MAMMOGRAPHY SCREENING SR

Assessment Report for 2022

Statistical outputs from anonymized data provided by certified mammography screening facilities and health insurance companies in 2022

National Oncology Institute

National Oncology Institute
Klenová 1, 833 10 Bratislava
Slovak Republic

+421 2 59 378 429
noi@noisk.sk
www.noisk.sk

Authors:
Dr. Bárdyová Zuzana, PhD., MPH
Kállayová Alena, M.D.
Štrbavý Adam, MSc.
Dr. Trautenberger Ricová Jana
Rečková Mária, M.D., PhD.

Acknowledgments
National Oncology Institute would like to thank all physicians, radiology assistants, nurses as well as other healthcare professionals who contribute to breast cancer mammography screening by their daily work. We thank the Ministry of Health of the SR, the Cancer Screening Committee of the MoH SR, health insurance companies and National Health Information Center for their support and cooperation. We are also particularly grateful for the support and cooperation of gynecologists and general practitioners for adults, as well as all other experts participating in the management of women with diseases of the breast, patients' organizations, volunteers and the public. Only a well-rounded, high-quality and long-term cooperation in mammography screening can bring excellent results and save lives and health of Slovak women.

TABLE OF CONTENTS

LIST OF CHARTS AND TABLES

LIST OF ABBREVIATIONS

HIC	health insurance company
MMG	mammography exam
MoH SR	Ministry of Health of the Slovak Republic
NHIC	National Health Information Center
NOI	National Oncology Institute established under National Cancer Institute
NOR	National Oncology Register
NUTS 2	Area (in European texts denoted as “region” (in a narrower sense of the word) or a group of regions) is a second order statistical territorial unit on a regional level (NUTS 2 in European terminology) in Slovakia.
SR	Slovak Republic

FOREWORD

Breast cancer mammography screening is a long-term, systematic, state-supported and guaranteed detection of early stages of breast cancer in asymptomatic women aged 50 – 69 from the entire population. Its main objective is to reduce mortality, prolong the lives of women thanks to a more effective treatment of early stages of the disease and improve quality of life. After implementation of general mammography screening and increasing participation rate of women, there is a transient period of higher incidence in the target female population followed by an increased detection of early stages and a long-term drop in mortality.

These indicators are influenced by other independent factors, such as risk factors of the participating population, development of diagnostic methods and their implementation, development of treatment methods, awareness and education of the population as well as a very important factor – high-quality and up-to-date data collected in National Screening and Oncology Register. Precise impact of mammography screening on the population can be assessed only after these factors are quantified.

That is why long-term, regular statistical evaluation of changes in the spectrum of detected malignancies and validation of screening outcomes is a crucial process in order to ensure quality of individual facilities as well as of general mammography screening.

Screening mammography can be performed only in certified mammography screening facilities which work effectively, promptly and with a high level of professionalism, ensuring immediate and efficient management of detected malignancies according to requirements laid out in the valid *Standard Procedure for Medical Radiation and Prevention – Screening Mammography*.

It is possible for radiologists in a certified mammography screening facility to transform preventive mammography referrals to screening mammography since May 15, 2021 if the woman fulfills the age interval, i.e., 50 – 69 years, and all inclusion criteria.

Collection and evaluation of statistical results in a binding structure is also part of mammography screening, which is not only a precondition of self-check of individual screening mammography facilities, but also a precondition of statistical data collection about screening participants and its evaluation.

From January 1, 2022, to December 31, 2022, statistical data was collected by National Oncology Institute (NOI) according to an approved design of data collection based on the valid *Standard Procedure for Medical Radiation and Prevention – Screening Mammography* in order to adhere to all legislation regarding data protection.

Mammography screening currently takes place at 20 certified mammography screening facilities which have fulfilled the conditions of participation in mammography screening according to the valid Standard Procedure. Their activities must be regularly checked and monitored according to transparent rules laid out in the Standard Procedure.

The course of the program, adherence to set rules as well as scientific development of the project are supervised by NOI and Cancer Screening Committee of the MoH SR whose working group for breast cancer screening unites radiologists – mammography diagnosticians, representatives of all medical specialties involved in diagnostics and treatment of breast diseases as well as representatives of other stakeholders including MoH SR, NOI, health insurance companies, National Health Information Center (NHIC) and Health Care Surveillance Authority. The screening program is supervised by the MoH SR which also guides the methodology and legislation associated with the program. NOI coordinates and evaluates the program.

Expert Working Group for Quality Assurance of Mammography Facilities of the MoH SR Committee for Quality Assurance in Radiodiagnostics, Radiation Oncology and Nuclear Medicine is an integral part of mutual cooperation in terms of quality assurance and increasing the number of certified mammography screening facilities, long-term regular checks and quality assurance of certified mammography screening facilities as well as precise collection of statistical data about performed examinations.

Data audit and statistical processing of data is in the authority of National Oncology Institute in close cooperation with MoH SR, Slovak Radiological Society and mainly health insurance companies with the objective to develop a cooperation with NHIC in order to collect all necessary data from the screening program efficiently as well as adjust the flow of data between health insurance providers involved in the screening program, NHIC and NOI. A binding parametric structure of information about the participants in mammography screening and their examinations is in preparation to ensure quality data collection by NOI. This data will be a requirement and part of re-assessment for mammography screening facilities involved in the screening and, as such, a precondition of further participation in the mammography screening. The parametric structure of data collection by NOI will be regularly updated according to the development of the screening process.

Total participation rate of women in the mammography screening is still relatively low. This is due to several factors:

a) The COVID-19 pandemic stopped or reduced the number of people coming to facilities in 2021.
b) There is no general system of targeted invitations in Slovakia. Health insurance companies envisage a preparation of targeted invitations sent to all screening participants repeatedly in case of non-participation. Another option to increase the participation rate of women throughout Slovakia is to consider using another, more active way of inviting the target population. Since May 15, 2021, repeated invitations have been sent by certified mammography screening facilities where the woman had undergone the screening.
c) An estimated 20% of women in Slovakia undergo preventive mammography examinations at non-certified diagnostic-preventive mammography facilities, which is called opportunistic screening. It is necessary to transfer these examinations to high-quality certified mammography screening facilities.
d) The network of 20 certified mammography screening facilities is insufficient and there are regional disparities regarding their availability, which is why it is necessary to ensure continuous activity of the Expert Working Group for Quality Assurance of Mammography Facilities in order to continue certifying other registered mammography facilities interested in the mammography screening. Continuous education of healthcare professionals about screening mammography is equally important.
Another important activity is increasing the possibilities of education in mammography diagnostics in radiology as a certified work activity. Several other radiology facilities are registered for certification at the moment.
e) It is also necessary to increase the participation rate of women in the mammography screening by educational campaigns repeated several times per year with unified communication from all stakeholders – MoH SR, NOI, health insurance companies, expert societies and patients' organizations.

METHODOLOGY

The presented data are based on the collection and processing of anonymized data provided by all health insurance companies (HICs) and certified mammography screening facilities to the National Oncology Institute.

Mammography examinations all around Slovakia in 2022 were categorized as follows:

a) **Screening mammography (organized mammography screening)**, i.e., mammography of asymptomatic women aged 50 – 69 performed at a certified mammography screening facility.
   The list of mammography facilities evaluated by the expert working group and recommended to be included in the mammography screening by the committee is regularly updated by the MoH SR and published at its website.[1]
b) **Preventive mammography (opportunistic mammography screening)**, i.e., mammography of asymptomatic women aged 40 – 69 performed at a preventive-diagnostic (i.e., other than certified screening) mammography facility. Preventive mammography is also a mammography exam of an asymptomatic woman aged 40 – 49 performed at a certified mammography screening facility.
c) **Diagnostic mammography**, i.e., mammography of women with symptoms of breast disease. Diagnostic mammography is performed at all mammography facilities regardless of whether it is a certified mammography screening facility or other, i.e., preventive-diagnostic mammography facility.

A specific type of mammography screening is **screening mammography in high-risk female population** for which a new standard procedure *Breast Cancer Screening in High-Risk Female Population* was approved in November 2022.[2] This standard diagnostic procedure adjusts the course of breast cancer screening in case of asymptomatic women at high risk of development of the disease via complex radiology imaging diagnostics in order to detect suspect non-palpable breast lesions early. It is based on a SSLG methodical instruction *Standard diagnostic procedure for complex genetic laboratory diagnostics for hereditary breast, ovarian and pancreatic cancer syndrome* and *Standard procedure for medical radiation and prevention – screening mammography / Standard procedure for breast cancer prevention via population-based screening method – screening mammography.*[3]

However, we do not have any data regarding women in the high-risk population at the moment, which does not allow us to perform statistical evaluation of the group and consequently take it into consideration when assessing mammography screening.

Given that the standard procedure for breast cancer screening in high-risk female population only entered into application at the end of 2022 and there are currently no specific procedure codes or diagnosis codes for this group of women through which they could be identified, asymptomatic women aged 50 – 69 with a positive family history of breast cancer were integrated in screening mammography in 2022.

Another specific group are women monitored for breast cancer of breast cancer in situ, or in remission. Based on the 3rd revision of the *Standard procedure for medical radiation and prevention – screening mammography / Standard procedure for breast cancer prevention via population-based*

[1] MoH SR. List of mammography facilities evaluated by the expert working group and recommended to be included in the mammography screening by the committee. 2022. Available online: https://www.health.gov.sk/Clanok?dops-zamerana-na-zabezpecenie-kvality-namamografickych-preventivnych-a-diagnostickych-pracoviskach

[2] Lehotská V, Rauová K, Lohajová, Behúlová R, Urbán V, Lauková T et al. 2022. Breast Cancer Screening in High-risk Female Population – Standard Procedure. [online]. Bratislava: Ministry of Health of the Slovak Republic, 2022. 11 pp. Available online: https://www.noisk.sk/files/2022/2022-11-11-standardny-postup-pre-skrining-karcinomu-prsnika-vo-vysokorizikovej-populacii-zien.pdf

[3] Horváthová M, Lehotská V, Nikodemová D, Kállayová A, Slobodníková A. 2021. Standard Procedure for Medical Radiation and Prevention – Screening Mammography. 3rd revision [online]. Bratislava: Ministry of Health of the Slovak Republic, 2021. 50 pp. Available online: https://www.noisk.sk/files/2022/2022-11-11-skriningova-mamografia-3-revizia.pdf

screening method – screening mammography[3] approved in November 2022, the indication for mammography screening covers also asymptomatic women with a personal history of breast cancer who have ended their 10-year follow-up care and currently do not show any signs of activity of the original oncological disease. However, since the standard procedure did not manage to be fully implemented in clinical practice in 2022, this group of women was reported under diagnostic mammography in 2022.

However, we strongly believe that it will be possible to evaluate the aforementioned statistical data regarding specific mammography screening groups properly thanks to an established MoH SR working group for data collection for all cancer screenings (including mammography screening) and after improvement of our cooperation with NHIC, including getting data from NOR, which would help us precisely define these groups.

The 3rd revision of the standard procedure[3] brings other important changes regarding mammography screening, but it will only be possible to implement these in clinical practice in the upcoming period. One of important changes is an adjustment of age group for mammography screening which is broadened to 45 – 75 years. However, it has to be noted that this amendment proposed by NOI and MoH SR (from November 2022) did not enter into application in 2022 because it has not been approved by the parliament. This means that only asymptomatic women aged 50 – 69 are considered mammography screening target group in the statistical processing of mammography screening data.

Screening mammography codes are currently reported via cumulative screening procedure codes 1301, 1301a, 1301b, 1301c, 1301d, 1301e, 1301f and diagnosis codes Z01.6; Z80.3; Z87.7.[4,5]

Three types of screening mammography reporting could be identified in certified mammography screening facilities according to whether the asymptomatic woman in question (when adhering to inclusion and exclusion criteria) received an invitation from her HIC.

a) If the woman received an invitation from her HIC to undergo a screening mammography exam, went to a certified mammography screening facility and underwent screening mammography, it was reported by procedure codes 1301 or 1301a-f.
b) If the woman did not receive an invitation from her HIC to undergo a screening mammography exam but went to a certified mammography screening facility and underwent screening mammography, it was reported by procedure codes 5092 or 5092p with diagnosis codes Z00 – Z80.[4,5]
c) Since entry into application of the 2nd revision of *Standard procedure for medical radiation and prevention – screening mammography / Standard procedure for breast cancer prevention via population-based screening method – screening mammography*[6] (May 2021), all women, regardless of whether they received an invitation from HIC or not, who were examined by screening mammography at a certified mammography screening facility, were reported under one of the screening mammography procedure codes (i.e., procedure codes 1301, 1301a-f).

