form of correlations  
2 between the average user charge of a healthcare visit in 1991 SEK, and the log (odds ratio)  
3 from stage 1 of having visited a doctor during the past three months for the entire population,  
4 Group A and Group B.

1 **Table 4: Linear regression results for the relationships between healthcare user charges in 1991 SEK and the log(odds ratios) from stage 1 of having made a visit to**  
 2 **a doctor. Time-varying effects are adjusted for by including Year as a control variable in the second model.**  
 3  
 4

	All			With good health (Group A1+B1)			Not good health (Group A2+B2)		
	Coefficient	95% CI	R <sup>2</sup>	Coefficient	95% CI	R <sup>2</sup>	Coefficient	95% CI	R <sup>2</sup>
<i>Not adjusted for time-varying effects</i>									
Constant	0.753**	(0.503, 1.002)	0.735	0.188	(-0.067, 0.443)	0.411	-0.738	(-0.378, -0.097)	0.095
User charge	-0.009**	(-0.012, -0.006)		-0.002	(-0.005, 0.001)		0.006	(-0.001, 0.013)	
<i>Adjusted for time-varying effects</i>									
Constant	4.9	(-20.691, 30.492)	0.721	-16.032	(-40.794, 8.731)	0.908	3.867	(-69.989, 69.723)	0.039
User charge	-0.009**	(-0.014, -0.003)		-0.005	(-0.010, 0.001)		0.007	(-0.008, 0.021)	
Year	-0.002	(-0.015, 0.011)		0.008	(-0.004, 0.021)		-0.002	(-0.036, 0.031)	
<i>Adjusted for higher education rate and time-varying effects</i>									
Constant	5.175	(-43.288, 53.636)	0.702	-0.983	(-45.892, 40.393)	0.076	-10.126	(-83.857, 63.604)	0.032
User charge	-0.009**	(-0.015, -0.002)		-0.006	(-0.011, -0.000)		0.006	(-0.008, 0.021)	
Year	-0.002	(-0.027, 0.022)		0.001	(-0.022, 0.023)		0.004	(-0.032, 0.042)	
High Education Rate	0.000	(-0.038, 0.039)		0.001	(-1.910, 4.501)		-1.396	(-4.577, 1.785)	

5  
 6 **\*\* Adjusted  $p < 0.05$**   
 7

1

2 Table 4 shows that there were no clear correlations between the user charge and  
3 inequalities in access to healthcare for any health-status group. The correlation coefficients for  
4 user charges were all very low (never greater than -0.009), meaning that changes to user  
5 charges have a miniscule relation to odds ratios of healthcare visits. This is in keeping with  
6 the results from Stage 1, as inequalities in access remained fairly stable despite the increase in  
7 user charges. The regression coefficient for the relationship between user charge and  
8 inequality remained similar in all groups when adjusted for time and for the proportion of  
9 higher educated in the population, which indicates that the relationship was due to user  
10 charges and not to other time-varying factors. The  $r^2$  value was smaller than for those with  
11 *Not good health*, meaning that user charges can explain less of the variance in inequalities in  
12 healthcare access in those with *Not good health* than in those with *Good health*.

### 13 **Discussion**

14 The results presented here show that overall, the less educated are slightly more likely  
15 to seek healthcare in Sweden, but among those with *Not good health* the more educated are  
16 slightly more likely to seek healthcare. Since the rates of *Not good health* are higher among  
17 the lower educated, the greater use of healthcare by those with lower education is probably  
18 due to their greater need. Among people with similar needs, however, the higher educated are  
19 more likely to seek healthcare. It may well be that the user charge for healthcare contributes to  
20 this inequality, or at least does nothing to ameliorate it. For those with *Good health*, there was  
21 little difference between the groups in the frequency of having sought healthcare.

