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Abstract

Market frictions, such as imperfect information or hassle costs, may reduce benefits from market incentives in healthcare settings. We use data from two randomised policy interventions in a Swedish region, which improved the access to provider information and reduced the switching costs of one percent of the adult population and of a sample of new residents. We examine the effects of the interventions on a large number of clinical process quality measures, access to care, and adverse health events, measured at the individual level. We find no significant effect of the interventions on any of the quality measures.

Keywords: Market frictions; Field experiment; Care quality; Primary care; Sweden

JEL classification: D89; I11

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1 Introduction

In many health systems, individuals are allowed to choose among providers. Consumer choice may improve the matching of individuals and providers, and may strengthen providers' incentives to compete on quality (Besley and Ghatak, 2003; Gaynor, Propper and Seiler, 2016). But as in any market, the link between choice and welfare may be weakened by market frictions, such as imperfect information about providers (Arrow, 1963) or transaction costs associated with switching providers (Klemperer, 1995). Even if individuals value high quality providers, search costs may prevent them from obtaining information before choosing a provider (Victoor et al., 2012; Glenngård, Anell and Beckman, 2011). Further, small hassle costs, like creating a user account on an online choice website, may lower mobility (Handel and Kolstad, 2015).

Many governments and private organisations disseminate provider information to reduce search costs and intervene to reduce switching costs (Saghafian and Hopp, 2019). Information dissemination, such as public reporting or online physician ratings, has been shown to affect individuals' choice of provider (Chen and Lee, 2021; Bensnes and Huitfeldt, 2021; Luca and Vats, 2013), but there is little evidence on whether such information has a ripple effect on the quality of the care they receive. This study aims to provide such evidence.

We use two randomised field experiments that documented market frictions on the primary care market in a Swedish region (Anell et al., 2021). To improve access to provider information, the regional health authority sent out a leaflet with comparative information about individuals' current primary care provider and its closest competitors to one percent of the adult population (population-representative sample, PRS), and to a sample of new residents (NRS). The leaflet included information on addresses, opening hours, available services, and on two types of quality indicators: subjectively reported patient satisfaction ratings and objective measures of continuity of care, telephone access, and adherence to prescription guidelines for elderly individuals. Most of the treated individuals (75% in PRS and all in NRS) also received a pre-paid form that facilitated switching, as it reduced the hassle costs associated with logging on to the online switching system or having to visit the provider to switch.

Anell et al. (2021) show that the interventions affected the choice behavior of individuals in several dimensions. The interventions increased the probability of switching to another primary care provider and had mixed effects on the consumed volume of care and drugs. Furthermore, the treatment group that received information without a form were registered at providers with higher average quality (according to the information on the leaflet) at the end of the follow-up period. The effects were particular prevalent for individuals living in urban

areas.

Whether the interventions improved the quality of received care is an open question. The present study examines the impacts on a number of outcomes measured at the individual level up to 44 months after the interventions. Acknowledging that quality is a multi-dimensional construct (Donabedian, 1988), we study indicators of process quality, structural quality (access), and outcome quality (adverse health events) using high-quality register data. Our pre-registered outcome variables encompass aspects such as continuity of care; appropriate treatment of common chronic conditions, infections, and depression; access to specialist care; and hospitalisations (overall and avoidable). Of these indicators, only two overlapped with those on the leaflet (continuity of care and adherence to prescription guidelines for elderly individuals). Thus, the question we ask is if the impact of increased access to information about general features of providers and softer quality indicators (i.e., patient satisfaction) spills over to the clinical quality of care a person receives.

Our analysis suggests that the intervention did not affect the clinical quality. We find small and statistically insignificant effects on the indicators of process quality, access, and adverse health events. Using our rich data to explore potential reasons for the null findings, we find no evidence to suggest that individuals for whom the studied process quality measures would be more relevant (i.e., individuals with health conditions related to these measures) were unresponsive to the interventions. This subgroup switched providers to a similar (if anything, higher) degree as individuals without these conditions. Our data instead indicate that the interventions did not induce choices of providers that offered higher quality in terms of the studied process quality measures. This result can be rationalised by the generally low correlations between the indicators on the leaflet and those studied in this paper, and with weak responses to those measures that were highly correlated.

Our findings raise questions of what information health authorities should disseminate. The findings do not necessarily imply that information dissemination should focus on clinical quality indicators instead of softer quality indicators. First, the interventions might have had positive effects on patient experience (e.g., physician communication skills) – an outcome we could not study. Second, the leaflets contained the type of information that health authorities believe is important for individuals to have before choosing a provider, and that individuals generally are interested in (Hoffstedt, Fredriksson and Winblad, 2021). If individuals are only interested in soft indicators, then an intervention replacing such information with the more clinically relevant process quality measures may not affect the choice of provider (Marshall et al., 2006). Third, the type of information available on the leaflets may affect the received clinical quality in

contexts where softer and clinical quality are more correlated.

In relation to the earlier literature, our study stands out in terms of assessing the effects on the received clinical quality of care. Previous field experiments have considered the effect of information on health plan choices but not the effects on care quality or health (Knutson et al., 1998; McCormack et al., 2001; Hibbard et al., 2002; Farley et al., 2002*a*,*b*; Kling et al., 2012; Abaluck and Gruber, 2016; Ericson et al., 2017; Domurat, Menashe and Yin, 2021). The literature on the effect of online ratings of physicians on choices indicates that higher ratings increase demand, but there is no study examining how the induced choices affect the quality of care (Chen and Lee, 2021; Bensnes and Huitfeldt, 2021; Luca and Vats, 2013). At most, these studies show that physician ratings correlates to clinical measures aggregated to the physician level (Chen and Lee, 2021; Lu and Rui, 2018; Placona and Rathert, 2021).

Our study also speaks to the broader literature on public reporting of provider quality information using report cards, and online and newspaper rankings. This literature suggests that public reporting is associated with quality (health) improvements (Fung et al., 2008; Ketelaar et al., 2011; Totten et al., 2012; Mukamel, Haeder and Weimer, 2014), but generally fails to disentangle patients' reactions from those of healthcare providers.[1]

The next section describes the institutional setting and provides an overview of the experimental interventions. Section 3 describes the data and Section 4 the econometric approach. The results are reported in Section 5. Section 6 provides a concluding discussion.

2 Study setting and intervention

2.1 Primary care in Skåne

The setting for the field experiments is the primary care sector in the Swedish region Skåne. The regional health authority is responsible for the organisation and provision of publicly financed healthcare for 1.3 million residents. The role of primary care is to supply basic medical treatments, preventive care, and rehabilitation. Primary care physicians are responsible for the treatment (including drug treatment) of many chronic conditions, but also for treating occasional minor health problems (infections, wounds etc). Although primary care physicians

[1] An exception is Cornell et al. (2019) who study the effects of report cards on provider performance among nursing facilities. Although not examining the release of information per se, they show that being admitted to a higher rated facility improve outcomes.

are not formal gatekeepers to secondary care, they typically refer patients and are often the first point of contact in the healthcare system.

Primary care is provided in multi-professional group practices called primary care centers (PCCs). At the time of the study there was 150 PCCs in the region, of which 84 were located in urban areas. All residents are registered at a PCC, and they may switch as often as they like.

While healthcare is publicly financed, there are both private for-profit and public PCCs (36 of the 84 urban PCCs are privately operated). As PCCs are mainly reimbursed by the number of enrolled individuals (via risk-adjusted capitation), they have incentives to compete on quality to keep the current stock and increase enrolment (Anell et al., 2021).

2.2 Experimental interventions

The two experimental interventions were directed to randomised samples of one percent of the adult population (PRS) and half of all new residents (NRS) during a three-month period. The primary component of the experimental interventions was an information leaflet, which was sent by the regional healthcare authority by postal mail to the treatment groups in late February (PRS) and early June (NRS) 2015. The leaflets contained comparative information about the individual's current PCC and its three geographically closest competitors. As a secondary intervention, a subsample of the experimental subjects also received a pre-paid choice form, which may have reduced the monetary and hassle costs of switching: the individual only had to fill in the name of the chosen PCC and to return the form, either by postal mail or by handing it in at a PCC. The control groups received nothing.

The first part of the leaflets contained information about some general features (address, phone number, opening hours, number of enrolled individuals, public/private ownership). Second, there was a set of quality indicators, of which two were taken from a national survey of patients who had visited primary care in 2014 (willingness to recommend the PCC to others; perceived waiting time to see a physician), and three indicators were collected by the healthcare authority (telephone response rate; patient-physician continuity; compliance with prescription guidelines for elderly). Third, there were indicators for each PCC's availability of special clinics catering to elderly individuals or to certain patient groups (dementia, asthma, chronic obstructive pulmonary disease or congestive heart failure), and indicators for the availability of behavioural therapists, gynecologists, chiropractors, or naprapaths. Fourth and finally, the leaflets indicated if the PCCs were located nearby a midwife clinic or a child health center.

The leaflet was unique for each of the 150 PCCs. There was considerable variation in terms of most items on the leaflets, in the region as a whole as well as within a given leaflet. All information was publicly available online, though not collected in one single place. For a more detailed description of the intervention and samples, see Anell et al. (2021). See online appendix A for an example of a leaflet.

3 Data

3.1 Study populations

As specified in our pre-registered plan, we restrict the analysis to the 69,744 individuals in the PRS and 4,852 in the NRS that were enrolled at an urban PCC at the date of the intervention.[2] Of these, 6,329 and 2,455 were treated. All NRS and 4,751 of the PRS were in the treatment arm that received a choice form together with the information leaflet. Further, as also pre-specified, we report results for the subsample of (urban) new residents who had not just immigrated.[3] This non-immigrant subset includes 3,157 individuals (of which 1,597 treated).

3.2 Data sources and variables

Our dataset includes daily information from the regional healthcare database covering all care contacts in Skåne from 2009 through October 2018. We combine these data with information about all dispensed doses of prescribed drugs from the national pharmaceutical register (held by the National Board of Health and Welfare), and data on pre-determined background characteristics from Statistics Sweden. The following sections describe our outcome measures.

[2] Although the availability of alternative providers is limited in rural areas, the field experiments were implemented in the whole region as the regional health authority had to treat all PCCs equally. The definition of urban PCCs is based on the town in which the PCC is located. PCCs in towns with more than 18,000 residents, or smaller towns adjacent to a larger city, are defined as urban. This corresponds to towns with more than 2 PCCs. As the PRS is stratified by PCC, restricting the sample to urban centers does not affect the randomisation. The numbers excludes 1 individual in the PRS and 4 individuals in the NRS for whom follow-up data were incomplete.

[3] For lingual and institutional reasons, the intervention should have limited effect on recent immigrants.

3.2.1 Process quality indicators

The process quality measures in this study is a subset of measures developed in a national collaboration coordinated by the Swedish Association of Local Authorities and Regions (SALAR). The aim of the collaboration, Primärvårdskvalitet ('Primary Care Quality', henceforth PCQ), is to develop a library of evidence-based measures to be used for internal quality improvement work at PCCs. We study PCQ indicators related to the following dimensions: lifestyle advice; continuity in the physician-patient relationship; follow-up visits for patients with chronic conditions, adequate drug treatment of i) elderly patients, ii) hypnotics, and iii) patients with chronic conditions; adequate treatment of anxiety and depression (prescribed drug or behavioural therapy; follow-up visits of newly diagnosed depression); and physical examination of patients with certain infections (otitis, pneumonia, or cystitis). The indicators for follow-up visits include the following chronic conditions: asthma, COPD*, dementia*, diabetes*, hypertension*, atrial fibrillation*, ischemic heart disease*, heart failure*, stroke*, and osteoporosis. The conditions marked with an asterisk are also included in the set of indicators of adequate drug treatment. See online appendix B for detailed definitions of all the studied indicators.

In total, our analysis includes 24 indicators from the 2018 version of PCQ measured over a follow-up period of up to 44 months. Notably, of these indicators, only two were similar to indicators on the information leaflets (continuity of care and appropriate drug treatment of elderly patients); neither was defined in the exact same way on the leaflets as in the PCQ library.

3.2.2 Non-emergency secondary care

We define an indicator for having at least one contact with a physician in specialist outpatient care and an indicator for having at least one inpatient episode in the 42 months after the intervention.[4] Seeing an outpatient specialist may indicate structural quality, i.e., accessibility of healthcare. However, the measure may also indicate outcome quality, i.e., adverse health events. Being hospitalised is primarily an indicator of outcome quality, i.e., an adverse health event.