Because of this, the following terms were used for statistical processing of data regarding mammography exam of women aged 50 – 69:

a) **screening mammography** (organized mammography screening), i.e., mammography of an asymptomatic woman aged 50 – 69 performed at a certified mammography screening facility
b) obsolete **preventive mammography** (opportunistic mammography screening), i.e., mammography of an asymptomatic woman aged 50 – 69 performed at other than certified mammography screening facility

[4] NOI. Mammography Screening SR: Addendum. Statistical outputs from anonymized data provided by MoH SR and health insurance companies in 2021. 2022. Available online: https://www.noisk.sk/files/2022/2022-11-08-hodnotiaca-sprava-mamograficky-skrining-2021-doplnok-sk.pdf

[5] NOI, Behúnová Z. Methodical instruction for procedure and diagnosis code reporting for healthcare providers and their subsequent reimbursement in relation to general breast cancer screening implementation [proposal in preparation].

[6] Horváthová M, Lehotská V, Nikodemová D, Kállayová A, Slobodníková A. 2021. Standard Procedure for Medical Radiation and Prevention – Screening Mammography. 2nd revision. [online]. Bratislava: Ministry of Health of the Slovak Republic, 2021. 50 pp. Available online: https://www.standardnepostupy.sk/standardy-skriningove/.

c) **diagnostic mammography**, i.e., mammography of a woman with symptoms of breast disease examined at a certified mammography screening facility, but also at other than certified mammography screening facility

Demographic statistical data were taken from the Statistical Office of the SR.[7] Data about the resident citizens as of December 31, 2022 were taken into account.

Relative quantity indicators are recalculated per number of women in the given area aged 50 – 69 who represent the target group of the mammography screening in the SR.

The participation rate of women was calculated as a ratio of mammography exams actually carried out (i.e., mammography exams performed in a mammography facility according to its territorial activity) and the number of women entitled to a screening mammography (i.e., women entitled to a screening mammography in the given region/district) while adhering to a 2-year screening interval (all women currently undergoing treatment for breast cancer or in palliative care should be subtracted).

Discrepancies between statistical data from mammography screening provided by certified mammography screening facilities and health insurance companies were calculated as a difference in percentage between these data.

Due to rounding to one decimal place, the sum of percentages does not have to equal one hundred.

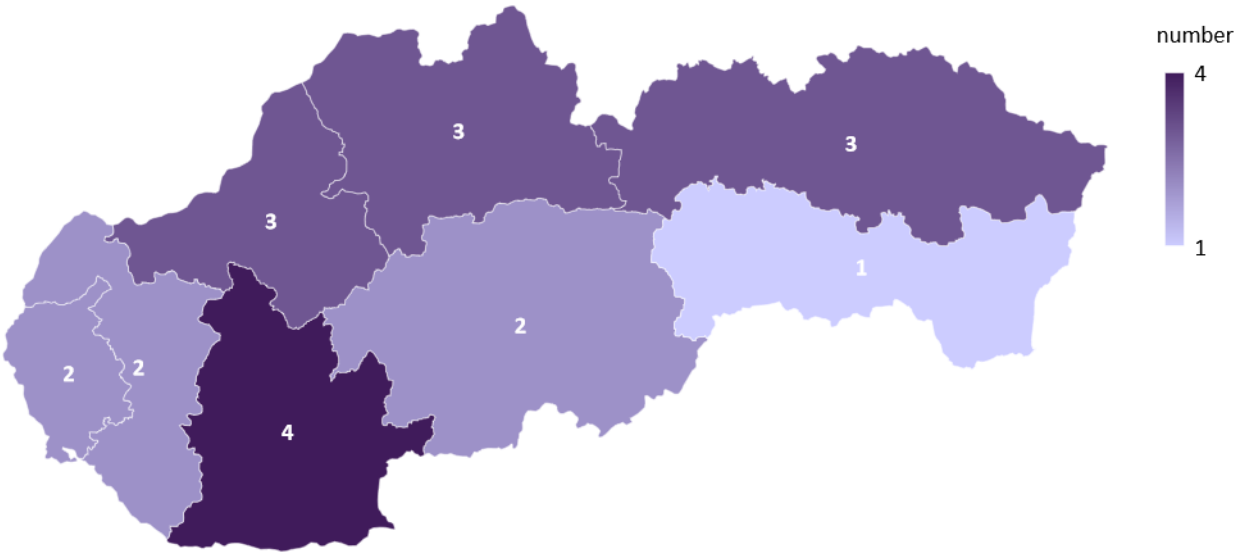
[7] Statistical Office of the SR. STATdat. Demographics and social statistics. 2023. Available at: http://statdat.statistics.sk/cognosext/cgi-bin/cognos.cgi?b_action=cognosViewer&ui.action=run&ui.object=storeID%28%22i40A03AF2150C41DE8BE98D0C0C41A764%22%29&ui.name=Vekov%c3%a9%20zlo%c5%beenie%20-%20SR%2c%20oblasti%2c%20kraje%2c%20okresy%2c%20mesto%2c%20vidiek%20%5bom7009rr%5d&run.outputFormat=&run.prompt=true&cv.header=false&ui.backURL=%2fcognosext%2fcps4%2fportlets%2fcommon%2fclose.html&run.outputLocale=sk

1 NUMBER OF CERTIFIED MAMMOGRAPHY SCREENING FACILITIES IN THE SR

From January 1, 2022, to December 31, 2022, the Expert Working Group for Quality Assurance of Mammography Facilities of the MoH SR Committee for Quality Assurance in Radiodiagnostics, Radiation Oncology and Nuclear Medicine added **20 certified mammography screening facilities** to the List of Mammography Facilities (CH 1, T 1).

In 2022, two new mammography facilities were added to the List of Mammography Facilities certified by the Expert Working Group for Quality Assurance of Mammography Facilities of the MoH SR Committee for Quality Assurance in Radiodiagnostics, Radiation Oncology and Nuclear Medicine.

Given that one of the newly certified mammography screening facilities was included among the certified screening facilities in June 2022, the statistical evaluation processed data from 18 certified mammography screening facilities until June 2022 and 19 certified mammography screening facilities since June 2022. Moreover, the second of the newly certified mammography screening facilities was included in the List of screening mammography facilities at the end of 2022, i.e., started functioning as a certified mammography screening facility only in 2023 and the statistical processing did not include data from this facility.



CH 1. Number of certified mammography screening facilities in regions of the SR as of December 31, 2022.

T 1. Number of certified mammography screening facilities in the SR as of December 31, 2022.

Location	Name of the facility	Address of the facility
Banská Bystrica	Mammacenter of St. Agatha (Mammacentrum sv. Agáty) SVLZ rádiológia	T. Andrašovana 46, 974 01 Banská Bystrica
Bratislava	2nd Radiology Clinic of the Faculty of Medicine of Comenius University and Saint Elizabeth Cancer Institute Mammography Facility 1	SECI Heydukova 10, 812 50 Bratislava
	2nd Radiology Clinic of the Faculty of Medicine of Comenius University and Saint Elizabeth Cancer Institute Mammography Facility 2	
Dolný Kubín	Dr. L. Nádaši Jégé Lower Orava Hospital with Policlinic	Nemocničná 1944/10 026 01 Dolný Kubín
Košice	Mammography Diagnostic Center AGEL Hospital Košice-Šaca a.s.	Lúčna 57 040 15 Košice-Šaca
Liptovský Hrádok	X-ray ward SVALZY s.r.o.	Ul. J.D. Matejovie 542, 033 80 Liptovský Hrádok
Lučenec	SOMATO s.r.o.	Mammography Facility Q Policlinic Rúbanisko II/77 984 03 Lučenec
Malacky	Hospital Malacky Nemocničná a.s.	Duklianskych hrdinov 34, 901 22 Malacky
Nové Zámky	Teaching Hospital with Policlinic Nové Zámky	Slovenská 11/A 940 34 Nové Zámky
Nitra	Jessenius – Diagnostic Center a.s.	Špitálska 6, 949 01 Nitra
	Medical Center Nitra	Fatranská 5, 949 01 Nitra
Poprad	Hospital Poprad a. s. Department of Diagnostic and Interventional Radiology	Banícka 803/28, 058 45 Poprad
Prešov	J. A. Reiman Teaching Hospital with Policlinic Prešov	Hollého 14, 081 81 Prešov
Prievidza	St. Vincent – Radiology, s.r.o.	Hviezdoslavova 3, 971 01 Prievidza
Ružomberok	Central Military Hospital Ružomberok Teaching Hospital	Ul. Generála Miloša Vesela 21, 034 01 Ružomberok
Stará Ľubovňa	Mammography Facility, Department of Radiology, Ľubovnianska nemocnica n.o.	Obrancov mieru 3, 064 01 Stará Ľubovňa
Topoľčany	Mammography and Ultrasound Office Topoľčany, Skladaná Lisánska, M.D.	Moyzesova 1333/1A, 955 01 Topoľčany
Trenčín	Radiology Clinic s.r.o.	K dolnej stanici 18, 911 01 Trenčín
	Mammography facility of Department of Imaging, Teaching Hospital TN	Legionárska 594/28, 911 01 Trenčín
Trnava	MRI, s.r.o. Imaging Diagnostics Institute (Inštitút zobrazovacej diagnostiky)	Družba Policlinic (pediatric pavilion – basement) Starohájska 2, 917 01 Trnava
	Radiology clinic, Teaching Hospital in Trnava	A. Žarnova 11, 917 75 Trnava

2 DEMOGRAPHICS

Based on data from the Statistical Office of the Slovak Republic, there were 720,061 women aged 50 to 69 in Slovakia as of December 31, 2022. When taking into account a 2-year screening interval and inclusion and exclusion criteria, **360,031 women should have attended the mammography screening in 2022** (all women treated for breast cancer or in palliative care at that time should be subtracted). Approximately 30% of women, i.e., approximately 100,000 women, attend a preventive mammography, so-called opportunistic screening, based on a referral from their gynecologist, general practitioner or other specialist every year.

Within mammography screening implementation in Slovakia, health insurance companies (VšZP, Union, Dôvera) send invitations to women aged 50 – 69 who have not attended a mammography exam for more than 2 years and fulfill the precise inclusion and exclusion criteria. The total number of invited women from January 2022 to December 2022 was 132,477 (T 2, T 3).

Of all invited women, 17,555 were examined by screening mammography, i.e., 13.2% of the invited women, which corresponds to 4.9% of the target female population. Of the total number, 10,370 women were examined by screening mammography based on an invitation from their HIC at other than certified mammography screening facility (opportunistic mammography screening), i.e., 7.8% of the invited women, which corresponds to 2.9% of the target female population. 7,185 women were examined by screening mammography at a certified mammography screening facility (organized mammography screening), i.e., 5.4% of the invited women, which corresponds to 2% of the target female population.

T 2. Number of women invited to screening mammography exam by health insurance companies in 2022.

Health insurance company	Number of invited women
VšZP	57,600
Dôvera	15,634
Union	59,243
INVITED WOMEN TOTAL	**132,477**

T 3. Participation rate of women aged 50 – 69 in a mammography screening in 2022 based on an invitation from HIC.

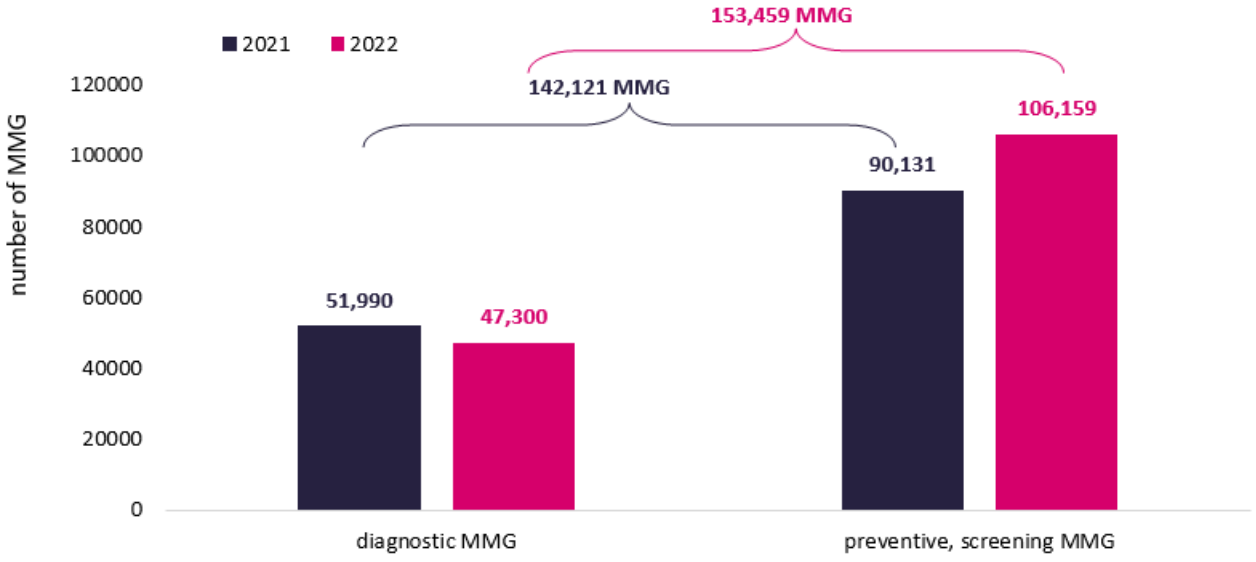
Participation in mammography screening	Number of women who underwent mammography screening	Participation rate of women in mammography screening based on an invitation from HIC
At a certified mammography screening facility	7,185	5.4%
At other than certified mammography screening facility	10,370	7.8%
Participation rate in mammography screening at certified or other than certified mammography screening facility	**17,555**	**13.2%**

3 STATE OF MAMMOGRAPHY IN THE SR ACCORDING TO ANONYMIZED DATA FROM HEALTH INSURANCE COMPANIES IN 2022

The COVID-19 pandemic was the main reason for a decrease in female participation rate in the mammography screening in 2020 and 2021. While 274,491 mammography exams (including preventive, screening and diagnostic mammography in all age groups) were performed in 2019 (i.e., before the COVID-19 pandemic), this number dropped by 16% in 2020 (number from 2020: 230,458 mammography exams). Afterward, after the epidemiology situation stabilized, we could see a slight increase in the number of mammography exams by approximately 10% in 2021 (number from 2021: 253,989 mammography exams), however, this increase did not achieve a minimal required number of performed mammography exams from 2019. The results only reached this level again in 2022. **274,462 mammography exams** (including preventive, screening and diagnostic mammography in all age groups) were performed at radiology (mammography) facilities **in 2022**. Of this number, **64%** corresponded to **mammography exams of asymptomatic women** (i.e., 176,174 mammography exams) and 36% represented mammography exams of women with breast disease symptoms (i.e., 98,288 mammography exams).

