

Living and persevering in the pandemic? Comparative evidence of unmet health care needs and their subjective reasons in a European survey

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Introduction and research context

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Research context

- Despite high overall coverage, marginalised groups and regions across the EU still face restricted access; user charges and geographic disparities widen health inequalities (Palm et al. 2021; Peiró & Maynard 2015)
- Austerity since the Great Recession raised unmet needs and strained universal coverage (Reeves et al. 2015; Karanikolos et al. 2013; Ortiz & Cummins 2021)
- During COVID-19, routine services were scaled down and access rationed, often hitting deprived and chronically ill groups hardest; indirect effects may take years to surface (Roy et al. 2021)
- Vulnerability is intersectional and context-dependent (Kuran et al. 2020; Mah et al. 2023)

Gap & research question

- Prior EU evidence is largely confined to older adults (Tavares 2022) or single countries (Moran et al. 2021)
- In 2021, 4.8% of the EU population reported unmet needs for a medical examination or treatment (Eurostat 2022)
- This study gives a cross-European picture of the general population, *a spotlight, not a magnifying lens*
- **RQ:** What is the scale of unmet health care needs during the COVID-19 pandemic across the 27 EU member states, and what drives them?

Methods

Methods - Data

Living, working and COVID-19 e-survey 2021-2022 (Eurofoundation; Eurofound 2020)

- “The Eurofound LWC-19 e-survey is an online survey that targets individuals aged 18 or over and looks at experiences and perceptions linked to working, including teleworking patterns, social conditions, poverty, work-life balance and well-being” (Eurofound-ETF 2022, p. 9).
- Covers all 27 EU member countries
- In this study mostly used is data of spring 2021, but also some of spring 2022

Quality of Government 2023 (University of Gothenburg; Teorell et al. 2023)

- Variables of societal, political, and economic structure
- Serve as spatial and cultural controls on the macro level

Methods - Variables

Eurofound LWC-19 2021-2022

- Outcomes: Needs in 8 health care domains (preventive, cancer, surgery, hospital/specialist, GP, dental, mental, and other)
- Predictors: 7 unmet needs due to affordability/costs, waiting times, care giving responsibilities, transportation and travel, the COVID-19 pandemic, risk avoidance of becoming infected with COVID-19, and unspecified/other reasons
- Auxiliary covariates: gender (dichotomous/binary), age (in years, ranging from 18 to 98), self-assessed health status (5-point Likert scale), urbanisation level (4 categories), employment status (4 categories), education level (ISCED 0-8 collapsed into 4 categories), and 27 dichotomous EU country dummies

Methods - Analytical Strategy

- Binary Probit models on the round 3 data ($N = 36,000$)
- Only people with some unmet need ($N = 3,345$)
- Estimation of propensity scores
- Zero-inflated binomial regression models
- Multivariate regression model
- Linear regression model with sample weights and auxiliary covariates, using pooled data from both survey waves ($N = 73,362$)
- Instrumental-variables generalised method of moments (GMM) regression models
- Two-step Heckman selection models

Methods - Further issues

Cross-National Comparability

- Spatial and cultural controls (Claessens et al. 2023)
- **QoG 2023**
 - Natural population change relative to a country's total population, gender inequality, an egalitarian component index, cultural diversity, political rights as well as of pluralism and participation, gender gap in political empowerment, environmental health, people's internet use to seek health-related information, gender gap in health and survival, and national health policy within wider social policy making and sustainable governance

Reporting & Robustness

- Missing Data & Multiple Imputation, Item Response Testing, Covariate Selection, Confounding & Bias Assessment, Effect Sizes & Statistical Power Analysis, Bayesian Model Averaging, Cross-National Comparison & Variation, Cluster Analysis, Model Fit & Performance, Assessing Sub-Population Vulnerabilities, Accounting for COVID-19 & Vaccination
- Reporting Checklist: The RECORD Statement (Benchimol et al. 2015)

Results

Spring 2021: costs and pandemic-related rationing drive unmet needs across domains

