The Physician-Patient Match and Health Inequality*

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Abstract

This study explores the impact of primary care physicians' childhood socio-economic status (SES) on their patients' health and socio-economic inequality in health. We measure physicians' SES by their parents' education and find that SES concordance decreases low-SES patients' mortality substantially, while high-SES patients' mortality does not depend on their physicians' family background, resulting in a reduction in the SES-mortality gradient of 25%. SES concordance improves low-SES patients' health by increasing care at the intensive margin, increasing detection of chronic conditions, and improving adherence to treatment. SES concordance elevates communication, fosters empathy and trust between physicians and low-SES patients. *JEL Codes:* I12, I14, J62

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1 Introduction

Health disparities are large and growing in developed economies (Mackenbach et al., 2018, Deaton, 2013). Low socio-economic status (SES) individuals have worse health and shorter life expectancy than high-SES individuals (OECD, 2019). The gap in life expectancy between a college and a high school male graduate in the US is 9 years (Sasson and Hayward, 2019). Even in countries with universal healthcare access and the most equal income distributions, we observe a similar health-SES gradient (OECD/European Union, 2020). The health-SES gradient has increased across races in the US, while the racial health inequality has narrowed, making SES an increasingly important source of inequality (Case and Deaton, 2021). Mitigating this inequality is at the top of the policy agenda globally (OECD, 2019).

Primary care physicians' (henceforth, physicians) responsibilities cover all aspects of health; they provide long-term care, make diagnoses, prescribe drugs, act as gatekeepers to medical specialists, and work with patients to manage chronic conditions (Starfield, 1994), making the physician-patient relationship especially important in this setting. Understanding variation in physician quality and the effects of physician-patient matching has important implications for policy and healthcare spending efficiency (Currie and Zhang, 2023, Ginja et al., Forthcoming, Simeonova, Skipper and Thingholm, 2022, Dahlstrand, 2021). Previous studies have found that similarities between physicians and patients in terms of salient characteristics, such as family ties (Chen, Persson and Polyakova, 2022), race (Alsan, Garrick and Graziani, 2019, Greenwood et al., 2020, Ye and Yi, 2022, Frakes and Gruber, 2022, Hill, Jones and Woodworth, 2023), or gender (Cabral and Dillender, 2024, Greenwood, Carnahan and Huang, 2018), positively impact patient health, potentially by improving communication and trust. Despite the growing SES inequality in health, SES-concordance between physicians and patients remains unexplored.

This paper examines the effect of physician–patient matches on health inequality, providing novel evidence that primary care physicians from low-SES families, measured by their

parents' education, can substantially reduce socio-economic disparities in health.

We use Danish population-wide administrative data from 1995 to 2019 to study SES concordance effects, supplemented by survey data from a random sample of the Danish population. The Danish setting provides an ideal setting for this research, as the data allow us to track families across generations and link this information to physicians' practices, patients' healthcare utilization, and health outcomes. Universal healthcare coverage enables us to isolate the effect of the physician–patient match, ruling out effects attributed to differences in healthcare costs and insurance selection. Although Denmark has a universal education system, access to medical education remains highly unequal: medical degrees are among the most unequally distributed by parental education (Thomsen, 2022).[1]

The main challenge in establishing causal evidence is that physician-patient matches may be endogenously created. To circumvent this challenge, we exploit variation induced by clinic closures, a cause for physician-patient separation that is plausibly exogenous to patients' health trajectories (Simonsen et al., 2021, Fadlon and Van Parys, 2020, Huang and Ullrich, 2024).[2]

We find that SES concordance between physicians and patients reduces mortality for low-SES patients by 0.151 percentage points in the first three years following the match. High-SES patients' mortality is unaffected by their physician's social background, highlighting that low-SES patients are particularly sensitive to their assigned physician. Physicians from low-SES families close the SES-gap in mortality, measured by the difference in mortality between high- and low-SES patients, by 25%.

[1]Stansbury and Schultz (2023) documents substantial SES inequality in the economic profession in the US. Thomsen (2022) shows a similar tendency in Denmark. Airoldi and Moser (2024) shows that childhood SES impacts people's chances of succeeding in science. Similarly, Novosad et al. (2024) demonstrates that Nobel Prize laureates are highly selected based on childhood SES.

[2]Several papers have documented effects of disruption in care (see e.g., Zhang (2022), Simonsen et al. (2021)). All patients in our analysis sample experience a clinic closure. Our estimates capture the impact of the new physician, and not the effect of disruption of care. One empirical challenge for our data is that we can only link patients to their primary care clinic. If there is more than one physician working in the clinic (48% of clinics), we summarize social background at the clinic level. Throughout the paper, we use the term 'physician' rather than 'clinic,'. Our results are not sensitive to the way of summarizing physician characteristics on the clinic level, as we will show in Appendix A.

Physician SES is correlated with other characteristics such as academic performance, gender, ethnicity, and experience. A potential concern is that these attributes, rather than SES itself, could be driving the observed effects. Across specifications, we find no evidence that they do, suggesting that the effect is driven by SES concordance rather than other physician characteristics. These tests are described in detail in Section 4.4.

We break down the effect on mortality and focus on deaths caused by chronic conditions, as primary care physicians hold the central role for the diagnosis and management of these (The Danish Ministry of Health, 2008, Rothman and Wagner, 2003). We find that the effect on overall mortality is driven by a large reduction in cardiovascular mortality, especially for men, and cancer mortality driven by women. By looking at the patient health care utilization related to chronic conditions, we find evidence of the following channels: (1) Low-SES patients matched with physicians from low-SES families receive more care at the intensive margin. (2) SES concordance increases detection of chronic conditions and adherence to medical guidelines. For example, SES concordance increases uptake of statins, a medicine that prevents major heart attacks.[3] In addition, using survey data we find suggestive evidence supporting that (3) SES concordance improves physician-patient communication and patients' perceptions of physicians' empathy, and (4) SES concordance increases patients' trust in the physician.[4]

The proposed mechanisms are in line with the literature on medical communication, which finds shared identities between the physician and the patient to lessen miscommunication (Lang, 1986). Differences in communication styles in health care are well documented, and bad communication leads to under-diagnosis (Vellakkal et al., 2013) or under-treatment (Di Cesare et al., 2013). Highly educated patients have similar social identities to their physicians, which facilitates easier interaction (Lang, 1986, Street, 1991, Thornton et al., 2011),

[3]Statins are documented to have sub-optimal utilization patterns and are commonly used in the literature to study health behaviors, see, e.g., Fadlon and Nielsen (2019). Physician-patient matches are important for the adherence rate for, e.g., statins (Koulayev, Simeonova and Skipper, 2017).

[4]In addition, we test for alternative channels and find no evidence that low-SES physicians are more effective because they have greater exposure to chronic conditions within their family network, are better at treating less healthy patients, or are more skilled on average.

while low-SES patients ask fewer questions, are more often misunderstood, and receive less medical information from their physician (Street, 1991, Willems et al., 2005). Therefore, physicians from low-SES families may be better prepared to understand low-SES patients' questions and their way of describing symptoms; they could also be more effective in communicating medical advice to patients with less education (Ha and Longnecker, 2010).

Mismatch between physician and patient is unlikely to be mitigated by the market, despite the long-term and continuous nature of the physician-patient relationships. First, evidence suggests that patients are not fully informed about match quality nor its effect on health outcomes (Ginja et al., Forthcoming, Alsan, Garrick and Graziani, 2019). Second, institutional barriers, such as the allocation of doctors according to geo-location proximity, as well as the shortage of primary care physicians, limit patients' ability to switch to a better-matched physician. Third, even if patients are able to switch, discontinuity in care may be associated with uncertainty and costs (Bischof and Kaiser, 2021).

Our paper makes a novel contribution by demonstrating that physician-patient SES concordance substantially mitigates health-SES inequality, thereby bridging the literature on physician practice style with the literature on health inequality.

First, our paper builds on a literature studying physicians' practice styles (see, e.g., Chandra, Cutler and Song 2011). Differences in physicians' behavior translate to differences in quality of care (Currie and Zhang, 2023, Ginja et al., Forthcoming, Simeonova, Skipper and Thingholm, 2022, Fadlon and Van Parys, 2020). Studies show that physicians' skill or quality (Doyle Jr, Ewer and Wagner, 2010, Currie and MacLeod, 2020, Dahlstrand, 2021), their medical training (Schnell and Currie, 2018), and their personal belief about the benefit of a treatment (Cutler et al., 2019) matter for their practice styles. Ginja et al. (Forthcoming) demonstrates that there is substantial variation in the quality of physicians, and physician quality has a large impact on patient mortality. They show that observable characteristics of physicians, such as gender, age, and specialization, explain only a small part of the variation in quality. Therefore, most of the variation in quality is driven by unobserved characteristics

of the doctors.

Second, this paper is closely related to the literature on matching quality as an input in production functions.[5] Familial ties between patients and medical professionals, representing a form of close social identity, have been shown to influence health outcomes. Chen, Persson and Polyakova (2022) uses a lottery into medical school in Sweden to estimate the effect of having a health professional in the family. They find that having a medical expert in the family increases preventive health investments, such as higher uptake of vaccines and usage of affordable preventive drugs, which in turn improves the physical health of family members.[6] However, the evidence is mixed. Using a similar setup in the Netherlands, Artmann, Oosterbeek and van der Klaauw (2022) found no effect on health from having a doctor in the family. In terms of gender concordance, Cabral and Dillender (2024) shows that female patients treated by female physicians are more likely to report feeling respected, comfortable, and understood by their physician. Alsan, Garrick and Graziani (2019) study racial physician-patient concordance in a randomized controlled experiment. They show that racial concordance between physician and patient increases the uptake of preventive care services among African American men, largely driven by improved communication.[7] We contribute to the recent literature on patient-physician matching by focusing on a physician characteristic that is under-explored and not directly observable, yet policy-relevant as it directly addresses the socioeconomic gradient in health. While the physician's SES is related to race and gender, we show that the effect extends beyond the influence of gender and ethnicity.

Third, together with recent literature on representations—for example, in local government (Beach et al., 2024), teaching staff (Card et al., 2022), managers (Kunze and Miller,

[5]In educational settings, Card et al. (2022) and Dee (2005) find that teachers who are demographically similar to their students improve student outcomes. In the labor market, Kunze and Miller (2017) find that having a female boss increases the chance of advancing in rank for female workers.

[6]In addition, Finkelstein et al. (2022) demonstrated that having a doctor in the family can reduce adherence to medical guidelines.

[7]Hill, Jones and Woodworth (2023), Ye and Yi (2022) and Greenwood et al. (2020) find similar results in hospital settings. Frakes and Gruber (2022) show that racial concordance improve adherence to treatment of chronic conditions.

2017) - we document that inequalities in an occupation can be a driving factor for inequalities in other domains. Our study demonstrates that childhood SES, a non-salient characteristic, is a relevant and important factor for how physicians interact with patients.

The remainder of the paper is organized as follows. Section 2 describes the institutional setting and our data set. Section 3 describes our empirical strategy. We discuss our main results and robustness checks in Section 4 and conclude in Section 5.

2 Institutional Settings and Data

Denmark has tax-funded universal public health insurance that provides free and equal access to healthcare for all citizens. Primary care clinics are privately owned, and are reimbursed on a mixed capitation and fee-for-service system. Primary care physicians are gatekeepers of the healthcare system; they perform initial diagnoses, treat illnesses, prescribe medication, manage chronic conditions, and refer patients to medical specialists. The tasks they face vary widely and often require intensive communication and a continuous relationship with the patient (Heritage and Maynard, 2006).

Our identifying variation is induced by clinic closures: a vast majority of clinic closures (74%) are due to retirement.[8] New assignment of physicians and patients takes place in two ways after clinic closures: (1) If the physician chooses to sell the clinic to another physician, the patient list is sold along with the clinic. Patients are unable to influence their new physician. (2) If the clinic is not sold, patients are automatically assigned to a new clinic (Huang and Ullrich, 2024). We are unable to distinguish between the two ways of reallocation of patients following clinic closure in the data.[9]

Patients can change their primary care physician at any time via the Danish National

[8]We define a clinic closure as occurring when the provider ID ceases activity and the clinic's physician stops practicing as a primary care provider. Following Simonsen et al. (2021), we classify a closure as retirement-induced if the average age of physicians in the clinic exceeds 60 at the time of closure.

[9]Simonsen et al. (2021) shows that a substantial share of patients transition to the same new clinic after a closure. In about one-third of cases, over 80% of patients move together, suggesting that the closing clinic is often sold to a new physician.

eHealth Portal, provided the chosen clinic has an open patient list. Switching costs approximately $31 (205 DKK), unless the patient moves to a new municipality or their current clinic closes. During the study period, physician shortages meant many clinics were closed to new patients, limiting choice.[10] When choosing a new primary care physician online, patients are informed about the number of physicians in the clinic, as well as the physicians' names, gender, and age. It is unlikely that patients can infer SES from this information.[11] Physicians' medical school is not shown on the portal.[12]

We cannot observe the assigned physician after the clinic closes—only the physicians with whom the patient interacts. In Appendix A, we show that results hold when restricting to clinics taken over by a physician, where assignment can be inferred.

2.1 Data

Studying physician-patient SES concordance on health and health care utilization requires linking physicians to their parents' demographics and merging this with detailed data on their patients' health and health care use. Denmark's comprehensive administrative registers uniquely enable such population-level analysis. Below, we describe how we construct our analysis sample and key variables.

2.1.1 Constructing the Analysis Sample

To construct the patient analysis sample, we begin with all adults between ages 40-70 in the entire Danish population between 1995 and 2019. In Appendix A, we justify our choice of age range and show that our results are robust to using a wider range. We use the Danish

[10]Clinics may stop accepting new patients if they exceed 1,600 patients per physician and must stop once they reach 2,500. In 2017, 67% of clinics had closed their lists (PLO, 2017).

[11]Most Danes have common '-sen' last names, which convey little information about social status. In 2010, last names like Jensen, Nielsen, and Hansen accounted for over 45% of the population. Even in affluent areas '-sen' last names are common (Danmarks Statistik, 2010). Moreover, first names provide weak SES signals: for example, names associated with 'doctor' are also common in lower-status occupations (Kirkegaard and Tranberg, 2015).

[12]Denmark has three main medical schools—Copenhagen, Aarhus, and Odense—with similar curricula. Aalborg University added a program in 2010. University of Copenhagen has the highest applicant numbers and GPA threshold.

National Health Service Register and follow Kjaersgaard et al. (2016) to link every adult to their corresponding primary care clinic on an annual basis. We identify 894 clinic closures between 1999 and 2016, affecting over 352,000 adult patients (Table 1). We include patients the first time they experience a closure and define their new clinic as the one they join in the following year. The main analysis sample includes patients observed for at least four years before the closure; we do not restrict post-closure observation, as mortality is a key outcome.

After we have linked patients to clinics, we add physician IDs from the Service Provider Registry.[13] Physician demographics and parental education are merged from administrative registers. When clinics have multiple physicians, we aggregate characteristics at the clinic level. In section Appendix A we show that the results are robust to different aggregation methods.

Mortality After defining the population of interest, we construct the relevant outcome variables. Patient mortality is a primary outcome of interest. We identify patient mortality and cause of death using the Cause of Death Registry.

Chronic Conditions To explore the underlying causes of the mortality effect, we focus on the four chronic conditions with the most unequal SES distribution: cardiovascular conditions (CVC), cancer, diabetes, and chronic obstructive pulmonary disease (COPD) (Danish Health Authority, 2015).[14] These conditions are leading causes of death, major contributors to disease burden, and central to primary care management (The Danish Ministry of Health, 2008, Rothman and Wagner, 2003).