Regarding age structure, **153,459 mammography exams** (including preventive, screening, diagnostic mammography) were performed in women **aged 50 – 69** (mammography screening target group in the SR) in 2022. Of this number, **47,300 mammography exams were performed in women with breast disease symptoms** (31% of all mammography exams in women aged 50 – 69) and **106,159 mammography exams in asymptomatic women** (69% of all mammography exams in women aged 50 – 69). Compared to 2021, we can see an approximately 15% increase in the number of mammography exams of asymptomatic women and an approximately 9% decrease in the number of mammography exams of women with breast disease symptoms in the mammography screening target group (i.e., women aged 50 – 69) (CH 2).

Tables T 4, T 5, T 6 show the numbers of mammography exams per age group (under 50, 50 – 69, over 70), type of mammography (preventive, screening, diagnostic) and territory of activity of a mammography facility (district, region) when the mammography took place.



CH 2. Comparison of the number of all mammography exams of women aged 50 – 69 in 2021 and 2022.

T 4. Number of diagnostic and preventive mammography exams of women aged under 50 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (preventive, diagnostic)	Number of mammography exams of women aged under 50	
		without breast disease symptoms (preventive mammography)	with breast disease symptoms (diagnostic mammography)
Banská Bystrica region	**9,292**	**6,021**	**3,271**
of which			
Banská Bystrica	4,963	3,323	1,640
Brezno	508	375	133
Lučenec	1,748	848	900
Rimavská Sobota	1,198	641	557
Zvolen	862	821	41
Žiar nad Hronom	13	13	-
Bratislava region	**17,868**	**8,854**	**9,014**
of which			
Bratislava I-V	15,289	6,657	8,632
Malacky	1,718	1,572	146
Pezinok	861	625	236
Košice region	**10,965**	**8,956**	**2,009**
of which			
Košice I-IV, okolie	6,263	5,166	1,097
Michalovce	1,707	1,383	324
Rožňava	561	539	22
Spišská Nová Ves	1,067	980	87
Trebišov	1,367	888	479
Nitra region	**11,032**	**8,322**	**2,710**
of which			
Komárno	1,606	678	928
Levice	1,402	1,253	149
Nitra	4,102	2,832	1,270
Nové Zámky	1,765	1,649	116
Topoľčany	2,157	1,910	247
Prešov region	**11,812**	**9,771**	**2,041**
of which			
Bardejov	1,901	1,191	710
Humenné	1,360	1,008	352
Levoča	622	559	63
Poprad	2,424	2,335	89
Prešov	2,677	2,053	624
Sabinov	511	498	13
Snina	373	274	99
Stará Ľubovňa	1,030	978	52
Vranov nad Topľou	914	875	39

T 4 (continued). Number of diagnostic and preventive mammography exams of women aged under 50 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (preventive, diagnostic)	Number of mammography exams of women aged under 50	
		without breast disease symptoms (preventive mammography)	with breast disease symptoms (diagnostic mammography)
Trenčín region	**10,628**	**6,885**	**3,743**
of which			
Ilava	1,622	10	1,612
Myjava	854	710	144
Nové Mesto nad Váhom	1,307	1,240	67
Považská Bystrica	825	746	79
Prievidza	2,054	1,924	130
Púchov	1,389	927	462
Trenčín	2,577	1,328	1,249
Trnava region	**10,103**	**7,717**	**2,386**
of which			
Dunajská Streda	1,535	1,296	239
Galanta	593	511	82
Hlohovec	383	364	19
Piešťany	308	-	308
Skalica	1,050	946	104
Trnava	6,234	4,600	1,634
Žilina region	**13,125**	**10,680**	**2,445**
of which			
Čadca	1,156	1,150	6
Dolný Kubín	1,243	886	357
Liptovský Mikuláš	1,756	1,564	192
Martin	3,188	1,905	1,283
Ružomberok	1,114	1,043	71
Tvrdošín	1,235	991	244
Žilina	3,433	3,141	292
SLOVAK REPUBLIC	**94,825**	**67,206**	**27,619**

T 5. Number of diagnostic and preventive mammography exams of women aged over 70 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (preventive, diagnostic)	Number of mammography exams of women aged over 70	
		without breast disease symptoms (preventive mammography)	with breast disease symptoms (diagnostic mammography)
Banská Bystrica region	**2,544**	**198**	**2,346**
of which			
Banská Bystrica	1,466	139	1,327
Brezno	184	22	162
Lučenec	296	9	287
Rimavská Sobota	312	3	309
Zvolen	282	25	257
Žiar nad Hronom	4	-	4
Bratislava region	**6,801**	**700**	**6,101**
of which			
Bratislava I-V	6,352	543	5,809
Malacky	272	132	140
Pezinok	177	25	152
Košice region	**3,118**	**63**	**3,055**
of which			
Košice I-IV, okolie	2,138	43	2,095
Michalovce	311	4	307
Rožňava	58	4	54
Spišská Nová Ves	256	6	250
Trebišov	355	6	349
Nitra region	**2,636**	**385**	**2,251**
of which			
Komárno	540	1	539
Levice	433	206	227
Nitra	725	10	715
Nové Zámky	329	6	323
Topoľčany	609	162	447
Prešov region	**2,980**	**640**	**2,340**
of which			
Bardejov	572	229	343
Humenné	613	2	611
Levoča	136	16	120
Poprad	265	7	258
Prešov	983	338	645
Sabinov	55	4	51
Snina	46	1	45
Stará Ľubovňa	213	13	200
Vranov nad Topľou	97	30	67

T 5 (continued). Number of diagnostic and preventive mammography exams of women aged over 70 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (preventive, diagnostic)	Number of mammography exams of women aged over 70	
		without breast disease symptoms (preventive mammography)	with breast disease symptoms (diagnostic mammography)
Trenčín region	**2,677**	**105**	**2,572**
of which			
Ilava	326	-	326
Myjava	130	31	99
Nové Mesto nad Váhom	379	13	366
Považská Bystrica	211	11	200
Prievidza	361	27	334
Púchov	252	1	251
Trenčín	1,018	22	996
Trnava region	**2,656**	**582**	**2,074**
of which			
Dunajská Streda	386	258	128
Galanta	185	27	158
Hlohovec	61	35	26
Piešťany	143	-	143
Skalica	312	164	148
Trnava	1,569	98	1,471
Žilina region	**2,766**	**136**	**2,630**
of which			
Čadca	151	-	151
Dolný Kubín	423	-	423
Liptovský Mikuláš	321	29	292
Martin	580	-	580
Ružomberok	283	16	267
Tvrdošín	270	10	260
Žilina	738	81	657
SLOVAK REPUBLIC	**26,178**	**2,809**	**23,369**

T 6. Number of diagnostic, preventive and screening mammography exams of women aged 50 – 69 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (screening, preventive, diagnostic)	Number of mammography exams of women aged 50 – 69	
		without breast disease symptoms (screening, preventive mammography)	with breast disease symptoms (diagnostic mammography)
Banská Bystrica region	**16,131**	**10,601**	**5,530**
of which			
Banská Bystrica	8,506	5,265	3,241
Brezno	968	677	291
Lučenec	2,731	2,098	633
Rimavská Sobota	2,288	1,219	1,069
Zvolen	1,599	1,304	295
Žiar nad Hronom	39	38	1
Bratislava region	**25,703**	**11,176**	**14,527**
of which			
Bratislava I-V	22,935	8,826	14,109
Malacky	2,009	1,931	78
Pezinok	759	419	340
Košice region	**19,090**	**14,061**	**5,029**
of which			
Košice I-IV, okolie	10,408	7,611	2,797
Michalovce	3,218	2,356	862
Rožňava	1,122	1,055	67
Spišská Nová Ves	2,012	1,761	251
Trebišov	2,330	1,278	1,052
Nitra region	**18,069**	**14,041**	**4,028**
of which			
Komárno	2,533	661	1,872
Levice	2,689	2,221	468
Nitra	7,217	6,412	805
Nové Zámky	2,316	2,062	254
Topoľčany	3,314	2,685	629
Prešov region	**21,636**	**16,472**	**5,164**
of which			
Bardejov	3,433	2,099	1,334
Humenné	2,922	2,106	816
Levoča	1,156	931	225
Poprad	3,989	3,724	265
Prešov	5,458	3,499	1,959
Sabinov	767	733	34
Snina	798	528	270
Stará Ľubovňa	1,399	1,282	117
Vranov nad Topľou	1,714	1,570	144

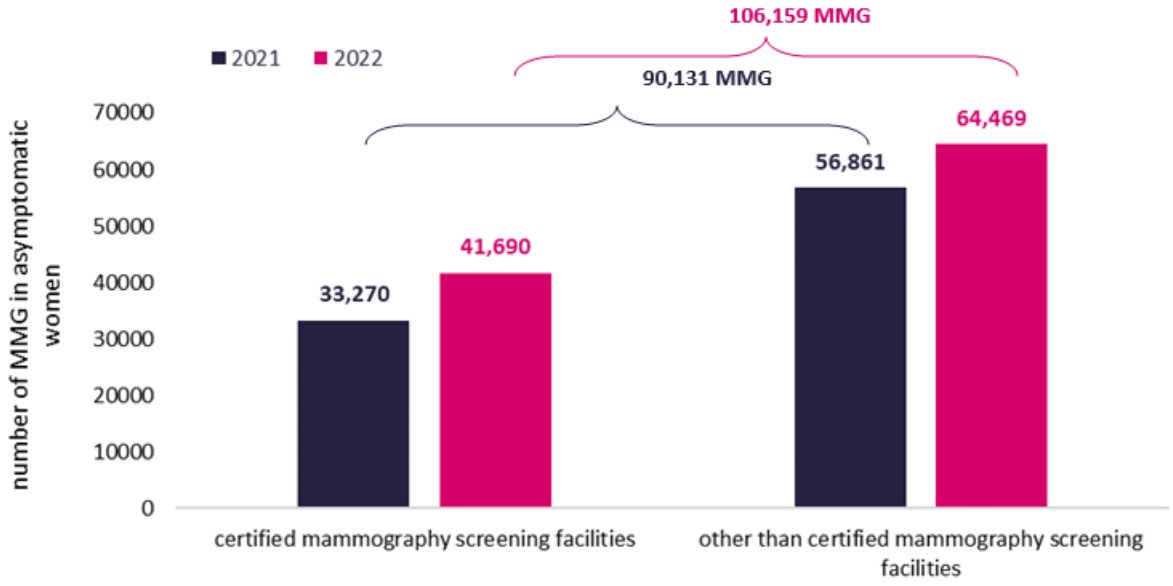
T 6 (continued). Number of diagnostic, preventive and screening mammography exams of women aged 50 – 69 in the SR in 2022 per territory of activity of a mammography facility.