- 16.78% of respondents report unmet needs, 9.79% in one domain, 6.99% in two or more
- Treatment costs raise unmet needs in five of eight domains (not cancer, surgery or GP care)
- Waiting times matter for hospital & specialist care; transport barriers for mental health care
- Pandemic-related rationing is significant in all domains; COVID-19 risk avoidance affects preventive, hospital/specialist, dental and other care
- Models explain 44% (other) to 65% (hospital & specialist) of variance (pseudo-R²)

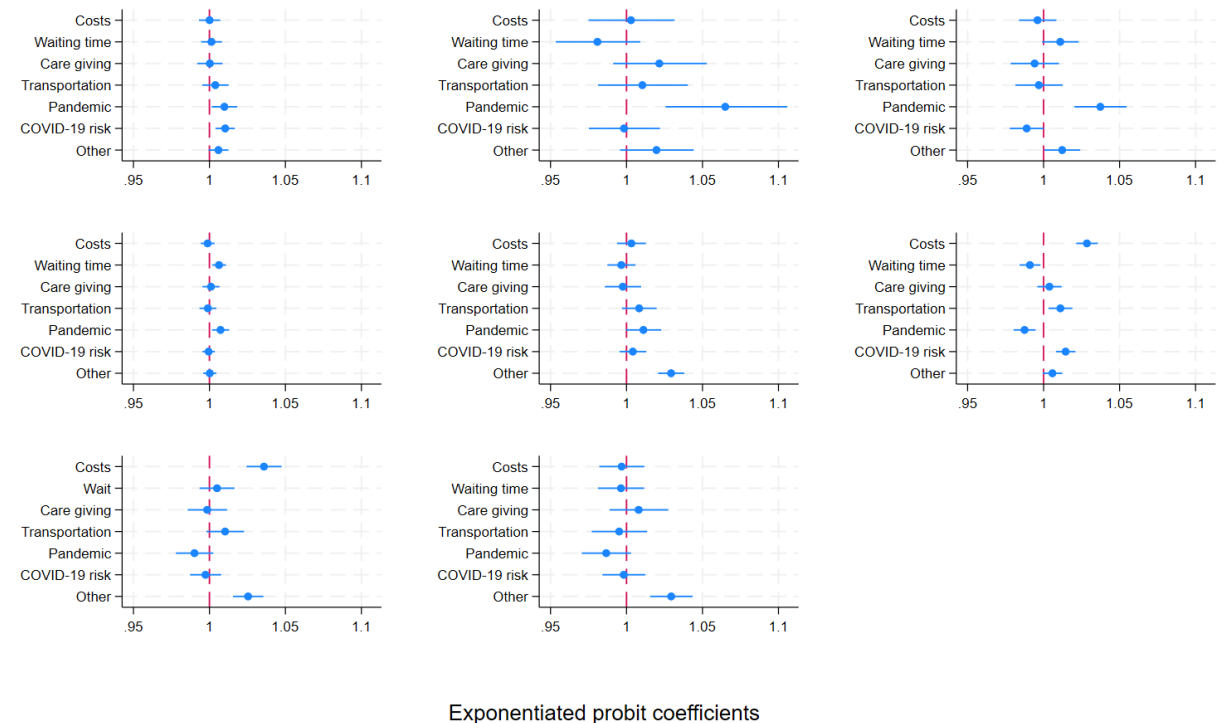
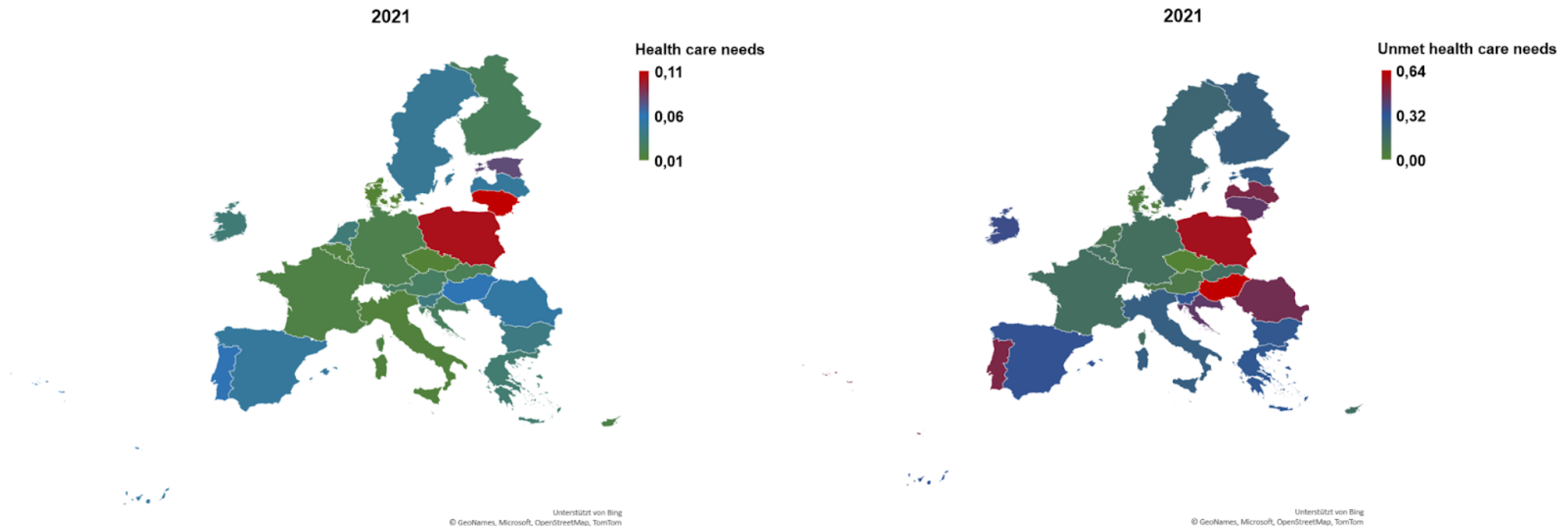


