Evaluation and Monitoring of Population-Based Cancer Screenings

2024 Report

2023

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Evaluation and Monitoring of Population-Based Cancer Screenings

2024 Report

TECHNICAL SHEET

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Executive Summary

Portugal has three population-based cancer screening programs, namely for breast cancer, cervical cancer and colorectal cancer.

Breast Cancer Screening is currently implemented in all health regions, with a geographic coverage of 100% of all Primary Health Care Units in Mainland Portugal and in the Autonomous Regions of the Azores and Madeira. The screening's rate of adherence was 56%, with a total of 440 298 women screened (413 300 in Mainland Portugal, 11 927 in Azores and 15 071 in Madeira).

Of the women screened, 0,7% (n= 2 940) were positive and were referred for hospital care.

Cervical Cancer Screening is currently implemented in all health regions, with a geographic coverage of 91% of all Primary Health Care Units in Mainland Portugal and 100% in the Autonomous Region of the Azores. In 2023, the Autonomous Region of Madeira started a pilot program for this screening in 23% of the region's health centres. The national population coverage rate was 59%. The screening's rate of adherence was 94% with a total of 310 976 women screened (301 477 in Mainland Portugal, 9 499 in Azores). In Madeira, 624 women were screened 45 of them positive for HPV test.

Of the total women screened, in mainland Portugal and Azores, 6,5% (n= 20 206) were referred for hospital care.

Colorectal Cancer screening is currently implemented in all health regions, with 89% geographic coverage in mainland Portugal and 100% in the Autonomous Region of the Azores. In 2023, Madeira started a pilot program for this screening, with 8% of geographic coverage. The population coverage rate was 32%. This screening's rate of adherence was 54% with a total of 277 540 users screened (270 365 in Mainland Portugal and 7 175 in Azores).

Of the users screened, in mainland Portugal and Azores, 0,2% (n=685) were referred for hospital care.

Chapter I

1. Population-Based Cancer Screenings

Until 2023, population-based cancer screening programmes were under the responsibility of the Regional Health Administrations (RHAs) in mainland Portugal. According to Order No. 8254/2017, of 21 September, the Directorate-General for Health (DGS), through the National Programme for Oncological Diseases (PNDO), was tasked with monitoring and periodically evaluating screening programmes by publishing an annual report (1).
The ongoing organisational restructuring of the National Health Service (SNS), following the enactment of Decree-Law No. 61/2022, of 23 September (2), which established the organic law of the Executive Directorate of the SNS (DE-SNS), I.P., and redefined the competences assigned to the RHAs (to be dissolved by April 2024), along with the new model of care provision organised in Hospitals (3) and the reorganisation of the coordination and management of population-based screening programmes. Additionally, the publication of the National Cancer Strategy, Horizon 2030 (4) recommended the establishment of a National Coordination for Population-Based Cancer Screening Programmes under the direction of the DE-SNS, enabling the creation of the National Coordination Unit for Population-Based Screening Programmes (CN-Rast_Pop) (5).
Thus, starting in 2024, data from population-based cancer screenings will be requested directly by the DGS from the CN-Rast_Pop. Data for 2024, to be included in the 2025 report, will be disaggregated by NUTS II and Hospitals, replacing previous analyses by RHAs and Health Centre Groupings (ACeS).
In the autonomous regions, population-based cancer screenings fall under the responsibility of the Azores Oncology Centre (COA) in the Azores Autonomous Region (RAA) and the Screening Centre of the Regional Health Directorate of the Madeira Autonomous Region (DRS/SESARAM, EPERAM).
The goal of cancer screening is to reduce cancer-related mortality through the early diagnosis and treatment of the disease or its precursors.
A population-based screening programme depends on a sequence of interventions, including:

1. Identification of the target population
2. Invitation of the eligible population
3. Administration of the screening test
4. Diagnosis
5. Referral for treatment
6. Therapy
7. Post-treatment surveillance or follow-up