Territory of activity of a mammography facility	Total number of all mammography exams (screening, preventive, diagnostic)	Number of mammography exams of women aged 50 – 69	
		without breast disease symptoms (screening, preventive mammography)	with breast disease symptoms (diagnostic mammography)
Trenčín region	**17,056**	**11,685**	**5,371**
of which			
Ilava	2,482	13	2,469
Myjava	1,229	1,032	197
Nové Mesto nad Váhom	2,133	1,932	201
Považská Bystrica	1,764	1,577	187
Prievidza	4,087	3,716	371
Púchov	1,904	1,349	555
Trenčín	3,457	2,066	1,391
Trnava region	**14,587**	**11,926**	**2,661**
of which			
Dunajská Streda	2,653	2,257	396
Galanta	1,179	710	469
Hlohovec	517	485	32
Piešťany	708	-	708
Skalica	2,005	1,772	233
Trnava	7,525	6,702	823
Žilina region	**21,187**	**16,197**	**4,990**
of which			
Čadca	2,065	2,019	46
Dolný Kubín	2,242	1,483	759
Liptovský Mikuláš	3,049	2,593	456
Martin	4,623	2,320	2,303
Ružomberok	1,704	1,559	145
Tvrdošín	1,669	1,137	532
Žilina	5,835	5,086	749
SLOVAK REPUBLIC	**153,459**	**106,159**	**47,300**

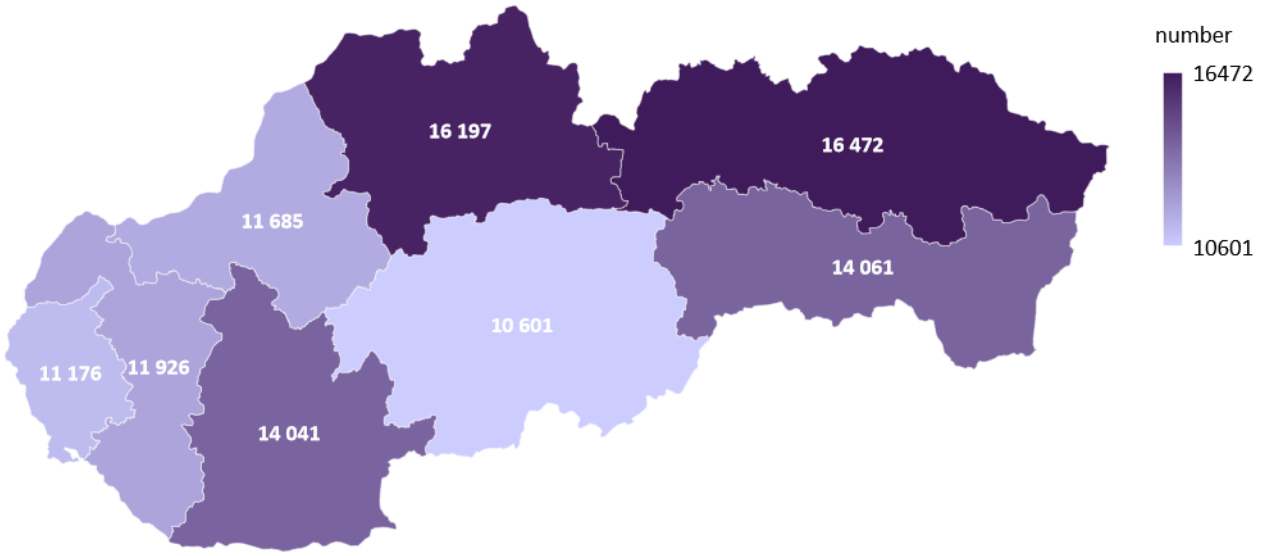
4 STATE OF MAMMOGRAPHY SCREENING IN THE SR ACCORDING TO ANONYMIZED DATA FROM HEALTH INSURANCE COMPANIES IN 2022

Based on statistical data from health insurance companies, 106,159 mammography exams were performed in asymptomatic women aged 50 – 69 in 2022. Of this number, **41,690 women** were examined by screening mammography within the **organized mammography screening,** which represents **39% of all mammography exams performed in asymptomatic women.** The historically obsolete preventive mammography (i.e., **opportunistic screening**) represented **64,469 asymptomatic women**, which corresponds to **61% of all mammography exams performed in asymptomatic women** (CH 3, T 7, T 8).

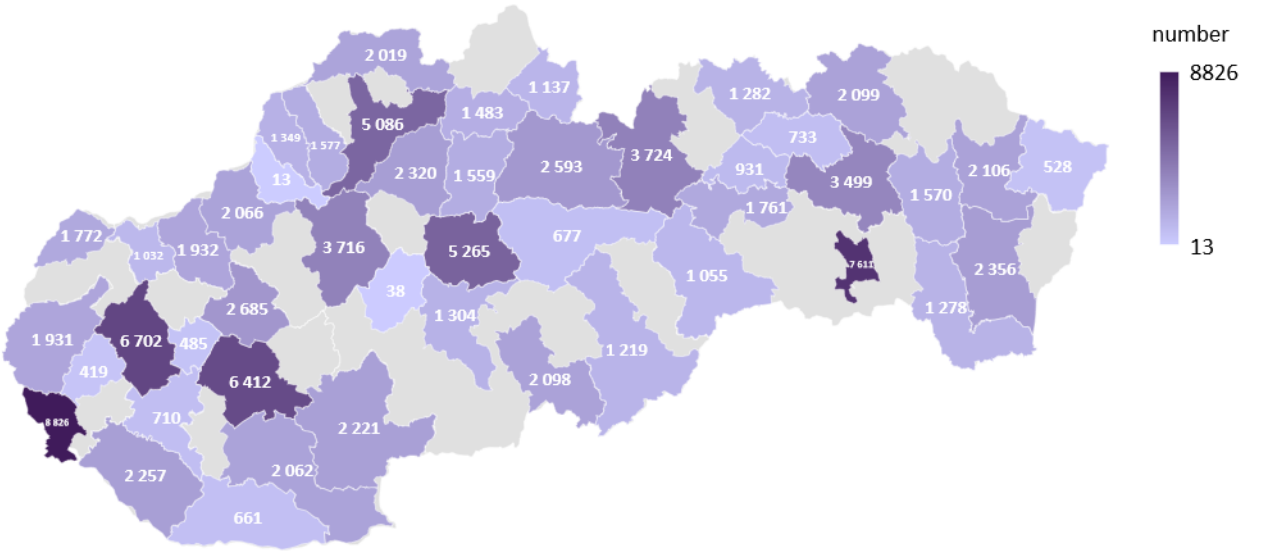
In comparison with 2021, we can see a slight increase not only in the number of women examined by screening mammography but also seemingly increasing percentage of women examined by screening mammography at certified mammography screening facilities. While 37% of all asymptomatic women were examined by screening mammography within the organized mammography screening in 2021, another 2% increase took place in 2022 (i.e., 39%).



CH 3. Comparison of the number of mammography exams in asymptomatic women performed at certified mammography screening facilities and other facilities in 2021 – 2022.



CH 4. Number of all preventive and screening mammography exams of asymptomatic women aged 50 – 69 in the SR in 2022 per region of the mammography facility at which the mammography was performed.



CH 5. Number of all preventive and screening mammography exams of asymptomatic women aged 50 – 69 in the SR in 2022 per district of the mammography facility at which the mammography was performed.

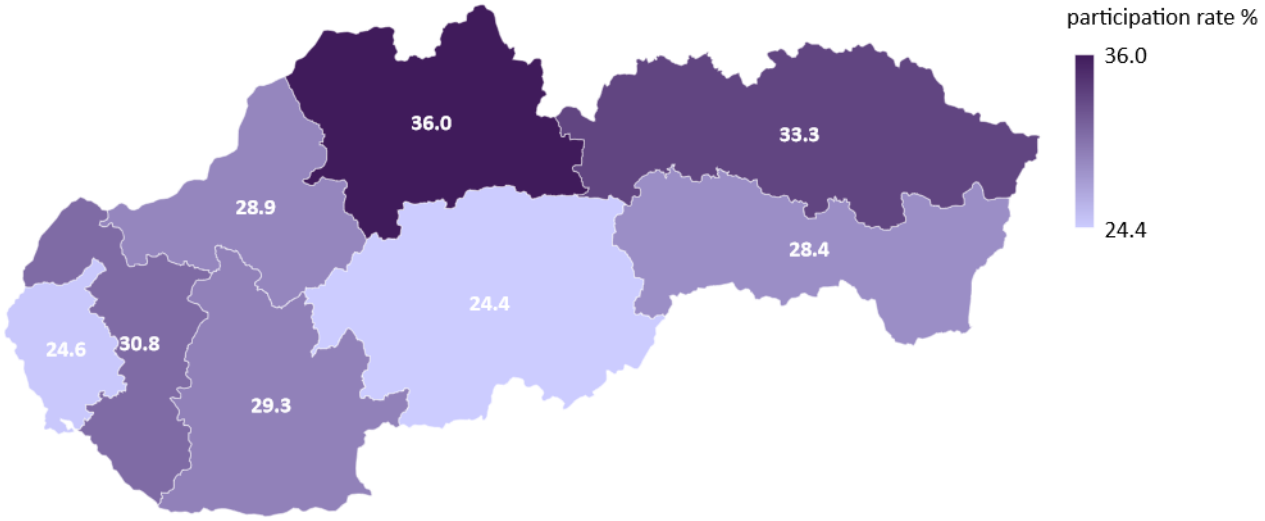
T 7. Number of mammography exams in asymptomatic women aged 50 – 69 performed at certified mammography screening facilities and other facilities in 2022.

Territory of activity of a mammography facility	Number of all mammography exams of asymptomatic women aged 50 – 69	Number of mammography exams of asymptomatic women aged 50 – 69	
		at a certified mammography screening facility	at other than certified mammography screening facility
Banská Bystrica region	10,601 (100%)	2,525 (24%)	8,076 (76%)
Bratislava region	11,176 (100%)	6,401 (57%)	4,775 (43%)
Košice region	14,061 (100%)	1,150 (8%)	12,911 (92%)
Nitra region	14,041 (100%)	8,436 (60%)	5,605 (40%)
Prešov region	16,472 (100%)	6,710 (41%)	9,762 (59%)
Trenčín region	11,685 (100%)	5,317 (46%)	6,368 (54%)
Trnava region	11,926 (100%)	6,702 (56%)	5,224 (44%)
Žilina region	16,197 (100%)	4,449 (27%)	11,748 (73%)
SLOVAK REPUBLIC	**106,159 (100%)**	**41,690 (39%)**	**64,469 (61%)**

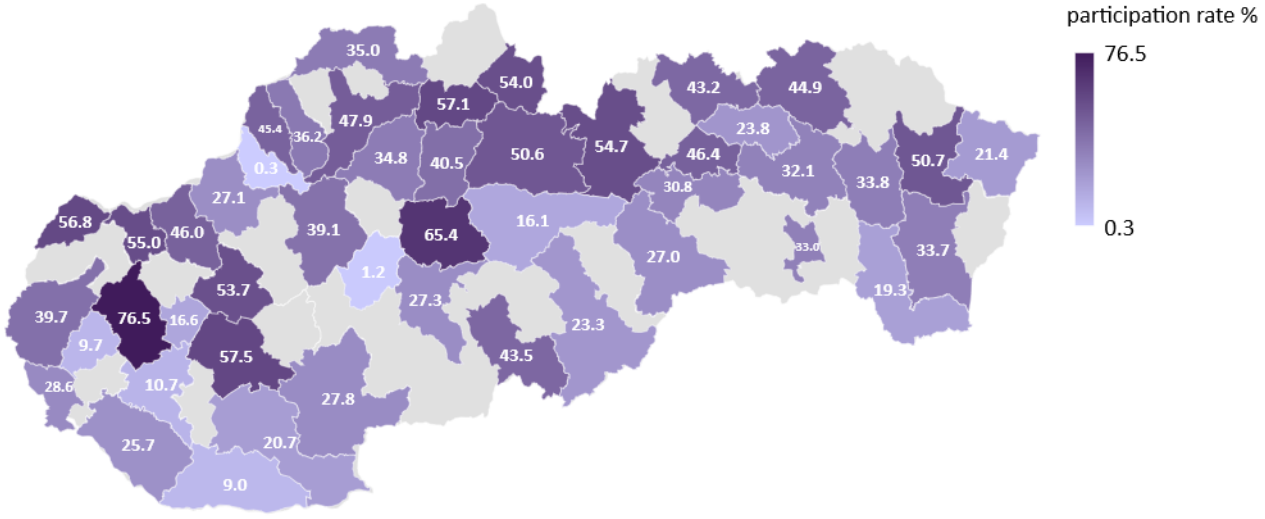
T 8. Number of mammography exams in women aged 50 – 69 with breast disease symptoms performed at certified mammography screening facilities and other facilities in 2022.

Territory of activity of a mammography facility	Number of mammography exams in women with breast disease symptoms aged 50 – 69	Number of mammography exams in women with breast disease symptoms aged 50 – 69	
		at a certified mammography screening facility	at other than certified mammography screening facility
Banská Bystrica region	5,530 (100%)	830 (15%)	4,700 (85%)
Bratislava region	14,527 (100%)	3,189 (22%)	11,338 (78%)
Košice region	5,029 (100%)	341 (7%)	4,688 (93%)
Nitra region	4,028 (100%)	1,173 (29%)	2,855 (71%)
Prešov region	5,164 (100%)	788 (15%)	4,376 (85%)
Trenčín region	5,371 (100%)	1,729 (32%)	3,642 (68%)
Trnava region	2,661 (100%)	823 (31%)	1,838 (69%)
Žilina region	4,990 (100%)	988 (20%)	4,002 (80%)
SLOVAK REPUBLIC	**47,300 (100%)**	**9,861 (21%)**	**37,439 (79%)**

In 2022, the **total participation rate of asymptomatic women aged 50 – 69 was 29.5%** of all women in the SR entitled to screening mammography. **The participation rate of these women in the mammography screening at a certified mammography screening facility was 11.6% and at other than certified mammography screening facility 17.9%** (CH 6, CH 7, T 9, T 10, T 11). In comparison to 2021, we can see an increase in the participation rate in mammography screening, with total participation rate of asymptomatic women aged 50 – 69 amounting to 24.9%; 9.2% at certified mammography screening facilities and 15.7% at other than certified mammography screening facilities (CH 8, CH 9).



