

# Geographic Variation in Screening Mammography Coverage Across Poland: A Nationwide Dataset Analysis

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## Abstract

Breast cancer is the most commonly diagnosed cancer among women worldwide. Early detection enables timely therapy and improves prognosis. Therefore, this study assesses the coverage of screening mammography in counties and communes in Poland based on data published by the National Health Fund. This study is a retrospective analysis of a dataset on a publicly funded breast cancer prevention program, published on October 1, 2025 by the National Health Fund. Data are presented for all counties and communes in Poland. Regional differences in screening mammography coverage were found, with the lowest coverage being in southeastern Poland and the highest in central-western Poland. In one commune (Bolesław commune in Dąbrowski County), the coverage was below 10%. Overall, 6 of the bottom 20 communes with the lowest rates were in Gorlicki County. The highest screening mammography coverage rate (65.59%) was in Latowicz commune in Miński County. Only in 4 communes in Poland did the coverage exceed 60% of the eligible population. Overall, 4 of the top 20 communes with the highest coverage were in Siedlecki County (Table 1). Out of the 20 communes with the highest screening mammography coverage rates, 7 were located in Mazowieckie Voivodeship. This study found that screening mammography coverage under the publicly funded cancer screening program in Poland was significantly below the population targets. Moreover, regional differences in coverage were observed.

**Keywords:** breast cancer; mammography; prevention; early detection; screening

## Introduction

Breast cancer is the most commonly diagnosed cancer among women worldwide (Heer et al., 2020; Kim et al., 2025). It is also a leading cause of cancer-related death (Kim et al., 2025). Early detection – particularly at more treatable stages – enables timely therapy and improves prognosis (Ginsburg et al., 2020). In response to the global burden, many countries have organized mammography screening to reduce mortality (Ren et al., 2022). Effective, population-based screening programs ensure regular screening intervals, minimize administrative barriers, and extend geographic reach (Ren et al., 2022). To achieve a meaningful reduction in mortality, population coverage is generally expected to exceed 70%–80% of the target group (Ren et al., 2022; Katsika et al., 2024).

In Poland, the publicly funded breast cancer screening program offers a free mammography every two years to women aged 45–74 years (with specific provisions for those with a prior diagnosis of breast cancer) (Koczkodaj & Michalek, 2024; Sierocki et al., 2025; National Health Fund, 2025). Examinations are available in outpatient clinics and via mobile mammography units that reach areas with limited access to healthcare (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). No referral is required. Participants with abnormal results are referred to specialists for further diagnostic assessment and treatment within the national healthcare system (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). The program has undergone several modifications: for example, a key change in November 2023 expanded the eligible age range from 50–69 to 45–74 years (National Health Fund, 2025).

Despite the broad availability, screening coverage remains below target (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). As of October 2025, the National Health Fund estimated that approximately 33.5% of eligible women had participated in the publicly funded program (National Health Fund, 2025); uptake varies geographically. Reported barriers include limited awareness, low health literacy, organizational and transportation constraints, and sociocultural factors (Ozcelik & Avci, 2025; Fazeli et al., 2025). Systematic, local monitoring of screening coverage can inform policy and healthcare professionals on local needs, guiding deployment of mobile units and supporting targeted educational campaigns, organizational improvements, and resource allocation (Katsika et al., 2024).

Therefore, the aim of this study was to assess the screening mammography coverage in counties (*powiaty*) and communes (*gminy*) in Poland using data published by the National Health Fund.

## Material and Methods

This study is a retrospective analysis of a dataset published on October 1, 2025 by the National Health Fund (NHF). The NHF publishes data on the implementation of publicly funded cancer prevention programs (breast, cervical, and colorectal). We derived the data from the dataset published on the NHF's official website (National Health Fund, 2025).

For each county and commune, the dataset included the number of women aged 45–74 years residing there, the number of women excluded from screening due to prior breast cancer treatment, and the number of women temporarily ineligible for mammography in a given month because less than 24 months had elapsed since their last examination. We used the number of eligible women as of October 1, 2025 (by county/commune) and the number of women who had undergone screening in the prior 24 months to calculate screening coverage, defined as the percentage of eligible women who received screening.