3.2.3 Hospitalisations for ambulatory care sensitive conditions (ACSC)

We define an indicator variable for having at least one inpatient episode with an ambulatory care sensitive condition (ACSC) as the main diagnosis in the 42

[4] We exclude in- and outpatient emergency department visits, which were analysed in Anell et al. (2021), and births.

months after the intervention. ACSCs are conditions for which many hospitalisations would be preventable given that the patient has access to well-functioning primary care. ACSC episodes are therefore adverse health events that may indicate deficient primary care quality.

We use the union of two definitions of ACSC developed by the National Board of Health and Welfare (2013, 2014). These definitions include the following chronic conditions: anemia, asthma, diabetes, heart failure, hypertension, COPD, angina; the following acute conditions: bleeding ulcers, diarrhea, epileptic seizures, inflammatory diseases in the female pelvic organs, pyelitis, and ear, nose and throat infections; and the following conditions of special relevance to elderly patients: atrial fibrillation, flu, pneumonia and urinary tract infections. See online appendix C for relevant ICD-codes.

3.2.4 Covariates

Table 1 describes the covariates included in the analysis. We use the same covariates for both the PRS and the NRS, except for the measures of pre-intervention switches, care consumption and chronic conditions. These covariates are only included in the analyses for the PRS, due to the lack of historical information about the NRS in the regional registers.

3.3 Descriptive statistics

Table 2 shows descriptive statistics for individual-level data (columns PRS, NRS and NRS excl.) and for data aggregated at the PCC-level (remaining columns).

The variable on the first row of Panel A , *At risk*, speaks to the relevance of the process quality measures for the populations affected by the intervention. This binary variable equals one for individuals diagnosed with at least one of the chronic conditions (pre or post intervention) or an infection (post) or a first depression diagnosis (post) that had a PCQ indicator associated with it. The high proportion of individuals 'at risk' in the PRS indicates that the process quality measures are relevant for a substantial part of the sample. In the NRS, around a quarter of the sample are classified as being at risk. The lower figure is expected given their different age structure.[5] Notably, some of the process quality measures (lifestyle advice and continuity of care) may be of direct relevance also for individuals who are not at risk by this definition.

[5] 30 percent of the PRS were aged 60 years or above in 2015, as opposed to 10 percent of the NRS.

Table 1: Definitions of covariates

Female	Individual is a woman.
Age > 30 (< 75)	Individual is <30 (≥75) years of age.
Age 30-45 (60-75)	Individual is 30-45 (60-74) years of age.
Foreign background	Born outside, or both parents born outside, Sweden.
Child in household	Individual has ≥ 1 child (< 18 years old) living in the household.
Lowest (highest) education tertial	Two thirds of individual's birth cohort has longer (shorter) education (cohort defined by birth decade).
Lowest (highest) income tertial	Gross income in the lowest (highest) tertial of the regional income distribution.
Enrolled at closest PCC	Registered at the closest PCC (Feb 2015)
Choice within 1 (3) >3 km	≥2 PCCs within 1 (3) >3 km from home.
Pre-intervention mover	Individual moved, and changed closest PCC. (Dec 31 2013 – Feb 22 2015).
PCC switches pre	Number of PCC switches. Dummies for 0, 1, 2, and ≥3.
Recent switch (36 weeks pre)	Individual has switched PCC at least once.
PCC contacts (42 months pre)	Number of contacts with a PCC.
ED visits (42 months pre)	Number of emergency department visits.
Chronic pre	Has a chronic condition.

Note: All covariates are dummy variables (= 1 when the definition above applies and 0 otherwise) except *PCC contacts* and *ED visits pre*, which as continuous. *PCC contacts* include visits, phone contacts and letters. Chronic conditions include asthma, dementia, diabetes, atrial fibrillation, hypertension, heart failure, COPD, ischemic heart disease, stroke and osteoporosis. In the table '*pre*' means 2009- Feb 2015 unless stated otherwise.

The three remaining rows of Panel A show that two thirds of the PRS consulted an outpatient specialist at least once during the 42-months follow-up period. One fifth had at least one inpatient episode and 6 percent were hospitalised with an ACSC condition during follow-up. As expected, the figures are lower for the NRS.

Panel B shows descriptive statistics for each of the process quality measures. For the individual-level data, the mean of binary indicators (i.e., all indicators except the continuity of care index) indicates the share of each sample for which the indicator equals 1. For most indicators, the shares are very low, which is plausible since each of the studied diagnoses only affects a few percent of the population (the measures are coded as 0 unless the individual has both a diagnosis and a relevant treatment). One exception is the indicator for no inappropriate drugs for elderly individuals: the mean of this variable is close to 1 because it is coded as 1 for all individuals aged below 75 years. Another exception is the indicator for lack of prescription of NSAID drugs to individuals with ischemic heart disease (IHD) or diabetes, a standard that is easy to fulfil as it only requires the

Table 2: Descriptive statistics; by sample and at PCC-level

	Panel A: Health variables							
	PRS		NRS		NRS EXCL.		PCC-LEVEL	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
At risk	0.439	0.496	0.229	0.420	0.251	0.434	0.444	0.062
Specialist	0.672	0.470	0.496	0.500	0.519	0.500	0.675	0.060
Inpatient	0.196	0.397	0.086	0.280	0.090	0.286	0.198	0.043
ACSC	0.062	0.240	0.015	0.121	0.017	0.131	0.062	0.021
	Panel B: Process quality meaures							
	PRS		NRS		NRS EXCL.		PCC-LEVEL	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Tobacco advice	0.034	0.182	0.047	0.213	0.054	0.227	0.034	0.015
Exercise advice	0.064	0.245	0.031	0.173	0.026	0.160	0.065	0.051
Alcohol advice	0.021	0.144	0.037	0.188	0.045	0.208	0.020	0.013
Food advice	0.058	0.235	0.029	0.169	0.029	0.167	0.059	0.028
Continuity of care (COC index)	0.148	0.257	0.071	0.213	0.072	0.212	0.156	0.069
Follow-up visit, pre-intervention chronic	0.203	0.402	0.012	0.110	0.015	0.120	0.206	0.058
Follow-up visit, new chronic	0.065	0.246	0.046	0.209	0.048	0.215	0.067	0.022
Infection diagnosis with physical examination	0.092	0.289	0.077	0.267	0.079	0.270	0.096	0.021
Depression follow up	0.043	0.202	0.047	0.212	0.061	0.239	0.041	0.012
Depression relevant	0.041	0.199	0.047	0.211	0.060	0.237	0.040	0.013
No inapp N05B N05C	0.956	0.205	0.995	0.070	0.992	0.087	0.956	0.017
Appropriate IHD drug pre	0.039	0.194	0.003	0.051	0.002	0.049	0.040	0.015
Appropriate IHD drug post	0.014	0.119	0.007	0.081	0.007	0.085	0.015	0.007
Appropriate ACE ARB pre	0.034	0.181	0.002	0.045	0.002	0.047	0.034	0.013
Appropriate ACE ARB post	0.017	0.131	0.006	0.074	0.006	0.079	0.017	0.006
Appropriate statins pre	0.068	0.253	0.003	0.055	0.003	0.058	0.070	0.024
Appropriate statins post	0.020	0.141	0.012	0.110	0.013	0.115	0.021	0.009
No inappropriate drugs	0.974	0.159	0.998	0.044	0.997	0.052	0.973	0.012
IHD diabetes no NSAID	0.666	0.472	0.812	0.391	0.780	0.414	0.661	0.051
Atrial fibrillation with relevant treatment	0.020	0.139	0.001	0.025	0.001	0.025	0.020	0.009
Appropriate heartfail drug pre	0.011	0.105	0.001	0.032	0.001	0.036	0.011	0.005
Appropriate heartfail drug post	0.015	0.123	0.002	0.043	0.002	0.044	0.015	0.007
Appropriate Dementhia drug pre	0.003	0.056	0.000	0.000	0.000	0.000	0.003	0.003
Appropriate Dementhia drug post	0.004	0.064	0.001	0.025	0.001	0.031	0.004	0.004

Note: The table shows descriptive statistics by estimation sample: population representative sample (PRS), new residents (NRS), new residents excluding recent immigrants, and for data aggregated at the PCC-level (using the PRS control group to compute PCC-level means and standard deviations). In Panel A, *At risk* is a binary indicator for having a chronic condition (pre-intervention, or within the first 21 months of the post-period) or having been diagnosed with an infection or depression (any time during the follow up period). *Specialist* is a binary indicator for having made at least one visit at a specialist outpatient clinic (post intervention). *Inpatient* is a binary indicator for having at least one inpatient stay (post intervention). *ACSC* is a binary indicator for having made at least one visit inpatient stay with an ambulatory care sensitive condition (ACSC) (post intervention). Panel B shows descriptive statistics for the process quality indicators used to estimate the average standardised treatment effect. All measures except the continuity index are binary, and most measures are defined so that 1 indicates that one has a diagnosis and receives a relevant treatment; the small fractions with a given diagnosis thus explain the low means for many variables. Exceptions are the indicators for No inappropriate drugs for elderly, which is defined as 1 for all individuals below 75 years of age, and IHD diabetes no NSAID which is defined as 1 for everyone without such a diagnosis.

physician to abstain from prescribing. We chose to include all individuals in the analysis, regardless of whether a specific quality measure was relevant for them

or not, as the probability of having a diagnosis registered in the data is potentially endogenous (if treated individuals received better access to primary care, they would also be more likely to have a diagnosis).

Around one fifth of the PRS had a chronic condition before the intervention and a visit with the same diagnosis in any of the two 21 month-periods after the intervention.[6] Only six percent of the PRS sample got their first chronic condition diagnosis in the post intervention period and a follow-up visit within 21 months. The striking difference to the indicator for individuals with pre-intervention conditions is mainly explained by the considerably shorter period of time during which we count diagnoses set in the post period (because we need data for at least 21 months after the first diagnosis to compute the indicator).[7]

Given the demography of the NRS, it is not surprising that the means are generally lower (or higher, for indicators for which 1 is the status quo).[8] Notably, no one in the NRS had a dementia diagnosis before the intervention (the standard deviation for the Appropriate dementia drug indicator is zero). Accordingly, we could not analyse the effect on this process quality indicator for the NRS.

The final column of the table shows statistics aggregated at the PCC-level, calculated using data for the control group members of the PRS mapped to the PCCs where they were enrolled before the intervention. The PCC-level statistics show that there is variation across PCCs, which is important since the treated individuals received PCC-level information. As the only source of variation is at the PCC level, we should not expect any treatment effect on these measures if all PCCs perform equally in terms of process quality. In practice, the standard deviations are quite large (in relation to the means) for many of the indicators.

[6] The non-zero values for new residents come from individuals who had either been diagnosed after moving to the region or had previously lived in the region some time during the pre-period.

[7] 29 percent of the PRS had a chronic condition in the pre-period (2009-Feb 2015). 9 percent of the PRS were diagnosed with their first chronic condition in the 21 first months of the follow-up period.

[8] Individuals included in the NRS are, as they moved to the region one to four months before they received the leaflet, observed for a shorter pre-period and the chance of documenting conditions in the pre-period is therefore smaller than for individuals in the PRS.

4 Methods

In the main analysis, which follows the pre-specified plan,[9] we estimate the following regression model for each outcome variable:

$$y_{ijt} = \alpha_j + \sum_k \beta_{kj} T_{ik} + \gamma_j X_i + \delta_l j + \varepsilon_{ijt} \quad (1)$$

where y_{ijt} is the j:th outcome for individual i in measurement period t. For measures defined over the whole post-period (e.g., lifestyle advice), the time index is redundant. For measures defined over shorter sub-parts of the post-period (e.g., measures dividing the follow-up into two equally spaced periods), the data is structured as a long panel and we estimate a pooled regression model. α is a constant. T_{ik} is a dummy indicating if the individual belongs to treatment arm k, where k indicates either the information only arm (*info*) or the information and choice form arm (*info&form*)). (Note that in the new residents sample, all treated individuals belonged to the *info&form* arm.) The coefficients of interest are the β_{kj}, which represent the difference in the j:th outcome between the control arm and treatment arm k. X_i is a vector of predetermined individual-level covariates. $\delta_l j$, which represents the PCC fixed effect of the$l$:th PCC, is only included in our estimations for the PRS as this intervention was stratified at the PCC level.