CH 6. Participation rate of women in preventive and screening mammography exams of asymptomatic women aged 50 – 69 in the SR in 2022 per region of the mammography facility at which the mammography was performed.



CH 7. Participation rate of women in preventive and screening mammography exams of asymptomatic women aged 50 – 69 in the SR in 2022 per district of the mammography facility at which the mammography was performed.

T 9. Relative participation rate of asymptomatic women in preventive and screening mammography in 2022 per territory of activity of mammography facilities.

Territory of activity of a mammography facility	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening and preventive mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Banská Bystrica region	**87,020 / 43,510**	**10,601**	**24.4%**
of which			
Banská Bystrica	16,107 / 8,054	5,265	65.4%
Brezno	8,388 / 4,194	677	16.1%
Lučenec	9,636 / 4,818	2,098	43.5%
Rimavská Sobota	10,449 / 5,225	1,219	23.3%
Zvolen	9,542 / 4,771	1,304	27.3%
Žiar nad Hronom	6,330 / 3,165	38	1.2%
Bratislava region	**90,848 / 45,424**	**11,176**	**24.6%**
of which			
Bratislava I-IV	61,665 / 30,833	8,826	28.6%
Malacky	9,717 / 4,859	1,931	39.7%
Pezinok	8,660 / 4,330	419	9.7%
Košice region	**98,969 / 49,485**	**14,061**	**28.4%**
of which			
Košice I-IV, okolie	46,061 / 23,031	7,611	33.0%
Michalovce	13,968 / 6,984	2,356	33.7%
Rožňava	7,828 / 3,914	1,055	27.0%
Spišská Nová Ves	11,429 / 5,715	1,761	30.8%
Trebišov	13,232 / 6,616	1,278	19.3%
Nitra region	**95,842 / 47,921**	**14,041**	**29.3%**
of which			
Komárno	14,722 / 7,361	661	9.0%
Levice	15,957 / 7,979	2,221	27.8%
Nitra	22,312 / 11,156	6,412	57.5%
Nové Zámky	19,962 / 9,981	2,062	20.7%
Topoľčany	9,992 / 4,996	2,685	53.7%
Prešov region	**99,062 / 49,531**	**16,472**	**33.3%**
of which			
Bardejov	9,341 / 4,671	2,099	44.9%
Humenné	8,315 / 4,158	2,106	50.7%
Levoča	4,012 / 2,006	931	46.4%
Poprad	13,610 / 6,805	3,724	54.7%
Prešov	21,781 / 10,891	3,499	32.1%
Sabinov	6,156 / 3,078	733	23.8%
Snina	4,931 / 2,466	528	21.4%
Stará Ľubovňa	5,941 / 2,971	1,282	43.2%
Vranov nad Topľou	9,290 / 4,645	1,570	33.8%

T 9 (continued). Relative participation rate of asymptomatic women in preventive and screening mammography in 2022 per territory of activity of mammography facilities.

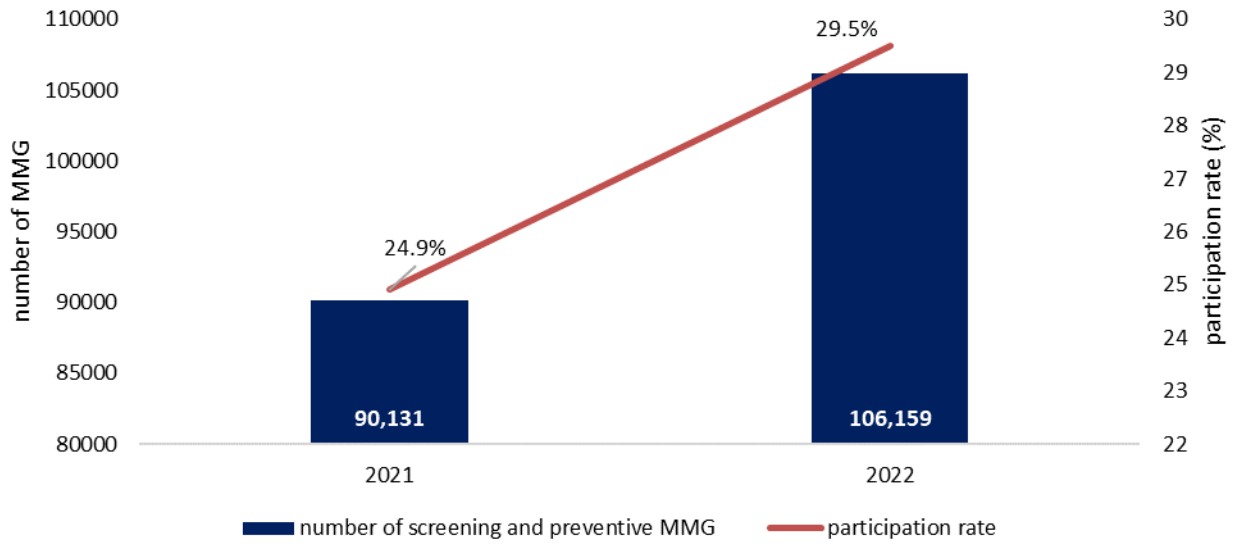
Territory of activity of a mammography facility	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening and preventive mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Trenčín region	**80,750 / 40,375**	**11,685**	**28.9%**
of which			
Ilava	8,414 / 4,207	13	0.3%
Myjava	3,752 / 1,876	1,032	55.0%
Nové Mesto nad Váhom	8,392 / 4,196	1,932	46.0%
Považská Bystrica	8,707 / 4,354	1,577	36.2%
Prievidza	19,016 / 9,508	3,716	39.1%
Púchov	5,940 / 2,970	1,349	45.4%
Trenčín	15,241 / 7,621	2,066	27.1%
Trnava region	**77,536 / 38,768**	**11,926**	**30.8%**
of which			
Dunajská Streda	17,590 / 8,795	2,257	25.7%
Galanta	13,275 / 6,638	710	10.7%
Hlohovec	5,854 / 2,927	485	16.6%
Skalica	6,243 / 3,122	1,772	56.8%
Trnava	17,532 / 8,766	6,702	76.5%
Žilina region	**90,034 / 45,017**	**16,197**	**36.0%**
of which			
Čadca	11,539 / 5,770	2,019	35.0%
Dolný Kubín	5,190 / 2,595	1,483	57.1%
Liptovský Mikuláš	10,248 / 5,124	2,593	50.6%
Martin	13,326 / 6,663	2,320	34.8%
Ružomberok	7,694 / 3,847	1,559	40.5%
Tvrdošín	4,213 / 2,107	1,137	54.0%
Žilina	21,254 / 10,627	5,086	47.9%
SLOVAK REPUBLIC	**720,061 / 360,031**	**106,159**	**29.5%**

T 10. Relative participation rate of asymptomatic women in preventive and screening mammography in 2022 per territory of activity of a mammography facility and region (NUTS 2).

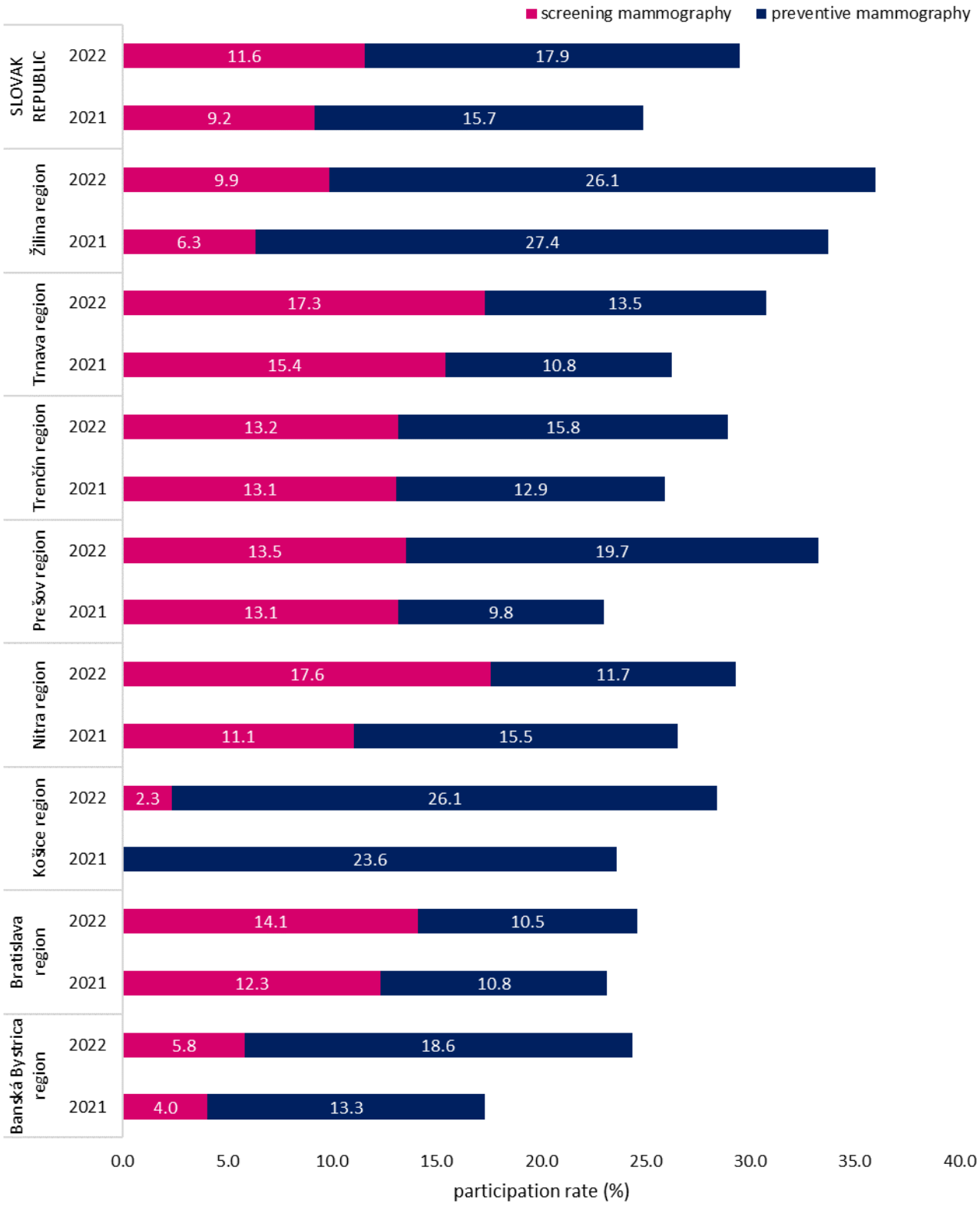
Territory of activity of a mammography facility per region (NUTS 2)	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening and preventive mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Bratislava region	90,848 / 45,424	11,176	24.6%
Western Slovakia	254,128 / 127,064	37,652	29.6%
Central Slovakia	177,054 / 88,527	26,798	30.3%
Eastern Slovakia	198,031 / 99,016	30,533	30.8%
SLOVAK REPUBLIC	**720,061 / 360,031**	**106,159**	**29.5%**

T 11. Relative participation rate of asymptomatic women in preventive and screening mammography in 2022 per territory of activity and type of mammography facility.

Territory of activity of a mammography facility	Number of performed screening and preventive mammography exams of women aged 50 – 69		Relative participation rate when adhering to screening interval (%)	
	at a certified mammography screening facility	at other than certified mammography screening facility	at a certified mammography screening facility	at other than certified mammography screening facility
Banská Bystrica region	2,525	8,076	5.8%	18.6%
Bratislava region	6,401	4,775	14.1%	10.5%
Košice region	1,150	12,911	2.3%	26.1%
Nitra region	8,436	5,605	17.6%	11.7%
Prešov region	6,710	9,762	13.5%	19.7%
Trenčín region	5,317	6,368	13.2%	15.8%
Trnava region	6,702	5,224	17.3%	13.5%
Žilina region	4,449	11,748	9.9%	26.1%
SLOVAK REPUBLIC	**41,690**	**64,469**	**11.6%**	**17.9%**



CH 8. Comparison of trends in mammography screening participation rate (organized, opportunistic) in 2021 – 2022.



CH 9. Comparison of participation rate in mammography screening at certified or other than certified mammography screening facilities in 2021 and 2022.

5 STATE OF MAMMOGRAPHY SCREENING IN THE SR ACCORDING TO DATA FROM CERTIFIED MAMMOGRAPHY SCREENING FACILITIES

12.7% of the target female population were examined by screening mammography at a certified mammography screening facility in 2022, i.e., **45,773 women participated in the mammography screening.** Compared to 2021, it meant an increase in the number of performed screening mammography exams by 9.2% (i.e., 41,554 screening mammography exams in 2021). Moreover, we can see a slight increase in the relative participation rate of asymptomatic women aged 50 – 69 in the mammography screening by 1.2% (11.5% vs 12.7%) (T 12, T 13, T 14, CH 10, CH 11, CH 12, CH 13, CH 14, CH 15, CH 16, CH 17). This target group included 252 diagnosed cancers, which corresponds to a malignancy rate of **5.5 cases per 1,000 women** (T 15, CH 18, CH 19).