22 User charges are expected to be one factor that deters people from seeking care, and it is  
23 also expected that this deterrent effect is greatest among those with lower socio-economic  
24 status [25]. The work presented here shows that the link between the magnitude of user  
25 charges and inequalities in healthcare access in Sweden is lowest among those with *Not good*  
26 *health*. These are the people who are more likely to have a greater need for healthcare, which  
27 may be why there is a smaller association with user charges. Another factor that may lead to  
28 less price-sensitivity among those with *Not good health* is the existence in the Swedish system  
29 of a maximum amount that any person is required to pay for healthcare in one calendar year  
30 regardless of income. This cap was introduced in some counties during the 1970s and  
31 nationally in 1981. The cap covers primary and secondary outpatient care and is set at a level  
32 of SEK 1,100. One primary care visit costs approximately SEK 200 and a specialist outpatient



1 visit costs approximately SEK 350. This probably matters more to those with *Not good*  
2 *health*, as they are more likely to consume healthcare above this maximum amount. The  
3 protections provided within the Swedish system may thus have buffered against too hard an  
4 adverse effect on access for those most in need, despite no specific provision covering  
5 healthcare costs for the poorest. They also serve to limit the effects of recommodification.

6 Our results show that user charges explained more of the variance in healthcare usage  
7 between educational groups among those with *Good health* (Groups A1+B1) than those with  
8 *Not good health* (Groups A2+B2). Those with *Good health* are expected to be more price-  
9 sensitive, as the healthcare they seek is probably non-emergency, preventative, or  
10 unnecessary. The latter is healthcare that user charges are intended to deter. Our results  
11 indicate that the educational difference in price sensitivity is larger among those with *Good*  
12 *health* than *Not good health*. It is also less probable that those with *Good health* will seek  
13 enough care in one year to rise above the maximum level, meaning that this will probably not  
14 have as great an effect on their consumption of healthcare. However, the change in inequality  
15 in access is quite small, even in this group. Similarly, the overall proportion of people who  
16 have sought care does not decrease as user charges increase, which indicates that people are  
17 not very sensitive to the price of healthcare. It is possible that the user charge increase was too  
18 small to affect people's behaviour, as the rate adjusted for inflation was stable throughout the  
19 1990s and early 2000s. There was a slight increase (from an odds ratio of 0.8 to 1) in  
20 inequalities in access to healthcare in the group with *Not good health* in the years 1993-1995,  
21 when Sweden was undergoing a severe economic crisis. This may have contributed to the  
22 increase in inequalities in access, as in hard times those with lower education might be less  
23 inclined to access healthcare.

24 Our findings do not agree with previous results obtained by Burström [22], in that we  
25 have found only a limited association between increases in user charges and inequalities in  
26 healthcare access. However, Burström measured having needed but not sought medical care,  
27 and the effect of increases in the user charge was most apparent among low-income groups.  
28 Access to healthcare is a complex issue that depends on many factors, and it may be that the  
29 user charge has not yet risen to levels at which it outweighs other considerations, such as need  
30 and accessibility. Our finding that the group with *Not good health* is the least price-sensitive  
31 supports this speculation. A previous study found that 20% of those who had needed but not  
32 sought medical care did so for economic reasons [23], and investigating whether this  
33 proportion differed by socioeconomic or health status would give an indication as to the

1 extent price sensitivity depends on socio-economic and health status. This could also be  
2 investigated in a time perspective, to see whether or not this is related to recommodification.

3 This study has used different indicators of socio-economic status from those used by  
4 others. We measured socio-economic status by education, whereas previous studies have  
5 measured it mainly by income or occupation. User charges are more likely to influence  
6 inequalities in access by income, whereas education tends to have more influence in the  
7 evaluation of need, and in knowing when and how to seek appropriate care. It may be that  
8 there are smaller differences in the educational factors that influence healthcare access in the  
9 Swedish healthcare system, such as knowledge of how to gain access to it. This would explain  
10 the differences between this study and those, such as Burström [22], that found that health  
11 inequalities in the 1990s were greater than in the 1980s. Education may be a less accurate  
12 reflection of price-sensitivity than income, so by measuring changes in access by education  
13 status, we may have missed changes by income status. It can, however, be argued that  
14 education is a better long-term measure of socio-economic status, as it rarely changes once  
15 initial education is completed.