Figure 1. Average marginal effects (exponentiated probit coefficients) with 95% CIs; eight weighted binary probit models, $N \approx 36,000$; predictors: seven stated reasons and 27 country dummies. Data: LWC-19 e-survey, round 3 (spring 2021) (Eurofound 2020).

Needs and unmet needs cluster geographically across the EU (spring 2021)

- Hospital and specialist care were Europe's most restricted services during the pandemic
- Some countries (e.g. Latvia) show low unmet needs, partly a low base of total reported needs
- Needs and unmet needs are strongly correlated across countries (Spearman $\rho = 0.60$, $p < 0.001$)

Figure 2. Left: weighted mean health care needs (index of 8 domains); right: weighted mean unmet needs (index of 7 ranked reasons), by country. $N = 45,101$. Data: LWC-19 round 3 (spring 2021) (Eurofound 2020).



From 2021 to 2022, unmet needs shifted unevenly across member states

- By domain: unmet needs fell for preventive care, surgery and hospital & specialist care, but rose in the other five domains
- Country trajectories diverged, higher in 2022 (e.g. Austria, Belgium, Germany, Netherlands, Sweden), lower (e.g. Croatia, Slovenia, Spain) or broadly stable (e.g. Hungary, Malta, Poland)
- Adjusted models contrast each state against the rest of the EU, revealing consistently lower (e.g. Czechia, France, Italy) and higher (e.g. Estonia, Finland, Poland, Portugal) rates