To gain power and avoid multiple testing problems for the large number of process quality indicators, we estimate average standardised treatment effects (ASTE; Kling, Liebman and Katz, 2007; Finkelstein et al., 2012). We first estimate 24 (23 for the NRS) versions of Eq. (1) (one equation for each outcome variable) in a seemingly unrelated regression (SUR) framework to account for potential between-equation correlation in the errors. We then calculated the average standardised treatment effects as

[9] We pre-registered the analysis in the AEA registry before we had access to the data (registration number AEARCTR-0003599). The analysis follows the plan with the following exceptions: i) We do not use the stepwise testing procedure outlined in the plan. (This deviation does not affect our conclusions.) ii) We use follow-up periods of 2×22 months instead of 2×21 months for process quality indicators relating to drug treatment. (Because we obtained data covering a longer period than expected.) iii) We make an analytically inconsequential change of the definition of one process quality measure, Appropriate prescriptions for elderly: For young individuals, who per definition cannot have been prescribed 'inappropriate drugs' in this sense, the definition in the plan implied that younger individuals would be coded as being in the 'bad' state (0, i.e., inappropriate prescriptions). In the data, young individuals were instead coded as being the 'good' state (1, i.e., no inappropriate prescriptions). iv) We do not study the outcomes of household members of the population-representative sample. v) We exclude outcomes that did not relate to the quality of care, i.e., primary care utilisation, emergency department visits and pharmaceutical consumption. Results for these outcomes are available in Anell et al. (2021).

$$\tau_k = \sum_{j \in J} \frac{1}{J} \frac{\beta_{kj}}{\sigma_j} \tag{2}$$

where σ_j denotes the standard deviation of outcome variable y_j in the control group, and β_{kj} is the coefficient on the treatment indicator k from regression j (a positive β_{kj} indicates a beneficial effect). We report the ASTE τ_k together with its estimated standard errors obtained by the delta method. We use robust standard errors for the PRS and cluster-robust standard errors for the NRS, for whom the treatment was randomised at the residential address level.

5 Results

5.1 Main results

Table 3 shows the regression estimates. We do not find any statistically significant effects on the individuals who were randomised to the information treatment, regardless of whether they also received a choice form or not. Most estimates are small in magnitude; this is most evident for the estimated ASTEs (which is the average of standardised coefficients) in Panel A,[10] and for the estimates of specialist outpatient visits and inpatient episodes in Panels B-C. When it comes to ACSC hospitalisations (Panel D), the estimated magnitudes are larger: For the PRS, the estimates in both treatment arms correspond to around a 3 percent decrease relative to the mean (i.e., -.002 compared to the control group mean of .065). For the NRS excluding recent immigrants, the estimate is likewise large, but goes in the other direction, indicating a 25 percent increase relative to the mean (.005 compared to .020). Notably though, neither of the ACSC estimates are precise enough to rule out sizeable relative *decreases* with a 95 percent confidence interval.

Although the table reports the results separate for the two treatment arms in the PRS, we also perform analyses using a joint treatment definition (as specified in the pre-registered plan). All coefficients are still statistically insignificant with such a specification: the ASTE equals .0028 (s.e.=.0036); for specialist visits, $\beta = -.0076$ ($s.e. = .0057$); for inpatient episodes, $\beta = -.0021$ ($s.e. = .0047$); and for ACSC episodes, $\beta = -.0016$ ($s.e. = .0029$).

As almost all of the PCQ indicators are binary, we also perform a robustness check in which we standardised the treatment effect on each variable by the con-

[10] Only three of the underlying 94 SUR estimates in the three samples are statistically significant. The underlying SUR estimates are shown in online appendix D.

Table 3: Estimation results

	Panel A: ASTE		
	(1)	(2)	(3)
info	0.0032		
	(0.0069)		
info&form	0.0027	-0.0052	0.0019
	(0.0041)	(0.0085)	(0.0106)
	Panel B: Specialist visit		
info	0.0054		
	(0.0111)		
info&form	-0.0119	0.0158	0.0170
	(0.0065)	(0.0144)	(0.0176)
	Panel C: Inpatient episode		
info	-0.0007		
	(0.0092)		
info&form	-0.0026	-0.0062	0.0049
	(0.0054)	(0.0080)	(0.0100)
	Panel D: ACSC episode		
info	-0.0016		
	(0.0056)		
info&form	-0.0015	0.0004	0.0052
	(0.0033)	(0.0034)	(0.0046)
N	69,744	4,852	3,157

Note: Panel A shows the average standardised treatment effects (ASTE) for process quality measures. Panels B-C show estimates from linear probability models of indicators for having at least one outpatient specialist visit, one inpatient episode, or one inpatient episode with an ACSC condition during the post-intervention period. Estimates for population representative sample (column 1), new residents (col. 2) and new residents excluding recent immigrants (col. 3). Standard errors in parentheses (clustered by individual (PRS) or address (NRS)). *** p<0.001, ** p<0.01, * p<0.05.

trol group mean instead of the standard deviation. The results are qualitatively unchanged. In the PRS, the ASTE equals .0173 (s.e. .0456) for the *info* treatment arm and .0214 (s.e. .0272) for the *info & form* arm. In the NRS, the ASTE equals -.0156 (s.e. .1319) when recent immigrants are included, and .1174 (s.e. .1696) otherwise. Neither of these estimates are statistically significant at the 95% level.

The PCQ indicators may be more relevant for individuals with conditions

that correspond to one or more process quality measures (i.e., the individuals labeled 'at risk' in section 3.3). We therefore estimate our main specification using samples restricted to at-risk individuals. All estimates are insignificant also in these samples. The coefficients are mostly small, and not systematically indicating beneficial or harmful effects for any treatment (see online appendix E). Thus, these results strengthens our belief that the treatments had no substantial effects on the received clinical quality of care.

5.2 Exploratory analyses

There are several possible reasons why we find no treatment effect on the studied care quality measures. One possibility is that the examined outcome measures were irrelevant to the subgroup of treated individuals who reacted to the intervention. To gauge the importance of this explanation, we examine how the intervention affected the probability of switching providers for the individuals labeled 'at risk' in section 3.3). We estimate a variant of Eq. (1) in which the dependent variables is a binary indicator equal to one if the individual switched providers at least once during the 36 (PRS) or 20 (NRS) weeks after the intervention (the same outcomes as in Anell et al., 2021), and in which the treatment dummies are interacted with the dummy having a diagnosis relevant for a process quality measure ($AtRisk$).

The results in Table 4 show that there is no significant difference between at-risk and not-at-risk individuals in the treatment effect on switching rates. If anything, the estimates are larger for the at-risk individuals.

Another possible explanation is that the intervention may not have induced choices of better PCCs. To examine this explanation, we revisit the ASTE framework, this time looking at the difference in each process quality measure – aggregated at the PCC-level – between the PCC at which the individual was registered at the randomisation date and the PCC at the end of follow up.[11] When computing the PCC-level versions of the process quality measures, we take the average over the individuals in the control arm who were listed at the PCC at the date of randomisation, and we adjust the PCC-level measures for systematic differences in the age, gender, and foreign background of enrolled patients.

Table 5 shows that the interventions did not induce choices of PCCs with higher clinical quality.[12] This null result could be explained by a lack of over-

[11] This is a similar approach as the one used in Anell et al. (2021) to evaluate treatment effects on the characteristics of chosen providers. We code the difference as zero for individuals who were no longer enrolled at a PCC at the end of follow-up or had switched to one of the two recently established PCCs.

[12] Only two of the underlying 94 SUR estimates in the three samples are statistically significant

Table 4: Probability of switching PCC

	PRS (1)	NRS (2)	NRS EXCL. (3)
info	0.0088		
	(0.0085)		
info&form	0.0124*	0.0312**	0.0297*
	(0.0051)	(0.0095)	(0.0116)
AtRisk	0.0080***	0.0751***	0.0519**
	(0.0019)	(0.0162)	(0.0177)
info × *AtRisk*	0.0118		
	(0.0138)		
info&form × *AtRisk*	0.0017	-0.0054	0.0254
	(0.0080)	(0.0235)	(0.0272)
p: Total ME info	0.0588		
p: Total ME *info&form*	0.0218	0.2428	0.0278
N	69,744	4,852	3,157

Note: The table presents results from estimations of the heterogeneity in the probability of switching provider. Estimates for population representative sample (column 1), new residents (col. 2) and new residents excluding recent immigrants (col. 3). *AtRisk* is a dummy variable equal to one if the individual had a condition relevant for a process quality measure. (30,677 (PRS) and 1,091 (NRS)). *p* total ME... shows p-values for the total marginal effect for individuals with *AtRisk*=1. Robust standard error for PRS and cluster-robust standard errors for NR. *** p<0.001, ** p<0.01, * p<0.05.

lap between the information on the leaflets and the quality measures we study. In online appendix G, we show the correlation between all leaflet and PCQ indicators. Indeed, the correlations between leaflet indicators, between PCQ indicators, and between leaflet and PCQ indicators are overall low. The low average correlations may have hampered individuals from choosing PCCs that on average performed better in dimensions not explicitly mentioned on the leaflet.[13]

There are a few leaflet indicators – continuity of care, satisfaction with waiting times and willingness to recommend one's PCC – that are highly correlated with the PCQ indicator of continuity of care (correlations range between 0.40 to 0.51). The estimates in Anell et al. (2021) indicate that treated individuals chose

($p < 0.05$). We show these estimates in online appendix F.

[13]The *info* group chose significantly better PCCs in terms of the leaflet indicators (Anell et al., 2021), so low average correlations between indicators is not a sufficient condition for the null effects. In general, average quality need not determine the received quality of care for the individual patient.

Table 5: ASTE for difference in PCC-level PCQ measures

	(1)	(2)	(3)
info	-0.0060		
	(0.0087)		
info&form	0.0054	0.0003	0.0157
	(0.0052)	(0.0057)	(0.0170)
N	69,744	4,852	3,157

Note: The table shows the average standardised treatment effects (ASTE) for the differences between pre-intervention and follow-up values of each process quality measure, aggregated at the provider level (primary care center) after adjustment for age group, gender and foreign background. For each individual and measure, the difference is taken between the value for the PCC at which one was registered at the date of randomisation and the PCC at which one was registered at the follow-up date. The PCC-level values are calculated using the control group of the PRS. Individuals that were no longer registered at a PCC at the follow-up date, and individuals who switched to a newly established PCC during follow-up, are assigned the values of their original provider (and thus the differences = 0 for these individuals). Estimates for population representative sample (column 1), new residents (col. 2) and new residents excluding recent immigrants (col. 3). Standard errors in parentheses (clustered by individual (PRS) or address (NRS)). *** p<0.001, ** p<0.01, * p<0.05.

PCCs with higher values on the two patient satisfaction measures (see Appendix L in Anell et al. (2021)). Nonetheless, the SUR estimate for the PCQ continuity indicator is statistically insignificant (Table F). This suggests that individuals might not have been sufficiently responsive to the information about those measures that did overlap.

6 Concluding remarks

There are hopes that healthcare markets can be improved by decreasing market frictions. The interventions we study, which increased individuals' access to information and reduced switching costs, have previously been shown to increase switching rates, affect measures of care and drug consumption, and, for one treatment group, induce choices of providers with higher ratings on subjective quality indicators (see Anell et al., 2021). In this study, we show that the interventions did not improve the received clinical quality of care over a follow-up period of up to 44 months. The clinical quality measures covered process, structural, and outcome quality, related to a broad spectrum of health conditions, and showed considerable variation across providers. Thus, the interventions could in principle have had an effect on these measures

Our exploratory analyses provide guidance to these results. The subset of individuals for whom the studied quality measures were more relevant were not less responsive to the interventions. Instead, our leading explanation is that the interventions did not induce choices of higher quality providers, as measured by the clinical quality indicators. In turn, this may be related to the small overlap between the clinical indicators and those on the leaflet, and to low responsiveness to information about the measures that did overlap.

Our results highlight the challenges associated with efforts to reduce market frictions when the goal is to improving the quality of primary care. The results do not imply that policymakers should disseminate clinical quality information at the expense of information about softer quality indicators. The outcome variables in this study do not capture softer but relevant quality dimensions such as waiting times or physician communication skills; it is possible that the interventions improved patient experiences in these regards. Further, the correlations between softer and clinical quality measures vary between both contexts and measures (Doyle, Lennox and Bell, 2013; Glenngård, 2021; Placona and Rathert, 2021). Where soft and clinical quality measures are more strongly correlated, similar information leaflets may help individuals to choose providers with high clinical quality.

A fundamental problem of healthcare markets is that measures that are viewed as important by the medical profession and policymakers may not be observed or valued by the population at large. Previous studies indicate that individuals are interested in softer quality information – such as the one included on the leaflets (Marshall et al., 2006; Hoffstedt, Fredriksson and Winblad, 2021).[14] An avenue for future research is therefore to examine if disseminating information about clinical quality, as a substitute or complement to softer information, improves the received quality of care. Another way forward might be to better exploit data from electronic health records to tailor individualised information on provider performance on a set of relevant clinical measures, perhaps even suggesting a "best match" for the individual based on his/her health problems.