The conditions have the following in common: (1) They have a strong link to health behaviors (e.g., smoking, inactivity, diet), (2) early detection improves outcomes, (3) these

[13]Physicians are defined as individuals with a medical degree. Some are trainees who interact with patients for short periods. Results are robust to excluding trainees, though this reduces the physician sample and increases missing SES data.

[14]We focus on CVC and cancer when studying causes of death, as diabetes and COPD are rarely listed as primary causes; see Appendix B.

conditions are commonly underdiagnosed (Falagas, Vardakas and Vergidis, 2007), (4) diagnosis requires effective communication with primary care, and (5) early-stage management typically involves lifestyle changes or medication rather than invasive treatment.

While primary care plays a key role in managing chronic illness, diagnoses are only recorded in hospital data. Patients diagnosed in hospitals may have prior diagnoses elsewhere or present at more advanced stages. In the absence of diagnosis records, we rely on indicators such as first-line treatments and medical services. This approach is imperfect. However, post-closure improvements in health outcomes suggest underdiagnosis or undertreatment in the pre-period. Details on conditions and measurement are provided in Appendix B.

Health Care Utilization In addition to mortality and chronic conditions, we examine changes in health care utilization. Using the National Health Insurance Registry, we measure the number of clinic visits, the number of services per visit, and total physician reimbursements from the regional government. The number of services per visit is calculated conditional on at least one visit.

Socio-Economic Status We define SES using education. Patients are classified as low-SES if their highest completed education is primary school (9 years in Denmark). For physicians, SES is based on the highest education level of their parents. A physician is defined as low-SES if at least one parent has only completed primary school. A clinic is classified as low-SES if at least one low-SES physician works there. Alternative definitions are explored in Appendix A.

Parental education captures broader aspects of childhood environment, including family income, neighborhood, and peer group. Although we do not use income due to lack of data before 1980, parental education is strongly correlated with parental income. For example, in 1980, low-SES fathers of physicians earned significantly less (85,526 DKK vs. 129,875 DKK) and had higher unemployment rates (3.4% vs. 2.2%) than high-SES fathers. Similar patterns are observed for mothers.

We can only link physicians to their parents if the physician was born after 1954, when the Danish central registry was established. As a result, SES is missing for older physicians. In the main analysis, we group physicians with missing SES as high-SES, since most medical students before 1960 came from high-SES families (Ministry of Education, 1998). In Appendix A, we show that excluding clinics with missing SES data does not alter our findings.

2.2 Descriptive Statistics

Table 1 reports summary statistics on patients, physicians, and clinics. Panel A compares the full Danish population aged 40–70, the analysis sample, and subgroups by SES. Patients exposed to clinic closures are older and more likely to be ethnic Danes, likely due to the rural location of many closures. Low-SES individuals make up 33% of the full population and 32% of the analysis sample. Within the analysis sample, low-SES patients are older, more often female, and less likely to be married. High- and low-SES patients are equally likely, a chance of 21%, to have a low-SES physician.

The sample includes 3,375 clinics and 8,963 primary care physicians, with an average of 2.3 physicians per clinic. Among non-closing clinics, which serve as potential new physicians, we identify clinic-level SES for 67%. Compared to the total population, primary care physicians are less likely to be defined as low-SES. Low-SES physicians and clinics make up 25% and 23% of the sample, respectively. Low-SES physicians are more often female and less likely to hold a degree from the University of Copenhagen (Table 1, columns 4–5).

2.2.1 Socio-Economic Inequality in Health

Despite equal access to healthcare and education in Denmark, substantial health inequalities persist. Figure 1 shows one-year mortality rates by patient education and physician SES, adjusted for age, gender, and year fixed effects. Mortality declines nonlinearly with education: 0.95% of patients with only primary education die annually, compared to 0.61% on

Table 1: Summary Statistics - Patients, Physicians, and Clinics

	All (1)	Non-closing clinics (2)	Closing clinics (3)	High-SES (4)	Low-SES (5)
Panel A: Patients					
Male	0.502		0.504	0.535	0.436
Year of birth	1954.6		1952.8	1953.5	1951.4
Danish ethnicity	0.908		0.921	0.919	0.927
Married	0.635		0.644	0.671	0.586
Low-SES	0.334		0.321	0.000	1.000
PCP low SES	0.376		0.209	0.209	0.209
Panel B: Physicians					
Male	0.534	0.504	0.694	0.375	0.338
Year of birth	1963.4	1965.8	1950.7	1976.0	1973.4
Danish ethnicity	0.899	0.890	0.950	0.959	0.906
Low-SES	0.253	0.246	0.337	0.000	1.000
Non-missing SES	0.585	0.645	0.272	1.000	1.000
Degree from Uni. of Copenhagen	0.527	0.509	0.619	0.528	0.447
Degree from Uni. of Southern Denmark	0.163	0.180	0.073	0.226	0.275
Degree from Aarhus Uni.	0.277	0.277	0.280	0.242	0.269
Degree from other uni.	0.033	0.034	0.028	0.004	0.009
Panel C: Clinics					
Solo	0.488	0.355	0.895	0.396	0.300
Number of doctors in clinic	2.238	2.639	1.126	2.386	3.086
Low-SES	0.231	0.300	0.041	0.000	1.000
Not-missing SES	0.515	0.667	0.092	1.000	1.000
Number of patients	3,818,956		352,411	241,481	110,930
Number of physicians	8,963	7,533	1,430	3,306	870
Number of clinics	3,375	2,481	894	641	583

Notes: The table presents patient, physician, and clinic characteristics. All patients ages 40-70 (mean age: 53.8) between 1995-2019 are included. Patients are low-SES if they have primary school as the highest level of completed education. PCP stands for primary care physician and includes all people with a master's degree in medicine working in a primary care clinic. Physicians are low-SES if one of their parents has primary school as their highest level of completed education. Clinics are low-SES if at least one physician in the clinic is defined as low-SES. The sample in column 3 is the analysis sample. The characteristics of physicians and clinics in columns 4 and 5 are for the non-closing clinics, conditioning on observing parental education. Appendix Table D1 reports more summary statistics on the patient level.

average among those with higher education—a (0.95-0.61/0.61*100=) 54.9% higher risk. The figure suggests that low-SES patients assigned to low-SES physicians have lower mortality than those with high-SES physicians, reducing the SES mortality gap by 10%.

Appendix Figure D1 displays SES gradients in health outcomes and utilization in the full population, after adjusting for age, gender and year fixed effects. Low-SES patients are more

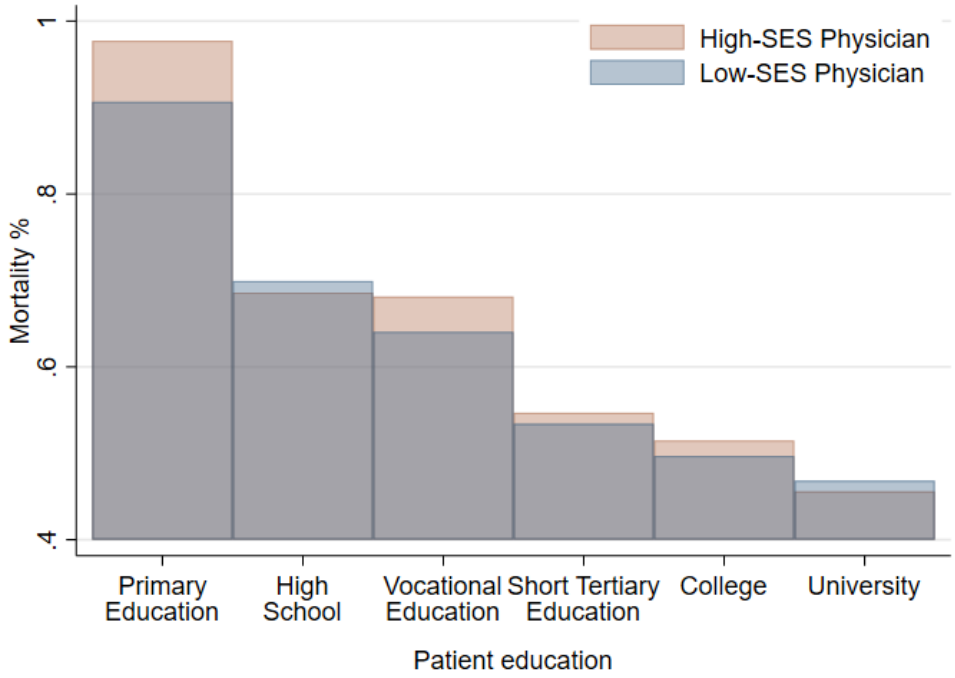


Figure 1: One-Year Mortality by Patient Education and Physician SES

Note: The figure plots one-year mortality rates by patient education and physician socio-Economic Status (SES) in the full Danish adult population between ages 40-70 (mean age: 53.8) between 1995-2019, adjusted for age, gender, and year fixed effects. Physicians are classified as low-SES if at least one of their parents has primary school as their highest level of education.

likely to die from chronic conditions — 58.5% more likely from CVC and 69.5% from lung cancer. They also use more healthcare: more frequent GP visits and higher rates of treatment for chronic conditions (e.g., 18% more likely to receive statins, 13% more likely to be tested for lung cancer). Yet, they are 98% more likely to experience avoidable hospitalizations for COPD. Avoidable hospitalizations can be avoided with proper care from their primary care physician, suggesting that this group may still be undertreated or may not receive the care they need on average.

3 Identification Strategy

The ideal experiment to study our research question would be to separate a representative group of patients from their existing physicians and randomly assign them to new physicians.

In the absence of such an experiment, we follow the previous literature and use clinic closures to exploit the variation from the reassignment of patients to physicians after these closures.

Although the separation from the prior clinic is plausibly exogenous and that patients are automatically assigned to a new clinic, there remains concern that selection exists in the formation of new physician-patient pairs, as patients are free to switch physician at any point. Table 2 shows that patients and physicians of the same gender and ethnicity are more likely to be matched post-closure, suggesting that some patients may opt out of their automatically assigned physician. However, patients do not switch to a new physician based on their social background. When we control for observable characteristics, the social background of the physician becomes quasi-randomly assigned.[15]

In Appendix Table D3, we explore whether pre-closure patient characteristics predict the SES of their new physician. We separately analyze high- and low-SES patients, testing whether age, ethnicity, or treatment for chronic conditions pre-closure explains their new physician's SES. We do find some imbalances: men and individuals in couples are less likely to be assigned a low-SES physician—but this pattern appears in both SES groups. We observe no differences in prior treatment for chronic conditions. Moreover, when conditioning on clinics where we observe physician SES, these imbalances vanish. To account for these imbalances, we control for gender and marital status or include individual fixed effects in our preferred specification.

3.1 Estimation Equations

We use two empirical strategies. First, to assess the effect of a new low-SES physician, we estimate two dynamic difference-in-difference models for high- and low-SES patients

[15]We control for other new physician characteristics, as physician SES is correlated with factors such as gender and ethnicity. For example, in our sample, both female physicians and patients are more likely to be classified as low-SES. To account for this, we include controls for these characteristics. Concordance in gender, ethnicity, and age is associated with longer new physician–patient relationships (see Appendix Table D2). However, we find no evidence that high- or low-SES patients disproportionately switch physicians post-reassignment based on the SES of the new physician, suggesting that patients are unaware of match quality—consistent with prior findings (Ginja et al., Forthcoming, Alsan, Garrick and Graziani, 2019).

Table 2: Test for Selection in Physician-Patient Reassignment After Clinic Closure

	Physician characteristics			
	Low-SES	Male	Non-Danish ethnicity	Age> 50
	(1)	(2)	(3)	(4)
Patient characteristics				
Low-SES	0.00514			
	(0.00640)			
Male		0.02522***		
		(0.00425)		
Non-Danish ethnicity			0.04183***	
			(0.01025)	
Age > 60				0.00217
				(0.00474)
Observations	352,411	352,411	352,411	352,411

Notes: The table tests for selection in patients' reassignment to new physicians post-clinic closures. The table shows coefficients from regressing an indicator of a the new physician characteristic on the same patient's characteristics. The coefficients are the likelihood of physicians sharing the same characteristics with the patient. The regressions include both new physician controls (on the clinic level) and patient controls, except for the focal characteristic, and prior physician fixed effects. New physician controls include average age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, graduating institutions, and SES. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, married, and a low-SES dummy. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

separately. This strategy enables us to evaluate the presence of pre-trends and examine how the outcomes of interest change in years after clinic closures. All patients in our analysis experience clinic closure. Our empirical design captures the effect of the match with the new physician, while controlling for the effect of discontinuity in care. The estimating equation is

$$y_{ijt} = \sum_{\substack{r=-4 \\ r\neq -1}}^{5} \theta_r \times I_r + \sum_{\substack{r=-4 \\ r\neq -1}}^{5} \theta_r^{SES} \times I_r \times PCP_j^{Low} + \beta \times x_{it}^p + \pi_i + \epsilon_{ijt}, \tag{1}$$

where y_{ijt} is a measure of health or health care utilization for patient i at time t, who acquire physician j after clinic closure. I_r is an indicator that takes the value one in relative period r compared to the clinic closure. The parameter θ_r illustrates how patient health or health care

utilization changes in relative period r compared to one period prior to clinic closure, and thus measures the clinic closure effect. PCP_j^{Low} takes the value one if patient i is matched with a new physician after clinic closure from a low-SES family and zero otherwise. We hold PCP_j^{Low} constant even if the patient changes physician in the post period. Our parameter of interest is θ_r^{SES}. This parameter captures the additional effect of clinic closure on patients who acquire a new physician from a family with low levels of education post-clinic closure. We test for parallel trends by examining health outcomes prior to clinic closure using θ_r^{SES}.

Our main specification includes individual fixed effects π_i and time variant variables, such as age and marriages status, x_{it}^p . In Table 1 we saw that physician SES correlates with other characteristics, such as gender and age, however, new physician observable characteristics, do not vary within individuals.

Second, to quantify the effect of concordance on the SES gradient in health, we employ a triple differences specification that compares the effect of a new low-SES physician for the high vs. low SES patients. Intuitively, we compare the difference between the two differences-in-differences estimations. The first difference compares outcomes of interest for low-SES patients before and after they join a low-SES clinic. Since this difference includes a discontinuity-of-care effect from the separation of patients from their initial physicians, we use low-SES patients who join high-SES clinics in the post-period as a control group, creating our second difference. As there are potential systematic differences between high- and low-SES clinic, we introduce a second control group consisting of high-SES patients who are matched with either a high- or a low-SES clinic post-clinic closure. This gives us the third difference. We estimate the following triple-differences equation:

$$(2) \quad y_{ijt} = \tau \times PCP_j^{Low} \times P_i^{Low} \times post_{it} + \alpha \times post_{it} \times PCP_j^{Low} + \rho \times post_{it} \times P_i^{Low} + \delta \times PCP_j^{Low} \times P_i^{Low} + \iota \times P_i^{Low} + \sigma \times post_{it} + \beta \times x_{it}^p + \pi_i + \eta_t + \epsilon_{ijt},$$

P_i^{Low} is an indicator that takes the value one if the patient is defined as low SES. The variable

$post_{it}$ takes the value one in post-closure years and zero in the years before the clinic closure and η_t is year fixed effects. The estimand τ gives us the difference in health or health care utilization between high- and low-SES patients who are assigned a physician from a low-SES family following a clinic closure compared to the same difference for patients who are assigned a physician from a high-SES family. We include three years prior to and three years after the clinic closure, as our results show that the effect fades out in later periods.

