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Paying for Parity: Incentivizing Men in Feminized Occupations

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Abstract

We study whether gender-neutral financial incentives can increase male participation in feminized occupations such as General Practice. Exploiting a salary supplement policy for GP residents in Catalonia (Spain) and a synthetic difference-in-differences design, we find that the policy increased the share of male residents by 8.3 percentage points—a 30% rise over the pre-treatment mean. The effect is concentrated in areas receiving larger wage increases and in more geographically remote hospitals, consistent with gender differences in wage elasticities and geographic mobility. The policy is also associated with lower GP vacancy rates in treated regions, suggesting that such incentives can help rebalance gender composition while alleviating workforce shortages.

JEL Codes: I11, J24, H75

Key words: Monetary incentives; Primary Care; Gender composition; Feminized occupations; Occupational choice

1 Introduction

Gender imbalances in the workforce shape not only representation, but also the functioning, resilience, and attractiveness of entire professions. Reducing gender-driven distortions in occupational sorting can enhance team performance (Hoogendoorn et al. 2013) and generate substantial aggregate gains (Hsieh et al. 2019). These concerns are particularly salient in healthcare, and especially in general practice (GP), where persistent shortages are placing growing pressure on health systems across high-income countries (OECD 2024). Primary healthcare (PHC), with GPs at its core, plays a central role in improving population health and containing costs through early diagnosis and prevention (Bailey and Goodman-Bacon 2015; Mora-García et al. 2024). Yet despite women's increasing entry into historically male-dominated professions, men's movement into feminized occupations has largely stalled (England 2010). GP is no exception: it ranks among the most feminized medical specialties, with persistently low male participation that risks deepening existing shortages. Beyond labor suplpy, the gender composition of the medical workforce, including gender concordance between patients and providers, has been linked to improved patient outcomes (Tsugawa et al. 2017; Greenwood et al. 2018; Wallis et al. 2023), suggesting that a more gender-balanced GP workforce could yield benefits extending well beyond staffing levels alone. Moreover, attracting men into care-intensive roles may carry broader social returns: greater male presence in caregiving professions can help normalize male care work and contribute to the erosion of occupational gender stereotypes; a dimension of the gender revolution that has so far made little headway (England 2010; Elliott 2016).

Achieving a more gender-balanced workforce in essential public service roles is therefore not only an equity concern, but also a policy challenge with implications for service delivery. A large literature shows that interventions can shape gender composition (Dohmen and Falk 2011; Breda et al. 2023; Carrell et al. 2010; Bell et al. 2019; Wasserman 2023; Goldin and Katz 2016), yet most existing evidence focuses on encouraging women into male-dominated, high-paying fields. Much less is known about whether men can be attracted into highly feminized occupations, particularly through gender-neutral financial incentives. In education, increasing male participation in teaching has been shown to improve student outcomes (Schaede and Mankki 2022), but comparable evidence for PHC remains absent, despite its central role in health systems and the persistently low male participation that characterizes it.

Spain's GP market offers a natural setting to study this question. GP is among the most feminized medical specialties, ranking seventh lowest in male representation across 44 specialties, with men accounting for only 29% of GPs (Ku 2011; Amer-Mestre et al. 2021). As shown in Figure A1, it is also the only specialty to have experienced persistent shortages since 2022, with an average vacancy rate of 9.7%. We combine rich administrative data from Spain's medical residency allocation system (MIR) with a synthetic difference-in-differences design to estimate the causal effect of a gender-neutral financial incentive introduced for GPs in Catalonia.

We find that the policy increased the share of men choosing GP by 8.3 percentage points on average, a 30% rise relative to the pre-treatment mean, with the effects concentrated in areas receiving the largest supplements. Consistent with this shift in male participation, GP vacancy rates also declined relative to untreated hospitals. Together, these findings suggest that gender-neutral financial incentives can help alleviate workforce shortages while simultaneously rebalancing gender composition in essential public services.