Lastly, making information publicly available may change provider behavior. Reviews indicate that public reporting is associated with better health outcomes (Fung et al., 2008; Ketelaar et al., 2011; Totten et al., 2012; Mukamel, Haeder and Weimer, 2014). Our study design excludes supply side responses to the in-

[14] The literature on patient choice and competition in primary care suggests that increasing choice and competition primarily affect measures related to patient satisfaction and not clinical outcomes (e.g., Gravelle et al., 2019; Dietrichson, Ellegård and Kjellsson, 2020). Notably, such results were obtained also in the UK (Gravelle et al., 2019), where more information about the clinical primary care quality is publicly available than in Sweden (see e.g., qof.digital.nhs.uk/search/index.asp).

terventions, but taken together with results from studies isolating provider responses (Kolstad, 2013; Godager, Hennig-Schmidt and Iversen, 2016), our results suggest that provider reactions may be more important for the relationship between public reporting and health outcomes. Given the complexity of demand and supply side connections, field experiments that vary the supply of information to individuals and providers within and between healthcare markets would be very valuable.

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Appendix A Leaflet example

The subsequent two pages include an example of a leaflet from the treatment arm with a choice form in the intervention to the population-representative sample (i.e., *info&form*). The leaflet was a folded paper in A4 format with the comparative information about four PCCs printed on the centerfold. On the next page, the left margin shows the leaflet's back page and the right margin shows the front page. The page thereafter shows the centerfold.

The information in the centerfold was the same in the two experiments, with the exception that some quality indicators were updated before the intervention to new residents, and that the information about opening hours during non-office hours was somewhat more detailed.

The layout of the leaflet was exactly the same in all interventions. Right after the example leaflet, we provide English translations of the texts printed on the leaflets in each intervention.

Så här byter du vårdcentral:

- genom att lämna in den bifogade blanketten till den vårdcentral du vill lista dig hos, eller skicka den med posten (porto är betalt)
- genom Region Skånes e-tjänst Mina vårdkontakter

Mer information om Mina vårdkontakter samt möjlighet att skriva ut valblanketter finns på 1177.se:

www.1177.se/Skane/Regler-och-rattigheter/Valja-vardcentral/

På 1177.se kan du också jämföra fler vårdcentraler via tjänsten ”Hitta och jämför vård”.

Om du inte gör något nytt val står du kvar som listad på din nuvarande vårdcentral.

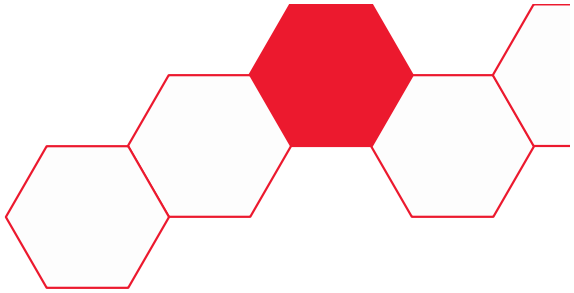
Region Skåne
291 89 Kristianstad
Telefon: 044-309 30 00
Skane.se

Du vet väl om att du kan välja?

Du som bor i Skåne är listad på en vårdcentral. Du kan själv välja vilken vårdcentral du vill gå till. Vårdcentral väljer du genom att lista dig och du kan när som helst byta till en annan vårdcentral.

Du behöver inte vara listad vid den vårdcentral som ligger närmast ditt hem. Du kan till exempel välja en som ligger nära ditt jobb eller en som erbjuder en verksamhet som passar dig och dina behov.

För att du ska kunna hitta den vårdcentral som passar dig bäst är det viktigt att jämföra olika vårdcentraler med varandra. På nästa sida hittar du information om den vårdcentral som du är listad hos idag och de tre vårdcentralerna som ligger närmast denna.



	Berga Läkarhus	Vårdcentralen Stattena	Vårdcentralen Drottninghög	Vårdcentralen Tågaborg
Adress	Rundgången 26 25452 Helsingborg	O D Krooks g. 53 25443 Helsingborg	Blåkullag. 11C 25457 Helsingborg	Tågag. 38 25439 Helsingborg
Telefonnummer	042-15 50 00	042-406 04 00	042-406 02 20	042-406 08 20
Filial	Nej	Nej	Nej	Nej
Ägare	Privat	Region Skåne	Region Skåne	Region Skåne
Antal listade	9 961	10 305	8 598	5 472
Öppettider (besök)	Må-Fr 8-17	Må-Fr 8-17	Må-Fr 8-17	Må-Fr 8-17
Jourtider (besök och telefon)	Lö-Sö 10-15	Må-Fr 17-20 Lö-Sö 10-20	Må-Fr 17-20 Lö-Sö 10-20	Må-Fr 17-20 Lö-Sö 10-20
Jourvårdcentral	Lö: Ödåkra Läkargrupp Sö: på vårdcentralen	Sjukhusområdet i Helsingborg	Sjukhusområdet i Helsingborg	Sjukhusområdet i Helsingborg
Rekommenderas av andra?				
Patientomdöme från 0 till 100*	87	80	69	75
Hur upplevs väntetiden för att få träffa en läkare?				
Patientomdöme från 0 till 100*	75	70	70	66
Är det enkelt att få kontakt via telefon?				
Andel telefonsamtal som besvaras inom 2 timmar	87%	93%	90%	98%
Får du träffa samma läkare?				
Andel patienter som fått träffa samma läkare vid minst hälften av sina besök**	76%	52%	54%	48%
God läkemedelsförskrivning för äldre?				
Uppfyller vårdcentralen Region Skånes mål?	Nej	Nej	Ja	Nej
Vårdcentralen erbjuder även				
Minnesmottagning (demensutredning)	✓	✓	✓	
Äldremottagning				
Astma/KOL-mottagning	✓	✓		
Hjärtsviktsmottagning		✓	✓	
Psykolog				
Gynekolog		✓	✓	
Kiropraktor				
Naprapat	✓			
Inom 100 meter från vårdcentralen finns även:				
Barnavårdcentral	✓	✓	✓	✓
Barnmorskemottagning	✓			

* Patientomdömena kommer från Nationell patientenkät. Omdömena mäts på en skala där 0 är sämsta möjliga utfall och 100 är bästa möjliga. För mer information, se "Hitta och jämför vård" på 1177.se.
** Gäller patienter som gjort tre eller fler besök senaste året.

Translation of leaflet: PRS treatment with choice form

Front page:

You know that you have a choice?

As a resident in Skåne, you are enrolled at a care center. You may choose which care center you want to go to. You choose by enrolling at a care center, and you can switch to another at any time.

You do not have to be enrolled at the care center closest to your home. For example, you can choose a care center close to your job or one that offers services that suit you and your needs.

In order to find the care center that suits you best, it is important to compare different care centers with each other. On the next page you will find information about the care center you are enrolled at today and the three care centers closest to it.

Back page:

How to change care center:

- submit the attached form to the care center at which you wish to enrol, or send it by mail (postage is paid).
- use Region Skåne e-service My Care Contacts.

More information about My Care Contacts is available at 1177.se, where you can also print a choice form:

www.1177.se/Skane

At 1177.se, you also compare more care centers via the "Find and compare care" service. If you do not make a new choice, you will remain enrolled at your current care center.

Translation of leaflet: PRS treatment without choice form

Front page:

You know that you have a choice?

As a resident in Skåne, you are enrolled at a care center. You may choose which care center you want to go to. You choose by enrolling at a care center, and you can switch to another at any time.

You do not have to be enrolled at the care center closest to your home. For example, you can choose a care center close to your job or one that offers services that suit you and your needs.

In order to find the care center that suits you best, it is important to compare different care centers with each other. On the next page you will find information about the care center you are enrolled at today and the three care centers closest to it.

Back page:
How to change care center:

- hand in (directly or by mail) a choice form to the care center at which you wish to enrol.
- use Region Skåne e-service My Care Contacts.

More information about My Care Contacts is available at 1177.se, where you can also print a choice form:

www.1177.se/Skane

At 1177.se, you also compare more care centers via the "Find and compare care" service. If you do not make a new choice, you will remain enrolled at your current care center.

Translation of leaflet: New residents

Front page:
You know that you have a choice?
As a resident in Skåne, you can choose which care center you want to go to. You choose by enrolling at a care center. If you do not make an active choice, you are automatically enrolled at the care center closest to your home. When you moved to Skåne you received a letter indicating which care center that is.

You do not have to be enrolled at the care center closest to your home, and you can switch to another at any time. For example, you can choose a care center close to your job or one that offers services that suit you and your needs.

In order to find the care center that suits you best, it is important to compare different care centers with each other. On the next page you will find information about the care center you are enrolled at today and the three care centers closest to it.

Back page:
How to change care center:

- submit the attached form to the care center at which you wish to enrol, or send it by mail (postage is paid).
- use Region Skåne e-service My Care Contacts.

More information about My Care Contacts is available at 1177.se, where you can also print a choice form:

www.1177.se/Skane

At 1177.se, you also compare more care centers via the "Find and compare care" service. If you do not make a new choice, you will remain enrolled at your current care center.

Translation of leaflet: Centerfold (all treatment arms)

- Address
- Phone number
- Owner
- Number of enrolled patients
- Regular opening hours (visits)
- Opening hours during non-office hours
- Non-office hour care center
- Recommended by others?
  - Patient rating from 0 to 100*
- Perceptions of waiting time to see a doctor?
  - Patient rating from 0 to 100*
- Is it easy to contact the care center by phone?
  - Share of calls that are answered within 2 hours
- Will you see the same doctor?
  - Share of patients who have seen the same GP on at least half of previous visits**
- Appropriate drug prescriptions to elderly?
  - Does the care center fulfil Region Skåne's targets?
- The care center also offers:
  - Memory clinic (dementia investigation)
  - Elderly clinic
  - Asthma/COPD clinic
  - Heart failure clinic
  - Psychologist
  - Gynecologist
  - Chiropractor
  - Naprapath

- Within 100 meters from the care center, there is also:
  - Child health center
  - Midwife clinic

* Patient rating from the National Patient Survey. The ratings are measured on a scale where 0 represents the worst possible rating and 100 is the best possible rating. For more information, see "Find and compare care" att 1177.se

** Concerns patients with at least three visits during the last year.

Appendix B Definition of PCQ process indicators

B.1 Selection and operationalisation

In constructing the process quality measures, we adhered as closely as possible to the official definitions of PCQ indicators. However, it was necessary to make some adaptions to fit our setting:

- The PCQ indicators are aggregate measures at the primary care center level. Because the share of treated individuals in our interventions is too small to have any effect on aggregate measures, we have constructed disaggregated (individual-level) versions of the measures.

- Several of the PCQ indicators rely on information from electronic medical records (EMR). We have no access to electronic medical records, and thus cannot use such indicators. (We are able to construct PCQ indicators that use information on diagnoses, drug consumption, and/or date and type of care contacts. Such information is available in the administrative care registers that we have access to.)

- For lifestyle indicators, we included all individuals instead of all individuals with chronic illnesses. We believe that the indicators, which mainly capture documented lifestyle advice, are of relevance for a broader set of patients than only those with chronic conditions.

- Several PCQ indicators follow cohorts of patients diagnosed within a rolling period of time. We chose to make two versions of indicator using diagnosis information: one version in which we followed individuals who were diagnosed already in the pre-period (5 years before the intervention), and one in which we followed individuals who received their first diagnosis after the intervention.

- For pre-determined chronic conditions, we divided the follow-up period into segments of either 12, 21 or 22 months, depending on the measure

(12/22 were for indicators using drug data, 21 for indicators using care contact data). Thus, we had up to 3 post-intervention measures for a given individual.

- For first diagnoses set after the intervention, we only included one follow-up period, of either 21 (follow-up visit indicators) or 22 (drug indicators) months after the first diagnosis.
- We included as many as possible of the PCQ indicators. Nonetheless, we made some exclusions:
  - Some PCQ indicators are very similar to each other. For instance, the frequency of follow-up visits for heart failure patients is a component in two of the PCQ measures ('Prioritering', i.e., prioritisation, and 'Samverkan', i.e., coordination of care). We excluded duplicates of indicators.
  - We also excluded indicators that have an ambiguous interpretation from the point of view of patients. For instance, there is a number of PCQ indicators relating to antibiotics prescriptions. The primary goal of these indicators is to monitor the PCCs' management of the antibiotic resistance threat. Although all individuals benefit from low antibiotic resistance, any given antibiotic treatment has a negligible effect on the development of resistance, and thus the indicator is an ambiguous measure of quality from the perspective of individual patients. In other cases, the indicator is just included in the PCQ initiative to help PCCs monitor the use of certain treatment options, with no specific desired direction.