T 12. Relative participation rate of asymptomatic women in screening mammography in 2022 per territory of activity of a mammography facility and region (NUTS 2).

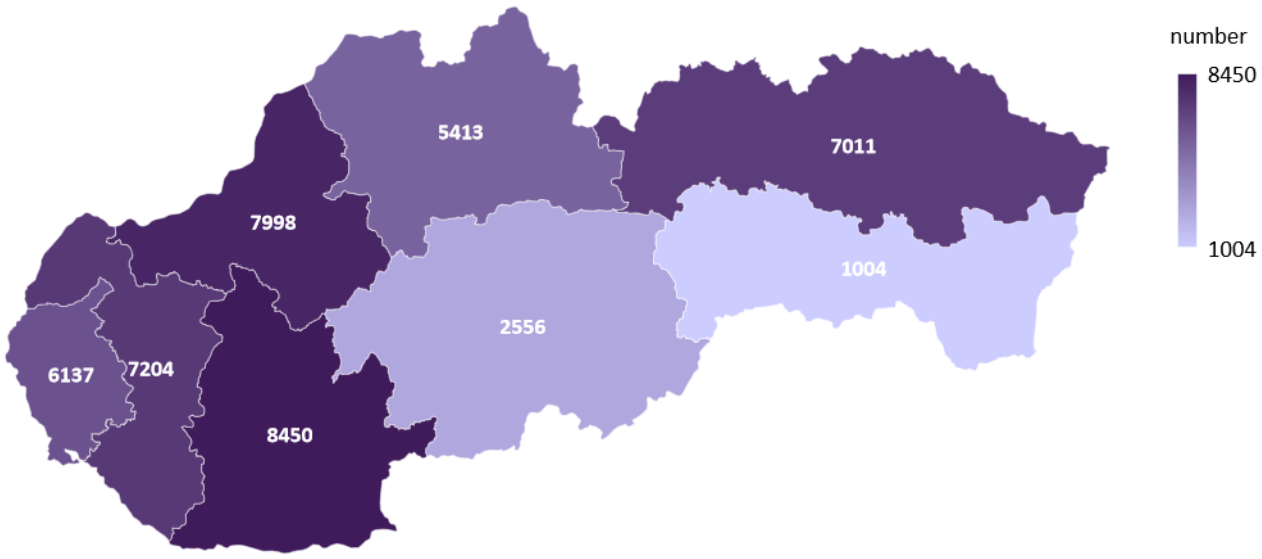
Territory of activity of a mammography facility per region (NUTS 2)	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Bratislava region	90,848 / 45,424	6,137	13.5%
Western Slovakia	254,128 / 127,064	23,652	18.6%
Central Slovakia	177,054 / 88,527	7,969	9.0%
Eastern Slovakia	198,031 / 99,016	8,015	8.1%
SLOVAK REPUBLIC	**720,061 / 360,031**	**45,773**	**12.7%**

T 13. Relative participation rate of women in the mammography screening in 2022 per region with certified mammography screening facility.

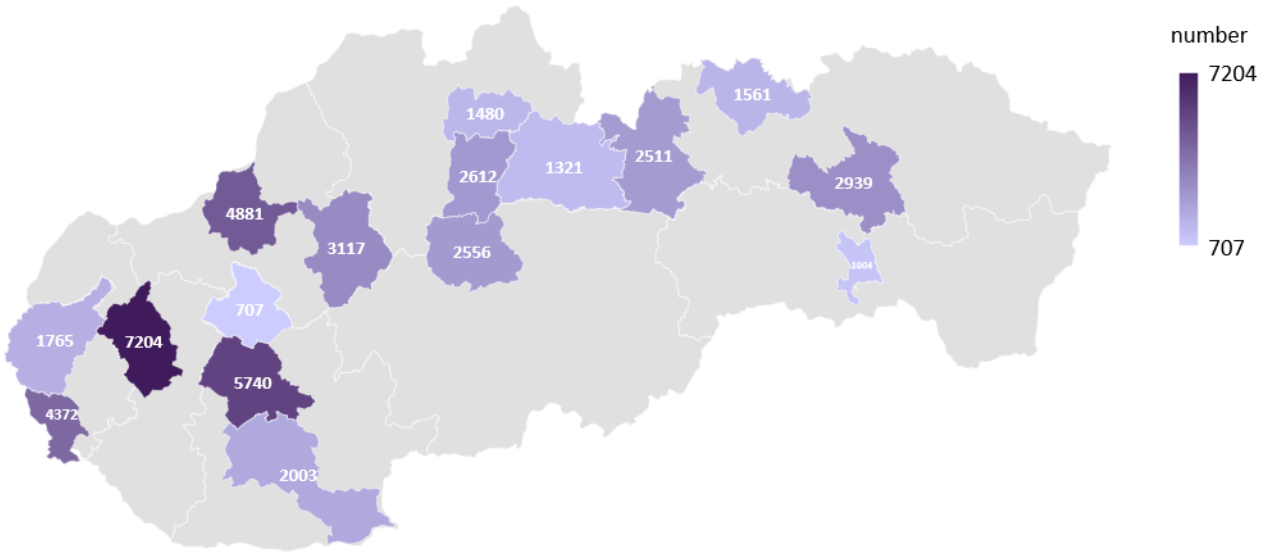
Territory of activity of a mammography facility	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Banská Bystrica region	87,020 / 43,510	2,556	5.9%
Bratislava region	90,848 / 45,424	6,137	13.5%
Košice region	98,969 / 49,485	1,004	2.0%
Nitra region	95,842 / 47,921	8,450	17.6%
Prešov region	99,062 / 49,531	7,011	14.2%
Trenčín region	80,750 / 40,375	7,998	19.8%
Trnava region	77,536 / 38,768	7,204	18.6%
Žilina region	90,034 / 45,017	5,413	12.0%
SLOVAK REPUBLIC	**720,061 / 360,031**	**45,773**	**12.7%**

T 14. Relative participation rate of women in the mammography screening in 2022 per district with certified mammography screening facility.

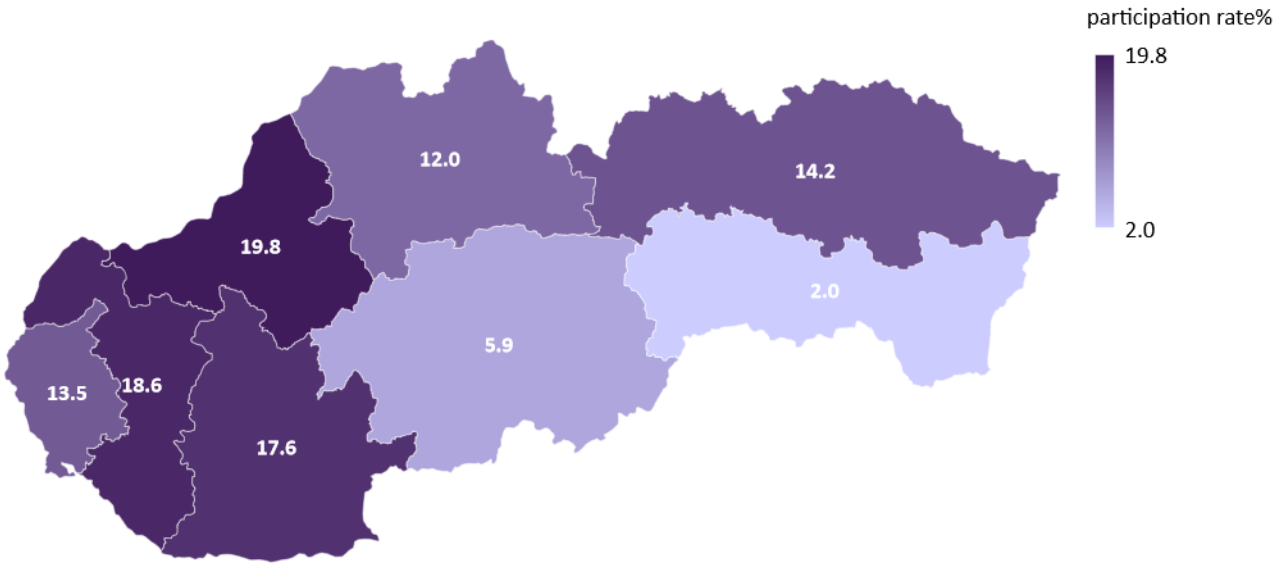
Territory of activity of a mammography facility	Number of women aged 50 – 69 / number of women when adhering to screening interval	Number of performed screening mammography exams of women aged 50 – 69	Relative participation rate when adhering to screening interval (%)
Banská Bystrica	16,107 / 8,054	2,556	31.7%
Bratislava	61,665 / 30,833	4,372	14.2%
Malacky	9,717 / 4,859	1,765	36.3%
Košice	46,061 / 23,031	1,004	4.4%
Nitra	22,312 / 11,156	5,740	51.5%
Nové Zámky	19,962 / 9,981	2,003	20.1%
Topoľčany	9,992 / 4,996	707	14.2%
Poprad	13,610 / 6,805	2,511	36.9%
Prešov	21,781 / 10,891	2,939	27.0%
Stará Ľubovňa	5,941 / 2,971	1,561	52.6%
Prievidza	19,016 / 9,508	3,117	32.8%
Trenčín	15,241 / 7,621	4,881	64.1%
Trnava	17,532 / 8,766	7,204	82.2%
Dolný Kubín	5,190 / 2,595	1,480	57.0%
Liptovský Mikuláš	10,248 / 5,124	1,321	25.8%
Ružomberok	7,694 / 3,847	2,612	67.9%
SLOVAK REPUBLIC	**720,061 / 360,031**	**45,773**	**12.7%**



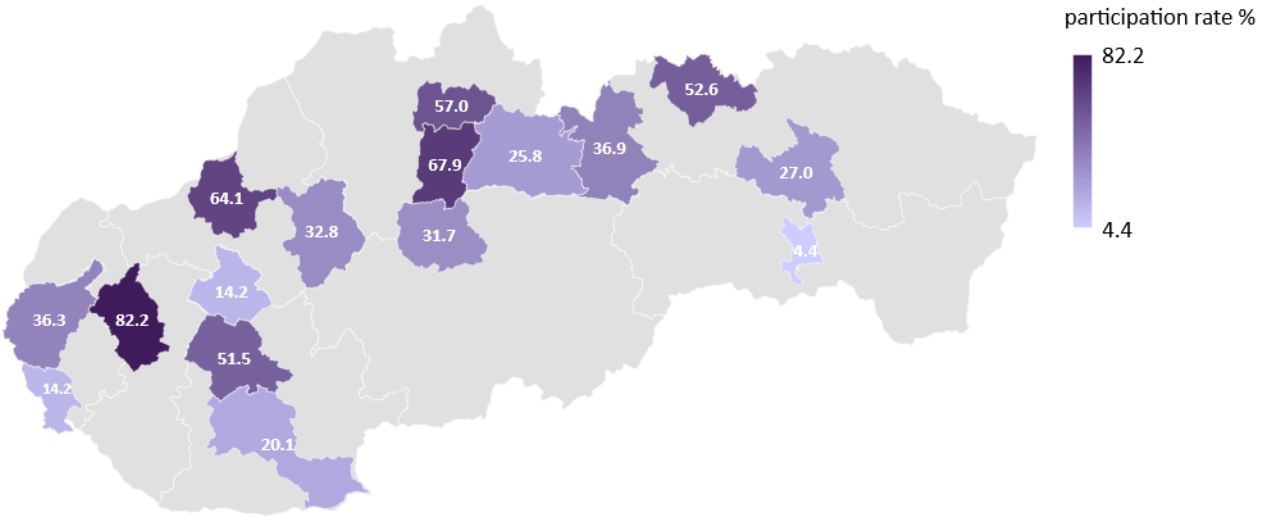
CH 10. Number of performed screening mammography exams at certified mammography screening facilities in 2022 per region with certified mammography screening facility.