When estimating the effect on mortality there is no pre-closure variation, as we condition on being alive at relative period 1 to identify the patient's new physician. As a result we cannot test for pre-trends in mortality and there may be concerns about differential selection into high- vs. low-SES physicians across patient SES groups. To address this, we (1) control for imbalanced patient characteristics (e.g., gender, marital status) and physician traits correlated with SES; (2) conduct placebo tests using patients who died prior to closure to mimic pre-trends;[16] and (3) test robustness across specifications and subsamples. Finally, the absence of differential pre-trends in non-mortality outcomes further supports the validity of our mortality estimates. For mortality outcomes, the lack of pre-closure variation reduces our triple-differences strategy to a difference-in-differences approach. In addition, we have no variation within individual and for that reason we substitute individual fixed effects, with previous physician fixed effects, PCP^{-1} for this particular outcome and include new PCP controls. Essentially, we compare the difference in mortality among low-SES patients—who shared the same prior PCP—assigned to high- versus low-SES PCPs, to the corresponding difference among high-SES patients.

Our identification strategy exploits variation in the SES of the post-closure physician and we assume no spillover effects from the pre-closure physician. The key identifying assumption is the parallel trends assumption: patients' underlying trends in health and health care utilization, conditional on observable characteristics, do not systematically differ by the SES of the physician they are assigned to after clinic closure. More precisely, we require that

[16]Using data from surviving patients, we predict the SES of the potential new PCP for patients who died prior to closure. This exercise is detailed in Appendix C and discussed in the next section.

the relative outcomes between high- and low-SES patients matched with low-SES physicians mirror those in the control state without treatment (Olden and Møen, 2022). We test this assumption graphically in the next section.

4 Physician-Patient SES Concordance Effects

This section presents three sets of results. First, we examine how SES concordance affects all-cause mortality and explore its origin by breaking down mortality by cause. Second, we investigate potential pathways by studying health care utilization related to chronic conditions. Finally, we provide suggestive evidence on mechanisms and address threats to internal validity.

4.1 Mortality

We begin by presenting the results for all-cause mortality. Figure 2 shows coefficients from dynamic difference-in-differences regressions. The x-axis denotes years since clinic closure and the y-axis shows the effect of getting a low-SES physician after clinic closure on one-year mortality. The solid line shows the effect of being matched with a low-SES physician after clinic closure for low-SES patients, relative to low-SES patients who are matched to a high-SES physician (θ_r^{SES}). The dashed line shows the same effect for high-SES patients.

Since patients need to be alive at the time of clinic closures for us to identify their new physician, mortality in the pre-periods are zero by design. In order to test for the parallel trend assumption in mortality, we use data on deaths that occurred before clinic closure. For deceased patients we use the physician reassignment of their *peer* patients who were alive when the clinic closure took place. In Appendix C, we perform two types of placebo tests, defining treatment either at the clinic or at the individual level. As shown in the Appendix, we do not find any evidence that patients who died prior to clinic closure exhibited differential trends based on the predicted SES of their new PCP if they were alive in the post-period.

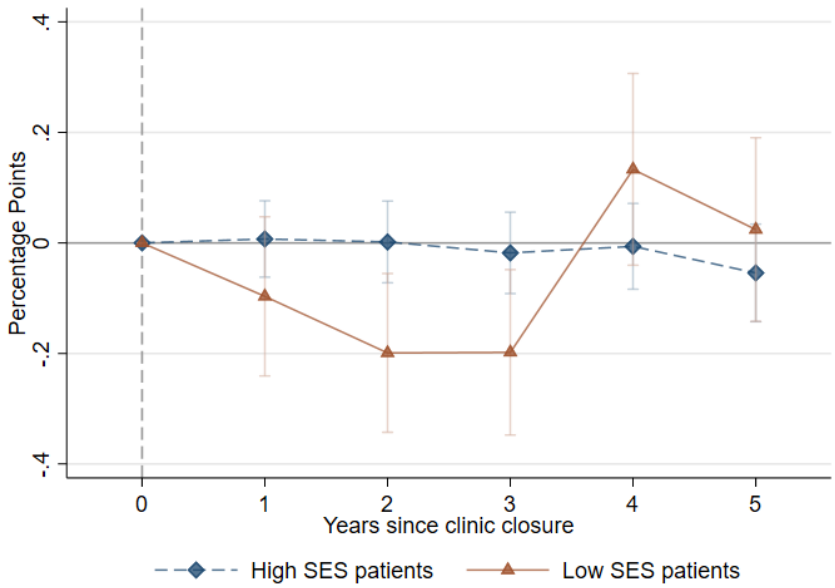


Figure 2: The Effect of Physician-Patient SES Concordance on Mortality

Note: The figure presents the effect of physician-patient SES concordance on mortality. The solid (dashed) line plots the estimates and 95 percent confidence intervals of the effect of being matched with a low-SES physician, as described in equation 1 restricted to the post period, for low-SES (high-SES) patients. The regressions control for prior physician fixed effects, patient characteristics and new physician observable characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level.

Figure 2 shows that mortality immediately decreases for low-SES patients in the first year they are matched with a low-SES physician relative to low-SES patients that are matched with a high-SES physician. Meanwhile, mortality rates for high-SES patients do not depend on the SES of their new physician. The effect is most prominent in the first three years after clinic closures and diminishes thereafter. This implies that the SES-concordance effect *decreases* low-SES patients' mortality in the initial years. However, after some time, the mortality rate for low-SES patients treated by low-SES PCPs is *no different* from that of low-SES patients treated by high-SES PCPs.

The fade-out of the effect is not unique to this setting. Other articles studying the impact of new physicians due to relocation or retirement similarly find that the effect is short-term and fades over time (see, e.g., Zocher (2024) and Zhang (2022)). We explore this dynamic by

examining the raw mortality levels for each group of patients. Appendix Figure D2 reveals that the fade-out results from two sources: 1) mortality for low-SES patients treated by low-SES physicians returns to levels similar to those of peers treated by high-SES physicians, and 2) mortality for the latter group declines slightly after three years. In Section 4.2.2, we demonstrate that the fade-out effect is not limited to mortality; for all outcomes except one, we observe that the effect disappears after 3 years. The fade-out of mortality effects is consistent with patterns observed for other medical interventions and similar findings in related studies. We provide further discussion on the fade-out effect at the end of Section 4.2.2.

We estimate the *relative* change in mortality measured by the difference between the solid and dashed lines in Figure 2 using a reduced version of equation 2. Table 3 column 1 shows our preferred estimation results using mortality as the outcome. The estimate indicates that the treatment group (low-SES patients matched with low-SES physicians in the post-period) experiences a 0.151 percentage point decrease in the probability of dying, relative to comparison groups in the first three years after clinic closure. In Appendix Table A9, we show that the coefficient of interest is similar across specifications. Since the reduction in mortality is concentrated among low-SES patients, with no effect for high-SES patients, we find evidence of a narrowing SES mortality gradient. We compare the estimate to the mortality gap between high- and low-SES patients assigned to high-SES physicians after clinic closure. In this group, low-SES patients have a 0.596 percentage point higher annual mortality rate, reflecting the SES gradient. In our preferred specification, the gradient decreases by $((0.151/0.596) \times 100 =)$ 25.3% for patients of low-SES physicians.

4.1.1 The Role of Chronic Conditions

What drives the significant decline in mortality when low-SES patients are matched with low-SES physicians? We breakdown mortality by cause and focus on deaths caused by CVC and cancers.

Table 3: The Effect of Physician-Patient SES Concordance on All-Cause Mortality and by Cause

	All cause mortality (1)	CVC (2)	Cancer (3)	Lung Cancer (4)
Low-SES PCP × Low-SES Patient × Post	-0.00151***	-0.00048**	-0.00082***	-0.00032*
	(0.00045)	(0.00020)	(0.00030)	(0.00017)
Observations	1,019,005	1,019,005	1,019,005	1,019,005
Outcome mean	.00836	.0015	.00359	.00102
Outcome mean low-SES patients	.01219	.00221	.00492	.00163
Gradient high-SES physicians	.00596	.00117	.00214	.00098

Notes: The table presents the effect of physician-patient SES concordance on all-cause mortality and mortality by cause. All columns report estimates from equation 2 restricted to the post-period. All columns include prior physician fixed effects, patient characteristics, and new physician characteristics. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Table 3 column 2 shows that, in the 3 years following clinic closure, low-SES patients matched with low-SES physicians experience a lower probability of dying from CVC by 0.048 percentage points. This corresponds to a reduction of approximately 40% relative to the SES gradient in CVC mortality rates. The magnitude of the estimate suggests that the reduction in CVC-related deaths accounts for a substantial share of the overall decline in all-cause mortality. Given the acute nature of CVC deaths, the result aligns with the fact that we observe that mortality drops immediately after clinic closures.

From column 3, we also observe a decline in cancer mortality following clinic closure, which reduces the low-SES cancer mortality rate by 0.082 percentage points or 38% compared to the SES gradient. Column 4 shows the effect on lung cancer deaths. Again, we see a decline in the mortality rate, which is significant on a 10 percent level.[17]

We investigate which groups are most susceptible to the SES concordance effect. We divide the sample by sex and age. As illustrated in Appendix Table D4 column 1, the

[17]Deaths by other types of cancer are infrequent in the data, and we do not find any significant SES-concordance effect on other types of cancers.

effect is statistically significant across all four subgroups. It is strongest for men and older individuals, primarily due to a large impact on CVC mortality. In contrast, the effect on cancer mortality is mainly driven by women.

4.2 SES Concordance Effects on Health Care Utilization

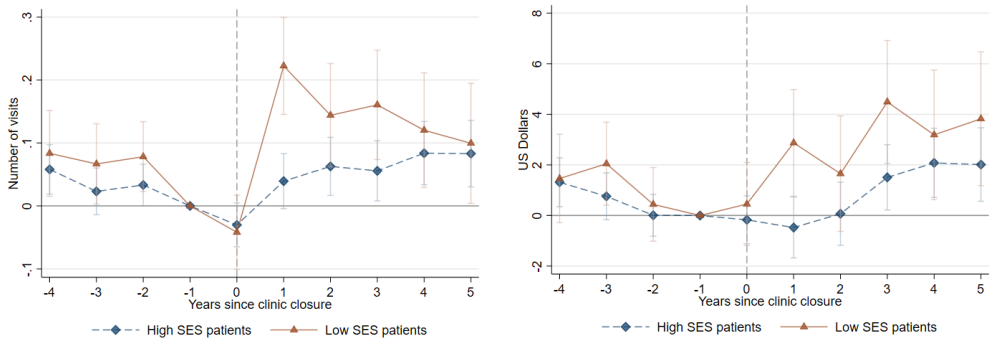
Next, we study potential pathways that physician-patient interaction could affect mortality by looking at patient health care utilization and utilization specific to chronic conditions.

4.2.1 Health Care Utilization

We examine health care utilization on both the extensive and intensive margins. Appendix Table D5, column 1, shows that patients in treatment and control groups are equally likely to make at least one annual visit in the first three years after clinic closure.

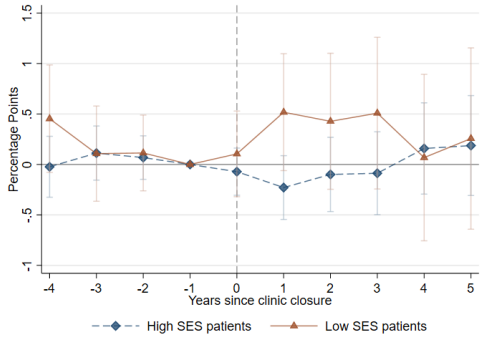
On the intensive margin, we study visit frequency, services per visit, and physician reimbursements. Figure 3, Panel A, shows that low-SES patients matched with low-SES physicians increase their number of visits, with no similar effect for high-SES patients. Pretrends are parallel, supporting the identifying assumption. Appendix Table D5 reports triple-difference estimates. Low-SES patients matched with low-SES physicians have 0.1 more visits per year. Figure 3, Panel B shows a corresponding increase in fee-for-service reimbursements for low-SES patients. Appendix Table D5 shows that Low-SES patients matched with low-SES physicians receive more services per visit and the physicians receive a higher total reimbursements equivalent to $3. While modest in size, these effects are statistically significant.

Increased utilization may reflect better detection of conditions or improved adherence to treatment. While lower-quality care could also lead to more visits, this is unlikely given the concurrent decline in mortality and increase in services per visit.

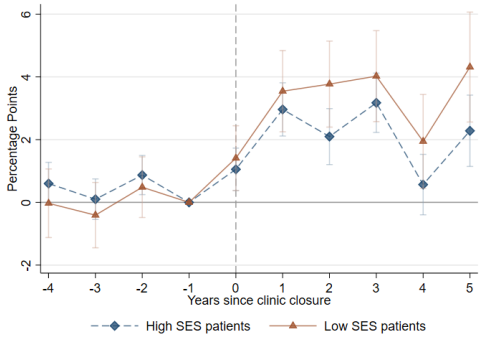


A: Number of office visits

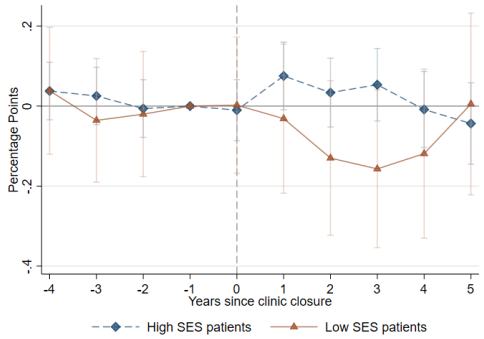
B: Physician services reimbursement



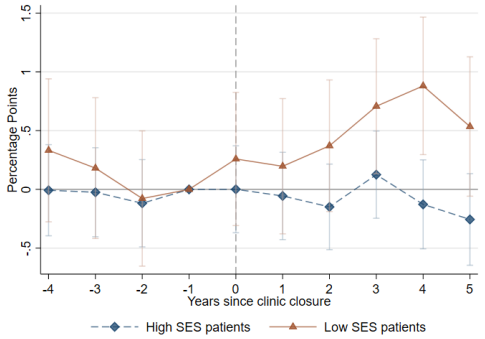
C: Statins for men



D: Diabetes checkup



E: COPD avoidable hospitalization



F: First lung scan for women

Figure 3: The Effect of Physician-Patient SES Concordance on Health Behaviors

Notes: The figures illustrate the effect of physician-patient SES concordance on patient health behaviors. The solid line shows estimates and 95 % confidence intervals for low-SES patients assigned to a low-SES physician (θ_r^{SES}) from equation 1. The dashed line shows the same for high-SES patients. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Panels A–E include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Panel F includes prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new physician level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects.

4.2.2 Health Care Utilization Related to Chronic Conditions

Next, we consider health care utilization related to chronic conditions. Since cancer treatment does not occur in primary care settings, we discuss cancer-related health care utilization in Section 4.3.

Cardiovascular Conditions (CVC) First, we examine health care utilization related to CVC to find a potential explanation for the decline in CVC mortality. Since we only observed an effect on CVC mortality for men, we focus on men when considering this outcome. In Figure 3 Panel C, we see that low-SES patients' statin use increases immediately after being matched with low-SES physicians post-clinic closure, while no such effect is present for high-SES patients. Pre-closure estimates display parallel trends. Triple differences result in Appendix Table D7 Panel A, column 1, shows that SES concordance increases statin use by 0.689 percentage points for low-SES men. Relative to a mean of 14.52%, this is an increase of approximately 5%. In Appendix Table D6, we show that there is no effect on ACE inhibitors from the SES concordance effect. Combined with the decrease in CVC mortality, this result suggest that low-SES patients are underdiagnosed or undertreated for CVC at baseline, and the SES-concordance improve care for this group of patients. The uptake of statins after the match could explain the immediate decline in mortality (Heeschen et al., 2002).