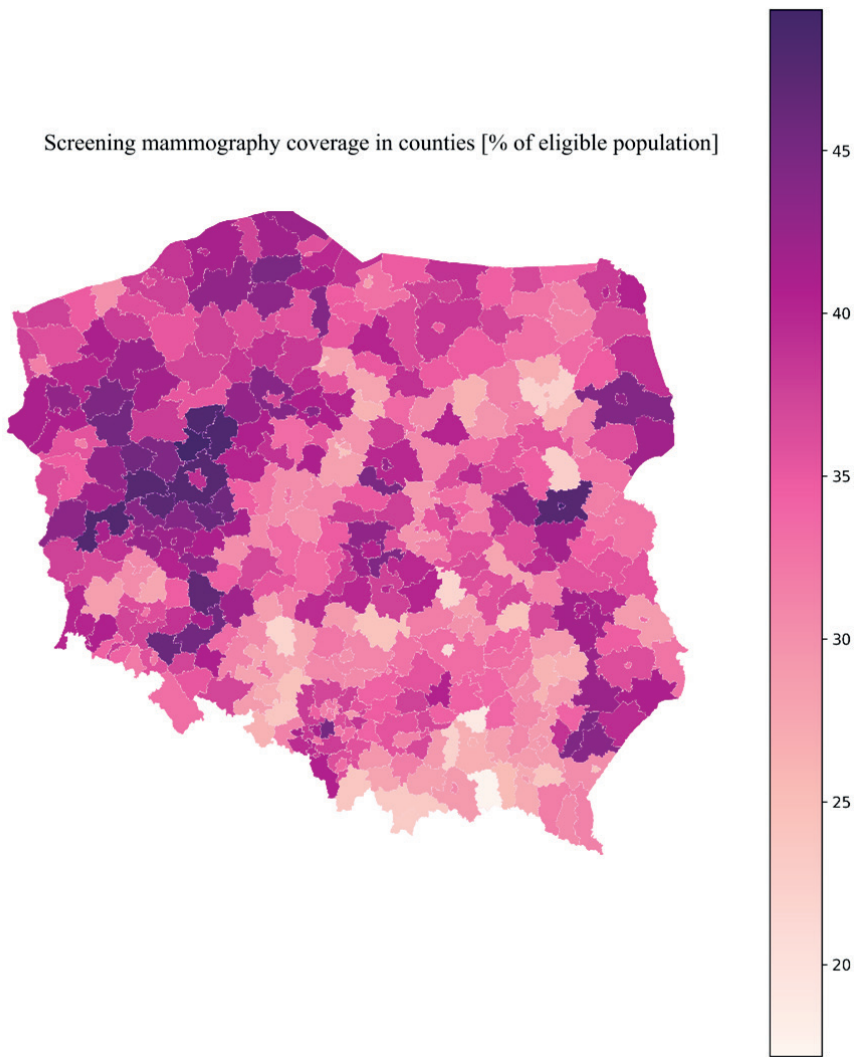
The data were summarized for all counties and communes in Poland and those with the lowest and highest screening coverage were identified.

The analysis was performed in Microsoft Excel (Microsoft Corporation, Redmond, WA, USA). As this was a retrospective analysis of a publicly available dataset, informed consent was waived. All procedures complied with the Declaration of Helsinki.

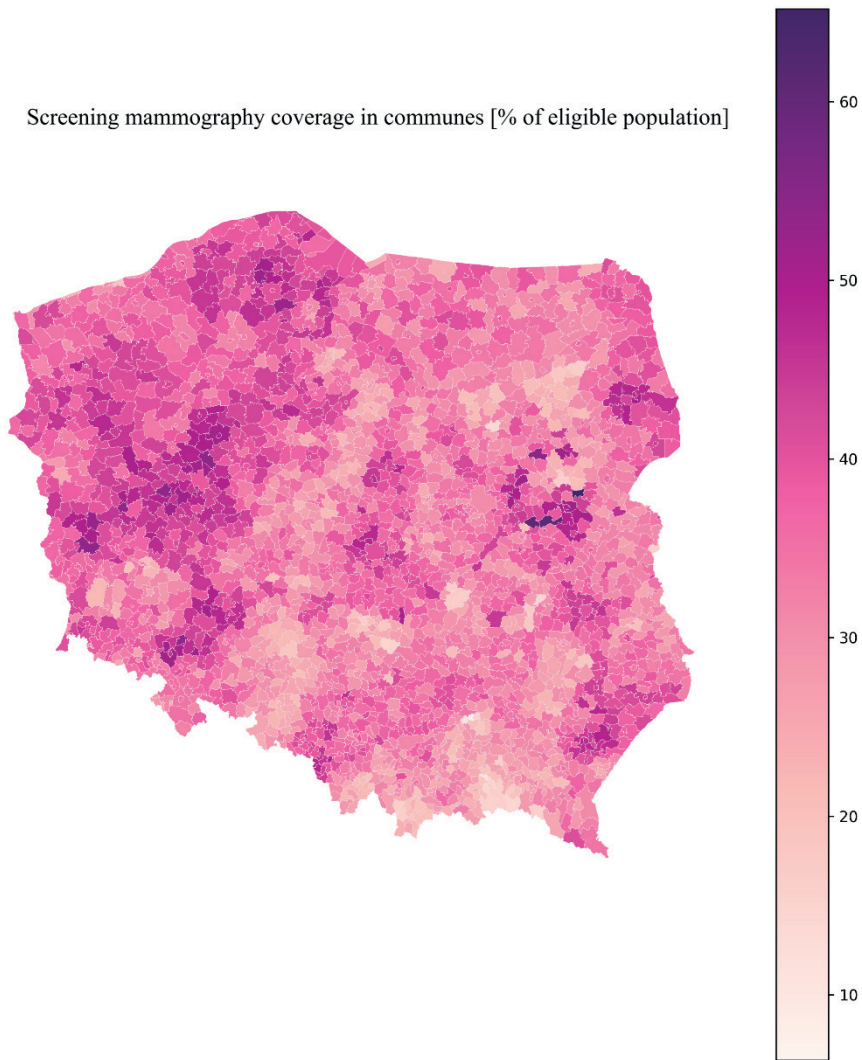
The figures were prepared by the author, based on the data published by the National Health Fund (2025).