B.2 List of indicators

Advice on Tobacco habits =1 if patient has been given "tobacco habits advice" according to the register. Follow up period= 42 month post intervention **The original PCQ indicator is named** Le3 **Deviation from the PCQ definition:** Longer follow-up-period, longer period for registering diagnoses, and not restricting measure to individuals with specific diagnoses.

Advice on physcial activity =1 if patient has been given "physical activity advice" according to the register. **Follow up period=** 42 month post intervention **The original PCQ indicator is named** Le7 **Deviation from the PCQ definition:** Longer follow-up-period, longer period for registering diagnoses, and not restricting measure to individuals with specific diagnoses.

Advice on alcolhol habits =1 if patient has been given "alcohol habits advice" according to the register. **Follow up period=** 42 month post intervention **The original PCQ indicator is named** Le9 **Deviation from the PCQ definition:** Longer follow-up-period, longer period for registering diagnoses, and not restricting measure to individuals with specific diagnoses.

Advice on eating habits =1 if patient has been given "eating habits advice" according to the register. **Follow up period=** 42 month post intervention **The original PCQ indicator is named** Le11 **Deviation from the PCQ definition:** Longer follow-up-period, longer period for registering diagnoses, and not restricting measure to individuals with specific diagnoses.

Continuity of care Continuity of care (COC) index for primary care physician visits. For each individual, the COC index is calculated as $COC = \frac{\sum_p^P n_p^2 - N}{N(N-1)}$, where n_p is the number of times the individual visited physician p and N is the total number of primary care physician visits. For individuals with no physician visits, we imputed a COC value, i.e., the deviation from the PCC-level average COC of the PCC at which the individual was registered at the time of the information intervention (Feb 2015). **Follow up period=** 42 month post intervention **The original PCQ indicator is named** Ko5 **Deviation from the PCQ definition:** Longer follow-up-period. Imputation of values for patients with no visits.

Follow-up of pre-intervention chronic patients = 1 if patient is diagnosed with chronic illness/condition pre-intervention and has at least one registered eye-to-eye nurse or physician-visit with SAME diagnosis during each 21 month-period after the intervention. Include diagnoses set pre-intervention in either inpatient or outpatient care. Include only revisits in outpatient care. See list of relevant diagnoses in sheets for chronic conditions (Heart failure List 1, IHD List 1 TIA/Stroke List 2 COPD List 1 Hypertension list 1 Cardiac arrhythmia list 1 Diabetes List 1 dementia List 1 Osteoporosis List 1 Asthma List 1) **Follow up period=** 2 periods* 21 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** SA1/SA2+As1 **Deviation from the PCQ definition:** Longer follow-up-period. Use any outpatient care visit. Asthma list 1 irrespective of pharmaceutical use.

New chronic diagnosis with follow-up = 1 if patient was diagnosed with chonic illness/condition in a time window starting after the intervention and ending 21 months before the end of

follow-up AND has at least one registered eye-to-eye visit at a GP or other primary care staff category with SAME diagnosis within 21 months of the first diagnosis. See above for list of diagnoses. **Follow up period=** 1 period* 21 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** SA1/SA2+As1 **Deviation from the PCQ definition:** Longer follow-up-period. Use any outpatient care visit. Asthma list 1 irrespective of pharmaceutical use.

Appropriate prescriptions for elderly = 1 if Patient is above 75 years of age & has NOT picked up prescribed pharmaceutical on the "black list" **Follow up period=** 2 periods* 22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** Äld1 **Deviation from the PCQ definition:** Longer follow up (21 instead of 18).

Appropriate prescriptions of anxiolytics (N05B) and Hypnotics and sedatives (N05C). = 1 if (Patient is 18-75 years of age and has not during any 12 month period (during the 42 month after the intervention) been picking up on average> 0.5 DDD PER DAY of (N05CF Benzodiazepine related drugs, N05CD05 Halcidon/Triazolam, N05CD02 Nitrazepam) OR (N05BA Benzodiazepine derivatives) OR (N05CD03 Flunitrazepam unless the patient has epileptic cramps diagnosis)) OR (Patient is above 75 years of age & patient has not been prescribed any drug from N05B (except oxazepam) & patient has not been prescribed any drug from N05C (except N05CF01 Zopiklon)) OR patient is below 75 years of age. **Follow up period=** 1 period 42 month **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Äld2+Äld3+Lm4+LM5 **Deviation from the PCQ definition:** To reduce number of indicators, we only use PCQ indicators of high doses, not indicators of any dose of the same drug.

NSAID to patients with elevated risk for cardiovascular events = 1 if patient had a registered diagnosis in coronary heart disease (ICD I20-I25) or diabetes (List 1) during pre-intervention period and has not picked up prescription of M01 Anti-inflammatory and antirheumatic products (NSAID) OR patient does not have IHD or diabetes **Follow up period=** 3 periods*12 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Lm2. **Deviation from the PCQ definition:** None.

Appropriate prescriptions for patient with dementia (pre-intervention) = 1 if patient has alzheimers diagnosis (dementia list 2) pre-intervention and has been prescribed N06D (dementia drugs) at least once per 21 month period and has not picked up any prescribed drug from N05A during this period. **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Dem2+Dem4 **Deviation from the PCQ definition:** None.

Appropriate prescriptions for patient with dementia (post-intervention) = 1 if patient has first observed alzheimers (dementia list 2) diagnosis post-intervention and has been prescribed N06D (dementia drugs) at least once in the following 21 month after first diagnosis

and has not picked up any prescribed drug from N05A during this period. **Follow up period=** 1 period*22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** Dem2+Dem4 **Deviation from the PCQ definition:** None.

Relevant treatment of atrial fibrillation (pre-diagnosis) = 1 if Patient has been diagnosed with diagnosed atrial fibrillation (pre-diagnosis) & has ChadsVASC scoregeq2 & and has picked up prescribed anticoagulantia OR has been diagnosed with diagnosed cardiac arrythmia (pre-diagnosis) & ChadsVASC score=0 & and has NOT picked up anticoagulantia. (See explanation for ChadsVASC score in sheet) **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Fö27 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18).

Use of beta blockers for heart failure (pre-diagnosis) = 1 if patient has pre-intervention diagnosis (heart failure) and has picked up beta-blockers (C07) **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** HJ2 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18).

Use of beta blockers for heart failure (post diagnosis) = 1 if patient has first heart failure diagnosis after intervention and has picked up beta-blockers (C07) during 12 months after first diagnosis. **Follow up period=** 1 period*22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** HJ2 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18).

Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (pre-diagnosis) =1 if patient has pre-intervention diagnosis of IHD and has picked up (B01AA03 Warfarin; B01AE07 Dabigatranetexilat; B01AF01 Rivaroxaban; B01AF02 Apixaban; B01AC04 Klopidogrel; B01AC06 Acetylsalicylsyra; B01AC22 Prasugrel; B01AC24 Ticagrelor) at least once during 12 months **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Kr4 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18).

Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (post-diagnosis) =1 if patient has first diagnosis (IHD) post intervention and has picked up (B01AA03 Warfarin; B01AE07 Dabigatranetexilat; B01AF01 Rivaroxaban; B01AF02 Apixaban; B01AC04 Klopidogrel; B01AC06 Acetylsalicylsyra; B01AC22 Prasugrel; B01AC24 Ticagrelor) at least once during the 12 months after first diagnosis **Follow up period=** 1 period*22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** Kr4 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18). Uses the period directly after a new diagnosis.

Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD). Pre-intervention diagnosis =1 if patient has pre-

intervention diagnosis (heart failure or ischemic heart disease) and has picked up C09 (excluding C09X) at least once during 12 months **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** Kr6 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18).

Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD). Post-intervention diagnosis =1 if patient has first diagnosis (heart failure or ischemic heart disease) after intervention and has picked up C09 (excluding C09X) at least once during the 12 months after first diagnosis **Follow up period=** 1 period*22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** Kr6 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18). Uses the period directly after a new diagnosis.

Use of statins for relevant diagnoses (TIA or stroke, diabetes type 2, ischemic heart disease). Pre-intervention diagnosis. =1 if patient has pre-intervention diagnosis (any in TIA/Stroke , diabetes type 2 (List 2) or ischemic heart disease) and has picked up statins (C10AA) **Follow up period=** 2 periods*22 months **The indicator uses diagnoses measured during** pre* **The original PCQ indicator is named** T/S2+Kr3+ Di4 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18)

Use of statins for relevant diagnoses (TIA or stroke, diabetes type 2, ischemic heart disease). Post-intervention diagnosis =1 if patient has first diagnosis of TIA or stroke, diabetes type 2 or ischemic heart disease after intervention and has picked up statins (C10AA) during the 12 months following the first intervention. **Follow up period=** 1 period*22 months **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** T/S2+Kr3+ Di4 **Deviation from the PCQ definition:** Longer follow up (22 instead of 18). Uses the period directly after a new diagnosis.

Physical examination of suspected infections =1 if patient has eye-to-eye contact with diagnosis otitis media/pneumonia/acute cystitis without having a previous "non-physical contact" within this episode; episode =18 months **Follow up period=** 1 period (at least one event during 42 months) **The indicator uses diagnoses measured during** post **The original PCQ indicator is named** Inf32+Inf33+Inf34 **Deviation from the PCQ definition:** Original measure is an aggregate share of patients with these diagnoses that got a physical examination. Ie, it does not include non-patients.

Short-term follow-up of depression =1 if patient has a new primary care contact (phone or eye-to-eye) with diagnosis code depression/anxiety within 6 weeks of first depression/anxiety diagnosis, where first=no previous contact with diagnosis depression or anxiety during the previous 18 months AND no registered consumption of antidepressants (N06A excluding N06AX12) during the previous 24 months. (See list of diagnoses in depression/anxiety sheet) **Follow up period=** 1 period (at least one event during 42 months) **The indicator**

uses diagnoses measured during pre/post **The original PCQ indicator is named** Dep4+Ån4 **Deviation from the PCQ definition:** None.

Relevant treatment of new depression/anxiety diagnosis = 1 if patient with a new depression/anxiety diagnosis (where new=no previous contact with diagnosis depression or anxiety during the previous 18 months AND no registered consumption of antidepressants (N06A excluding N06AX12) during the previous 24 months) get relevant treatment. For list of diagnoses see list below. Relevant treatment: (a) any eye to eye visit with kvå-kod = KBT, IPT, PDT or b) a prescribed antidepressants with follow up visit (new eye-to-eye visit with diagnosis code depression/anxiety within of 6-12 months of first redemption of prescribed antidepressants in 24 months) **Follow up period=** 1 period (at least one event during 42 months) **The indicator uses diagnoses measured during** pre/post **The original PCQ indicator is named** Dep5+Dep6+Dep7+Dep8+ Ån5+Ån6 **Deviation from the PCQ definition:** None.