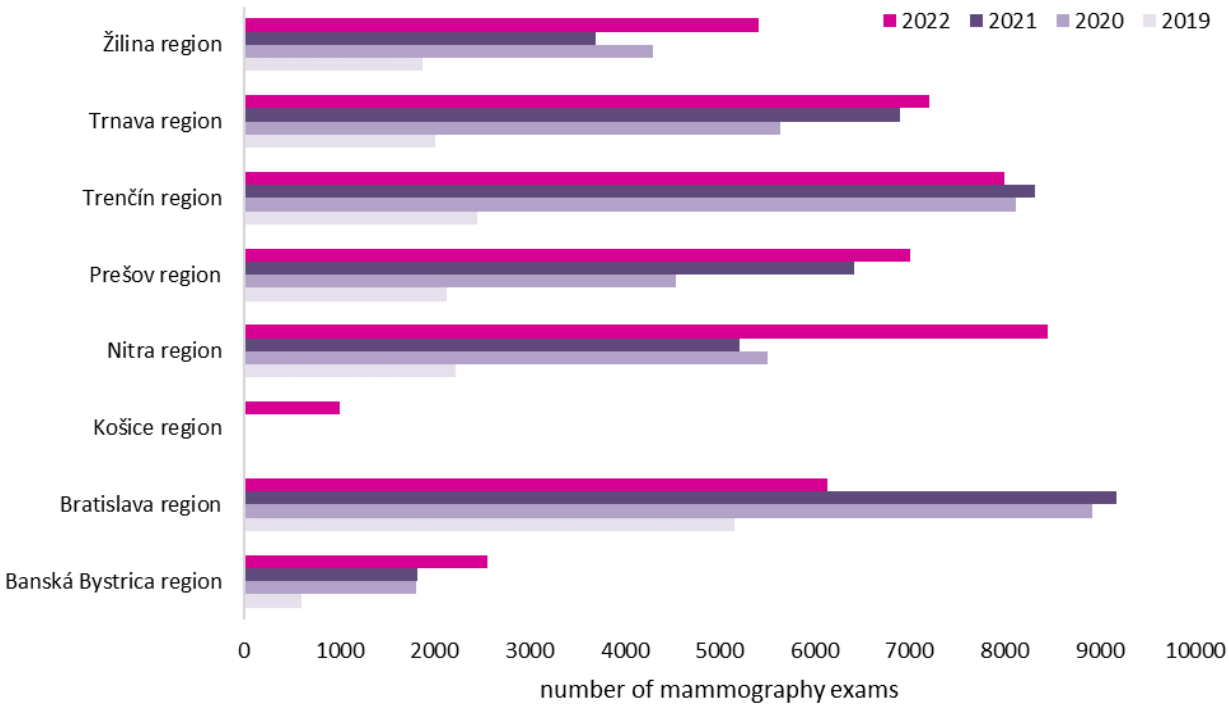
CH 11. Number of performed screening mammography exams at certified mammography screening facilities in 2022 per district with certified mammography screening facility.



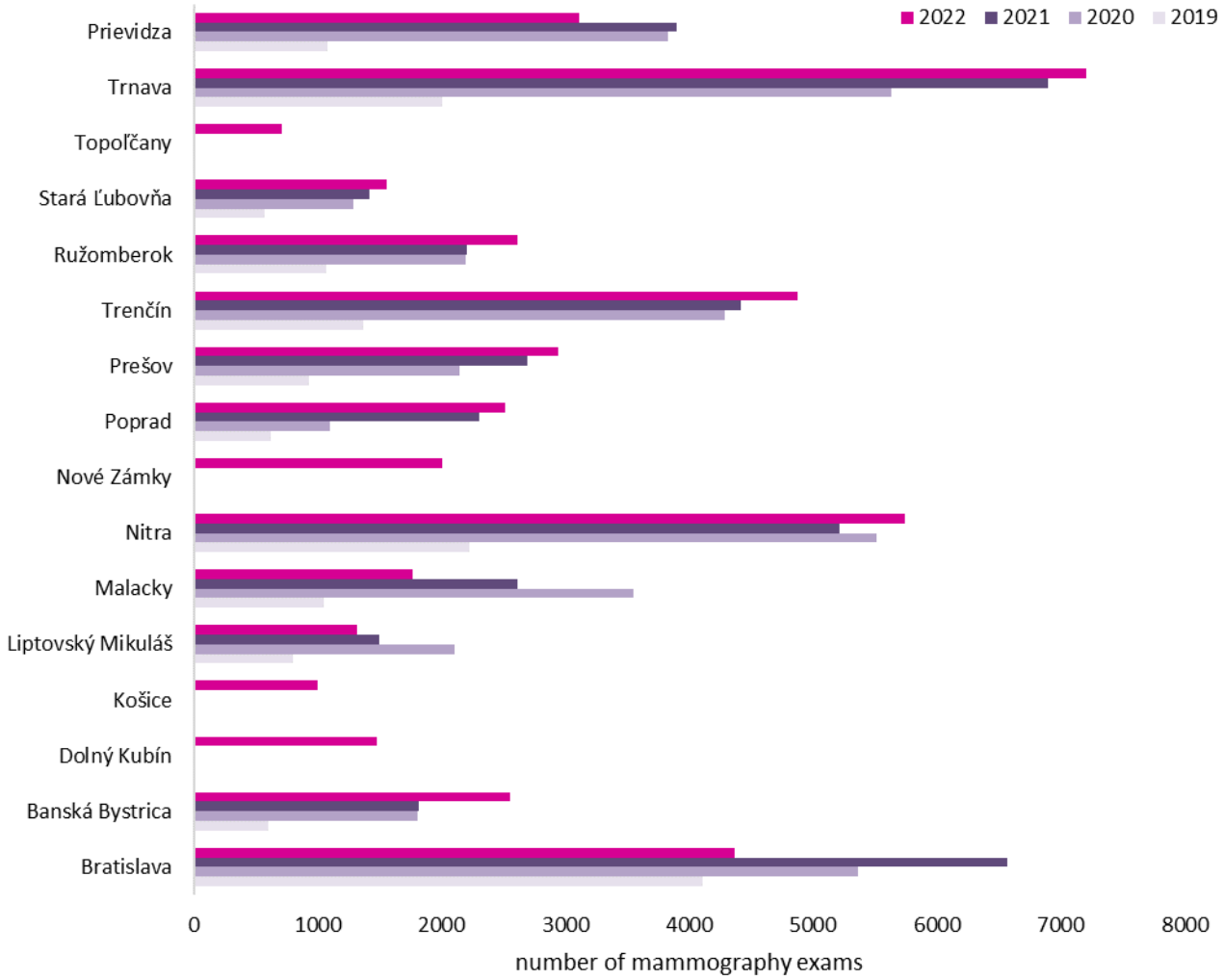
CH 12. Participation rate of women in screening mammography exams at certified mammography screening facilities in 2022 per region with certified mammography screening facility.



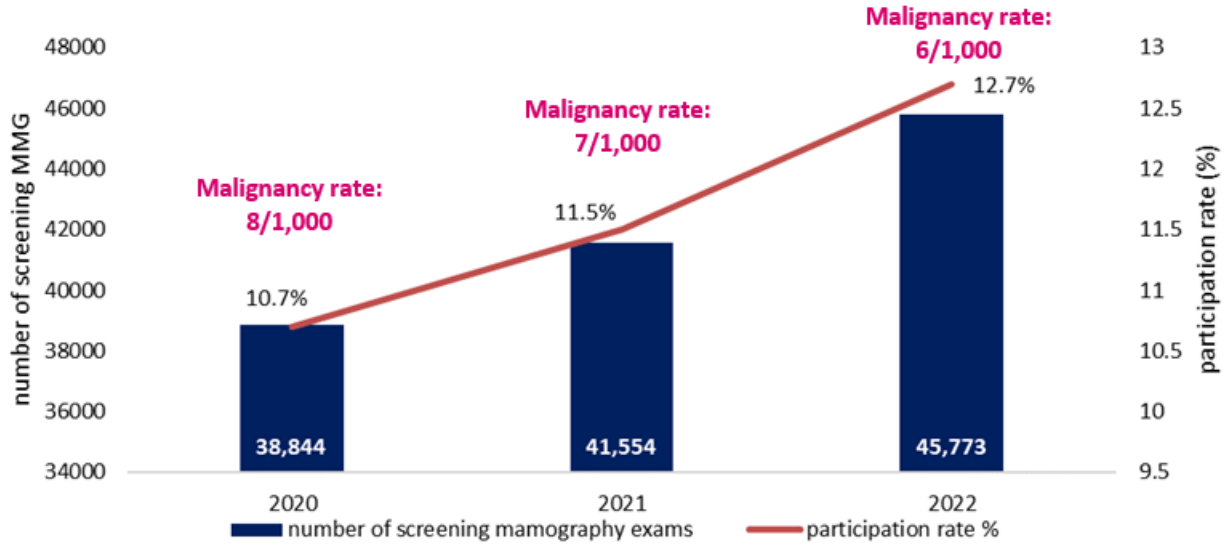
CH 13. Participation rate of women in screening mammography exams at certified mammography screening facilities in 2022 per district with certified mammography screening facility.



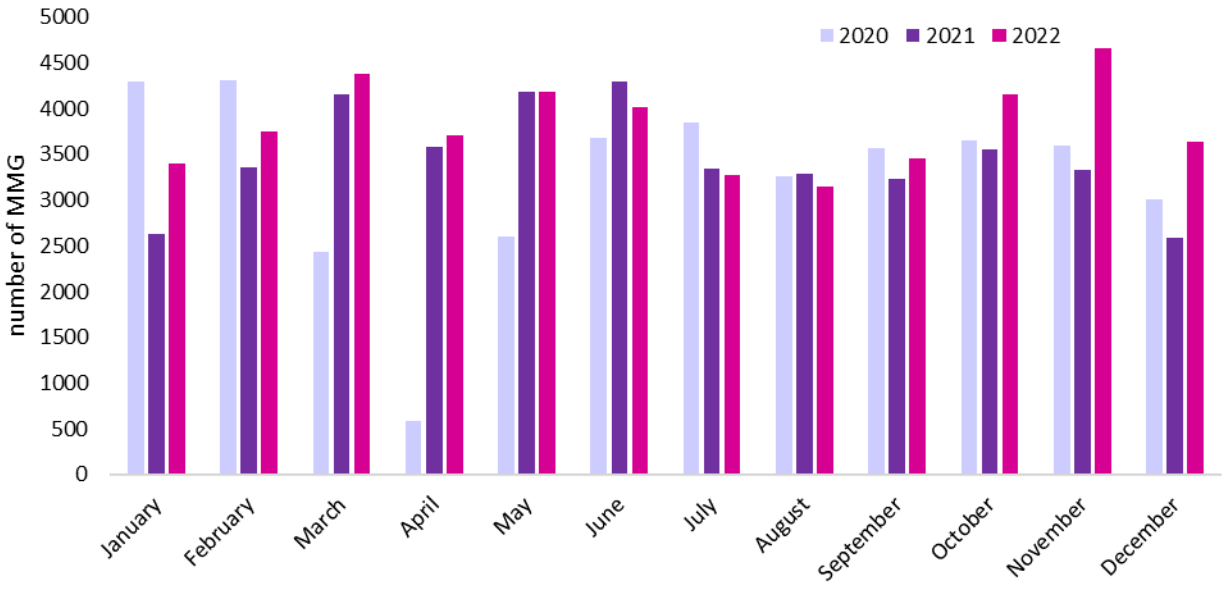
CH 14. Comparison of the number of performed screening mammography exams at certified mammography screening facilities in 2019 – 2022 per region with certified mammography screening facility.



CH 15. Comparison of the number of performed screening mammography exams at certified mammography screening facilities in 2019 – 2021 per district with certified mammography screening facility.



CH 16. Comparison of trends in mammography screening participation rate (organized, opportunistic) in 2020 – 2022.

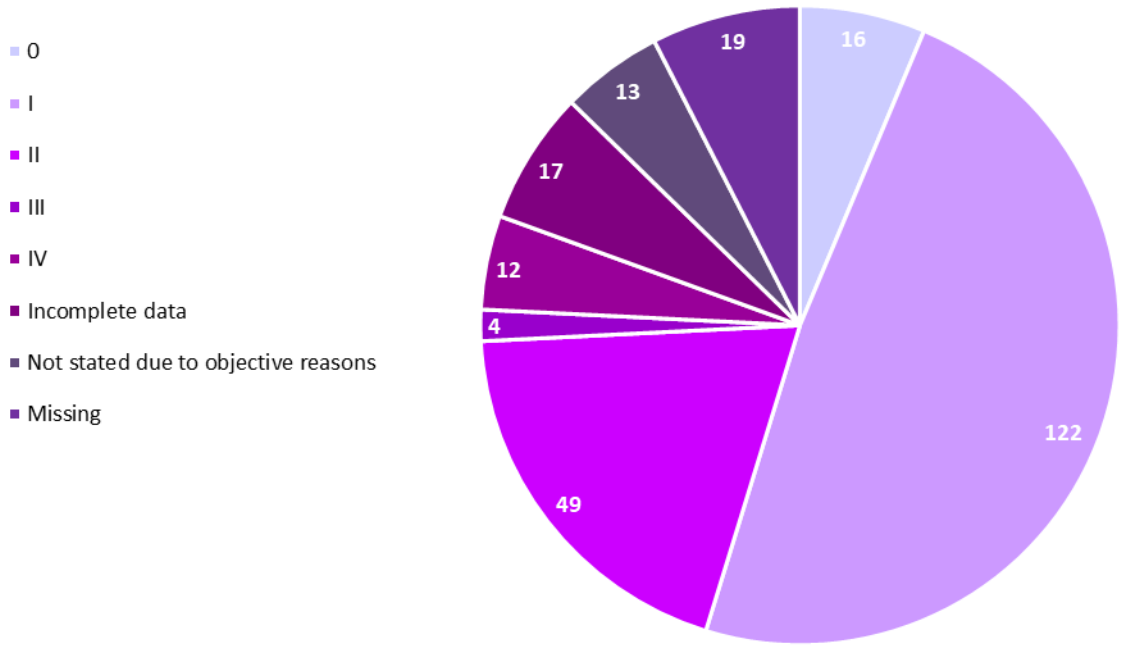


CH 17. Comparison of the number of performed screening mammography exams at certified mammography screening facilities in 2020 – 2022 per month.