Diabetes Following treatment guidelines for diabetes, we study how metformin prescriptions and annual diabetes checkups respond to SES concordance.[18] Figure 3 Panel D shows that both high- and low-SES patients with low-SES physicians experience an increase in diabetes checkup visits after clinic closure when matched with a low-SES physician. The triple-differences result in Appendix Table D7, Panel A, Column 4, shows that the increase in diabetes checkup visit uptake among low-SES patients is 1.2 percentage points higher when they are assigned to an SES-concordant physician, relative to the change observed for

[18] Annual diabetes checkups are only recorded in the years 2006-2011 and regressions using this outcome therefore contains fewer observations than the other outcomes.

other patient-physician SES pairings. Since diabetes is a cause for CVC, better diabetes management could explain part of the reduction in CVC mortality.

Chronic Obstructive Pulmonary Disease (COPD) The variables of interest related to COPD include both medication and avoidable hospitalization due to COPD. We do not find that COPD medication use responds to SES concordance, see Appendix Table D6. However, we observe a stark reduction in avoidable COPD hospitalizations, as shown in Figure 3 Panel E. Our triple differences estimate in Appendix Table D7 Panel A, column 3, shows that SES concordance reduces the SES-gradient in COPD avoidable hospitalizations by 0.135 percentage points, this is a reduction in the SES-gradient of 13.5% relative to the baseline gradient of 1 percentage points.

Consistent with the dynamic effects on mortality, we observe that the effects on health care utilization diminish over time. We test for two potential causes for this pattern: 1) changes in patient composition post-closure. If true, effects should differ when conditioning on survival and 2) changes in physician assignment—i.e., patients switching physicians after reassignment. To test this, we condition on patients who survive and remain with the same physician throughout the post-period. We test these hypotheses in Appendix A. Among patients who remain with the same physician for five years, we observe sustained increases in visits for low-SES patients assigned to low-SES physicians. A similar upward trend appears for high-SES patients assigned to low-SES physicians. These patterns suggest that the observed fade-out is likely driven by changes in physician assignment over time.

In Section Appendix A, we demonstrate that our results are predominantly robust to alternative aggregations of physician SES, changing the age range, and to excluding ethnic minority patients. We also confirm that our results are not driven by physicians with missing SES. Additionally, our main results holds in a subsample of patient's old clinic was bought by a new physician, using the SES of the physician who purchased the clinic. In this case, the patient has no influence on who their new physician is, and we can consider this exogenous

from the patient's point of view.

4.3 Potential Mechanisms

We have shown that SES concordance decreases the SES gradient in mortality and changes patient health care utilization. While many mechanisms may be at play, we find empirical support for the following four: (1) increased adherence to medical guidelines, (2) increased detection of chronic conditions, (3) improved physician-patient relationship, and (4) increased trust in the physician. In addition, we test but do not find empirical evidence to support the following alternative mechanisms: (5) low-SES physicians are better at treating low-SES patients due to greater experience with chronic conditions through their family network, (6) low-SES physicians are generally better at treating less healthy patients, or (7) low-SES physicians are more skilled on average. The last two potential mechanisms are explored in Appendix D.

Adherence and Detection Effects The medical literature uses adherence rates and avoidable hospitalizations to proxy for patient-physician communication quality (see, e.g., Ha and Longnecker 2010, or Oster and Bindman 2003). Therefore, adherence effects speak to whether SES concordance improves communication between physicians and patients; thus allowing physicians to make relevant information more salient and increasing health literacy. To study the adherence and detection effects, we estimate the SES concordance effect on health care utilization and mortality separately for patients that either did or did not received treatment for chronic conditions before clinic closure ("previously diagnosed" and "not previously diagnosed").

Appendix Table D7 Panels B and C show the effects of SES concordance on adherence and detection. Column 1 shows that SES concordance increases adherence to statins. The effect is statistically significant only for the group of patients already treated with statins before clinic closure. Among low-SES men already diagnosed with a CVC and matched with

a low-SES physician, their statin use is increased by 1.9 percentage points.[19]

In contrast to CVC treatment, we observe both detection and adherence effects for COPD hospitalizations, with statistically significant effects at the 10 percent level—particularly among patients already diagnosed. Similarly to the effect on statins, we only find a significant effect for already diagnosed patients for diabetes treatment.

A detection effect can also be observed through tests for cancer. We focus on lung cancer since primary care physicians play a crucial role in the decision to test. Since effects are observed only among women, we limit this analysis to female patients. Early detection is especially important for lung cancer due to its low survival rate. While we do not observe a statistically significant effect on average (see Panel B, column 4 of Table D7), low-SES women assigned to low-SES physicians are more likely to receive first-time lung scans, as shown in Figure 3 Panel F, and Appendix Table D7, Panel B, column 4. This provides suggestive evidence that reduced cancer mortality may be driven by earlier detection.

Physician-Patient Relationship To measure the SES concordance effect on the physician-patient relationship, we utilize a survey of a large segment of the Danish population. The survey was conducted in the summer of 2019 and invited a random sample of 121,390 individuals in Denmark. The response rate was 30% (Gensowski, Gørtz and Schurer, 2021). From the survey, we have measures on patients' perception of the physician-patient relationship, including the level of collaboration, communication clarity, and time attention from their physician. Additionally, we have measures of the patients' perception of the physicians' empathy and their trust in their primary care physician.[20] In this part of the analysis, we use

[19] Appendix Table D8 shows that SES concordance mainly reduces CVC mortality for men through an adherence effect, although the estimates are not statistically significant. For this group, there is a 0.131 percentage points (p-value=0.15) reduction CVC mortality. In addition, Appendix Table D8 shows that all-cause mortality decreases both for previously diagnosed patients, and for the group of patients with no prior diagnoses.

[20] The questions were formulated as follows: Collaboration: "The doctor and I made all treatment decisions together." Communication clarity: "The doctor's explanations were easy to understand." Time attention: "The doctor spent enough time during my consultation." Empathy: "The doctor understood my needs and problems and took them seriously." Trust: "I had confidence in my doctor's decisions and recommendations." Respondents could provide one answer on a 5-point Likert scale, ranging from "Do not agree" to "Completely agree." We standardized each answer to have a mean equal to zero and a standard deviation equal to one.

Table 4: The Effect of Physician-Patient SES Concordance on Physician-Patient Relationship

	Collaboration	Communication	Time attention	Empathy	Trust
	(1)	(2)	(3)	(4)	(5)
Low-SES Patient	-0.05936	-0.16290***	-0.09074**	-0.12520***	-0.10779***
	(0.03783)	(0.04071)	(0.03974)	(0.03958)	(0.03899)
Low-SES PCP × Low-SES Patient	0.08195	0.14118**	0.04738	0.09886*	0.09902*
	(0.05414)	(0.05721)	(0.05624)	(0.05537)	(0.05509)
Observations	13,871	13,868	13,879	13,879	13,885

Notes: The table presents the effect of physician-patient SES concordance on survey outcomes related to the physician-patient relationship. All outcomes are standardized with a mean equal to 0 and a standard deviation equal to 1. See footnote 25 for the formulation of the survey questions. All columns report estimates from Equation 2, restricted to the year 2019. Note that this means we have no time dimension in this analysis, which prevents us from including a 'post' indicator. The regression includes physician fixed effects and patient characteristics. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the physician level. *** p <0.01, ** p <0.05, * p <0.1.

the entire sample of individuals ages 40-70 and refrain from using a subset of individuals who experienced clinic closures, as the sample size becomes too small.[21] The results from this part of the analysis should, for that reason, be seen as suggestive, as there could be issues with selection into and out of clinics. We control for physician fixed effects, and thereby compare the answers between high and low-SES patients within the same clinic to control for the individual physician quality.

Table 4 shows SES differences and SES concordance effects on measures related to the physician-patient relationship. First, we see that low-SES patients on average respond less positively to the questions. Low-SES patients are less likely to agree with the statement that the physician were easy to understand. They are less likely to report feeling that the physician took their needs and problems seriously, and they report lower levels of trust in

[21]Note that this means we have no time dimension in this analysis, which prevents us from including a 'post' indicator.

their physician. However, when low-SES patients are matched with a low-SES physician, the low-SES penalty is almost offset. We find that SES concordance significantly improves low-SES patients' understanding of the physician's explanations by 14.1 percent of a standard deviation (SD). They also report feeling that the physician took their issues more seriously (9.8 percent of a SD) and express improved trust in their physician (9.9 percent of a SD). These underlying mechanisms align with previous literature suggesting that physician-patient concordance can enhance communication, empathy, and trust—all crucial elements in a physician-patient relationship.

Physicians' Personal Experience with Chronic Conditions Low-SES patients may benefit from having a low-SES physician, as they may be more attuned to the health risks associated with low-SES lifestyles. For instance, physicians from low-SES families might gain familiarity with conditions that are more common among low-SES patients outside of the professional settings through chronically ill family members, which in turn helps them detect and treat these conditions.

We test whether low-SES patients who, after clinic closure, are matched with a new physician who has personal experience with a chronic condition through their immediate family network can reduce the SES gradient in mortality. To do that, we replace the PCP^{Low} treatment dummy in equation 2 with an indicator for if the physician has personal experience with a chronic condition.[22]

Appendix Table D9 shows that physicians' personal experience with chronic conditions does not appear to be a relevant channel, whether we look at all-cause mortality or focus on specific conditions.

[22]We define physicians as having personal experience with chronic conditions if a parent died from or was treated for one of four conditions: CVC, cancer, diabetes, or COPD. This analysis is restricted to physicians for whom we can observe parental data; we make no assumptions when such data are missing. We observe causes of death from 1970 onward and prescription drug use, such as statins, from 1995. A substantial share of observed physicians have such experience, as chronic conditions are common in older age. Among new low-SES physicians, 67.5% had a parent with a chronic condition, compared to 56.8% of high-SES physicians. While physicians may also gain exposure through other relatives, we focus on parental conditions, which we believe to be the most influential. If personal experience were a key mechanism, we would expect observable effects from parental chronic illness.

4.4 Validity

In this section, we study the role of other physician and patient characteristics. In Appendix D we discuss the external validity, and show that the results we find are unique to low-SES concordance, and concordance effect on higher levels of education does not yield the same effect in our setting. In addition, we discuss the size of our estimated effect related to other studies.

The Role of Other Physician Characteristics A threat to internal validity is the correlation of physician SES with other physician characteristics. Low-SES physicians are, on average, older, more likely to be female, and less likely to have a degree from the University of Copenhagen, as shown in Table 1. Could any of these factors be driving our estimates? For instance, do low-SES patients benefit more from having a more experienced physician relative to high-SES patients?

To assess this potential threat to identification, we conduct two tests. First, we replace the physician SES indicator, SES_j^p, in equation 2 with other physician characteristics—such as experience—interacted with the patient SES indicator. Appendix Table D10 shows that matching low-SES patients with more experienced physicians, or with clinics that have more male or majority-ethnic physicians, does not affect the SES gradient in mortality.

Second, we estimate the SES concordance effect within subgroups defined by these characteristics, e.g., among the most and least experienced physicians. If any one characteristic were driving the results, we would expect the SES concordance effect to differ within that subgroup. Appendix Table D11 shows that the SES concordance effect holds within all subgroups—including both more and less experienced physicians, male and female physicians, and ethnic majority and minority physicians. This suggests that the estimated effect is not driven by gender, ethnicity, or experience, but by SES concordance itself.

We do observe an *increase* in low-SES patient mortality when matched with a physician who obtained their degree from the University of Copenhagen. However, this effect is not

strong enough to drive our main results. Additionally, Appendix Table D11, columns 7 and 8, show that the SES concordance effect is present in both a sample of physicians graduating from the University of Copenhagen and physicians who graduate from other institutions.[23]

Could we reduce the SES gradient in mortality by matching low-SES patients with physicians of the best quality? In other words, can we substitute low-SES physicians' social background with high physician quality? Since physician quality is hard to measure, we proxy for physicians' quality by their high school academic performance (GPA) upon entering medical school. While all physicians have high grades, there is still variation in their GPAs. We define physicians as "high quality" if their grades are among the top 33% in the whole physician population.[24] Appendix Table D10 column 5 show that physicians of "higher quality" do not affect the SES gradient in mortality differently compared to physicians of lower "quality". This suggests that higher quality physicians cannot substitute low-SES physicians. In addition, we do not find that experience with low-SES patients, as measured by having a higher share of low-SES patients the year before clinic closure, makes physicians decrease the SES gradient in mortality in the post-period, all else equal.

The above suggests that observed physician characteristics, including gender, experience, ethnicity, physician academic performance, and physician experience with low-SES patients, do not explain our findings.

The Role of Other Patient Characteristics Similarly, we find the concordance effect both for male and female patients (Appendix Table D4 panels A and B), older and younger

[23]The decline may indicate that a larger proportion of low-SES study peers could have a positive influence on the ability of high-SES physicians to interact with low-SES patients. Research has shown that exposure to a more diverse school environment can positively affect behavior towards minorities and political identity (Billings, Chyn and Haggag, 2021, Carrell, Hoekstra and West, 2019). Additionally, Gershenson et al. (2023) document spill-over effects from black schoolteachers to same-grade white teachers in terms of racial competencies. Rao (2019) document that rich students with economically disadvantaged classmates are less inclined to discriminate against poor students and demonstrate greater levels of prosocial behavior and generosity.

[24]High school GPA is observable for the youngest physicians in the sample, i.e., those who graduated high school after 1985. We aggregate physician school grades to the clinic level. We observe physician GPA for 74% of the new clinics in the analysis sample. We include only those observations for which we have the high school GPA of the new clinic.

patients (Appendix Table D4 panels C and D), with and without chronic conditions (Appendix Table C1) and when including and excluding ethnic minorities and ethnic majorities (Appendix Table A2).

5 Conclusion

This paper studies the effect of physician-patient SES concordance on the socio-economic gradient in health. We exploit variations in SES concordance between physicians and patients that are induced by clinic closures and use physicians' parents' highest level of education to measure their SES. We show that physicians' family background impacts the way they interact with low-SES patients, and that low-SES physicians can mitigate a substantial part of the SES gradient in health. In the first three years after the new physician-patient match, the mortality rate of low-SES patients is reduced, which results in a reduction in the SES-health gradient of around 25%.

Our results suggest that increased healthcare use, better treatment adherence, and earlier detection contribute to reducing the SES-health gradient. Additionally, we find suggestive evidence of improved communication, trust, and empathy in physician-patient relationships.

Our results illustrate that the match between physician and patient is important, especially for the most vulnerable groups, and that primary care physicians play an important role in mitigating socio-economic inequality in health.

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Online Appendix For "The Physician-Patient Match and Health Inequality"

Ida Lykke Kristiansen and Sophie Yanying Sheng

Appendix A Robustness Checks

We present robustness checks addressing key data limitations.

Expanding the Age Range In our main analysis sample, we exclude patients under the age of 40 for two reasons. First, very few people die before the age of 40. As mortality is a main outcome of interest, the younger population is not relevant for our analysis. Second, we focus on chronic conditions, and again the younger population is not relevant for these outcomes. For example, risk scores for cardiovascular conditions are usually not calculated for patients under the age of 40 (SCORE2 working group and ESC Cardiovascular risk collaboration, 2021). We exclude individuals over the age of 70. We have two main reasons to do so. First, many older individuals are already in contact with other health care providers, which decreases the importance of their primary care physician. Second, since the risk of mortality increases sharply after the age of 70 (Statistics Denmark, 2023), the primary care physician may have limited impact on the overall mortality rate for this part of the population.

As a sensitivity check, we expand our age range to 30-80 in this robustness check. Appendix Table A1 shows that our results are not sensitive to the age of patients included in the analysis.

Excluding Ethnic Minority Patients A limitation of the data is that immigrants' education information is not always recorded. Statistics Denmark imputes education in these

cases. For robustness, we exclude any non-Danish patients and repeat the main analysis in Appendix Table A2 shows that most main outcomes are robust to restricting our sample to ethnic majority patients.