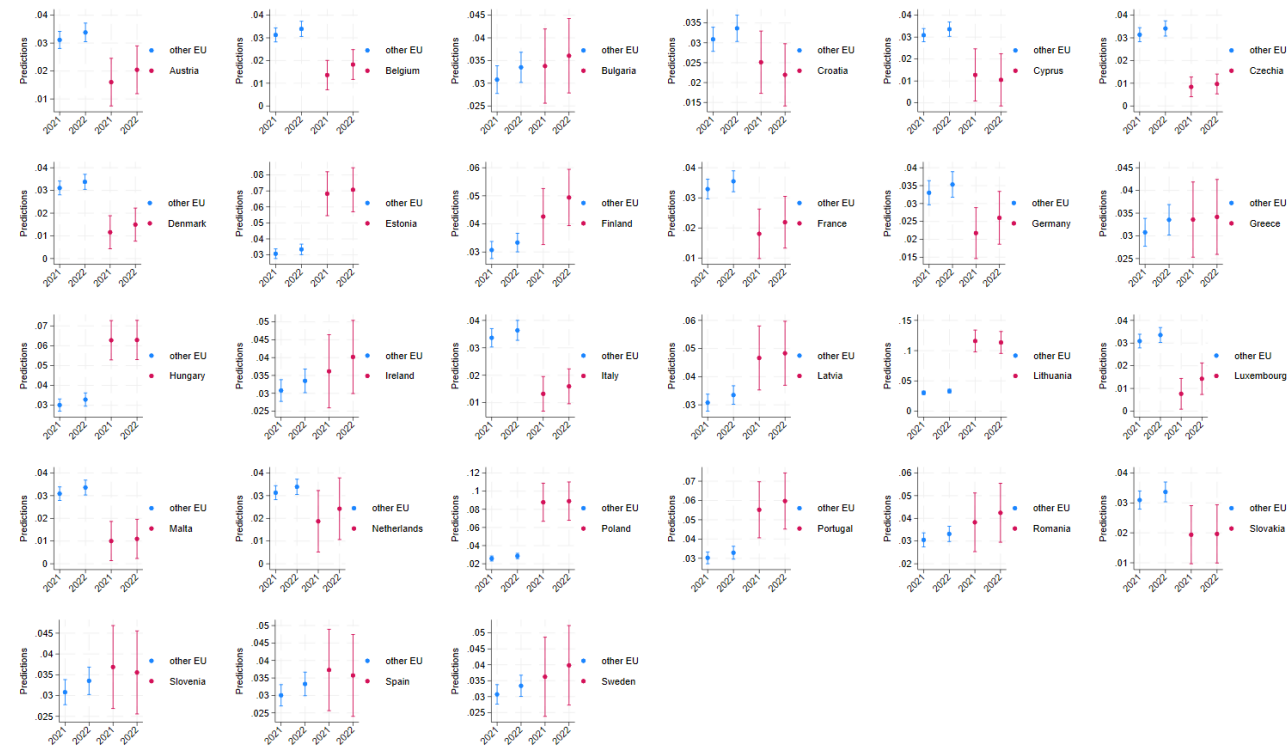


Figure 3. Predicted unmet needs, each country vs. the rest of the EU, spring 2021 and spring 2022; linear model with sample weights and auxiliary covariates. Data: LWC-19 rounds 3 & 5 (Eurofound 2020).

Micro-level drivers persist after macro-level (Quality-of-Government) controls

- Instrumental-variables GMM models (M1–M5) add demographic, cultural-political and health-system macro controls from the Quality of Government dataset (Teorell et al. 2023; Claessens et al. 2023)
- Micro-level reasons, costs, waiting times and pandemic rationing, remain associated with unmet needs across all specifications
- Among macro factors, political pluralism & participation, political rights and the health gender gap show the clearest associations

