**Online Resource 1**

# Geographic disparities in mammography uptake among beneficiaries of supplementary health insurance in Minas Gerais, Brazil: an individual-level road-network accessibility study

*Breast Cancer Research and Treatment*
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**Table S1** Road-network distance from each woman's residence to all accredited mammography providers (global distance matrix), Minas Gerais, Brazil, 2024

| Indicator | Value |
|---|---|
| Women (n) | 14,474 |
| Mean (km) | 393.97 |
| Median (km) | 381.05 |
| 95th percentile (km) | 828.95 |
| Minimum (km) | 0.00 |
| Maximum (km) | 1,441.14 |
| Standard deviation (km) | 234.85 |
| Coefficient of variation (%) | 59.61 |

Each woman is compared with every provider in the state, including the most distant ones. The measure therefore describes the dispersion of the network across the territory rather than the travel required to obtain a mammogram

**Table S2** Spearman correlation between municipality-level distance indicators and mammography coverage in 2023–2024, Minas Gerais, Brazil (494 municipalities)

| Distance measure | Indicator | Spearman ρ | p value |
|---|---|---|---|
| Global distance | Mean (km) | −0.147 | 0.001 |
| | Median (km) | −0.130 | 0.004 |
| | Minimum (km) | −0.118 | 0.009 |
| | Maximum (km) | −0.188 | < 0.001 |
| Minimum distance | Mean (km) | −0.126 | 0.005 |
| | Median (km) | −0.118 | 0.009 |
| | Minimum (km) | −0.118 | 0.009 |
| | Maximum (km) | −0.130 | 0.004 |

Restricted to the 163 municipalities with at least 10 eligible women, correlations ranged from −0.329 to −0.147 and remained significant, except for the median minimum distance (p = 0.061)

**Table S3** Logistic regression for mammography uptake in 2023–2024 according to car travel-time band to the nearest accredited provider, Minas Gerais, Brazil (n = 14,474)

| Variable | Adjusted OR (95% CI) | p value |
|---|---|---|
| **Travel time to nearest provider** | | |
| ≤ 15 min | 1 (ref.) | – |
| 15–30 min | 0.95 (0.81–1.12) | 0.556 |

| Variable | Adjusted OR (95% CI) | p value |
|---|---|---|
| 30–45 min | 0.81 (0.69–0.94) | 0.007 |
| 45–60 min | 0.89 (0.74–1.05) | 0.172 |
| > 60 min or outside isochrones | 0.65 (0.57–0.74) | < 0.001 |
| **Covariates** | | |
| Age (per year) | 1.00 (1.00–1.01) | 0.009 |
| PHC enrolment (yes vs no) | 2.05 (1.89–2.22) | < 0.001 |
| Non-capital vs capital residence | 0.86 (0.79–0.93) | < 0.001 |

CI, confidence interval; OR, odds ratio; PHC, primary health care. Travel-time bands derived from 15-, 30-, 45- and 60-min car isochrones (free-flow traffic). Model adjusted for all variables shown

**Table S4** Quantile regression of minimum road-network distance (km) to the nearest accredited provider at the 25th, 50th and 75th percentiles, Minas Gerais, Brazil (n = 14,474)

| Percentile / variable | Crude β (95% CI), km | Adjusted β (95% CI), km |
|---|---|---|
| **25th percentile** | | |
| Underwent mammography | −0.12 (−0.18 to −0.06)*** | −0.12 (−0.19 to −0.06)*** |
| Age (per year) | – | −0.02 (−0.02 to −0.02)*** |
| PHC enrolment (yes vs no) | – | −0.05 (−0.11 to 0.01) |
| Non-capital vs capital residence | – | 0.04 (−0.02 to 0.10) |
| **50th percentile (median)** | | |
| Underwent mammography | −0.39 (−0.54 to −0.24)*** | −0.31 (−0.44 to −0.17)*** |
| Age (per year) | – | −0.05 (−0.05 to −0.04)*** |
| PHC enrolment (yes vs no) | – | −0.40 (−0.51 to −0.29)*** |
| Non-capital vs capital residence | – | 0.30 (0.19 to 0.41)*** |
| **75th percentile** | | |
| Underwent mammography | −7.03 (−9.46 to −4.60)*** | −1.93 (−2.72 to −1.14)*** |
| Age (per year) | – | −0.08 (−0.11 to −0.06)*** |
| PHC enrolment (yes vs no) | – | −3.76 (−4.28 to −3.23)*** |
| Non-capital vs capital residence | – | 12.19 (10.36 to 14.02)*** |