2 Methodology and data

In Spain, medical graduates must complete a residency training program in order to practice as specialists within the National Health System. Residency positions, defined as hospital–specialty pairs, are allocated through a centralized process, known as MIR. Candidates are ranked according to a combined score of academic record and a national exam, and then sequentially choose their placement under a serial dictatorship mechanism.

Within this system, the Catalan regional government introduced an incentive program in 2022, renewed annually through 2024. The policy offers unconditional annual salary supplements to residents who select GP in Catalonia. Residents in the Barcelona metropolitan area receive €5,125 (Low intensity), those in the rest of the province of Barcelona receive €7,175 (Medium intensity), and those in the provinces of Girona, Tarragona, and Lleida receive €9,225 (High intensity). Since the base salary for a first-year resident is €19,550, the supplement implies a 26–47% increase.

Our analysis draws on administrative data from the Spanish Ministry of Health, covering the full universe of candidates who began their medical residency between 2019 and 2024 (47,380 individuals). Gender is recorded as a binary variable (male/female) in the MIR registry, based on official identification documents. Although the data contains each candidate's hospital-specialty choice, we aggregate to the hospital-specialty-year level, constructing a balanced panel of 16,218 observations.

The natural approach to estimate the causal effect of the policy on gender composition would be a difference-in-differences design, exploiting either the variation across specialties within the treated region, the variation across regions within GP, or both through a triple difference-in-differences. The triple interaction is preferred because gender composition trends may differ both across specialties and across regions simultaneously, so that two-way comparisons would conflate the policy effect with these concurrent trends[1]. See Appendix Table A1 for full results. However, event-study estimates from the standard DID specification reveal differential pre-trends, precluding a causal interpretation — although the point estimates are directionally consistent with our main findings (see Appendix Table A1). To address this, we adopt a synthetic difference-in-differences (SDID) design (Arkhangelsky et al. 2021), which constructs optimal weights for control units and pre-treatment periods to minimize pre-trend discrepancies. Since the policy varies in intensity across three geographic areas within Catalonia, we estimate the treatment effect separately for each intensity level. We complement the average effect with event-study estimates following Ciccia (2024). Standard errors are computed using bootstrapping methods.

3 Results

Figure 1 provides descriptive evidence on the effects of the policy by plotting the annual share of male residents across treatment groups, normalized to 2021. Before the policy, the male share in GP was stable at around 35% in control areas and ranged from 26% to 30% in treated areas. After 2022, the series remains largely flat in control and low-intensity areas, whereas medium- and high-intensity areas diverge sharply upward, with the male share rising to 36% upon the policy's introduction (Table A2).

We formalize this pattern in Table 1. The SDID estimate for the entire treated region (column 1) indicates an increase of 8.3 percentage points in the share of male residents, a

1. Under the triple DID design, the baseline specification would be:

$$Y_{ih(r)st} = \beta(GP_s \times Cat_r \times Post_t) + \mu_{rs} + \delta_{st} + \epsilon_{ih(r)st}$$

where subscripts i, h, s and t denote individual, hospital (located in region r), specialty and year, respectively. GP_s equals one for the GP specialty; Cat_r equals one for hospitals in Catalonia; and $Post_t$ equals one from 2022 onwards. μ_{rs} and δ_{st} denote region-specialty and specialty-year fixed effects. The within-Catalonia DID drops the Cat_r dimension and the within-GP DID drops the GP_s dimension.

30% rise over the pre-treatment mean. Behind this average, however, lies substantial heterogeneity across incentive intensity. The effect is driven entirely by medium and high-intensity areas (columns 3 and 4), where the impact reaches 11.1 and 10.1 percentage points, respectively—equivalent to increases of 41.3% and 37.3% relative to their respective pre-treatment means. In contrast, the estimate for the low-intensity area (column 2) is smaller and not statistically significant. The event-study estimates in Figure 2 confirm this picture: pre-treatment coefficients are close to zero across all intensity levels, supporting the parallel trends assumption, and the post-treatment effects for medium and high-intensity areas are homogeneously distributed across years. Moreover, the increase in male participation was largest in hospitals where the pre-policy male share was lowest. Conditional on treatment intensity, a 10 percentage point lower baseline male share is associated with a 10 percentage point larger policy effect, suggesting that the policy was most effective precisely where gender imbalances were most pronounced[2].