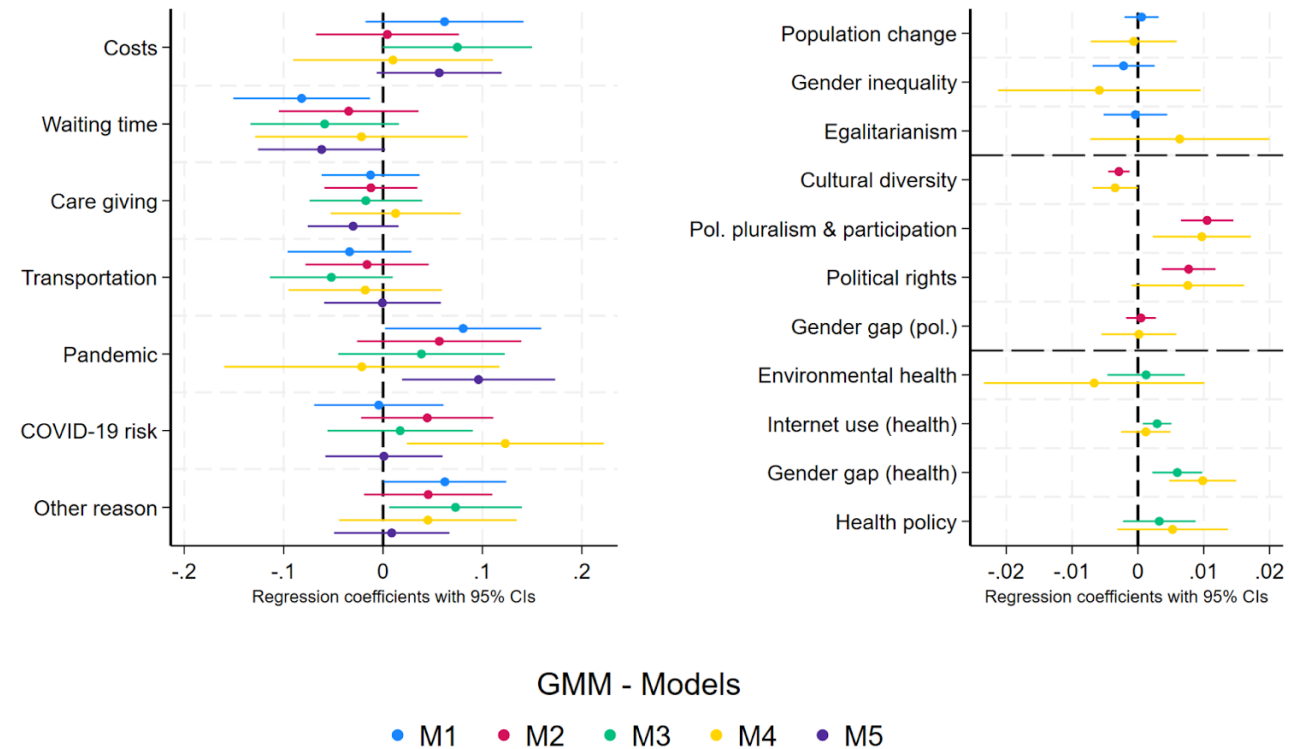
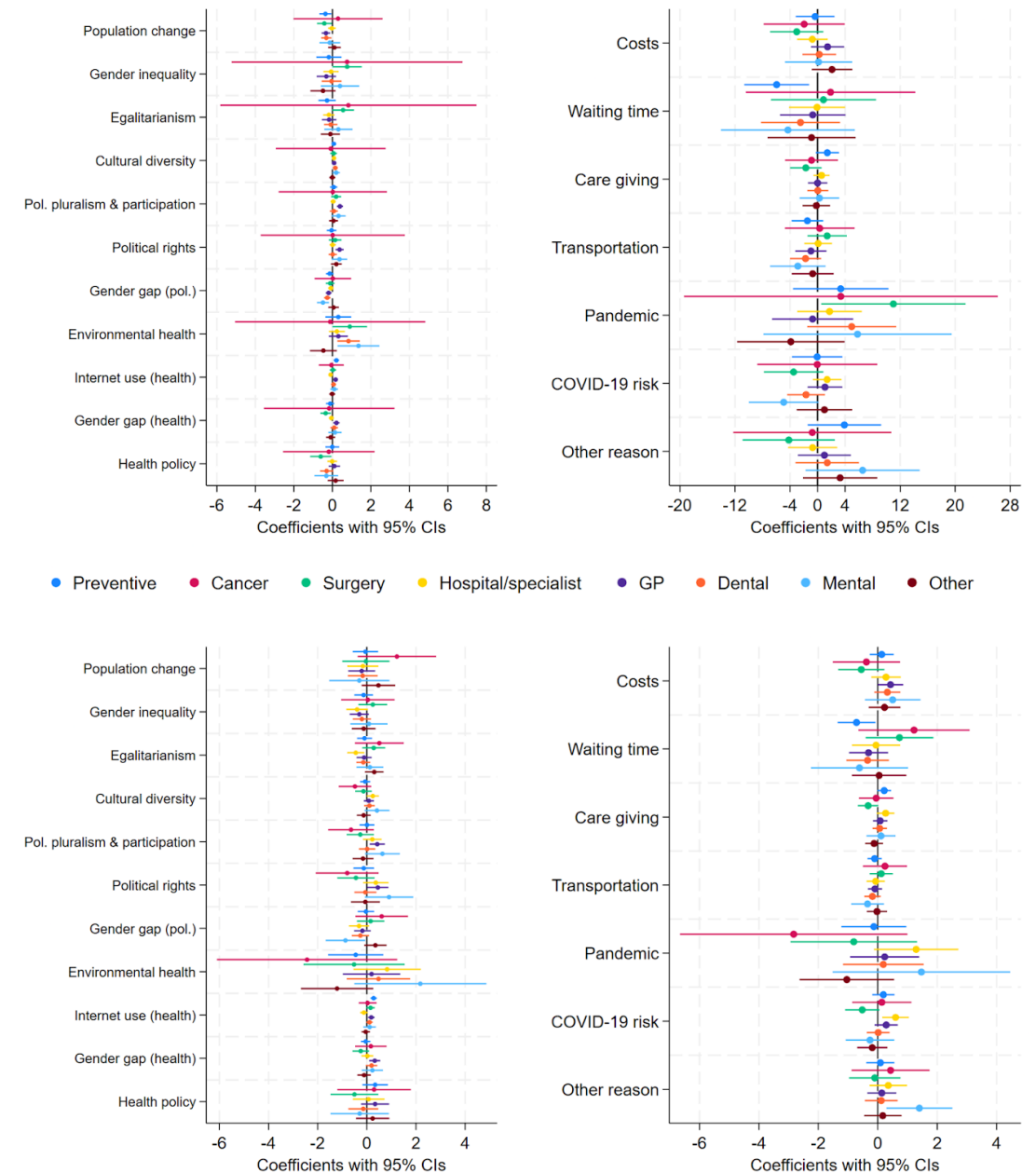