B.3 ATC codes, diagnosis codes, and definition of CHADsVASC score

Inappropriate drugs for elderly (ATC) N05BA01 N05CD02 N05CD03 N02AX02 N05CM06 N02AJ06 N02AJ09 R05DA04 A10BB01 A03AB A03BA A03BB A04AD C01BA G04BD exkl. G04BD12 M03BC01 M03BC51 N02AG N04A N05AA02 N05AB04 N05AF03 N05AH02 N05BB01 N06AA R06AA02 R06AA04 R06AE05 R06AD R06AB R06AX02

Anxiety F40.- F400 F401 F402 F402B F402F F402G F402W F408 F409 F410 F41.0 F41.1 F411 F412 F413 F418 F419 F419P F42.- F420 F421 F422 F428 F429 F431 F43.1

Asthma J450 J450A J450B J450W J451 J451A J451W J458 J459 J45-P J469

Atrial fibrillation I480 I481 I482 I483 I484 I489 I48-

COPD (ICD10/KSH97P) J440 J441 J448 J449 J449P J44P J44- J44.-

dementia, list 1 F000 F001 F002 F009 F01- F010 F011 F012 F013 F018 F019 F020 F021 F022 F023 F024 F028 F039 F03-P F107A G31.8 G31.1 G30- G300 G301 G308 G309

dementia, list 2 (Alzheimers) F000 F001 F002 F009 G30- G300 G301 G308 G309

Depression F32- F320 F321 F322 F328 F329 F33- F330 F331 F332 F333 F334 F338 F339 F341 F348 F349 F380 F381 F388 F399 F39-P F412

Diabetes, list 1 (ICD10/KSH97P) E100 E100A E100B E100C E100D E100X E101 E101A E101B E101D E101X E102 E102A E102B E102C E102W E102X E103 E103A E103B E103C E103D E103E E103F E103W E103X E104 E104B E104C E104D E104E E104W E104X E105 E105A

E105B E105W E105X E106 E106A E106D E106E E106F E106G E106W E107 E108 E109 E108P E109 E110 E110A E110B E110C E110D E110X E111 E111A E111B E111D E111X E112 E112A E112B E112C E112W E112X E113 E113A E113B E113C E113D E113E E113F E113W E113X E114 E114B E114C E114D E114E E114W E114X E115 E115A E115B E115W E115X E116 E116A E116D E116E E116F E116G E116W E117 E118 E118P E119 E119 E130 E131 E132 E133 E134 E135 E136 E137 E138 E139 E140 E141 E142 E143 E144 E145 E146 E147 E148 E149 E14-P

Diabetes, list 2 (ICD10/KSH97P) E110 E110A E110B E110C E110D E110X E111 E111A E111B E111D E111X E112 E112A E112B E112C E112W E112X E113 E113A E113B E113C E113D E113E E113F E113W E113X E114 E114B E114C E114D E114E E114W E114X E115 E115A E115B E115W E115X E116 E116A E116D E116E E116F E116G E116W E117 E118 E118P E119 E119 E130 E131 E132 E133 E134 E135 E136 E137 E138 E139 E140 E141 E142 E143 E144 E145 E146 E147 E148 E149 E14-P

Heart failure (ICD10/KSH97P) I110 I130 I132 I500 I501 I509 I50- I42.0 I42-P

Hypertension (ICD10/KSH97P) I10.9 I11.9 I12.0 I12.9 I13.1 I13.9 I15.0 I15.1 I15.2 I15.8 I15.9 I13-P I10- I15-

Infections (otitis media/pneumonia/acute cystitis) (ICD10/KSH97P) H660, H664, H669, H669P, N30-P, N300, N308, N309, N390X, O231, O862, J100, J110, J139, J149, J150, J151, J152, J153, J154, J155, J156, J157, J158, J159, J160, J168, J170, J180, J181, J182, J188

Ischemic Heart Disease (IHD) (ICD10/KSH97P) I20.0 I20.9P I20.0 I20.1 I20.8 I20.9 I21.-P I21.0 I21.1 I21.2 I21.3 I21.4 I21.4A I21.4B I21.4W I21.4X I21.9 I22.0 I22.1 I22.8 I22.9 I23.0 I23.1 I23.2 I23.8 I24.0 I24.1 I24.8 I24.9 I25.-P I25.0 I25.1 I25.2 I25.5 I25.6 I25.8 I25.9 I258 I259 I25-P

Osteoporosis M80.- M80.0 M80.0A M80.0B M80.0C M80.0E M80.0F M80.0G M80.0H M80.0J M80.0K M80.1 M80.2 M80.3 M80.4 M80.5 M80.8 M80.9 M81.- M81.0 M81.1 M81.2 M81.3 M81.4 M81.5 M81.6 M81.8 M81.9 M82.0* M82.1* M82.8*

TIA/Stroke (ICD10/KSH97P) G450 G451 G452 G453 G458 G459 I630 I631 I632 I633 I634 I635 I636 I638 I639 I649 I678 I679 I693 I694 I698 I63- G45-P I64- I67-P I69- Z866A Z866B Z867C I69.1 I610 I611 I612 I613 I614 I615 I616 I618 I619 I61-P I60.0 I60.1 I60.2 I60.3 I60.4 I60.5 I60.6 I60.7 I60.8 I60.9 I69.0 I69.0A I60.-

CHADSVASC score is based on the age, sex and diagnosis of an individual.

Age: ≤ 64 0 point; 65-74 1 point; ≥ 75 2 points

Sex: Male 0 point; Female 1 point

Diagnoses:

1 point for IHD List 1, HYPERTENSION List 1, HEART FAILURE List 1 or DIABETES List 1, or ICD10/KSH97P codes I70.9P I70.0 I70.1 I70.2 I70.2A I70.2C I70.2X I70.8 I70.9 I739 I739B I739P.

2 points for TIA/Stroke or ICD10/KSH97P codes I740 I741 I742 I743 I744 I745 I748 I749 I74-

Appendix C Ambulatory care sensitive conditions

Ambulatory care sensitive conditions are conditions for which many hospitalisations would be preventable given that the patient has access to well-functioning primary care. We defined an indicator variable for having at least one inpatient episode with such a condition as the main diagnosis in the 42 months following the intervention. For diabetes related diagnoses these also include contributing diagnoses (see list below).

We use the union of two definitions of ambulatory care sensitive conditions developed by the National Board of Health and Welfare (2013, 2014). [15] These definitions include chronic conditions, acute conditions and conditions of specific relevance to elderly patients.

[15] The two definitions are indicator 7 (Avoidable hospitalisations) in National Board of Health and Welfare (2013) and indicator 1 (Avoidable hospitalisations for individual above 65 year of age) in Appendix 2 (Bilaga 2) of National Board of Health and Welfare (2014).

	chronic conditions:
anemia	D501 , D508, D509
asthma	J45, J46
diabetes	E101-E108 (main or contributing diagnose)
	E110-E118 (main or contributing diagnose)
	E130-E138 (main or contributing diagnose)
	E140-E148 (main or contributing diagnose)
heart failure	I50,I110, J81
hypertension	I10, I119
COPD	J41, J42, J43, J44, J47
	J20 and J41, J42, J43, J44 or J47 as a contributing diagnose
angina	I20, I240, I248, I249
	acute conditions:
bleeding ulcers,	K250, K251, K252, K254, K255, K256
	K260, K261, K262, K264, K265, K266
	K270, K271, K272, K274, K275, K276
	K280, K281, K282, K284, K285, K286
diarrhea	E86, K522, K528, K529
epileptic seizures	O15, G40, G41, R56
pelvis inflammatory disease	N70, N73, N74
pyelitis	N390, N10, N11, N12, N136
ear, nose and throat infections	H66, H67, J02, J03, J06, J312
	conditions of specific relevance to elderly patients:
atrial fibrilliation	I48
Influenza & pneumonia	J09 J10, J11, J13, J14, J15, J16, J17, J18
urinary tract infections	N39, N109, N309

Appendix D SUR estimates of process quality indicators

Table D.1 shows the individual SUR estimates of all process quality indicators. The number of observations is larger than the number of individuals because we have multiple observations of some indicators (i.e., because we divided the follow-up period into 2-3 periods for some indicators). Note that the number of included indicators is smaller for new residents, as there is one indicator for which no new resident qualified (i.e., no one in the NR sample had dementia in the pre-period). The regressions are numbered as follows:

1	Tobacco advice
2	Exercise advice
3	Alcohol advice
4	Food advice
5	Continuity of care (COC index)
6	Follow-up visit, pre-intervention chronic
7	Follow-up visit, new chronic
8	Infection diagnosis with physical examination
9	Depression follow up
10	Depression relevant
11	No inappropriate N05B N05C
12	Appropriate IHD drug pre
13	Appropriate IHD drug post
14	Appropriate ACE ARB pre
15	Appropriate ACE ARB post
16	Appropriate statins pre
17	Appropriate statins post
18	No Inappropriate drugs elderly
19	Appropriate dementia drug post
20	IHD diabetes no NSAID
21	Atrial fibrillation and relevant treatment
22	Appropriate heartfail drug pre
23	Appropriate heartfail drug post
24	Appropriate dementia drug pre

Table D.1: SUR

	PRS	NRS	NRS excl.
	(1)	(2)	(3)
Regression 1			
info	-0.000238		
	(0.00459)		
info&form	-0.00466	-0.000405	-0.000298
	(0.00255)	(0.00599)	(0.00787)
Regression 2			
info	0.00676		
	(0.00627)		
info&form	0.00103	0.00149	-0.00240
	(0.00361)	(0.00500)	(0.00578)
Regression 3			
info	0.00240		
	(0.00379)		
info&form	-0.000236	0.00385	0.00293
	(0.00212)	(0.00526)	(0.00720)
Regression 4			
info	0.00447		
	(0.00597)		
info&form	0.00139	-0.00308	0.00259
	(0.00347)	(0.00484)	(0.00599)
Regression 5			
info	0.00590		
	(0.00611)		
info&form	-0.00126	-0.000854	-0.00290
	(0.00351)	(0.00613)	(0.00753)
Regression 7			
info	0.00722		
	(0.00637)		

Continued on next page

	(1)	(2)	(3)
info&form	-0.00106	0.00174	0.00950
	(0.00355)	(0.00564)	(0.00702)
Regression 11			
info	0.000369		
	(0.00505)		
info&form	-0.000302	-0.00208	-0.00321
	(0.00297)	(0.00201)	(0.00308)
Regression 23			
info	0.00528		
	(0.00355)		
info&form	0.000410	0.000517	0.0000989
	(0.00182)	(0.00123)	(0.00157)
Regression 13			
info	-0.000142		
	(0.00302)		
info&form	0.000299	0.00176	0.00340
	(0.00179)	(0.00227)	(0.00293)
Regression 15			
info	0.000802		
	(0.00337)		
info&form	0.00212	0.00147	0.00290
	(0.00203)	(0.00211)	(0.00276)
Regression 17			
info	0.000278		
	(0.00359)		
info&form	0.000291	0.00256	0.00595
	(0.00211)	(0.00305)	(0.00390)
Regression 8			
info	-0.00505		
	(0.00709)		
info&form	-0.00227	-0.0107	-0.0136
	(0.00424)	(0.00748)	(0.00925)
Regression 9			

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	(1)	(2)	(3)
info	0.000631		
	(0.00515)		
info&form	0.00354	-0.00915	-0.0135
	(0.00312)	(0.00601)	(0.00842)
Regression 10			
info	-0.00210		
	(0.00494)		
info&form	0.000606	-0.0119*	-0.0146
	(0.00300)	(0.00604)	(0.00840)
Regression 19			
info	0.000290		
	(0.00167)		
info&form	0.000381	-0.000381	-0.000648
	(0.000989)	(0.000731)	(0.00112)
Regression 6			
info	-0.000833		
	(0.00534)		
info&form	-0.000794	-0.00206	0.000628
	(0.00320)	(0.00299)	(0.00389)
Regression 18			
info	0.00137		
	(0.00324)		
info&form	0.00266	0.000504	0.000783
	(0.00181)	(0.00101)	(0.00150)
Regression 20			
info	0.00244		
	(0.00960)		
info&form	0.00396	-0.00517	-0.00559
	(0.00563)	(0.00878)	(0.0117)
Regression 22			
info	0.00129		
	(0.00260)		

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	(1)	(2)	(3)
info&form	0.000263	0.000168	0.000874
	(0.00149)	(0.000886)	(0.00119)
Regression 12			
info	-0.00671		
	(0.00420)		
info&form	0.0000182	-0.0000525	0.000513
	(0.00265)	(0.00142)	(0.00160)
Regression 14			
info	-0.00738*		
	(0.00371)		
info&form	0.000978	-0.000220	0.000276
	(0.00250)	(0.00125)	(0.00153)
Regression 16			
info	-0.0105*		
	(0.00522)		
info&form	-0.000614	-0.0000810	0.00110
	(0.00325)	(0.00147)	(0.00176)
Regression 21			
info	0.00488		
	(0.00367)		
info&form	0.00200	-0.000410	0.0000269
	(0.00200)	(0.000653)	(0.000789)
Regression 24			
info	-0.000694		
	(0.00119)		
info&form	0.000413		
	(0.000790)		
N	278,976	19,408	12,628

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	(1)	(2)	(3)

Notes. Seemingly unrelated regressions in which each dependent variable is a binary process quality indicator. Estimates by sample: population representative sample (PRS), new residents (NRS) and new residents excluding recent immigrants. Standard errors in parentheses (clustered by individual (PRS) or address (NRS)). *** p<0.001, ** p<0.01, * p<0.05.

Appendix E Robustness main results

Table E.1 presents results corresponding to the main specification (reported in Table 3) but using a sample restricted to individuals with diagnoses related to the PCQ-measures (i.e. $AtRisk$=1).