A natural question is whether the rise in male participation also helped reduce GP shortages. Although the absence of pre-treatment vacancies precludes a causal analysis, Figure A2 is suggestive. Once vacancies emerged in 2022, their rate in treated hospitals was substantially lower than in control hospitals, indicating that gender-neutral incentives may not only rebalance gender composition but also alleviate workforce shortages.

To shed light on the mechanisms underlying the policy effect, we examine heterogeneity across hospitals. Figure A3 shows that, even after absorbing treatment-intensity fixed effects, hospitals located farther from Barcelona experienced larger relative increases in the male share. This pattern suggests that men respond not only to the salary supplement itself, but also to within-zone differences in location characteristics that the broad intensity categories do not fully capture. Although the small number of treated hospitals prevents us from disentangling these channels cleanly, the evidence is consistent with prior work showing that men are more responsive to wage incentives (Blau and Kahn 2007), more geographically mobile (Le Barbanchon et al. 2021), and less constrained by family co-location considerations (Costa and Kahn 2000). Taken together, these patterns suggest that financial incentives in feminized professions may be particularly effective at attracting men to more remote and less connected areas, where shortages are often most acute.

Finally, as noted by prior work using this setting, our results may be prone to SUTVA

2. To obtain this estimate, we first compute hospital-level policy effects (SDID) and average them across post-treatment years. We then regress these estimates on the pre-policy male share and treatment intensity fixed effects. The coefficient on the pre-policy male share is 0.998 (p=0.008)

violations (?). To address this concern, we implement a ring-based exclusion strategy, dropping regions with high pre-policy mobility and specialties most comparable to GP[3]. Despite halving the sample, the estimates in Table A3 are consistent with the main findings.

4 Conclusion

Gender-neutral salary top-ups in a highly feminized medical specialty increased the male share by 30%, with the largest effects in more remote areas and where pre-policy gender imbalances were most pronounced. These findings suggest that financial incentives can be a powerful tool for rebalancing gender composition in essential public services while simultaneously alleviating workforce shortages. Beyond GP, the results speak to a broader policy question: whether gender-neutral incentives can attract men into other feminized, care-intensive occupations, such as nursing or primary school teaching, where similar imbalances and shortages persist. Future research should examine whether the resulting compositional shift proves self-reinforcing over time, and whether the gains in gender balance translate into measurable improvements in patient outcomes and care quality.

3. Excluded regions are Valencia, Madrid, Andalusia, and the Canary Islands. Excluded specialties are Preventive Medicine and Public Health, Clinical Analysis, Allergology, Occupational Medicine, Microbiology and Parasitology, Pathological Anatomy, Clinical Neurophysiology, Geriatrics, Clinical Pharmacology, and Nuclear Medicine.

Declaration of competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The data used in this study are administrative records from the Spanish Ministry of Health and are not publicly available. Access can be requested from the Ministry of Health (Ministerio de Sanidad, Spain).