Alternative Aggregations of Physician SES Claims data from Denmark allow us to connect each patient to the primary care clinic, rather than a specific physician within the clinic. The average clinic has 2.2 physicians. In this section, we present versions of our analysis by aggregating physician SES to clinic SES in two alternative ways.

In the main analysis, we defined a clinic as being low-SES if at least one of the physicians in the corresponding clinic was defined as low-SES (using a "max" function). In this case, there is a positive probability that the patient sees a physician with a low educational family background. Part of the treatment group may be untreated, as we are unable to identify specific physician-patient matches within the clinic. This could bias our estimate towards zero. As robustness checks, we repeat our analysis for our main outcomes defining physician SES on the clinic level using the "min" and "mean" functions. The min function takes the value 1 if all physicians in the clinic are low-SES. In this case, we are certain that the patient consults a low-SES physician. However, in this definition part of the control group will also be treated, which also could bias the results towards zero. When we use the 'min' function, we get a large reduction in the number of clinics we define as low SES, and our analysis has less variation in the treatment variable. Using this definition, only 11.5% of patients are defined as getting a low-SES physician following clinic closures, compared to 32.6% when using the 'max' function. Hence, when using the 'min' or 'max' function, there is a trade-off between defining too many patients as having a low-SES physician or too few. We also use the "mean" function: This gives us the share of physicians from a low-SES family and measures the probability that the patient sees a physician with a low educational background.

Appendix Table A3 shows the results. Using the two alternative definitions, we get esti-

mates that are within the confidence intervals of our main results. When we use the 'min' function, our point estimates on the mortality outcomes are smaller and not statistically significant. However, the non-mortality outcomes align with our main results. As the estimates are similar across specifications, it suggests that our main results are not too sensitive to changes in the definition of SES at the clinic level.

Missing Physician SES As described in Section 2.1, we are unable to identify the SES of physicians born before 1954. This applies to 36% of physicians in non-closing clinics. As a robustness check, we restrict our sample to clinics for which we can observe SES. Appendix Table A4 shows our main results using this subsample and specification described in equation 2.

The table shows that our results are robust to excluding observations with missing SES information. When we limit the sample to cases with non-missing SES information, the point estimate on all-cause mortality becomes somewhat smaller. However, since our main estimate is included in the confidence interval, we cannot reject that the estimates are identical. From the table, we see that the average mortality rate and the SES gradient for all-cause mortality are smaller in this restricted sample compared to in the main sample. A reason for the slightly smaller estimate could be that the patient sample differs somewhat. For the other outcomes, the coefficients are either similar to or slightly larger than the main results.

To account for the change in the sample, we include our entire sample, but replace the variable PCP^{Low} in equation 2 with a variable that indicates if the physician SES is missing, non-missing and high SES, or non-missing and low SES. Table A5 shows the results, using missing physician SES as the reference group. The table indicates that, missing physician SES generally does not explain the variation we find. Only in the case of statins and diabetes checkups is the interaction term *High-SES PCP* $\times$ *Low-SES Patient* $\times$ *Post* significantly different from the case of missing physician SES. In the case of statins, is the estimate for for non-missing low-SES PCPs, *Low-SES PCP* $\times$ *Low-SES Patient* $\times$ *Post* larger. In the

case of diabetes checkups, there is no difference between the two estimates.

Clinics Acquired by a New Physician Our main empirical design has the disadvantage that we can only observe new physician-patient matches if the patient has any contact with their new physician. Therefore, even if the municipality automatically assigns a new physician, the patient can switch to another physician before any contact occurs. As a result, the new physician-patient match could be endogenously created. In this robustness check, we restrict our analysis sample to patients who were in a clinic that was purchased by another physician. This allows us to identify their new physician, who is exogenously assigned from the patient's point of view.

We define clinics as those purchased by other clinics where more than 85% of the patients end up in the same new clinic, which accounts for around 40% of our patient sample.[1] We define the new physician characteristics based on the physician to whom 85% of patients switch—even for patients who are observed with a different physician.

Old physician characteristics or patient characteristics do not predict the SES status of the purchasing physician, as seen in Table A6.[2] Moreover, when we include the new physician characteristics, the prediction does not change. This suggests that there is no correlation between the characteristics of the old physician and those of the new physician, implying that the selection of new physicians in these instances is effectively random.

Using this smaller sample, where the new physician is defined by the purchaser of the old clinic, we re-estimate our main outcomes of interest. Table A7 reports the results. While not

[1]The choice of the 85% threshold for patient retention is not obvious. There is a trade-off between increasing the sample size (which would lower this threshold) and being more certain about the purchase of the new clinic (which would raise this threshold). In a given year, 7.6% of patients switch to a new physician for reasons unrelated to clinic closures. We set the 85% threshold so that up to twice the yearly average of patient switches (i.e., $\approx 15.2\%$) is allowed without affecting our classification of the event as a clinic purchase. A similar result is found when using 80% as the threshold (results are not shown).

[2]The socioeconomic status (SES) of the old physicians is not well measured, as most of them are too old for us to observe their parents. Because of this, the SES of the old physicians will not have much predictive power for the characteristics of the new physicians. However, for transparency, we report the share of new physicians from low-SES families according to our SES measure for the closing physician. Of the old physicians defined as high SES, 28.9% sell to a new physician from a low-SES family. Of the old physicians defined as low SES, 28.6% sell their clinic to a new physician from a low-SES family. The p-value testing for statistical significance is 0.9797.

all outcomes are statistically significant, the findings largely hold in this reduced analysis sample.

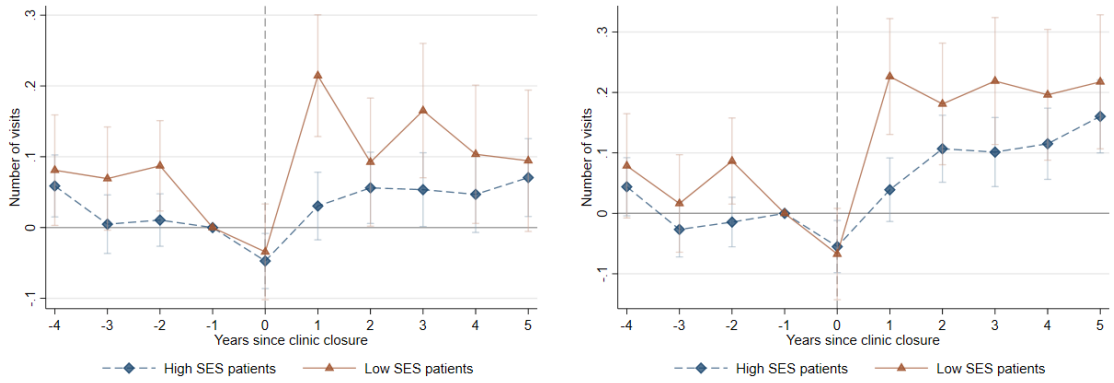
Patient Survival and Switching Physicians In this section, we perform our main analysis for non-mortality outcomes for a balanced sample and for a sample that stays with their new initial physician for at least 5 years (and thus also survives until that point). Table A8 and Figure A1 show the results.

Table A8, Panel A, shows that our results on non-mortality outcomes are robust in a balanced sample in which patients survive at least five years after clinic closures. This illustrates that the effects we find are *not* exclusively driven by patients that pass away during the post-period. Similar results are found when looking at Figure A1, Panel A, which shows the number of visits for the balanced sample; here, we again observe a fading out of the effect over time.

Panel B of Table A8 and Figure A1 show the estimates using a sample that further conditions on patients staying with their initial new physician post-clinic closure in all five post-periods. When studying Figure A1, Panel B, we observe that Low-SES patients assigned to a low-SES physician show an increase in the number of visits throughout the analysis period, suggesting that the fade-out effect in the main results may be caused by new physician-patient matches in the post period. However, we also note an increase in the number of visits for high-SES patients assigned to a low-SES physician over time. This pattern may suggest that at least some of the fade-out of the effects is driven by changes in physician assignment in the post-period.

Trajectory Fixed Effects While we find no evidence of selection, we address potential concerns about endogenous reassignment in physician-patient pairs by employing a *trajectory fixed effect*. Trajectory fixed effects refer to taking fixed effects on the pre-post closure physician interaction. The interaction term therefore compares the gradient in mortality between high- and low-SES patients who had the same pre-closure physician and post-closure

physician. This strategy not only accounts for the fact that there might be selection of the post-closure physician, but also that low-SES physicians may be different from high-SES physicians on several dimensions, as seen in Table 1. Under the assumption of random selection of the post-closure physician, and conditioning on pre-closure physician, the trajectory fixed-effects should not affect the estimation. The results can be found in Table A9 column 5. Consistent with this, we do not find that adding trajectory fixed effects affect our estimation results substantially, suggesting that that non-random selection of the post-closure physician is *not* an issue for our empirical strategy.



A: Balanced sample **B:** Stayers

Figure A1: The Effect of Physician-Patient SES Concordance on Number of Visits in Different Samples

Notes: The figures illustrate the impact of physician-patient SES concordance on the number of PCP visits in a balanced sample and in a sample of patients who remained with their initial physician following clinic closure (stayers). The red solid line plots the estimates, and 95 percent confidence intervals, of relative time to clinic closures for low-SES patients assigned to a low-SES physician (θ_r^{SES}) from equation 1. The blue dashed line show the same for high-SES patients. Low-SES physicians is defined as the physician has a parent with primary school as highest level of completed education. Low-SES patient is defined having primary school as highest level of completed education. The regressions control for patient fixed effects, and patient characteristics. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered on the patient level.

Table A1: Robustness Check: Expanding age range to 30-80

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
Low-SES PCP × Low-SES Patient × Post	-0.00115***	-0.00097***	0.12210***	0.00392*	0.01730***	-0.00114**
	(0.00042)	(0.00034)	(0.02877)	(0.00237)	(0.00480)	(0.00056)
Observations	1,616,831	811,695	3,899,948	1,954,982	1,466,807	3,870,909
Outcome mean	.01076	.00298	5.51867	.12521	.11893	.00684
Outcome mean low-SES	.01749	.00492	6.67607	.14642	.13966	.01179
Gradient for high SES physicians	.00994	.00289	1.71024	.04257	.03338	.01242
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	N
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on selected outcomes, see column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** p <0.01, ** p <0.05, * p <0.1.

Table A2: Robustness Check: The Effect of SES Concordance When Excluding Non-ethnic Danish Patients

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
Low-SES PCP × Low-SES Patient × Post	-0.00149***	-0.00075**	0.09144**	0.00687**	0.01117*	-0.00126*
	(0.00046)	(0.00036)	(0.03631)	(0.00323)	(0.00623)	(0.00067)
Observations	937,900	471,039	2,304,332	1,156,030	875,506	2,289,614
Outcome mean	.00862	.0022	5.39834	.13402	.12815	.00647
Outcome mean low-SES	.01222	.00319	6.40503	.14433	.13912	.01051
Gradient for high SES physicians	.00579	.00164	1.48086	.02847	.01836	.01007
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	Y
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on main outcomes, see column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** p <0.01, ** p <0.05, * p <0.1.

Table A3: Robustness Check: Alternative Physician SES Aggregation to the Clinic Level

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Min						
Low-SES PCP × Low-SES Patient × Post	-0.00079	-0.00054	0.19737***	0.01585***	0.02472**	-0.00152
	(0.00065)	(0.00058)	(0.05128)	(0.00467)	(0.01159)	(0.00095)
Panel B: Mean						
Low-SES PCP × Low-SES Patient × Post	-0.00134**	-0.00076	0.19125***	0.01317***	0.02353**	-0.00202**
	(0.00060)	(0.00053)	(0.04839)	(0.00437)	(0.00999)	(0.00090)
Observations	1,019,005	513,257	2,465,012	1,241,502	934,070	2,448,220
Outcome mean	.00836	.00211	5.42908	.13502	.12827	.00641
Outcome mean low-SES	.01219	.00316	6.40403	.1452	.13926	.01045
Gradient for high SES physicians	.00596	.00167	1.37505	.02717	.01681	.00993
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	N
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on the main outcomes, see column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Panel A ("min") defines a clinic as being low-SES if all physicians are low-SES. Panel B ("mean") uses the proportion of physicians that are low-SES in the clinic. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A4: Robustness Check: Using a Subsample of Physicians with Non-missing SES

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
Low-SES PCP × Low-SES Patient × Post	-0.00128***	-0.00069*	0.08613**	0.00555*	0.00960	-0.00170**
	(0.00047)	(0.00038)	(0.03775)	(0.00337)	(0.00653)	(0.00070)
Observations	842,858	421,690	2,061,262	1,030,573	762,939	2,047,028
Outcome mean	.00794	.00199	5.39884	.13748	.12867	.00625
Outcome mean low-SES	.0116	.00291	6.36887	.15	.14023	.01013
Gradient for high SES physicians	.00568	.00148	1.36452	.03299	.018	.00994
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	N
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on selected outcomes, see column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** p <0.01, ** p <0.05, * p <0.1.

Table A5: Robustness Check: Including physician missing SES information separately

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
High-SES PCP × Low-SES Patient × Post	-0.00070	0.00010	0.01466	0.00758**	0.01414**	0.00017
	(0.00054)	(0.00043)	(0.03765)	(0.00365)	(0.00682)	(0.00078)
Low-SES PCP × Low-SES Patient × Post	-0.00182***	-0.00072*	0.11549***	0.00951***	0.01470**	-0.00128*
	(0.00052)	(0.00040)	(0.03767)	(0.00360)	(0.00672)	(0.00076)
Observations	1,019,005	513,257	2,501,620	1,258,806	948,200	2,484,828
Outcome mean	.00836	.00211	5.42908	.13502	.12827	.00641
Outcome mean low-SES	.01219	.01219	6.40403	.1452	.13926	.01045
Gradient for high SES physicians	.00596	.00167	1.37505	.02717	.01681	.00993
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	N
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on selected outcomes, as indicated by the column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from a modified version of the triple-difference equation 2, where the indicator SES_j^p is replaced with a variable indicating whether the physician's (PCP) social background is missing, non-missing and high SES ($SES^{PCP} = High$), or non-missing and low SES ($SES^{PCP} = Low$). The reference category is PCP's SES is missing. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** p <0.01, ** p <0.05, * p <0.1.