## Results

Screening mammography coverage (as of October 1, 2025) is presented by county in Figure 1 and by commune in Figure 2. The screening mammography coverage varied from 6.34% to 65.59% (Figure 2). There were regional differences in screening mammography coverage, with the lowest coverage being in southeastern Poland (especially in Małopolskie [Lesser Poland] Voivodeship) (Figures 1 and 2). The highest rates of coverage were observed in central-western Poland.



**Figure 1.** Screening mammography coverage in Poland, by county, October 2025



**Figure 2.** Screening mammography coverage in Poland, by commune, October 2025

In one commune (Bolesław commune in Dąbrowski County), the screening mammography coverage was below 10% (Table 1). Overall, 6 of the bottom 20 communes with the lowest rates were in Gorlicki County (Table 1). Another 4 communes in this group were in Dąbrowski County (Table 1).

**Table 1.** Bottom 20 communes with the lowest screening mammography coverage rates in Poland, October 2025

Voivodeship	County	Commune	Screening mammography coverage [%]
Małopolskie	Dąbrowski	Bolesław	6.34
Małopolskie	Dąbrowski	Gręboszów	10.5
Małopolskie	Gorlicki	Moszczenica	10.53
Mazowieckie	Makowski	Czerwonka	13.45
Lubelskie	Puławski	Janowiec	14.11
Małopolskie	Gorlicki	Gorlice	14.16
Podkarpackie	Jasielski	Krempna	14.24
Małopolskie	Nowotarski	Czarny Dunajec	14.82
Wielkopolskie	Ostrzeszowski	Mikstat	14.88
Łódzkie	Radomszczański	Żytno	14.98
Małopolskie	Dąbrowski	Mędrzechów	15.09
Podkarpackie	Krośnieński	Jaśliska	15.35
Małopolskie	Gorlicki	Uście gorlickie	15.45
Lubelskie	Bialski	Sławatycze	15.62
Małopolskie	Gorlicki	Lipinki	15.85
Mazowieckie	Przysuski	Przysucha	15.89
Łódzkie	Radomszczański	Łgota Wielka	15.91
Małopolskie	Gorlicki	Sękowa	15.96
Małopolskie	Gorlicki	Gorlice	16.04
Podkarpackie	Dębicki	Jodłowa	16.12

The highest screening mammography coverage rate (65.59%) was in Latowicz commune in Miński County (Table 2). In only 4 communes in Poland did the coverage rate exceed 60% of the eligible population (as of October 1, 2025) (Table 2). Overall, 4 of the top 20 communes with the highest rates were in Siedlecki County (Table 1). Out of the 20 communes with the highest screening mammography coverage rates, 7 were located in Mazowieckie Voivodeship (Table 2).