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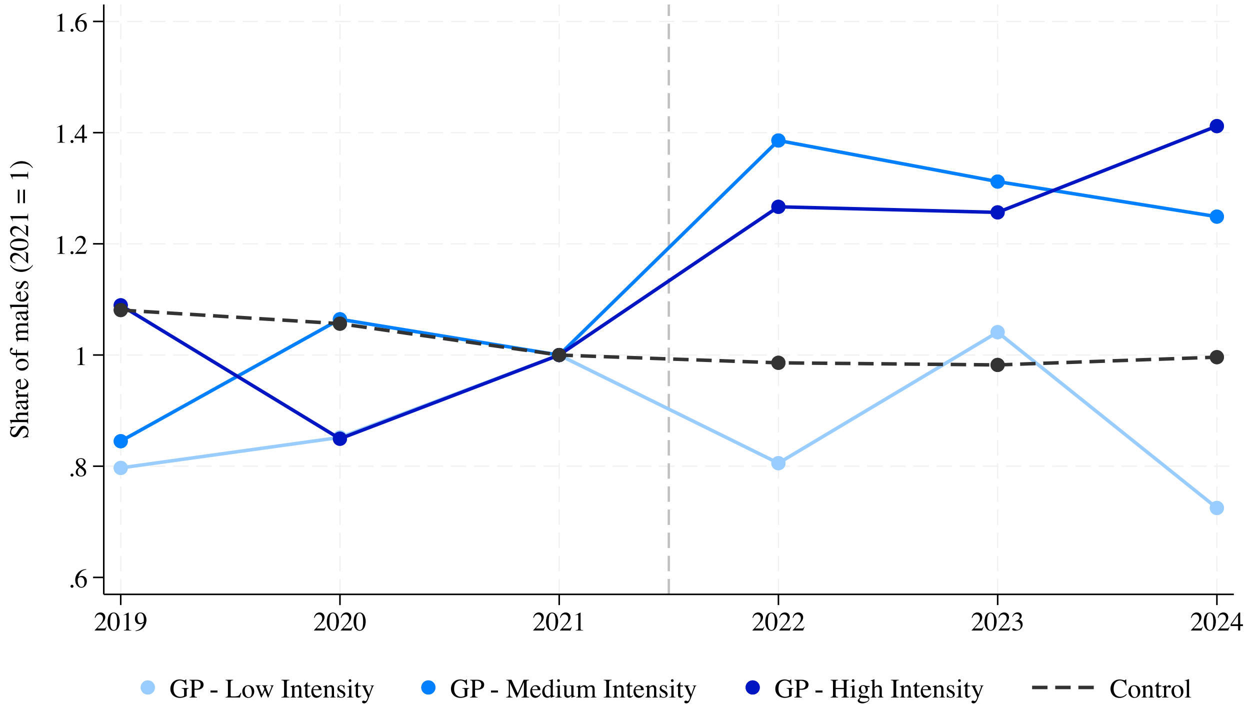
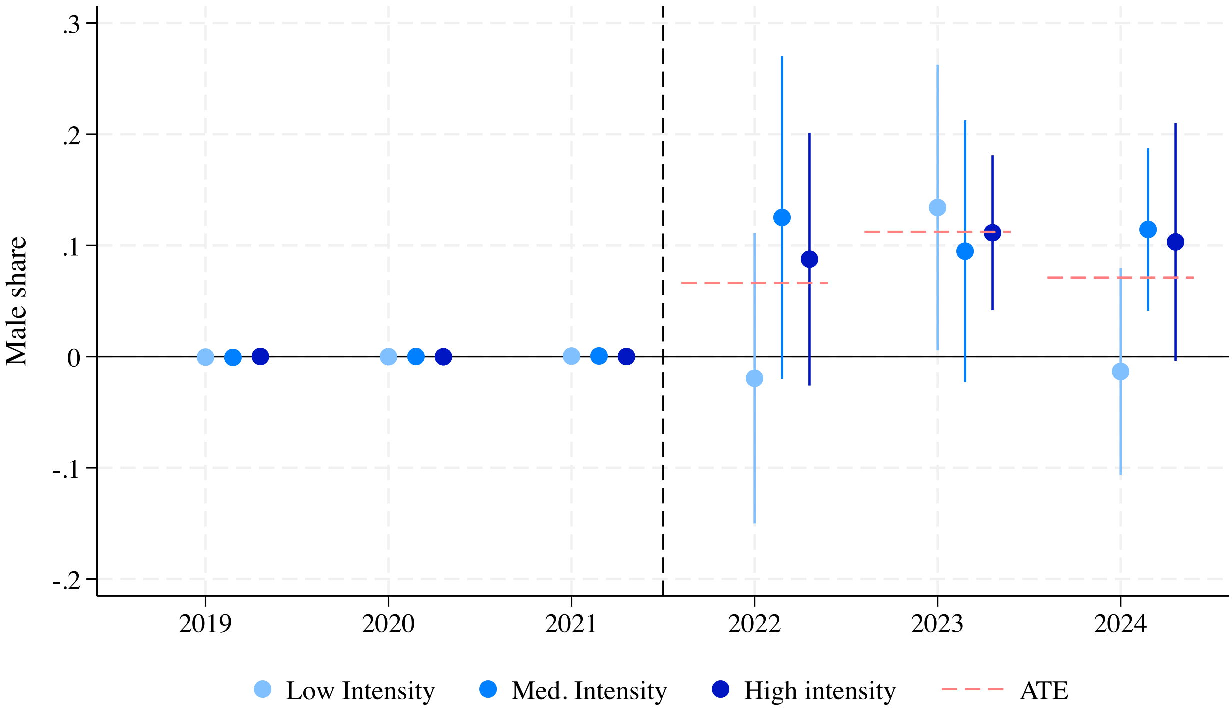
Figures and Tables