Table E.1: Estimation results

	Panel A: ASTE		
	(1)	(2)	(3)
info	0.0042		
	(0.0130)		
info&form	0.0093	-0.0018	0.0232
	(0.0078)	(0.0331)	(0.0384)
	Panel B: Specialist visit		
info	-0.0144		
	(0.0142)		
info&form	-0.0103	0.0007	0.0172
	(0.0083)	(0.0264)	(0.0311)
	Panel C: Inpatient episode		
info	-0.0018		
	(0.0163)		
info&form	0.0028	0.0014	0.0352
	(0.0098)	(0.0233)	(0.0266)
	Panel D: ACSC episode		
info	0.0044		
	(0.0122)		
info&form	-0.0003	0.0049	0.0203
	(0.0071)	(0.0128)	(0.0153)
N	30,611	1,109	793

Note: Estimates for subpopulation with *AtRisk*=1. Panel A shows the average standardised treatment effects (ASTE) for process quality measures. Panels B-C show estimates from linear probability models of indicators for having at least one outpatient specialist visit, one inpatient episode, or one inpatient episode with an ACSC condition during the post-intervention period. Estimates for population representative sample (column 1), new residents (col. 2) and new residents excluding recent immigrants (col. 3). Standard errors in parentheses (clustered by individual (PRS) or address (NRS)). *** p<0.001, ** p<0.01, * p<0.05.

Appendix F SUR estimates of process quality indicators of chosen PCC

Table F.1 shows the individual SUR estimates from the model of the difference in process quality before and after the intervention (PCC-level data with risk-adjustment of the quality score):

1	Tobacco advice
2	Exercise advice
3	Alcohol advice
4	Food advice
5	Continuity of care (COC index)
6	Follow-up visit, pre-intervention chronic
7	Follow-up visit, new chronic
8	Infection diagnosis with physical examination
9	Depression follow up
10	Depression relevant
11	No inappropriate N05B N05C
12	Appropriate IHD drug pre
13	Appropriate IHD drug post
14	Appropriate ACE ARB pre
15	Appropriate ACE ARB post
16	Appropriate statins pre
17	Appropriate statins post
18	No Inappropriate drugs elderly
19	Appropriate dementia drug post
20	IHD diabetes no NSAID
21	Atrial fibrillation and relevant treatment
22	Appropriate heartfail drug pre
23	Appropriate heartfail drug post
24	Appropriate dementia drug pre

Table F.1: SUR

	PRS	NRS	NRS excl.
	(1)	(2)	(3)
Regression 1			
info	-0.000136		
	(0.000150)		
info&form	0.0000999	0.0000966	0.0000407
	(0.0000938)	(0.000152)	(0.000205)
Regression 2			
info	0.000467		
	(0.000373)		
info&form	0.000269	-0.000620	-0.000497
	(0.000266)	(0.000430)	(0.000451)
Regression 3			
info	-0.0000916		
	(0.000134)		
info&form	0.000124	0.0000834	0.000174
	(0.0000923)	(0.000132)	(0.000184)
Regression 4			
info	0.000200		
	(0.000224)		
info&form	-0.00000959	-0.000136	-0.000203
	(0.000140)	(0.000225)	(0.000243)
Regression 5			
info	-0.000906		
	(0.000653)		
info&form	-0.000237	0.0000778	0.000970
	(0.000347)	(0.000566)	(0.000645)
Regression 6			
info	-0.000524		
	(0.000500)		

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	(1)	(2)	(3)
info&form	-0.0000147	-0.000191	-0.000548
	(0.000288)	(0.000498)	(0.000515)
Regression 7			
info	0.00000304		
	(0.000700)		
info&form	-0.000498	0.000822	0.000561
	(0.000408)	(0.000697)	(0.000822)
Regression 8			
info	0.000217		
	(0.000648)		
info&form	0.0000678	-0.000276	-0.000207
	(0.000381)	(0.000551)	(0.000617)
Regression 9			
info	-0.000380		
	(0.000617)		
info&form	0.0000797	0.000436	-0.0000205
	(0.000389)	(0.000693)	(0.000764)
Regression 10			
info	-0.000584		
	(0.000893)		
info&form	0.000525	0.00182*	0.00236*
	(0.000533)	(0.000881)	(0.00106)
Regression 11			
info	0.0000288		
	(0.0000926)		
info&form	0.0000250	0.0000353	0.000150
	(0.0000596)	(0.0000890)	(0.000105)
Regression 12			
info	-0.00115		
	(0.000669)		
info&form	0.0000846	-0.000134	0.000226
	(0.000421)	(0.000715)	(0.000786)
Regression 13			

Continued on next page

	(1)	(2)	(3)
info	-0.000411		
	(0.00137)		
info&form	0.000257	0.00272*	0.00303*
	(0.000775)	(0.00117)	(0.00150)
Regression 14			
info	-0.000663		
	(0.000928)		
info&form	0.000425	-0.000674	-0.00155
	(0.000515)	(0.000886)	(0.00109)
Regression 15			
info	0.000183		
	(0.00115)		
info&form	0.000343	-0.000268	-0.000256
	(0.000714)	(0.00116)	(0.00136)
Regression 16			
info	-0.000526		
	(0.000731)		
info&form	0.000165	-0.000128	0.0000745
	(0.000444)	(0.000801)	(0.000943)
Regression 17			
info	-0.000554		
	(0.00118)		
info&form	0.000606	0.000179	0.00190
	(0.000686)	(0.00111)	(0.00131)
Regression 18			
info	0.000225		
	(0.000596)		
info&form	-0.000168	0.000417	0.0000832
	(0.000345)	(0.000646)	(0.000704)
Regression 19			
info	0.00193		
	(0.00214)		

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	(1)	(2)	(3)
info&form	-0.000788	0.00149	0.000321
	(0.00122)	(0.00235)	(0.00276)
Regression 20			
info	-0.000691		
	(0.000543)		
info&form	-0.000644*	0.000185	-0.0000294
	(0.000326)	(0.000606)	(0.000701)
Regression 21			
info	0.000648		
	(0.00134)		
info&form	0.00117	0.000712	0.00152
	(0.000787)	(0.00121)	(0.00146)
Regression 22			
info	0.000893		
	(0.00150)		
info&form	0.000434	0.000860	0.000819
	(0.000894)	(0.00147)	(0.00156)
Regression 23			
info	-0.00241		
	(0.00181)		
info&form	0.00178	0.0000265	-0.00154
	(0.00101)	(0.00179)	(0.00183)
Regression 24			
info	0.00294		
	(0.00176)		
info&form	0.000922		
	(0.00114)		
N	69,744	4,852	3,157

Continued on next page

	(1)	(2)	(3)

Notes. Seemingly unrelated regressions in which each dependent variable is the difference between the value of a PCC-level process quality measure at the PCC were the individual was registered at the follow-up date and the corresponding value at the randomisation date. The PCC-level values are calculated using the control group of the PRS, adjusted for age group, gender and foreign background. Individuals that were no longer registered at a PCC at the follow-up date, and individuals who switched to a newly established PCC during follow-up, are assigned the values of their original provider (and thus the differences = 0 for these individuals). Estimates by sample: population representative sample (PRS), new residents (NRS) and new residents excluding recent immigrants. Standard errors in parentheses (clustered by individual (PRS) or address (NRS)). *** p<0.001, ** p<0.01, * p<0.05.

Appendix G Correlations between leaflet indicators and PCQ indicators

This appendix shows the correlations between indicators included on the leaflet sent out to treated individuals (Table G.1), between PCQ indicators (Table G.3), and between leaflet and PCQ indicators (Table G.4). The average correlations in the respective table are 0.00, 0.05, and 0.01 (excluding the indicators' correlations with themselves).

We abbreviated the indicator names to fit each table on one page. Each indicator is defined in the note to the respective table (see section B for more detailed definitions of the PCQ indicators).

Table G.1: Correlations between leaflet indicators

	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15
L1	1.00	0.61	0.38	0.23	0.18	-0.14	-0.14	0.05	-0.16	-0.39	-0.02	-0.33	-0.20	0.14	0.05
L2	0.61	1.00	0.50	-0.03	0.17	-0.13	-0.11	0.14	-0.08	-0.50	0.09	-0.26	0.02	0.10	-0.04
L3	0.38	0.50	1.00	0.11	-0.06	-0.19	-0.29	-0.10	-0.30	-0.33	0.23	-0.16	0.16	-0.07	-0.02
L4	0.23	-0.03	0.11	1.00	0.11	-0.01	0.08	-0.02	-0.14	0.12	-0.05	-0.10	-0.37	-0.06	-0.03
L5	0.18	0.17	-0.06	0.11	1.00	0.07	0.12	0.03	0.18	-0.14	-0.10	-0.10	-0.06	0.19	-0.11
L6	-0.14	-0.13	-0.19	-0.01	0.07	1.00	0.09	0.21	0.26	-0.04	0.09	0.13	-0.02	0.22	-0.10
L7	-0.14	-0.11	-0.29	0.08	0.12	0.09	1.00	0.17	0.20	0.32	-0.03	-0.08	-0.16	-0.27	-0.05
L8	0.05	0.14	-0.10	-0.02	0.03	0.21	0.17	1.00	0.13	-0.08	-0.11	0.11	-0.12	0.03	-0.15
L9	-0.16	-0.08	-0.30	-0.14	0.18	0.26	0.20	0.13	1.00	0.22	0.06	0.11	0.04	0.12	-0.11
L10	-0.39	-0.50	-0.33	0.12	-0.14	-0.04	0.32	-0.08	0.22	1.00	-0.23	0.09	-0.10	-0.11	0.03
L11	-0.02	0.09	0.23	-0.05	-0.10	0.09	-0.03	-0.11	0.06	-0.23	1.00	0.05	0.20	-0.12	0.09
L12	-0.33	-0.26	-0.16	-0.10	-0.10	0.13	-0.08	0.11	0.11	0.09	0.05	1.00	0.12	0.10	0.11
L13	-0.20	0.02	0.16	-0.37	-0.06	-0.02	-0.16	-0.12	0.04	-0.10	0.20	0.12	1.00	0.19	0.09
L14	0.14	0.10	-0.07	-0.06	0.19	0.22	-0.27	0.03	0.12	-0.11	-0.12	0.10	0.19	1.00	-0.05
L15	0.05	-0.04	-0.02	-0.03	-0.11	-0.10	-0.05	-0.15	-0.11	0.03	0.09	0.11	0.09	-0.05	1.00

Note. The table displays the correlations between the indicators included on the leaflet distributed to the treatment group. L1 = Perceptions of waiting time to see a doctor (patient rating from 0 to 100). L2 = Recommended by others (patient rating from 0 to 100). L3 = Share of patients who have seen the same GP on at least half of the previous visits (continuity). L4 = Share of calls that are answered within 2 hours. L5 = Indicator of whether the care center fulfils Region Skåne's targets about appropriate drug prescriptions to elderly. L6 = Indicator of whether the care center has an asthma/COPD clinic. L7 = Indicator of whether the care center has a heart failure clinic. L8 = Indicator of whether the care center has an elderly clinic. L9 = Indicator of whether the care center has a memory (dementia investigation) clinic. L10 = Indicator of whether the care center employs gynecologist. L11 = Indicator of whether the care center employs a chiropractor. L12 = Indicator of whether the care center employs a behavioural therapist. L13 = Indicator of whether there is a midwife clinic within 100 meters from the PCC. L14 = Indicator of whether there is a child health center within 100 meters from the PCC. L15 = Number of hours per week the PCC is open.