Table A6: Robustness Check: Clinics Acquired by a New Physician - Test for selection

	New PCP Low-SES (1)	New PCP Low-SES (2)	New PCP Low-SES (3)	New PCP Low-SES (4)
Old physician Low-SES	0.00085	-0.00352	-0.05978	-0.08286
	(0.13078)	(0.13065)	(0.16371)	(0.16634)
Old physician Age	0.00031	0.00004	0.00070	0.00111
	(0.00508)	(0.00513)	(0.00609)	(0.00624)
Old physician Male	-0.01761	-0.02978	-0.05696	-0.05083
	(0.07828)	(0.08105)	(0.10966)	(0.11202)
Old physician Ethnic majority	0.02647	0.02995	-0.05418	-0.04142
	(0.13329)	(0.13340)	(0.15486)	(0.15722)
Old physician Solo	-0.01333	-0.04136	-0.04321	-0.08312
	(0.08512)	(0.08677)	(0.10681)	(0.10908)
Old physician UCHP	-0.06133	-0.04807	-0.01562	-0.03301
	(0.13416)	(0.13576)	(0.16351)	(0.16633)
Old physician AU	-0.03375	0.01076	-0.00162	-0.03171
	(0.13563)	(0.13694)	(0.17240)	(0.17396)
Old physician SDU	0.02007	0.07296	-0.07208	-0.01568
	(0.15097)	(0.15551)	(0.19345)	(0.20099)
New physician Age		0.00148		0.00490
		(0.00402)		(0.00515)
New physician Male		0.04178		0.04990
		(0.07159)		(0.09032)
New physician Ethnic majority		0.34375**		0.33015*
		(0.14439)		(0.18432)
New physician Solo		0.05108		0.05967
		(0.06279)		(0.07608)
New physician UCHP		0.11032		0.10906
		(0.07715)		(0.10515)
New physician AU		0.03897		0.04416
		(0.08313)		(0.11151)
New physician SDU		0.08938		0.09612
		(0.07472)		(0.10271)
Patient share male			-0.06619	-0.16731
			(0.29255)	(0.29928)
Patient average age			0.00258	-0.00095
			(0.01938)	(0.01974)
Patient share ethnic majority			0.26811	0.56274
			(0.60463)	(0.61945)
Patient share married			-0.00062	0.01622
			(0.33011)	(0.33964)
Observations	282	282	282	282
R-squared	0.12752	0.16343	0.36980	0.39634
F-test	0.08484	0.75845	0.14254	0.48649
p-value	0.99956	0.72286	0.99948	0.96537

Notes: The table presents regression estimates from a model that explains the SES of the physician acquiring the closing clinic. Clinics are defined as being acquired by a new physician if 85% or more of their patient population moves to the same new clinic. The regression includes characteristics of the old physician, the new physician, and the patient population. The unit of analysis is at the clinic level, comparing the old and new clinics. At the bottom of the table, the F-test assesses whether the coefficients jointly explain the SES of the acquiring physician. UCPH is the University of Copenhagen. AU is Aarhus University, and SDU is University of Southern Denmark. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Columns (3) and (4) also include patient mode municipality as a control variable. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A7: Robustness Check: Clinics Acquired by a New Physician

	Death	Death from CVC	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)	(5)	(6)
Low-SES PCP × Low-SES Patient × Post	-0.00078	-0.00120*	0.20117***	-0.00123	-0.00756	-0.00274***
	(0.00072)	(0.00063)	(0.05080)	(0.00389)	(0.00918)	(0.00098)
Observations	403,137	199,561	976,121	676,361	297,041	969,246
Outcome mean	.00317	.00056	5.59223	.15802	.16733	.00569
Outcome mean for low-SES	.01164	.00298	6.27716	.14192	.15347	.00913
Gradient for high SES physicians	.00494	.00093	1.39811	.03333	.023	.00901
Patient characteristics	Y	Y	Y	Y	Y	Y
New PCP characteristics	Y	Y	N	N	N	N
Prior PCP FE	Y	Y	N	N	N	N
Patient FE	N	N	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance on selected outcomes, see column headings. Statins and CVC mortality are only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Columns 1-2 include prior physician fixed effects, patient characteristics, and new physician characteristics, and standard errors clustered at the new PCP level. Columns 3-6 include patient fixed effects and patient characteristics, and standard errors are clustered at the patient ID level. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. *** p <0.01, ** p <0.05, * p <0.1.

Table A8: Robustness Check: Conditional on Survival and No Subsequent Physician Switching

	Number of Visits	Statins	Diabetes Checkup	Hospitalization COPD
	(1)	(2)	(3)	(4)
Panel A: Conditional on survival (balanced panel)				
Low-SES PCP × Low-SES Patient × Post	0.07616*	0.00743**	0.00862	-0.00156**
	(0.03956)	(0.00355)	(0.00647)	(0.00064)
Observations	1,881,138	948,053	806,162	1,881,138
R-squared	0.68548	0.74089	0.45863	0.30535
Outcome mean	5.4290	.10805	.11852	.00415
Outcome mean low-SES	6.40403	.11628	.12821	.00669
Gradient for high SES physicians	1.3078	.02279	.01519	.00718
Panel B: Conditional on survival and no subsequent physician switch				
Low-SES PCP × Low-SES Patient × Post	0.09523**	0.00936**	0.00508	-0.00217***
	(0.04375)	(0.00397)	(0.00724)	(0.00071)
Observations	1,469,533	750,886	624,717	1,469,533
Outcome mean	4.90295	.10625	.11948	.0039
Outcome mean low-SES	5.78081	.11546	.12873	.00624
Gradient for high SES physicians	1.28882	.02496	.01711	.00728
Patient characteristics	Y	Y	Y	Y
New PCP characteristics	N	N	N	N
Prior PCP FE	N	N	N	N
Patient FE	Y	Y	Y	Y

Notes: The table presents the effect of physician-patient SES concordance for different subsamples. Statins is only estimated for men. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Panel A restricts the sample to a balanced panel, meaning that patients are observed for five years before and after the clinic closure and therefore do not die during this period. Panel B further restricts the sample to patients who are observed throughout and remain with the same physician five years after the closure. All regressions include patient fixed effects and patient characteristics. Patient characteristics include age fixed effects and a dummy for being married. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered on the patient level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table A9: The Effect of Physician-Patient SES Concordance on Mortality

	Death (1)	Death (2)	Death (3)	Death (4)	Death (5)
Low-SES PCP × Post	-0.00007	-0.00001	-0.00013	0.00018	
	(0.00021)	(0.00021)	(0.00030)	(0.00032)	
Low-SES Patient × Post	0.00583***	0.00437***	0.00415***	0.00410***	0.00400***
	(0.00028)	(0.00027)	(0.00027)	(0.00027)	(0.00028)
Low-SES PCP × Low-SES Patient × Post	-0.00161***	-0.00154***	-0.00158***	-0.00151***	-0.00130***
	(0.00046)	(0.00045)	(0.00045)	(0.00045)	(0.00047)
Observations	1,034,256	1,034,256	1,034,255	1,019,005	1,033,666
Outcome mean	.00836	.00836	.00836	.00836	.00836
Outcome mean low-SES patients	.01219	.01219	.01219	.01219	.01219
Gradient high-SES physicians	.00596	.00596	.00596	.00596	.00596
Patient characteristics	N	Y	Y	Y	Y
New PCP characteristics	N	N	N	Y	N
Prior PCP FE	N	N	Y	Y	N
Patient FE	N	N	N	N	N
Prior x new PCP FE	N	N	N	N	Y

Notes: The table presents the effect of physician-patient SES concordance on all-cause mortality. All columns report estimates from equation 2 with different controls and restricted to the post-period. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Column 4 is our preferred specification. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Appendix B Chronic Conditions

In this section, we provide details on the conditions we are examining in the paper.

When studying cause of death, we focus on CVC and cancer. There are relatively few cases of death where diabetes and COPD are the primary causes. In the period from 1995 to 2010, there were around 20 deaths from diabetes per 100,000 individuals, and 60 deaths from COPD per 100,000 individuals. 260 individuals died from cancer, and between 200 to 300 individuals died from CVC per 100,000 individuals (Danish Health Authority, 2011).

Cardiovascular Conditions (CVC) Cardiovascular conditions are the most common causes of death in developed countries (Raghupathi and Raghupathi, 2018). Around 20% of deaths are caused by CVC in our sample. Guidelines for primary care physicians include assessing patients' risk of cardiovascular conditions using multivariate risk prediction algorithms (Danish College of General Practitioners, 2022*a*), putting primary care at the center of identifying high-risk patients and preventing acute hospitalizations arising from CVC. To infer a CVC diagnosis in our data, we use prescriptions for statins and ACE inhibitors. These medications are considered first-line treatments for hyperlipidemia and hypertension (Danish College of General Practitioners, 2022*a*). Statins reduce CVC mortality and major coronary events by 70% for patients at risk (Scandinavian Simvastatin Survival Study Group, 1994). Patients should not stop taking statins once they start; adherence is therefore key to survival.

Chronic obstructive pulmonary disease (COPD) COPD is a group of chronic lung conditions that cause obstructed airflow from the lungs, typically due to long-term exposure to irritating particulate matters such as cigarette smoke, dust, or fumes. It is often misdiagnosed in its early stages, and diagnosing it typically involves a conversation between the physician and patient about exposure to irritants, family history, and symptoms (Danish College of General Practitioners, 2022*b*). Although COPD is progressive, it could be well

managed through smoking cessation alone in the early stages, and medication when the condition progresses. We infer COPD diagnosis using (1) prescriptions of common COPD medications,[3] and (2) avoidable hospitalizations due to COPD.

Diabetes Around 8% of the Danish adult population has been diagnosed with diabetes. Low-SES individuals are around twice as likely to be diagnosed with diabetes compared to high-SES individuals (The Danish Ministry of Health, 2014). Diabetes is closely associated with lifestyle – a healthy diet and regular exercise can delay or prevent the condition, and the condition is a common cause for heart disease and stroke (Danish College of General Practitioners, 2022*c*). Guidelines published by the American Diabetes Association refer to a care model with proactive practice teams and informed activated patient as the first-line of treatment (American Diabetes Association Professional Practice Committee, 2022). The care model involves an annual checkup of diabetes complications. Hence, we look at the following diabetes related treatments (1) annual diabetes checkup with primary care physicians and (2) prescriptions of metformin. Metformin has been the first-line pharmacotherapy for treating people with type 2 diabetes since the 1950s. Annual diabetes checkups are only recorded in the years 2006-2011 and regressions using this outcome therefore contains fewer observations than the other outcomes.

Cancer Cancer is the chronic disease that causes the most deaths in Denmark (Lyngaa et al., 2015). While breast cancer is the most common cancer, lung cancer causes the most deaths (Danish Health Authority, 2009). Lung cancer is often diagnosed after the disease has spread, as symptoms do not appear in the early stages; The 1-year survival rate was 33-38% in the period from 2000-2009 (NORDCAN, 2022). Therefore, early detection of lung cancer is key to increasing the likelihood of survival. Unlike the three diseases described above, diagnosis and treatment of cancer primarily take place in specialists' offices or in hospital settings. Primary care physicians play a role in the initial stages by making referrals to

[3]Long-acting muscarinic antagonists (LAMA) and Long-acting β2-agonists (LABA).

specialists. To study physicians' behavior in relation to cancer, we look at patients' use of services related to detect lung-cancer using thorax scans (x-rays and CT-scans).

Appendix C Testing for pretrends in mortality

We have no pre-closure variation in mortality, as we condition on being alive at relative period 1 to identify the patient's new physician. In this case, our triple-differences strategy is in, practice, reduced to a difference-in-difference strategy. To test for selection into post-closure clinics in this outcome, we test the parallel trend assumption in patients who died prior to clinic closure by adding patients who died within 4 years of the closure to our main analysis sample. Using surviving patients, we predict the SES of the potential new PCP for patients who die in the pre-period. We make two predictions, one on the individual level, where we exploit variation within clinic, and one on the clinic level, where we exploit variation between clinics on the probability of being assign a low-SES PCP post clinic closure.

Individual level prediction First, we predict potential PCP SES on the individual level by running following equation on patients who survive until after the closure, where we have a measure of their new PCP SES.

$$PCP_{ij}^{Low} = \beta \times x_i^p + \gamma \times PCP_{ij}^{-1} + \epsilon_{ij}, \tag{3}$$

PCP_{ij}^{Low} is an indicator that takes the value one if individual i who had physician j prior to clinic closure gets a new physician after clinic closure from a low-SES family. PCP_{ij}^{-1} is a prior physician fixed effects. x_i^p is patient specific controls. We control for gender, age, marital status, and ethnicity. We run the regression in relative period -4 for all patients who are alive to be assigned a new PCP. We then predict PCP_{ij}^{Low} for the entire sample of patients. We choose period -4 to run the regression as all patients are alive at this point (they can die during the year). We run the estimation separately for high and low-SES patients.

From the prediction above we group $\widehat{PCP_{ij}^{Low}}$ into quartiles based in the size of the predicted probability of being assigned a low-SES PCP, with group 1 being the patients

with the lowest predicted probability of being assigned a low-SES PCP post clinic closure, and group 4 is the group with the highest predicted probability.

The prediction is not very successful as the correlation with actual PCP SES for the surviving sample is weak, demonstrating that this characteristic of the new PCP is plausible quasi-randomly assigned, once controlling for observable characteristics. For example, among surviving patients in the highest quartile of predicted probability of getting a low-SES PCP, the likelihood of actually receiving one following clinic closure is 0.22 percentage points higher (p = 0.417), compared to those in the lowest quartile—after controlling for observable characteristics.[4]

We then run our event study equation with predicted PCP SES instead of actual PCP SES and focus on the pre-period.

$$(4)\quad Death_{ijt} = \sum_{\substack{r=-4 \\ r\neq 0}}^{0} \theta_r \times I_r + \sum_{\substack{r=-4 \\ r\neq 0}}^{0} \theta_r^{SES} \times I_r \times \widehat{QPCP_{ij}^{Low}} + \beta \times x_{it}^{p} + \kappa \times (PCP_{ij}^{-1}) + \epsilon_{ijt},$$

$Death_{ijt}$ is an indicator that takes the values one if patient i who had PCP j prior to clinic closure dies in period t. $\widehat{QPCP_{ij}^{Low}}$ is an indicator for being in the qth quartile of the predicted probability of being assigned a low-SES PCP in the post period. We run this equation for $q \geq 3$ and $q = 4$. We run the estimation separately for high and low-SES patients.

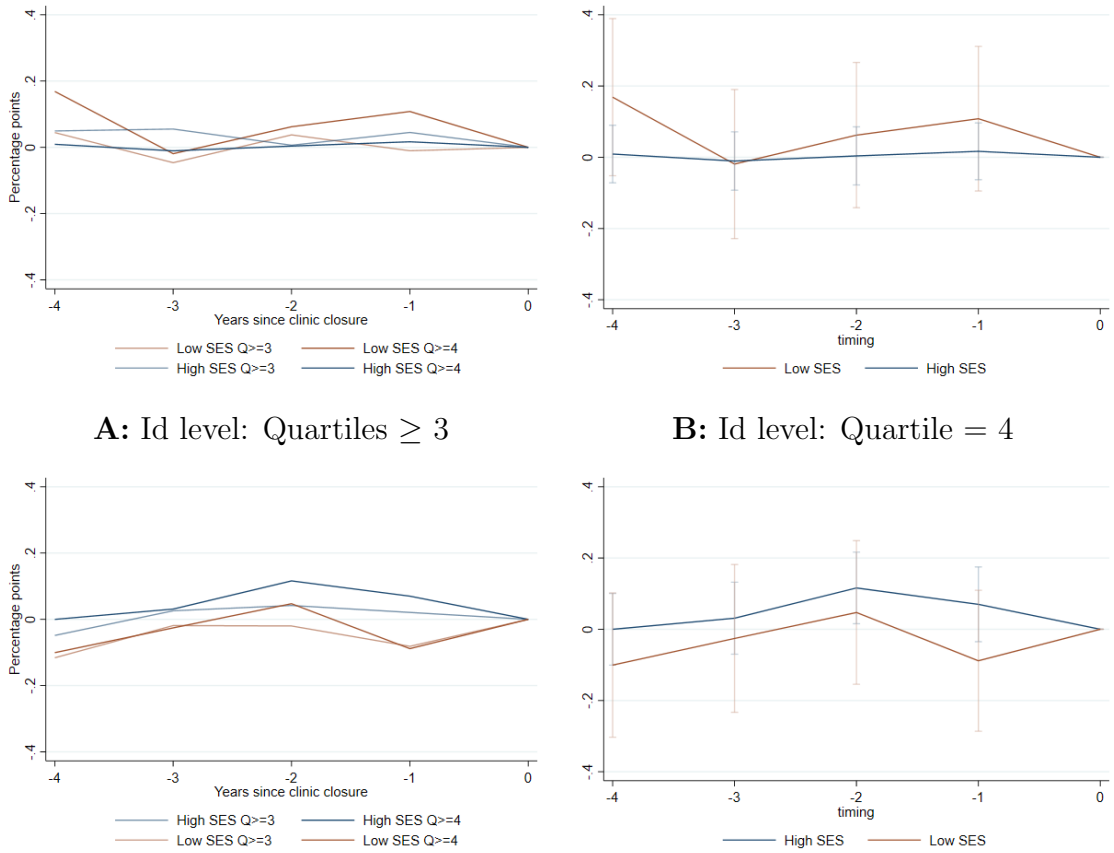
Appendix Figure B1 panels A and B show the results on the individual level predictions. The red lines show the estimates for low-SES patients and blue for the high-SES patients. In panel A, the darker the color the higher probability is assigned to the group of getting a low-SES PCP post clinic closure. The figures show no clear evidence of pre-trends. All estimates are around zero and none of the estimates are statically significantly different from

[4]For alive patients who are in the lowest quartile of predicted PCP SES, 33 percent get a new PCP from a low SES family. For those in the highest quartile of predicted PCP SES, 36 percent get a new PCP from a low SES family. These are raw means, while the estimates in the text control for gender, partner status, ethnicity, age fixed effects, and old PCP fixed effects, and cluster standard errors on the old PCP level.

zero.