Figure 1. Share of male GP residents by treatment intensity



Notes: Each line plots the yearly mean share of male residents in GP, indexed to 2021 (2021 = 1). Low, Medium, and High intensity correspond to the three geographic tiers of the Catalan salary supplement policy introduced in 2022. Control includes all GP positions outside Catalonia. The vertical dashed line marks the introduction of the policy. Data source: Spanish Ministry of Health, MIR administrative records.

Figure 2. Event-study estimates: effect on male share by treatment intensity



Notes: The figure plots SDID event-study estimates of the policy effect on the share of male GP residents, following Ciccia (2024). Each point represents the estimated coefficient for a given year and treatment intensity level. Vertical bars indicate 90% bootstrap confidence intervals. The dashed horizontal line shows the average treatment effect across post-treatment years. The vertical dashed line marks the introduction of the policy in 2022. Data source: Spanish Ministry of Health, MIR administrative records.

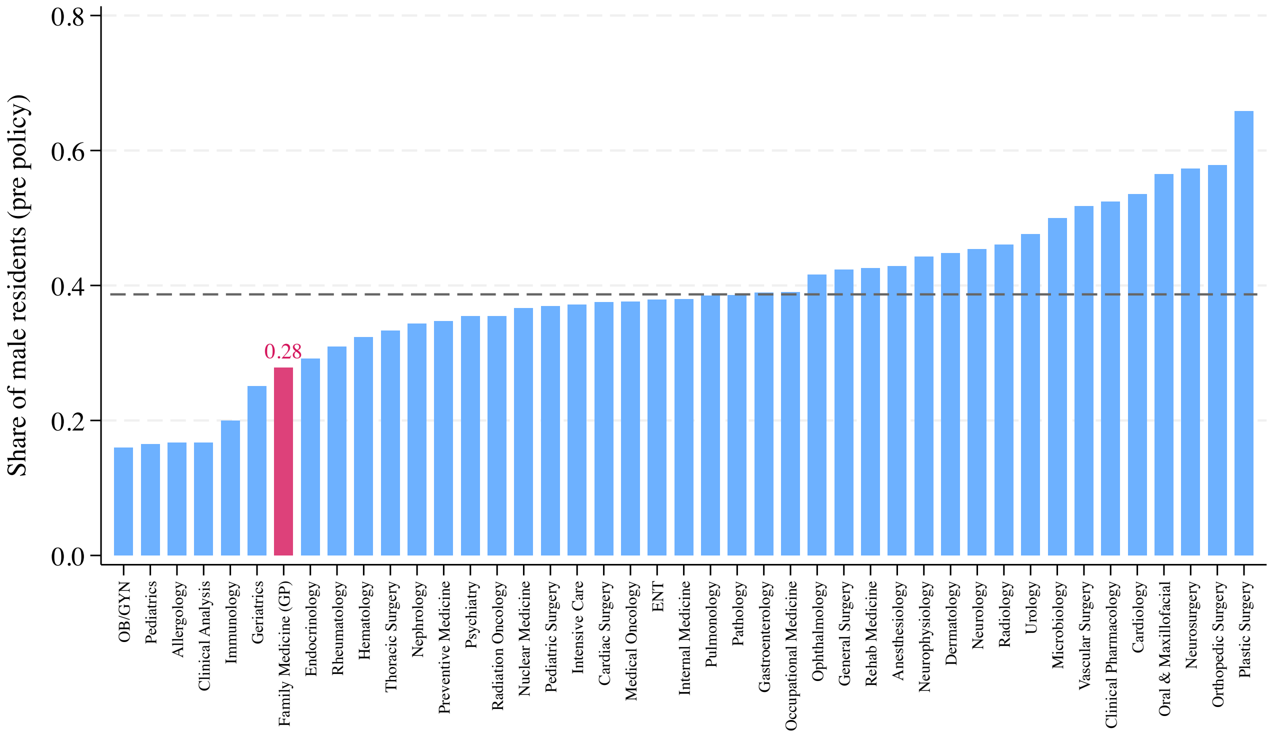
Table 1. Impact of the financial incentives policy on the share of males