16 Recommodification occurred during the period studied not only in the form of increases  
17 in user charges, but also through reforms that allowed private healthcare providers to establish  
18 a practice and that allowed people to choose their healthcare provider in the public system, to  
19 a limited extent. A healthcare market was created, and thus the limited choice reforms can be  
20 regarded as a recommodifying measure. It is also the case that the state no longer guarantees  
21 equal access to equal care in a choice system: the quality of care depends on the patient's  
22 choice of provider. More highly educated patients are often better able to understand and  
23 navigate the system and make demands, leading to concerns that the choice reforms favoured  
24 more highly educated patients [26, 27]. However, we have seen no evidence of this in our  
25 study, as inequalities in healthcare access did not increase when the choice reforms were  
26 implemented. Most counties in Sweden adopted choice reforms during the time period  
27 studied, yet inequalities in access to healthcare as a consequence of different levels of  
28 education did not increase during this period.

### 29 **Limitations**

30 The limitations in this study are related mainly to problems with data access. Our  
31 measures of socio-economic status and need were restricted by the available definitions in  
32 ULF, and information about the level of care and geographical location was missing from our

1 data. We did not have an adequate measure of income, and thus used education as our  
2 measure of socio-economic status. We were also unable to compare health inequalities  
3 between counties in Sweden. We also had few pre-1991 data points and none beyond 2005.

4 Our measure of need (self-reported *Good* or *Not good health*) is unable to pick up  
5 gradations of need. Furthermore, people might value their health differently, and two  
6 respondents with the same objective need for healthcare might have rated their health  
7 differently.

8 The dichotomisation of having accessed care means that we likely miss nuances in care  
9 usage, especially between low and high users. Our measure captures any kind of contact with  
10 a doctor, for any purpose and at any level of care. There may have been differences in the  
11 kind of care that was sought (relief for temporary health issues, urgent care, preventative care,  
12 or unnecessary care) that we were not able to detect with our measure of healthcare use.  
13 Furthermore, we did not distinguish between primary and secondary care in the study, and the  
14 factors that drive people to seek care might differ at different levels of care. There are  
15 differences in the ways that counties in Sweden arrange healthcare, which mean that some  
16 care that is provided by specialists in one county is provided by primary care practitioners in  
17 another county.

## 18 **Conclusions**

19 The introduction of user charges in Sweden recommodified healthcare, in that it led to a  
20 requirement for out-of-pocket payment when accessing healthcare. However, the increases in  
21 user charges that took place between 1980 and 2005 were not linked to increased educational  
22 inequalities in healthcare access. Healthcare access is, however, unequal between groups with  
23 different levels of education, and different health needs. Within the general population, those  
24 with least education tend to use healthcare more than those with more education, but the  
25 pattern is different for those with higher health needs. In the latter case, healthcare usage is  
26 more common among the more highly educated. It is probable that reforms such as increases  
27 to user charges contribute to this inequality, or at least do nothing to ameliorate it. However,  
28 we found only a weak association between increases in user charges and inequalities in access  
29 to healthcare. This was probably due to some of the protections within the Swedish system,  
30 such as charge caps that protect those with the highest health needs from large charges.  
31 Furthermore, the user charges were moderate relative to the average wage. This is an  
32 important caveat for other countries that are considering introducing or raising user charges.

1 Healthcare usage was not very price-sensitive, at least at the level of user charges in Swedish  
2 healthcare from the 1980s-2000s. However, this says very little about charges set at other  
3 levels, and evidence from other studies suggests that higher user charges reduce healthcare  
4 usage, especially among lower income groups [11, 20-22]. Sweden provides an example of  
5 the emerging recommodification of healthcare, and aspects of health equity should be  
6 considered when studying future trends.

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