Figure 4. Regression coefficients with 95% CIs; left: seven stated reasons; right: Quality-of-Government macro indicators in three domains (dashed separators); five GMM specifications (M1–M5), macro variables standardised.

Patterns hold under joint micro–macro models

- Full models estimate the seven stated reasons and eleven macro-level indicators simultaneously across all eight health care domains
- Results are consistent with two-step Heckman selection models, supporting the robustness of the IV-GMM inference (DeMaris 2014)
- Pandemic-related rationing and access to hospital & specialist care remain the dominant patterns

Figure 5. Coefficients with 95% CIs by domain (Preventive, Cancer, Surgery, Hospital/specialist, GP, Dental, Mental, Other); left: macro indicators, right: stated reasons; upper and lower rows show alternative specifications.



Conclusions

Conclusions

- About one in six EU residents reported unmet health care needs during the pandemic; treatment costs and pandemic-related rationing were the broadest drivers, and hospital & specialist care the most restricted service
- Maintaining essential preventive and primary care is critical, neglect risks worsening chronic conditions and delaying treatment-seeking
- Equity requires targeted action for marginalised groups, dismantling geographic, linguistic and socio-economic barriers to access
- Non-COVID health consequences may take years to surface, calling for sustained, long-term population monitoring
- Cross-border cooperation and evidence-driven, context-specific policy strengthen the resilience of European health systems

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