	(1) All	(2) Low	(3) Medium	(4) High
Gp × Cat × Post	0.083***	0.034	0.111**	0.101**
	(0.028)	(0.036)	(0.054)	(0.045)
Observations	16218	16146	16146	16158
Mean Y	0.282	0.299	0.269	0.271

Notes: The dependent variable is the share of male residents at the hospital-specialty-year level. Column (1) estimates the average effect across all treated hospitals in Catalonia. Columns (2)–(4) estimate the effect separately by treatment intensity: Low (Barcelona metropolitan area, €5,125/year), Medium (rest of Barcelona province, €7,175/year), and High (Girona, Tarragona, and Lleida, €9,225/year). All specifications are estimated using synthetic difference-in-differences. Baseline mean reports the pre-treatment mean of the dependent variable in treated GP hospitals. Standard errors, computed via bootstrap, are in parentheses. Data source: Spanish Ministry of Health, MIR administrative records.

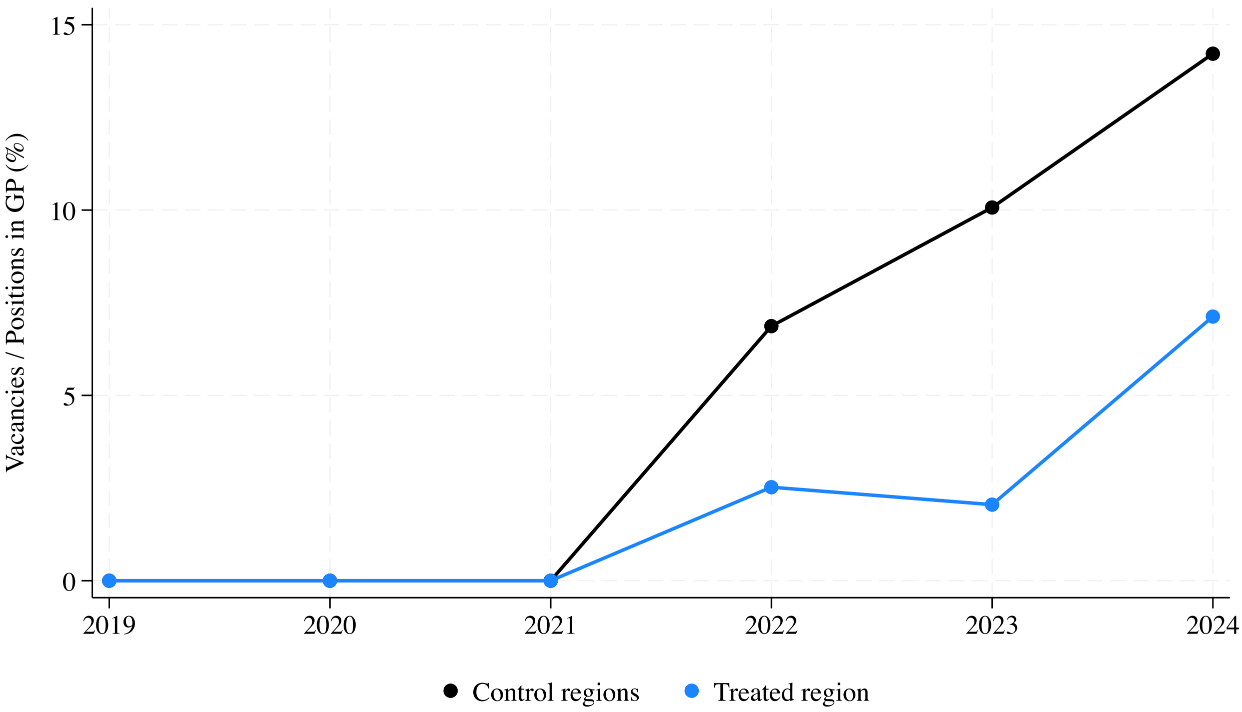
A Online Appendix

Figure A1. Males by specialty



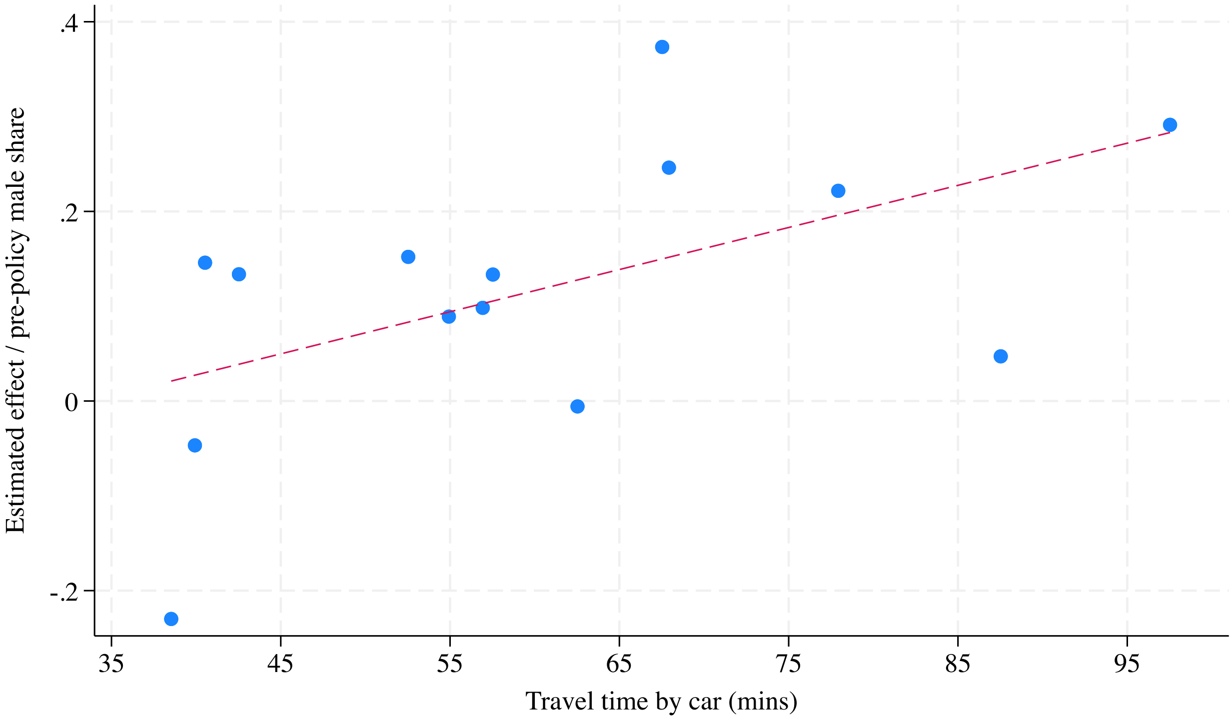
Notes: Each bar represents the share of male residents by medical specialty, computed using pre-policy data (2019–2021). The highlighted bar corresponds to Family Medicine (GP). The dashed line indicates the overall mean across all specialties. Data source: Spanish Ministry of Health, MIR administrative records.