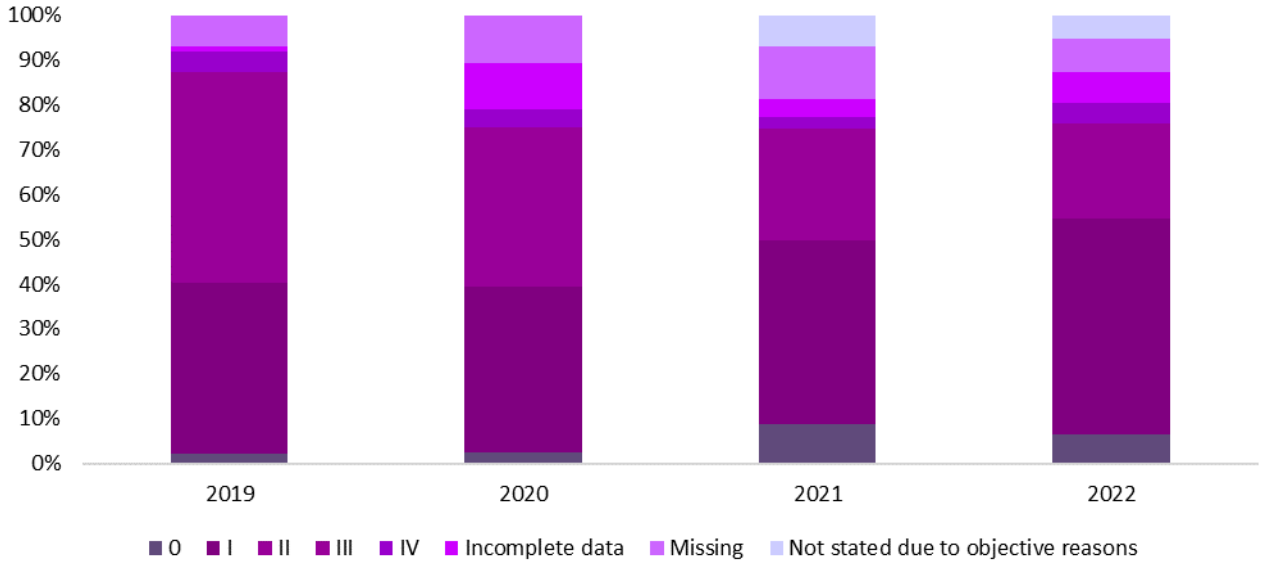
T 15. Number of malignancies diagnosed during mammography screening at certified mammography screening facilities in 2022 per TNM stage.

TNM stage	Number of malignancies diagnosed during mammography screening in 2022	
	number	percentage
0	16	6.3%
IA	122	48.4%
IIA	38	15.1%
IIB	11	4.4%
IIIA	3	1.2%
IIIB	1	0.4%
IV	12	4.8%
Incomplete data[8]	17	6.7%
Not stated due to objective reasons[9]	13	5.2%
Missing[10]	19	7.5%
All malignancies	**252**	**100%**

[8] ***TNM stage was classified as incomplete due to missing information about the M-stage***
[9] ***TNM not stated due to objective reasons: death, neoadjuvant treatment, refusal of treatment by the patient, contraindication of cancer treatment***
[10] ***Missing TNM***



CH 18. Percentage of clinical stages of malignant breast cancers diagnosed during mammography screening at certified mammography screening facilities in the SR in 2022.



CH 19. Number and percentage of clinical stages of malignant breast cancers diagnosed during mammography screening at certified mammography screening facilities in the SR in 2019 – 2022.

6 COMPARISON OF STATISTICAL DATA FROM MAMMOGRAPHY SCREENING IN 2022: ANONYMIZED DATA PROVIDED BY CERTIFIED MAMMOGRAPHY SCREENING FACILITIES AND HEALTH INSURANCE COMPANIES

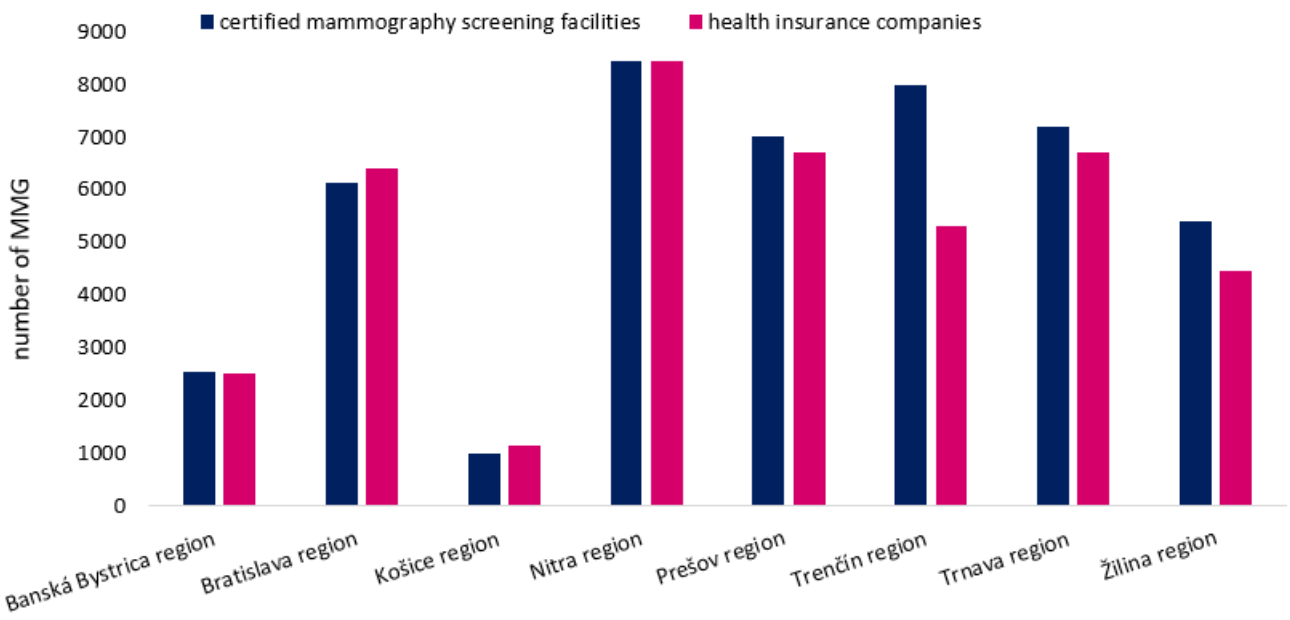
Based on data provided by certified mammography screening facilities and HICs, NOI was able to compare the numbers of performed mammography exams. The final comparison has shown a total **discrepancy of 8.9%.** Based on data from certified mammography screening facilities, 45,773 screening mammography exams were performed in 2022, whereas HIC data report 41,690 screening mammography exams in these facilities. Compared to 2021, when the discrepancy between the data provided by certified screening facilities and health insurance companies was 19.9%, we can see an improvement of the situation in 2022 and a reduction of the discrepancy by 11%, i.e., to 8.9% (T 16, T 17, CH 20, CH 21).

T 16. Comparison of the number of screening mammography exams based on anonymized data provided by certified mammography screening facilities and health insurance companies in 2022.

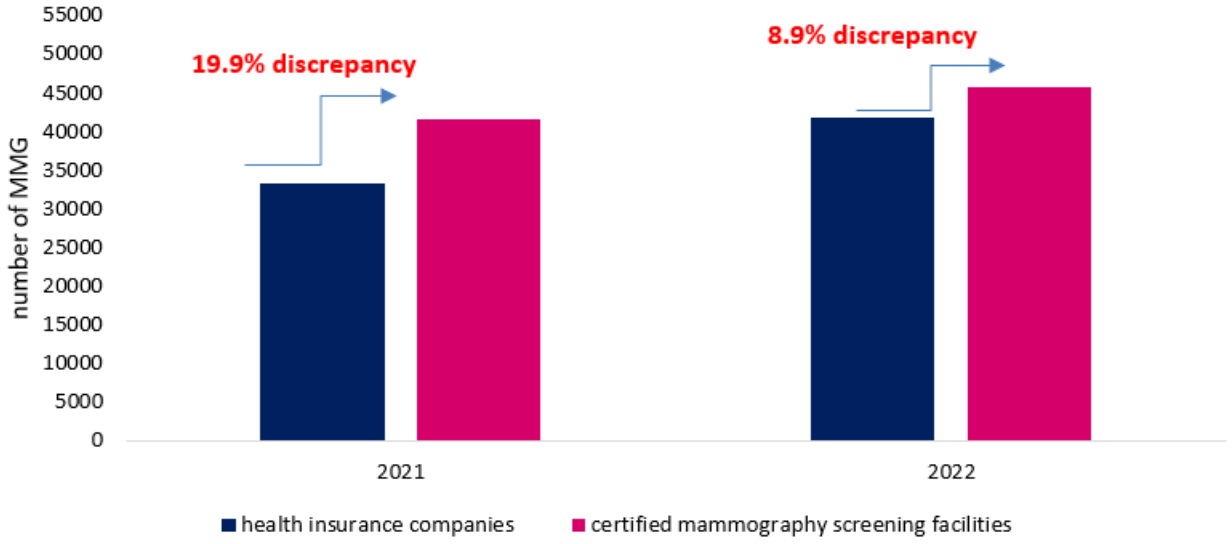
Territory of activity of a certified mammography screening facility / Region	Number of screening mammography exams based on anonymized data		discrepancy
	From certified mammography screening facilities	From health insurance companies	
Banská Bystrica region	2,556	2,525	-1.2%
Bratislava region	6,137	6,401	+4.3%
Košice region	1,004	1,150	+14.5%
Nitra region	8,450	8,436	-0.2%
Prešov region	7,011	6,710	-4.3%
Trenčín region	7,998	5,317	-33.5%
Trnava region	7,204	6,702	-7.0%
Žilina region	5,413	4,449	-17.8%
SLOVAK REPUBLIC	**45,773**	**41,690**	**-8.9%**

T 17. Comparison of relative participation rate of women in screening mammography exams based on data provided by certified mammography screening facilities and health insurance companies in 2022.

Territory of activity of a certified mammography screening facility	Relative participation rate of women in screening mammography exams based on data (%)		Discrepancy
	From certified mammography screening facilities	From health insurance companies	
Banská Bystrica region	5.9%	5.8%	-0.1%
Bratislava region	13.5%	14.1%	+0.6%
Košice region	2.0%	2.3%	+0.3%
Nitra region	17.6%	17.6%	0.0%
Prešov region	14.2%	13.5%	-0.7%
Trenčín region	19.8%	13.2%	-6.6%
Trnava region	18.6%	17.3%	-1.3%
Žilina region	12.0%	9.9%	-2.1%
SLOVAK REPUBLIC	**12.7%**	**11.6%**	**-1.1%**



CH 20. Comparison of the number of screening mammography exams based on data provided by certified mammography screening facilities and health insurance companies in 2022.



CH 21. Difference in percentage in the number of screening mammography exams based on anonymized data provided by certified mammography screening facilities and health insurance companies in 2022.

7 FINAL EVALUATION

Based on the analyzed anonymized data provided by certified mammography screening facilities and health insurance companies, it was possible to see matching data in some regions, slight discrepancies in others and more prominent discrepancies in yet others.

This difference can be explained by procedures reported by a certified mammography screening facility not being reimbursed due to incorrect procedure reporting. Due to this, it is appropriate to:

- set and evaluate cumulative screening mammography procedure code reporting in a targeted manner
- set and evaluate diagnosis code reporting related to cumulative screening mammography codes in a targeted manner
- consult and verify errors in procedure code and diagnosis code reporting related to mammography exams performed at a certified mammography screening facility within internal and external audit
- strictly adhere to contracts and the valid version of the standard procedure when reporting mammography exams to health insurance companies

Based on that, we recommend preparing and publishing a binding guideline in cooperation with health insurance companies' representatives and unifying screening, preventive and diagnostic mammography reporting at certified mammography screening facilities, which will have a positive impact on the reduction of errors in code reporting related to mammography exams.

Another factor that can influence the data might be incorrect and not unified mammography screening data collection by certified mammography screening facilities. This reason needs to be verified via internal and external audit. At the same time, it is necessary to implement a universally used program to collect mammography screening statistical data at certified mammography screening facilities across the board, which is in development by NOI.

It would be very helpful if NHIC and NOI could cooperate more closely and establish a working group for data collection for all cancer screenings including mammography screening based on a recommendation by the Cancer Screening Commission of the MoH SR.