Clinic level prediction In addition to the above analysis, we do a simple placebo assignment on the clinic level. We assume that the patients who passed away before clinic closures would have been matched with a low-SES physician if more than e.g., 60% of the patients in the same clinic who are alive at the time of the clinic closures are matched with a low-SES physician. We can variate the share of patients who needs to be assigned to a low-SES PCP in the post period to assign pre-closure individuals to a low-SES PCP. Similarly to the above, we group closure clinics into quartiles and run the event study analysis with this predicted PCP SES. We exclude 5 percent from the tails of the distribution. In the bottom quartile, on average 3.7 percent of patients end up with a high SES PCP after clinic closure, while in the top quartile, this number is 79.9 percent. Appendix Figure B1 panels C and D show the results on the clinic level predictions. Similarly to the figures using the individual predictions, there is no clear evidence of pretrends.

While this placebo exercise does not definitively rule out pre-trends in terms of mortality and hence selection into post-closure PCP SES, the tests do suggest that this is not a concern. Together with the absence of evidence of differential pre-trends in other outcomes, we find it unlikely that sorting is an issue for the interpretation of our mortality effects.



A: Id level: Quartiles ≥ 3

B: Id level: Quartile $= 4$

C: Clinic level: Quartiles ≥ 3

D: Clinic level: Quartile $= 4$

Figure B1: Placebo test - Predicted SES PCP at the individual level (id) or clinic level on pre-closure mortality

Notes: Panels A and B show mortality in the pre-period, where PCP SES is predicted at the individual level using equation 3. The figures display estimates from equation 4, with indicators for having a PCP SES in the 3rd or 4th SES prediction quartile in Panel A, and in the 4th quartile in Panel B, along with 95 percent confidence intervals. Panels C and D present similar placebo analyses, but with PCP SES predicted at the clinic level. PCP SES is grouped into quartiles based on the distribution among patients who are alive and assigned to a low-SES PCP after clinic closure. The figures display estimates from Equation 4, using indicators for patients whose new PCPs fall in the 3rd–4th quartiles (Panel C) and the 4th quartile (Panel D), along with 95 percent confidence intervals. The equation controls for old PCP fixed effects, and patient controls including indicators for gender, partner status, ethnicity, and age fixed effects. Standard errors are clustered at the old physician level.

Appendix D Alternative Mechanisms, External Validity and The Magnitude of the Effect

Appendix D.1 Additional Alternative Mechanisms

In Section 4.3, we discussed potential mechanisms and found evidence that SES concordance increases adherence and detection, and improves the physician-patient relationship. In this section, we explore two additional mechanisms beyond those covered in the main text.

Decreasing Returns to Baseline Health Another potential channel is that low-SES physicians are better at treating the frailest patients, and the effect of having a low-SES physician is decreasing in patient health status at the baseline. According to this hypothesis, the frailest patients have the highest return from having a low-SES physician, regardless of their own SES. To test whether this is the case, we define patients' health status by whether they received treatment for one or more chronic conditions before clinic closures.[5] Appendix Table C1 column 2 shows that, while low-SES patients with a chronic conditions benefit from getting a low-SES physician after clinic closure compared to a high-SES physician, high-SES patients with chronic conditions do not. In addition, we do not observe that the concordance effect increases when patients have more conditions. This suggests that decreasing returns in baseline health are not a driving mechanism.

[5]Note that treatment patterns are subject to potential endogeneity concerns: The likelihood of receiving a treatment, conditional on the same level of health, may be different between high- and low-SES patients.

Table C1: Mechanism: The Effect of Having a Low-SES Physician (PCP) on Mortality by Patients with Different Baseline Conditions

	No conditions (1)	Any conditions (2)	1 Condition (3)	2 Conditions (4)	3 Conditions (5)
Low-SES PCP × Post	-0.00018	0.00070	0.00077	0.00243	-0.01132
	(0.00034)	(0.00060)	(0.00086)	(0.00220)	(0.00946)
Low-SES Patient × Post	0.00329***	0.00470***	0.00517***	0.00436***	0.01177
	(0.00032)	(0.00048)	(0.00069)	(0.00162)	(0.00757)
Low-SES PCP × Low-SES Patient × Post	-0.00121**	-0.00177**	-0.00216*	-0.00224	0.01529
	(0.00052)	(0.00082)	(0.00118)	(0.00288)	(0.01362)
Observations	616,857	402,148	208,021	51,630	5,983
Outcome mean	.00596	.01204	.01044	.01912	.03035
Outcome mean low-SES patients	.00905	.01624	.01709	.02318	.03914
Gradient high-SES physicians	.00471	.00682	.00732	.00734	.01326

Notes: The table presents the effect of having a low-SES physician for different groups of patients, categorized by the number of chronic conditions diagnosed in the pre-period estimated from equation 2. The conditions consist of CVC, COPD, and diabetes. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. All columns include prior physician fixed effects, patient characteristics, and new physician characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Differences in Overall Skills Another alternative mechanism is that low-SES physicians may be more skilled than high-SES physicians. These physicians likely had to work harder than high-SES physicians to become physicians in the first place, which could reflect a higher skill level. Physician skills are multifaceted and difficult to measure, but we do not believe our results support this mechanism. If low-SES physicians were indeed more skilled, we might expect to see better health outcomes for both high-SES and low-SES patients, but as shown in, e.g, Figure 2 and 3, we do not find any effect on health for high-SES patients. As shown in Table C1, we do not even observe an effect for the frailest high-SES patients. Additionally, when measured by high school GPA, low-SES physicians tend to have lower test scores, which may correlate with overall skill.[6]

Appendix D.2 External Validity

To assess the external validity of our findings, we examine whether the impact of SES concordance on health can extend to patient populations with higher education levels. For example, we explore whether patients with vocational education as their highest level of education experience improvements in health outcomes when matched with a physician whose parent also has vocational education. To assess whether our results apply more broadly, we perform the same analysis following equation 2, but change the definition of low-SES to higher levels of education on both the patient and physician side. As presented in Appendix Table C2, we find no significant improvement in health outcomes for patient groups with higher levels of education due to educational concordance. This aligns with our findings from the event study figures, such as Figure 2, where we observe that high-SES patient mortality is unaffected by physician SES.

[6]High-SES physicians are from the 82.7th percentile of the high school GPA distribution, while low-SES physicians are from the 80.5th percentile. The p-value for a t-test of whether this difference is significantly different from zero is 0.000.

Table C2: External Validity: The Effect of Physician Parental Educational Level on Patient Mortality by Patient Education

	Primary school (1)	High school (2)	Vocational education (3)	Associate degree (4)	Undergraduate degree (5)	Postgraduate degree (6)
PCP Parent Education x Patient Education x Post	-0.00151***	-0.00015	0.00016	-0.00061	0.00008	0.00018
	(0.00045)	(0.00129)	(0.00036)	(0.00127)	(0.00041)	(0.00057)
Observations	1,019,005	1,019,005	1,019,005	1,019,005	1,019,005	1,019,005
Outcome mean	.00836	.00836	.00836	.00836	.00785	.00836

Notes: The table presents the effect of a generalized concordance effect, for example, the effect of having a physician with a parent with a vocational education for patients with vocational education. We estimate a version of equation 2, where we substitute the SES^{PCP} treatment dummy with, for example, an indicator for the physician's parent having a vocational education. We then interact this characteristic with the corresponding characteristic of the patient. Column 1 is our main result. All regressions include prior physician fixed effects, patient characteristics, and new physician characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Appendix D.3 Magnitude of the Effect

Our conclusion that physician-patient SES concordance improves patient health aligns with prior research (Hill, Jones and Woodworth, 2023, Chen, Persson and Polyakova, 2022, Frakes and Gruber, 2022, Ye and Yi, 2022, Alsan, Garrick and Graziani, 2019). However, comparing our results directly to other studies is challenging due to different settings.

Hill, Jones and Woodworth (2023) examines racial concordance in within-hospital mortality for uninsured patients in Florida. Our main mortality estimate is approximately half in absolute and relative terms to the estimate found in Hill, Jones and Woodworth (2023), although the baseline mortality rate is roughly similar. Chen, Persson and Polyakova (2022) shows that having a medical expert in the family increases survival by 0.8 percentage points for family members with income below the median, resulting in an 18.6% decline in the mortality rate 15 years after matriculation. Thus, the SES-concordance effect is smaller than both a racial concordance effect in a hospital setting and having a medical expert in the family.

In the Danish context, Simeonova, Skipper and Thingholm (2022) finds a substantial impact of physicians' health management skills on patients' statin adherence. Our SES concordance effect on statin adherence is less than half of the mean adherence effect for patients who had a physician in lowest quartile of the skill distribution before getting a new physician (1.9% vs. 4.3%). In Norway, Ginja et al. (Forthcoming) finds a 5% reduction in patient mortality with a 1 standard deviation increase in physician quality for individuals aged 55 and older. Though they don't separate the effect by patient SES, our SES concordance measures is larger than the average effect found in Ginja et al. (Forthcoming).

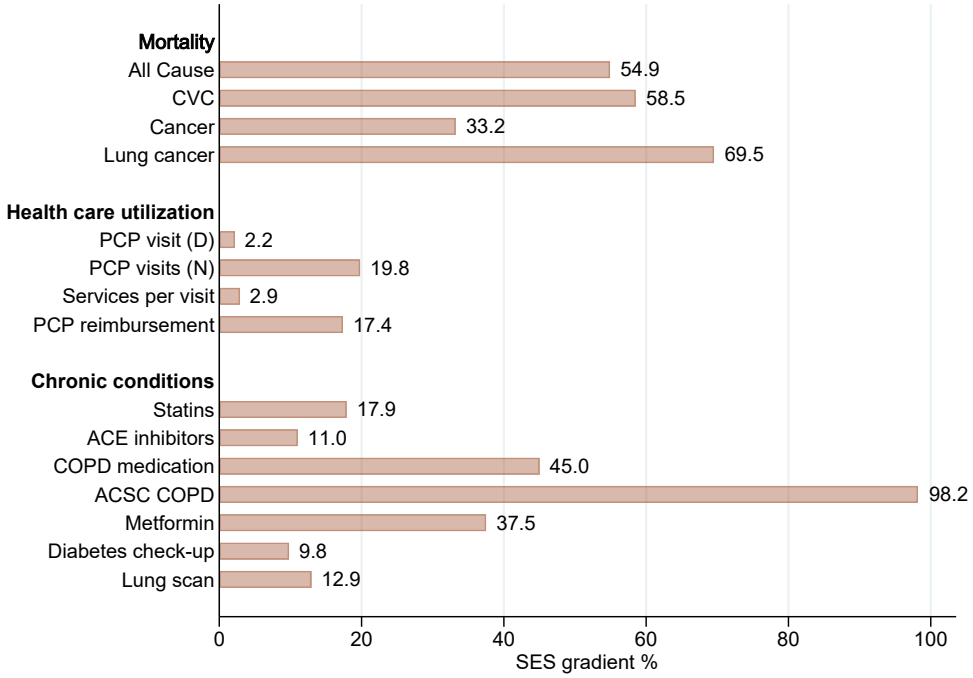


Figure D1: Health-SES Gradient by Outcomes of Interest

Note: The figure presents the SES gradient by outcomes of interest in the full Danish adult population between ages 40-70 (mean age: 53.8) in years 1995-2019, adjusted for age, gender, and year fixed effects. The gradient for mortality is calculated as (low SES mortality − high SES mortality)/(high SES mortality) × 100. We define low-SES patients as those with primary school as their highest level of completed education and high-SES as those with an education higher than primary school. PCP stands for primary care physician, D stands for dummy, N stands for counts, ACSC stands for hospitalizations with an ambulatory care sensitive condition.

Appendix E Additional Figures & Tables

Table D1: Summary Statistics - Patients

	Population (1)	Analysis sample (2)	High-SES (3)	Low-SES (4)
Primary education	0.334	0.321	0.000	1.000
High school	0.045	0.047	0.069	0.000
Vocational education	0.370	0.386	0.569	0.000
Associate degree	0.041	0.037	0.055	0.000
Undergraduate degree	0.134	0.142	0.209	0.000
Postgraduate degree	0.076	0.067	0.098	0.000
GP contact	0.820	0.843	0.834	0.861
Number of visits	5.332	5.489	5.054	6.436
Number of services per visit	1.623	1.605	1.603	1.610
Total reimbursement GP	102.636	105.003	97.680	120.947
Death	0.100	0.078	0.066	0.104
CVC death	0.021	0.014	0.011	0.019
Cancer death	0.042	0.034	0.030	0.043
Lung cancer death	0.011	0.010	0.007	0.014
Statins	0.086	0.126	0.118	0.145
ACE	0.116	0.152	0.145	0.167
COPD medicine	0.062	0.061	0.052	0.081
COPD hospitalization	0.008	0.007	0.005	0.011
Metformin	0.044	0.051	0.044	0.067
Diabetes control	0.077	0.097	0.092	0.109
Lung scan	0.045	0.041	0.038	0.047
Number of observations	3,818,956	352,411	241,481	110,930

Notes: The table presents patient characteristics in different patient samples. PCP stands for primary care physicians. Reimbursement is in 2010 US dollars. Mortality is one year mortality rates. The variables are unadjusted for age, gender and year.

Table D2: Duration of Patient-Physician Relationships Following Clinic Closure

	Low-SES	Male	Non-Danish ethnicity	older
	(1)	(2)	(3)	(4)
Patient characteristic	-0.01637	0.01441	-0.18043***	-0.71431***
	(0.01352)	(0.01490)	(0.02611)	(0.01087)
PCP characteristic	0.04261	0.04790	-0.11349**	-0.42623***
	(0.04966)	(0.05362)	(0.05497)	(0.05918)
Patient characteristic × PCP characteristic	-0.02786	0.06320***	-0.10185***	0.24971***
	(0.02038)	(0.01667)	(0.07141)	(0.02154)
Observations	352,411	352,411	352,411	352,411

Notes: The table tests for differences in the length of the post-closure physician-patient relationship. Length is measures in years. Note that, we only include a patient once, hence there is no time dimension in this analysis, which prevents us from including a 'post' indicator. The regressions include prior physician fixed effects, patient characteristics, and new physician characteristics, except for the focal characteristic. "Older" is defined as individuals aged older than 60 in the patient sample and older than 50 in the physician sample. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the prior physician level. *** p <0.01, ** p <0.05, * p <0.1.