Figure A2. GP vacancy rates by treatment status



Notes: The figure plots the ratio of unfilled to total GP residency positions by year, separately for Catalonia (treated region) and all other regions (control). Vacancies in the MIR system first emerged in 2022. Data source: Spanish Ministry of Health.

Figure A3. Policy effect vs. travel time, after absorbing intensity



Notes: Each point represents a treated hospital. The y-axis plots the ratio of the estimated policy effect on the male share to the pre-policy male share at each hospital, averaged across post-treatment years. The x-axis measures travel time by car (in minutes) from each hospital to Barcelona, the regional capital. Travel times are computed using the Google Maps API. The dashed line represents a linear fit. Treatment intensity fixed effects are absorbed. Data source: Spanish Ministry of Health and Google Maps.

Table A1. Difference-in-differences estimates of the policy effect on male share

	(1) All	(2) Low	(3) Medium	(4) High
Gp × Cat × Post	0.030*	-0.031*	0.074***	0.074***
	(0.018)	(0.018)	(0.018)	(0.018)
Observations	47251	46067	45794	45788

Notes: The dependent variable is an indicator for male at the individual level. The table estimates a triple DID (*GP* × *Catalonia* × *Post*). Column (1) estimates the average effect across all treated hospitals. Columns (2)–(4) estimate the effect separately by treatment intensity: Low, Medium, and High. The specification includes hospital-specialty fixed effects and year fixed effects. Standard errors clustered at the *CCAA* × *specialty* level are in parentheses. Pre-treatment event-study coefficients suggest violations of parallel trends, motivating the use of SDID in our main analysis. Data source: Spanish Ministry of Health, MIR administrative records.

Table A2. Male share by treatment intensity and period

	Low	**Medium**	**High**	**Control**
Pre-policy	30.0	26.9	26.1	35.0
Post-policy	28.9	36.2	35.8	33.1
Difference	-1.0	+9.3	+9.8	-1.9
p-value	(0.737)	(0.014)	(0.007)	(0.000)
N (Pre-policy)	417	294	303	19,993
N (Post-policy)	439	301	346	21,439

Notes: The table reports the share of male residents (%) by treatment intensity and period. Pre-policy: 2019–2021; Post-policy: 2022–2024. Low, Medium, and High intensity correspond to the three geographic tiers of the Catalan GP salary supplement. Control includes all non-treated positions (GP outside Catalonia and all other specialties). Data source: Spanish Ministry of Health, MIR administrative records.

Table A3. Robustness: ring-based exclusion strategy

	(1) All	(2) Low	(3) Medium	(4) High
Treat × Post	0.096***	0.047	0.125**	0.111**
	(0.029)	(0.034)	(0.057)	(0.054)
Observations	7080	7008	7008	7020

Notes: The dependent variable is the share of male residents at the hospital-specialty-year level. This table replicates the main specification after excluding regions with high pre-policy mobility to Catalonia (Valencia, Madrid, Andalusia, and the Canary Islands) and specialties most comparable to GP (Preventive Medicine, Clinical Analysis, Allergology, Occupational Medicine, Microbiology, Pathological Anatomy, Clinical Neurophysiology, Geriatrics, Clinical Pharmacology, and Nuclear Medicine). Column (1) estimates the average effect across all treated hospitals. Columns (2)–(4) estimate the effect separately by treatment intensity: Low, Medium, and High. All specifications are estimated using synthetic difference-in-differences. Standard errors, computed via bootstrap, are in parentheses. Data source: Spanish Ministry of Health, MIR administrative records.