**Table 2.** Top 20 communes with the highest screening mammography coverage rates in Poland, October 2025

Voivodeship	County	Commune	Screening mammography coverage [%]
Mazowieckie	Miński	Latowicz	65.59
Mazowieckie	Siedlecki	Paprotnia	65.19
Mazowieckie	Siedlecki	Domanice	60.75
Mazowieckie	Siedlecki	Wodynie	60.73
Mazowieckie	Miński	Latowicz	58.68
Lubuskie	Zielonogórski	Czerwieńsk	57.3
Wielkopolskie	Poznański	Murowana Goślina	55.91
Lubuskie	Zielonogórski	Babimost	55.42
Wielkopolskie	Poznański	Stęszew	55.39
Lubuskie	Zielonogórski	Nowogród Bobrzański	55.21
Mazowieckie	Węgrowski	Sadowne	54.24
Wielkopolskie	Nowotomyski	Opalenica	53.99
Dolnośląskie	Wrocławski	Mietków	53.85
Śląskie	Rybnicki	Jejkowice	52.5
Dolnośląskie	Świdnicki	Jaworzyna Śląska	52.44
Wielkopolskie	Wągrowiecki	Wągrowiec	52.42
Pomorskie	Kartuski	Sulęczyno	52.05
Podlaskie	Białostocki	Supraśl	52.03
Mazowieckie	Siedlecki	Siedlce	51.94
Kujawsko-pomorskie	Świecki	Pruszcz	51.92

## Discussion

This study provides population-based data on screening mammography coverage in Poland. Coverage of the publicly funded program remains well below population targets; only 4 communes exceeded 60% coverage among eligible women. Marked geographic heterogeneity was observed, with the lowest coverage being in southeastern Poland and the highest in central-western regions.

In Poland, debate continues regarding the effectiveness of cancer screening programs (Koczkodaj & Michalek, 2024; Sierocki et al., 2025). Breast cancer prevention and early detection remain priorities for policymakers and clinicians, given the high incidence among women (Sierocki et al., 2025). Over the past decade, population coverage in the publicly funded screening program has declined by 10 percentage points (National Health

Fund, 2025). In response to persistently low uptake, public health authorities are exploring new communication strategies for eligible women (Koczkodaj & Michalek, 2024). Paper letters, once used to invite participants, have been discontinued. To reduce transportation barriers, mobile mammography units operate nationwide, particularly in areas with limited access to outpatient clinics (Seweryn et al., 2022; Koczkodaj & Michalek, 2024). In parallel, non-governmental organizations, especially patient groups, are active in breast cancer education and promotion of early detection (Ciuba, 2025). Discussions are also underway regarding the use of smartphone apps and e-health services to build awareness and streamline participation.

Findings from this study underscored significant regional differences in screening mammography coverage in Poland. This observation indicates significant inequalities in breast cancer screening in Poland. Southeastern Poland was identified as having the lowest screening mammography coverage. Further actions are needed to identify potential barriers to access to screening mammography in these regions. Particular attention should be paid to barriers related to health literacy and personal beliefs, as well as sociocultural factors (Ozcelik & Avci, 2025; Fazeli et al., 2025). Moreover, potential organizational and transportation barriers to breast cancer screening should be analyzed.

Non-governmental organizations play important roles in raising public awareness on breast cancer prevention and screening. Those led by women with a history of breast cancer are particularly involved in educational campaigns on breast cancer screening, including mammography and self-examinations. Non-governmental organizations should be actively involved in the national strategy on breast cancer prevention.

Communes and counties with the highest screening mammography coverage rates should be treated as benchmarks and carefully analyzed to identify factors associated with high rates of coverage. Lessons learned from this region may inform policymakers how to increase screening mammography in Poland, especially in regions with lower coverage rates. Moreover, this study highlights the need for updated communication strategies regarding breast cancer screening. Personalized communication, targeted to different socioeconomic groups, should be used.

This study has several limitations. Firstly, it is a retrospective analysis of data published by the National Health Fund; it is therefore constrained by the variables available in that dataset (National Health Fund, 2025). Secondly, we only report coverage from publicly funded screening mammography; examinations financed through private insurance or by the patients were not captured. Thirdly, the analysis is limited to mammography and does not include data on breast self-examination or breast ultrasound.



## Conclusions

This study found that the coverage of the publicly funded breast cancer screening program in Poland was significantly below the population targets. It revealed regional differences in screening mammography coverage in Poland, with the highest coverage being in central-western Poland and the lowest in southeastern Poland. This study also found that excess body weight is an emerging public health problem in Poland. Disparities in screening mammography coverage in counties and communes across the country should be addressed through public health policies. Barriers to accessing breast cancer screening should be removed, as they can contribute to health inequalities in Poland.

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