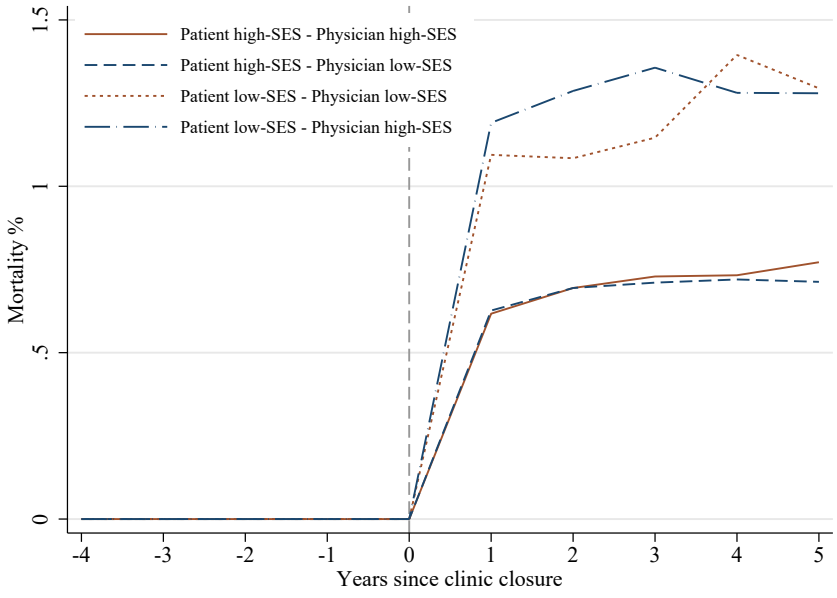


Figure D2: Physician (PCP)-Patient SES Concordance and Mortality - Raw Correlations

Note: The figure presents raw means of patient mortality by physician and patient SES, relative to the time of clinic closure. Physician low-SES is defined as having a physician who have a parent with primary school as highest level of completed education. Patient low-SES is defined as the patient having primary school as highest level of completed education.

Table D3: Test for Selection in Patient-Physician Reassignment

	Analysis sample High SES	Analysis sample Low SES	Non-missing physician SES High SES	Non-missing physician SES Low SES
	(1)	(2)	(3)	(4)
Male	-0.00342***	-0.00226	-0.00258**	-0.00169
	(0.00114)	(0.00185)	(0.00109)	(0.00173)
Non-Danish ethnicity	0.00098	-0.00362	0.00236	-0.00048
	(0.00255)	(0.00580)	(0.00254)	(0.00571)
Married	0.00305*	0.00677***	-0.00125	0.00053
	(0.00157)	(0.00206)	(0.00148)	(0.00185)
Pre CVC	0.00241	0.00005	0.00090	-0.00041
	(0.00180)	(0.00262)	(0.00169)	(0.00271)
Pre diabetic	-0.00038	-0.00108	0.00049	0.00031
	(0.00179)	(0.00273)	(0.00171)	(0.00259)
Pre COPD	-0.00193	-0.00383	-0.00024	-0.00064
	(0.00190)	(0.00271)	(0.00190)	(0.00265)
Observations	247,568	104,843	134,589	52,949

Notes: The table presents estimates on the probability of getting a low-SES physician post-clinic closure by patient SES, characteristics and pre-closure chronic conditions in the main analysis sample and the sub-sample in which physicians' parents' education is non-missing. Low-SES physician is defined as getting assigned to a physician who have a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. 'Pre CVC', 'Pre diabetic', and 'Pre COPD' is defined as getting medical treatment for the particular condition prior to clinic closure. All regressions include prior physician fixed effects, patient characteristics, and new physician characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at prior physician level. *** p <0.01, ** p <0.05, * p <0.1.

Table D4: The Effect of Physician (PCP)-Patient SES Concordance on Mortality from Chronic Conditions by Gender and Age

	All Cause (1)	CVC (2)	Cancer (3)	Lung Cancer (4)
Panel A: Female				
Low-SES PCP × Low-SES Patient × Post	-0.00104*	-0.00020	-0.00100**	-0.00047**
	(0.00054)	(0.00021)	(0.00039)	(0.00022)
Observations	505,748	505,748	505,748	505,748
Outcome mean low-SES patients	.00985	.00147	.00459	.00159
Panel B: Male				
Low-SES PCP × Low-SES Patient × Post	-0.00200**	-0.00077**	-0.00057	-0.00015
	(0.00078)	(0.00036)	(0.00047)	(0.00027)
Observations	513,257	513,257	513,257	513,257
Outcome mean low-SES patients	.0152	.00316	.00534	.00168
Panel C: Younger sample, Age<55				
Low-SES PCP × Low-SES Patient × Post	-0.00093*	-0.00007	-0.00043	-0.00010
	(0.00053)	(0.00020)	(0.00033)	(0.00018)
Observations	395,478	395,478	395,478	395,478
Outcome mean low-SES patients	.00581	.0008	.00209	.00063
Panel D: Older sample, Age>=55				
Low-SES PCP × Low-SES Patient × Post	-0.00183***	-0.00073**	-0.00106**	-0.00045*
	(0.00063)	(0.00029)	(0.00042)	(0.00024)
Observations	623,526	623,526	623,526	623,526
Outcome mean low-SES patients	.01539	.00291	.00634	.00213

Notes: The table presents the effect of physician-patient SES concordance on mortality by causes of death and subgroup. All columns report estimates from equation 2 restricted to the post-period. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. All regressions include prior physician fixed effects, patient characteristics, and new physician characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Table D5: The Effect of Physician-Patient SES Concordance on Healthcare Utilization

	PCP visit (Dummy) (1)	PCP visit (N) (2)	Services per visit (N) (3)	Reimbursement (4)
Low-SES PCP × Low-SES Patient × Post	-0.00183	0.10452***	0.01079**	2.98371***
	(0.00191)	(0.03293)	(0.00488)	(1.04474)
Observations	2,501,620	2,501,620	2,127,213	2,127,213
Outcome mean	.84609	5.42908	1.57794	114.94538
Outcome mean low-SES patients	.86319	6.40403	1.58792	129.87665
Gradient high-SES physicians	.02145	1.37505	.0175	25.86242

Notes: The table presents the effect of physician-patient SES concordance on healthcare utilization. All columns report estimates of coefficients from the triple-difference equation 2. All columns include individual fixed effects and patient characteristics. Reimbursement is in US dollars. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Patient characteristics include age fixed effects and a dummy for being married. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered at the patient level. *** p <0.01, ** p <0.05, * p <0.1.

Table D6: The Effect of Physician (PCP)-Patient SES Concordance on medicine use

	ACE inhibitors (1)	Metformin (2)	COPD medication (3)
Low-SES PCP × Low-SES Patient × Post	0.00185	0.00008	-0.00173
	(0.00211)	(0.00114)	(0.00136)
Observations	2,501,620	2,501,620	2,501,620
Outcome mean	.14696	.04908	.05752
Outcome mean low-SES	.16389	.06147	.07742
Gradient for high SES physicians	.03742	.02377	.03605

Notes: The table presents the effect of physician-patient SES concordance on Medicine use. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. All regressions include individual fixed effects, and patient characteristics. Patient characteristics include age fixed effects and a dummy for being married. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered at the patient level. *** p <0.01, ** p <0.05, * p <0.1.

Table D7: The Effect of Physician-Patient SES Concordance on Health Care Utilization, Disease Detection, and Treatment Adherence

	Statins (1)	COPD Hospitalization (2)	Diabetes Checkup (3)	Lung scans (4)
Panel A: Health Behavior				
Low-SES PCP × Low-SES Patient × Post	0.00689**	-0.00135**	0.01194*	0.00102
	(0.00316)	(0.00066)	(0.00611)	(0.00290)
Observations	1,258,806	2,484,828	948,200	1,100,892
Outcome mean	.13502	.00641	.12827	.07967
Outcome mean low-SES	.1452	.01045	.13926	.09783
Gradient for high SES physicians	.02717	.00993	.01681	.03346
Panel B: Detection Effect				
Low-SES PCP × Low-SES Patient × Post	0.00275	-0.00091*	0.00737	0.00425**
	(0.00298)	(0.00054)	(0.00596)	(0.00176)
Observations	898,768	2,440,577	695,411	1,100,892
Panel C: Adherence Effect				
Low-SES PCP × Low-SES Patient × post	0.01904**	-0.03165*	0.03396**	
	(0.00800)	(0.01799)	(0.01370)	
Observations	360,038	44,251	252,789	
Outcome mean	.46351	.05765	.41766	
Outcome mean low-SES	.46775	.07399	.4185	
Gradient for high SES physicians	.02149	.04179	.02153	

Notes: The table presents the effect of physician-patient SES concordance on health care utilization related to chronic conditions. Column 1 includes only men. Column 4 only include women. All columns report estimates of coefficients from the triple-difference equation 2. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. All regressions include individual fixed effects and patient characteristics. Patient characteristics include age fixed effects and a dummy for being married. **Panel B** restricts the sample to patients who were not previously diagnosed, defined as those who never received the corresponding treatment in the pre-period. **Panel C** restricts the sample to patients who were previously diagnosed, defined as those who received the corresponding treatment in the pre-period. Previously- and not-previously diagnosed in Panels B and C are defined in the following way: Column 1 split on whether the patient had used statins before clinic closures. Column 2 is split on whether the patient had been treated for COPD before clinic closures. Column 3 is split on whether the patient had a diabetes checkup or used metformin before clinic closures. Column 4 panel B uses first time use of lung scans as the outcome (as there is not variation within individual for this outcome, we use the same specification as for mortality in this outcome). "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered on the patient level. *** p <0.01, ** p <0.05, * p <0.1.

Table D8: The Effect of Physician-Patient SES Concordance on Mortality

	All-cause mortality (1)	CVC mortality (2)
Panel A: Detection Effect		
Low-SES PCP × Low-SES Patient × Post	-0.00121**	-0.00049
	(0.00052)	(0.00034)
Observations	616,857	370,450
Panel B: Adherence Effect		
Low-SES PCP × Low-SES Patient × Post	-0.00177**	-0.00131
	(0.00082)	(0.00092)
Observations	402,148	142,806
Outcome mean	.01204	.00448
Outcome mean low-SES	.01624	.00593
Gradient for high SES physicians	.00682	.00285

Notes: The table presents the effect of physician-patient SES concordance on mortality, split by conditions prior to clinic closure. Column 2 includes only men. All columns report estimates from equation 2 restricted to the post-period. Low-SES PCP is defined as having a physician who has a parent with primary school as highest level of completed education. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. **Panel A** restricts the sample to patients who were not previously diagnosed, defined as those who never received the corresponding treatment in the pre-period. **Panel B** restricts the sample to patients who were previously diagnosed, defined as those who received the corresponding treatment in the pre-period. Column 1 splits the mortality effect on whether the patients had been treated for any of the chronic conditions (CVC, diabetes, COPD). Column 2 split on whether the patient had used statins before clinic closures. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered on the new physician level. *** p <0.01, ** p <0.05, * p <0.1.

Table D9: Mechanism: The Effect of Physicians' (PCP) Parents' Illness on Patient Mortality

PCP Parental Condition	All cause mortality PCP All conditions (1)	PCP CVC (2)	PCP Cancer (3)	CVC mortality PCP CVC (4)	Cancer mortality PCP Cancer (5)
Low-SES Patient× Post	0.00320***	0.00328***	0.00331***	0.00060***	0.00104***
	(0.00036)	(0.00027)	(0.00028)	(0.00021)	(0.00018)
PCP parental illness × Post	-0.00053	-0.00009	-0.00054	-0.00024	-0.00005
	(0.00036)	(0.00047)	(0.00044)	(0.00032)	(0.00030)
PCP parental illness × Low-SES Patient × Post	0.00039	0.00089	0.00048	0.00003	0.00022
	(0.00050)	(0.00075)	(0.00063)	(0.00058)	(0.00040)
Outcome mean	.00843	.00843	.00843	.00212	.00363
Gradient high-SES physicians	.00589	.00589	.00589	.00165	.00211
Observations	783,776	783,776	783,776	393,269	783,776

Notes: All columns report the estimates from equation 2, replacing SES^{PCP} with an indicator for the physician's parent receiving treatment for, or dying from the corresponding condition. The regressions are conditioned on the observation of the physician's parents. PCP stands for primary care physician. 'All conditions' Indicates that the physician's parent had any of the chronic conditions, CVC, cancer, COPD, or diabetes. 'PCP CVC' indicates that the physician's parent had a cardiovascular condition, while 'PCP Cancer' indicates that the physician's parent died from cancer. Low-SES Patient is defined as the patient having primary school as highest level of completed education. All regressions include prior physician fixed effects, patient characteristics, and new physician characteristics. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. "Gradient high-SES physicians" is the difference in the outcome variable between high- and low-SES patients who have high-SES physicians in the post-period. Standard errors are clustered at the new physician level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D10: Internal Validity: The Role of Other Physician (PCP) Characteristics in Reducing the SES-Gradient in Mortality

	Most experience	Male	Ethnic Danish	UCPH	Highest GPA	Most low-SES patients
	(1)	(2)	(3)	(4)	(5)	(6)
Low-SES Patient × PCP characteristic × Post	0.00073	0.00017	0.00116	0.00106**	0.00027	-0.00012
	(0.00048)	(0.00050)	(0.00090)	(0.00046)	(0.00055)	(0.00049)
Observations	1,019,005	1,019,005	1,019,005	1,019,005	752,785	1,019,005
Outcome mean	.00836	.00836	.00836	.00836	.00785	.00836
Gradient at 'control' condition	.00519	.00527	.00532	.00498	.0056	.00542

Notes: The table tests for the role of other physician characteristics on the health-SES gradient. All columns report the estimates from equation 2, replacing PCP^{Low} by the respective physician characteristic. 'Most' refers to values in the top third of the distribution. E.g. 'Most low-SES patients' refers to physicians having a share of low-SES patients in the year prior to clinic closures in the top third of the distribution. Highest academic performance is defined as having high school grades among the top third of the distribution. UCPH is the University of Copenhagen. All regressions include prior physician fixed effects, patient characteristics. The regressions include new physician characteristics except for the focal characteristic. 'Gradient at 'control' conditions' refers to the SES gradient in, for example, non-male clinics or less-experienced clinics. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level. *** $p<0.01$, ** $p<0.05$, * $p<0.1$.

Table D11: Internal Validity: The Effect of Physician (PCP)-patient SES Concordance on Mortality by Physician Characteristic

	(1) Most experienced	(2) Least experienced	(3) Most male	(4) Least male	(5) Non-ethnic Danish	(6) Ethnic Danish	(7) UCPH	(8) Non UCPH
PCP low SES x Patient low SES x Post	-0.00199***	-0.00107*	-0.00113*	-0.00174***	-0.00237*	-0.00126**	-0.00193**	-0.00109**
	(0.00071)	(0.00058)	(0.00065)	(0.00061)	(0.00121)	(0.00049)	(0.00077)	(0.00055)
Observations	417,272	601,733	460,692	558,313	222,189	796,816	386,047	632,953
Outcome mean	.00896	.00795	.00378	.00378	.00353	.00353	.00328	.00328

Notes: The table tests for the role of other physician characteristics on the health-SES gradient. All columns report the estimates from equation 2 but conditioning on a certain new PCP characteristic. UCPH is the University of Copenhagen. All regressions include prior physician fixed effects, patient characteristics, and new physician characteristics. Low-SES Patient is defined as the patient having primary school as highest level of completed education. Physician characteristics and controls are aggregated on the clinic level and include mean age, share of male physicians, share of ethnic Danish physicians, number of physicians in the clinic, and physicians' graduating institution. Patient characteristics include age fixed effects, dummies for being male, non-Danish ethnicity, a dummy for being married, and year fixed effects. Standard errors are clustered at the new physician level. *** p <0.01, ** p <0.05, * p <0.1.