Table G.2: Correlations between PCQ indicators, part 1

	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
P1	1.00	0.31	0.67	0.21	-0.25	0.13	-0.08	0.11	0.21	-0.12	-0.07	0.17
P2	0.31	1.00	0.03	0.60	-0.21	0.15	-0.08	0.02	-0.04	-0.17	-0.05	0.05
P3	0.67	0.03	1.00	0.00	-0.18	0.06	-0.08	0.15	0.29	0.03	-0.08	0.20
P4	0.21	0.60	0.00	1.00	-0.26	0.03	-0.02	0.12	-0.04	-0.36	0.00	0.03
P5	-0.25	-0.21	-0.18	-0.26	1.00	0.05	0.08	0.13	-0.04	0.08	0.11	-0.05
P6	0.13	0.15	0.06	0.03	0.05	1.00	0.39	0.04	0.05	0.20	0.01	0.33
P7	-0.08	-0.08	-0.08	-0.02	0.08	0.39	1.00	0.15	0.05	0.24	-0.03	0.16
P8	0.11	0.02	0.15	0.12	0.13	0.04	0.15	1.00	-0.11	0.06	-0.08	-0.08
P9	0.21	-0.04	0.29	-0.04	-0.04	0.05	0.05	-0.11	1.00	0.27	-0.39	-0.01
P10	-0.12	-0.17	0.03	-0.36	0.08	0.20	0.24	0.06	0.27	1.00	-0.07	-0.17
P11	-0.07	-0.05	-0.08	0.00	0.11	0.01	-0.03	-0.08	-0.39	-0.07	1.00	0.15
P12	0.17	0.05	0.20	0.03	-0.05	0.33	0.16	-0.08	-0.01	-0.17	0.15	1.00
P13	0.22	0.07	0.06	0.31	0.08	0.08	0.24	0.13	-0.08	-0.08	-0.02	0.05
P14	0.14	0.16	0.14	0.16	-0.15	0.01	-0.18	0.02	-0.05	-0.35	-0.01	0.22
P15	0.08	-0.05	0.11	-0.03	0.09	0.00	0.22	0.28	0.15	0.08	-0.10	-0.10
P16	0.26	0.13	0.16	0.10	-0.05	0.44	0.24	0.03	0.01	-0.13	0.09	0.53
P17	0.05	0.00	0.15	-0.05	0.09	0.19	0.30	-0.04	0.14	0.01	0.03	0.20
P18	0.01	-0.07	0.12	-0.05	-0.14	0.06	-0.16	-0.27	0.03	-0.16	0.41	0.27
P19	0.01	-0.11	0.12	-0.13	0.09	-0.18	-0.12	-0.08	0.02	-0.09	-0.02	-0.07
P20	-0.22	-0.14	-0.07	-0.13	-0.16	0.03	-0.04	-0.15	0.15	0.02	0.06	0.18
P21	-0.03	-0.11	0.05	-0.05	0.05	0.28	0.21	0.08	0.04	0.20	0.01	0.27
P22	0.08	0.01	0.08	-0.02	-0.20	0.10	0.21	-0.18	-0.10	0.03	-0.03	0.22
P23	0.04	-0.04	0.24	-0.07	0.04	0.31	0.16	0.06	0.11	0.18	-0.03	0.14
P24	-0.23	-0.04	-0.17	-0.09	0.10	-0.07	0.08	0.27	-0.15	0.07	0.01	-0.13

Note. The table displays the correlations between the PCQ indicators. P1 = Advice on tobacco habits. P2 = Advice on physical activity. P3 = Advice on alcohol habits. P4 = Advice on eating habits. P5 = Continuity of care. P6 = Follow-up of pre-intervention chronic patients. P7 = New chronic diagnosis with follow-up. P8 = Physical examination of suspected infections. P9 = Short-term follow-up of depression. P10 = Relevant treatment of new depression/anxiety diagnosis. P11 = Appropriate prescriptions of anxiolytics (N05B) and Hypnotics and sedatives (N05C). P12 = Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (pre-diagnosis). P13 = Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (post-diagnosis). P14 = Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD) (pre-diagnosis). P15 = Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD) (post-intervention diagnosis). P16 = Use of statins for relevant diagnoses (pre-diagnosis). P17 = Use of statins for relevant diagnoses (post-diagnosis). P18 = Appropriate prescriptions for elderly. P19 = Appropriate prescriptions for patient with dementia (post-intervention). P20 = NSAID to patients with elevated risk for cardiovascular events. P21 = Relevant treatment of atrial fibrillation. P22 = Use of beta blockers for heart failure (pre-diagnosis). P23 = Use of beta blockers for heart failure (post diagnosis). P24 = Appropriate prescriptions for patient with dementia (pre-intervention).

Table G.3: Correlations between PCQ indicators, part 2

	P13	P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24
P1	0.22	0.14	0.08	0.26	0.05	0.01	0.01	-0.22	-0.03	0.08	0.04	-0.23
P2	0.07	0.16	-0.05	0.13	0.00	-0.07	-0.11	-0.14	-0.11	0.01	-0.04	-0.04
P3	0.06	0.14	0.11	0.16	0.15	0.12	0.12	-0.07	0.05	0.08	0.24	-0.17
P4	0.31	0.16	-0.03	0.10	-0.05	-0.05	-0.13	-0.13	-0.05	-0.02	-0.07	-0.09
P5	0.08	-0.15	0.09	-0.05	0.09	-0.14	0.09	-0.16	0.05	-0.20	0.04	0.10
P6	0.08	0.01	0.00	0.44	0.19	0.06	-0.18	0.03	0.28	0.10	0.31	-0.07
P7	0.24	-0.18	0.22	0.24	0.30	-0.16	-0.12	-0.04	0.21	0.21	0.16	0.08
P8	0.13	0.02	0.28	0.03	-0.04	-0.27	-0.08	-0.15	0.08	-0.18	0.06	0.27
P9	-0.08	-0.05	0.15	0.01	0.14	0.03	0.02	0.15	0.04	-0.10	0.11	-0.15
P10	-0.08	-0.35	0.08	-0.13	0.01	-0.16	-0.09	0.02	0.20	0.03	0.18	0.07
P11	-0.02	-0.01	-0.10	0.09	0.03	0.41	-0.02	0.06	0.01	-0.03	-0.03	0.01
P12	0.05	0.22	-0.10	0.53	0.20	0.27	-0.07	0.18	0.27	0.22	0.14	-0.13
P13	1.00	0.13	0.35	0.29	0.06	-0.16	-0.02	-0.15	0.10	0.04	-0.06	-0.07
P14	0.13	1.00	0.26	0.25	-0.14	0.12	0.06	-0.18	-0.01	-0.09	0.14	0.09
P15	0.35	0.26	1.00	0.10	0.08	-0.20	-0.04	-0.01	0.26	-0.08	0.18	0.14
P16	0.29	0.25	0.10	1.00	0.15	0.24	-0.01	-0.07	0.11	0.18	0.22	0.07
P17	0.06	-0.14	0.08	0.15	1.00	0.13	0.12	-0.06	0.19	0.05	-0.05	0.03
P18	-0.16	0.12	-0.20	0.24	0.13	1.00	0.14	0.27	0.03	-0.10	0.05	0.08
P19	-0.02	0.06	-0.04	-0.01	0.12	0.14	1.00	-0.02	0.16	0.02	-0.07	0.25
P20	-0.15	-0.18	-0.01	-0.07	-0.06	0.27	-0.02	1.00	0.02	0.13	0.04	-0.19
P21	0.10	-0.01	0.26	0.11	0.19	0.03	0.16	0.02	1.00	-0.06	0.07	0.19
P22	0.04	-0.09	-0.08	0.18	0.05	-0.10	0.02	0.13	-0.06	1.00	-0.00	-0.26
P23	-0.06	0.14	0.18	0.22	-0.05	0.05	-0.07	0.04	0.07	-0.00	1.00	0.23
P24	-0.07	0.09	0.14	0.07	0.03	0.08	0.25	-0.19	0.19	-0.26	0.23	1.00

Note. The table displays the correlations between the PCQ indicators. P1 = Advice on tobacco habits. P2 = Advice on physical activity. P3 = Advice on alcohol habits. P4 = Advice on eating habits. P5 = Continuity of care. P6 = Follow-up of pre-intervention chronic patients. P7 = New chronic diagnosis with follow-up. P8 = Physical examination of suspected infections. P9 = Short-term follow-up of depression. P10 = Relevant treatment of new depression/anxiety diagnosis. P11 = Appropriate prescriptions of anxiolytics (N05B) and Hypnotics and sedatives (N05C). P12 = Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (pre-diagnosis). P13 = Use of antiplatelet or anticoagulant therapy for Ischemic heart disease (post-diagnosis). P14 = Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD) (pre-diagnosis). P15 = Use of ACE-inhibators or angiotensin II–receptor blockers (C09, excluding C09X) for relevant diagnoses (heart failure or IHD) (post-intervention diagnosis). P16 = Use of statins for relevant diagnoses (pre-diagnosis). P17 = Use of statins for relevant diagnoses (post-diagnosis). P18 = Appropriate prescriptions for elderly. P19 = Appropriate prescriptions for patient with dementia (post-intervention). P20 = NSAID to patients with elevated risk for cardiovascular events. P21 = Relevant treatment of atrial fibrillation. P22 = Use of beta blockers for heart failure (pre-diagnosis). P23 = Use of beta blockers for heart failure (post diagnosis). P24 = Appropriate prescriptions for patient with dementia (pre-intervention).

Table G.4: Correlations between leaflet and PCQ indicators

	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13	L14	L15
P1	-0.20	-0.27	-0.17	-0.14	-0.08	0.16	0.15	0.14	0.10	0.00	0.21	-0.00	0.07	0.05	0.04
P2	-0.06	-0.02	-0.07	-0.21	-0.13	0.09	-0.04	0.07	0.20	-0.11	-0.06	0.00	0.11	0.03	0.08
P3	-0.18	-0.11	0.03	-0.29	-0.11	0.13	0.02	0.20	-0.04	-0.08	0.34	-0.02	0.14	0.07	-0.11
P4	-0.20	-0.20	-0.10	0.01	-0.11	0.29	-0.01	0.12	0.08	0.03	-0.12	0.17	0.09	0.10	0.07
P5	0.40	0.45	0.51	0.10	0.03	-0.21	-0.22	-0.20	-0.33	-0.14	0.06	-0.17	0.00	-0.00	0.27
P6	0.15	0.24	0.10	-0.08	0.04	0.09	-0.09	0.30	0.12	-0.44	-0.09	0.08	0.04	0.17	-0.36
P7	-0.12	0.00	-0.11	0.09	0.04	-0.02	0.02	0.09	0.03	0.01	-0.19	0.14	-0.09	0.15	-0.19
P8	-0.09	0.07	0.15	-0.15	-0.21	-0.04	-0.24	-0.14	-0.25	-0.14	0.06	0.12	0.21	0.11	0.15
P9	-0.11	-0.11	-0.03	-0.06	-0.24	0.15	0.24	0.28	0.09	0.22	-0.05	-0.04	0.01	0.01	-0.13
P10	-0.06	0.20	0.13	-0.13	-0.05	0.00	0.06	0.10	0.03	-0.02	-0.07	0.04	0.14	-0.02	-0.23
P11	0.18	0.20	0.07	0.08	0.31	0.15	-0.23	-0.06	-0.08	-0.10	-0.07	-0.04	-0.06	0.25	0.03
P12	0.01	0.07	0.03	-0.05	0.15	0.05	-0.17	-0.04	0.23	-0.20	0.20	0.04	0.04	0.05	-0.29
P13	-0.18	-0.11	-0.19	-0.10	0.06	0.11	-0.04	-0.01	-0.02	0.02	-0.13	0.14	0.03	-0.04	0.21
P14	-0.05	0.07	0.03	-0.23	0.05	0.14	-0.09	0.07	0.15	-0.15	0.23	0.02	0.21	-0.05	0.07
P15	-0.16	0.05	-0.01	-0.04	-0.06	0.16	-0.04	0.10	0.04	0.06	-0.04	-0.02	-0.08	-0.07	0.17
P16	-0.06	0.03	-0.11	-0.07	0.12	0.17	-0.08	0.00	0.29	-0.22	0.13	-0.06	-0.03	0.13	-0.12
P17	0.04	0.14	0.20	0.10	-0.01	0.05	-0.06	0.07	0.16	0.07	0.09	-0.07	-0.15	0.02	-0.15
P18	0.07	0.15	0.05	-0.02	0.12	0.12	0.03	0.04	0.16	-0.10	0.15	-0.16	0.11	0.17	-0.27
P19	0.11	0.08	0.06	-0.10	0.01	0.04	0.10	0.13	0.15	0.16	0.22	-0.17	0.02	-0.05	0.03
P20	-0.06	-0.12	-0.11	0.07	0.08	0.20	0.06	0.18	0.06	0.14	-0.15	0.06	-0.13	0.07	-0.44
P21	0.21	0.26	0.22	0.05	-0.09	-0.10	-0.21	0.18	0.19	-0.08	-0.06	-0.14	-0.05	-0.03	-0.18
P22	-0.04	-0.20	-0.16	0.25	0.04	0.04	0.16	-0.10	0.03	0.10	0.12	0.02	-0.20	0.04	-0.13
P23	0.03	0.13	-0.01	-0.11	0.05	0.12	-0.10	0.08	0.06	-0.17	0.14	-0.14	0.08	0.24	-0.40
P24	-0.02	0.03	0.14	-0.04	-0.04	-0.18	-0.11	-0.16	0.15	-0.01	0.15	-0.04	0.07	0.02	0.09

Note. The table displays the correlations between the indicators included on the leaflet distributed to the treatment group (L1-L15) and the PCQ indicators (P1-P24). The indicator definitions are shown in the notes to Table G.1 and Table G.3, respectively.