β, difference in distance (km) at the given percentile; CI, confidence interval; PHC, primary health care. Asymptotic standard errors (nid). ***p < 0.001

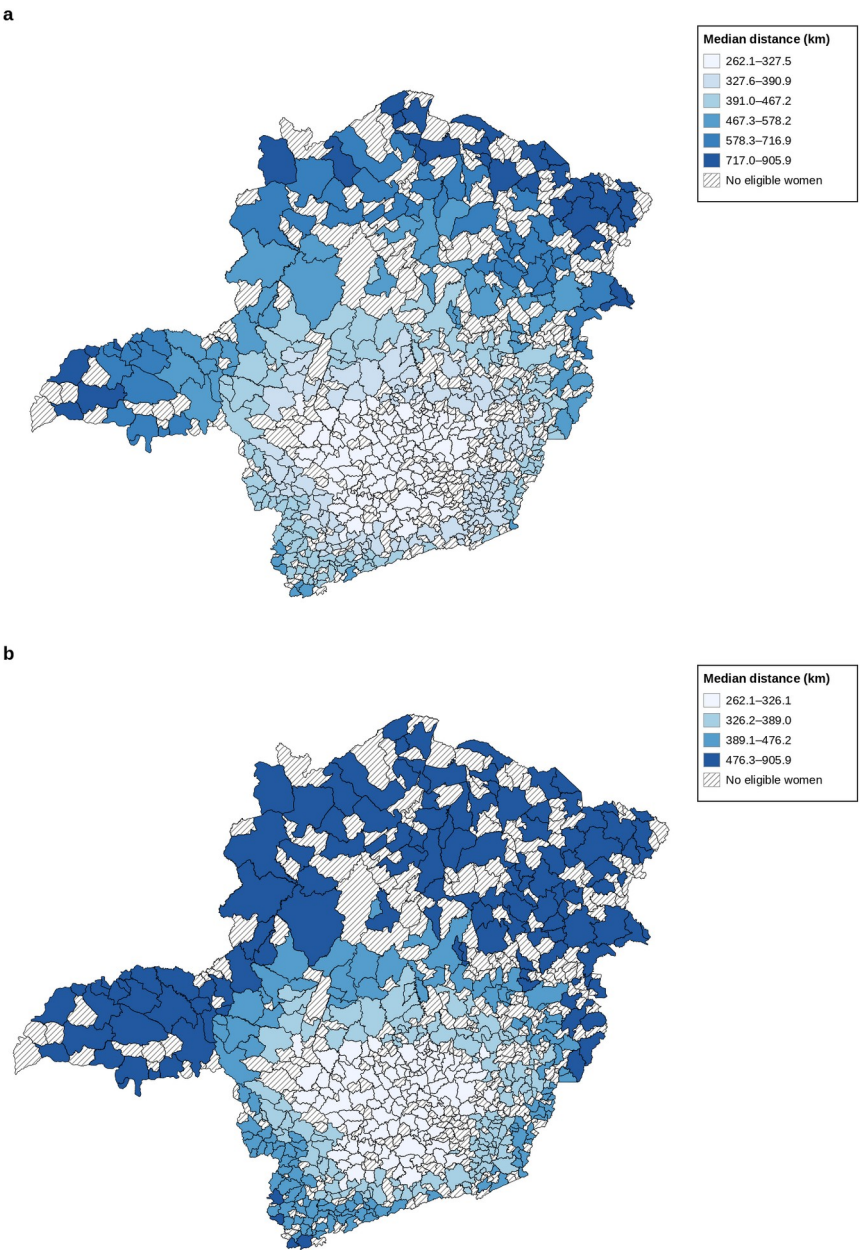


**Fig. S1** Median road-network distance (km) from residence to all accredited mammography providers (global distance), by municipality of residence, Minas Gerais, Brazil, 2024. **a** Jenks natural breaks; **b** quartiles. Hatched areas indicate municipalities without eligible women