The success of a screening programme depends on the effectiveness of all links in this chain.
Organised screening programmes are more effective than opportunistic screenings (which are unorganised and unmonitored). They result in fewer complications, are more cost-effective, auditable, and can be suspended if necessary.
Current scientific evidence is unanimous regarding the utility of cancer screening programmes for three types of cancer: breast cancer, cervical cancer, and colorectal cancer (6). For these types, it has been demonstrated that implementing screening programmes can reduce mortality rates by approximately 30%, 80%, and 20%, respectively. Moreover, the 2022 publication of the new European recommendations for cancer screening (7) includes three additional cancers for potential screening: lung, prostate, and stomach cancer. In the coming years, pilot projects will assess the feasibility and effectiveness of screening for these types of cancer in Portugal.

Organised screening programmes are more effective than opportunistic screenings (which are unorganised and unmonitored). They result in fewer complications, are more cost-effective, auditable, and can be suspended if necessary. To ensure harmonisation of screening programmes, the DGS published the General Methodology for Population-Based Cancer Screening 004/2024 standard on 12 June (8). Specific standards for each of the three population-based cancer screenings implemented in Portugal (breast cancer, cervical cancer, and colorectal cancer screening programmes) are under preparation and are expected to be published by the end of 2024.
Based on the National Health Plan 2021-2030 (9) as well as the National Cancer Strategy, Horizon 2030, and European recommendations (10), each screening programme will be described below, as foreseen, detailing how they are implemented in Portugal.

1.1. Breast Cancer Screening

Breast cancer screening targets asymptomatic women aged 50 to 69. Invitations for the primary screening test (bilateral digital mammography with double reading) are issued biennially. The new European recommendations suggest modifying the target population age range to include women aged 45 to 74 and propose the use of magnetic resonance imaging (MRI) in cases of dense breast tissue (7). This recommendation has not yet been implemented in Portugal, as it awaits integration into the Standard for this Screening Programme.

Breast cancer screening facilitates the detection of malignant lesions before the onset of symptoms, enabling early diagnosis and treatment, thereby significantly impacting mortality rates.

1.1.1. Implementation Status

The organised, population-based breast cancer screening programme was first implemented in Portugal in 1990 by the Central Regional Health Administration (ARS Centro). It is now fully implemented across the entire national territory, including the autonomous regions of the Azores and Madeira.

1.1.2. Screening Steps

Until 2023, in mainland Portugal, the RHAs were responsible for identifying the eligible population, which was then communicated to entities external to the National Health Service for the management of invitation procedures and primary tests. The external entities currently operationalising the screening are:

- The Portuguese League Against Cancer (LPCC), except in the Algarve Region.
- The Algarve Oncology Association (AOA) in the Algarve Region.

In the Autonomous Regions of the Azores and Madeira, the entire process is managed by their respective Regional Health Services, namely the Azores Oncology Centre (COA) and the Screening Centre of the Regional Health Directorate of the Autonomous Region of Madeira (DRS-RAM).

For the primary screening test, mobile or fixed screening units are used to ensure that every two years, the entire eligible population within a region is invited and screened.

Screening mammograms are reported according to the Breast Imaging Reporting and Data System (BI-RADS) terminology. Depending on the mammography results, the patient is referred for further action based on the findings:

- Inconclusive/Unsatisfactory (R0): The examination is repeated within the same screening cycle.
- Negative (R1 or R2): Screening is repeated in the next cycle, provided the individual remains eligible.
- Positive (R3, R4, or R5): The individual is referred for an assessment consultation or a hospital consultation.

Referral for consultation aims to perform additional examinations to determine the need for surveillance and/or hospital referral. Following this consultation and any complementary tests conducted, such as additional mammographic views, ultrasound, and/or biopsy, the patient's pathway will be one of the following:

- No suspicion of malignant lesion: Screening is repeated in the next cycle, provided the individual remains eligible.
- Inconclusive regarding suspicion of malignant lesion: A follow-up consultation and/or complementary examinations are repeated in 6 or 12 months.
- Suspicion or confirmation of malignant lesion: Referral to a hospital.

1.2. Cervical Cancer Screening

Cervical cancer screening targets asymptomatic individuals with uterus, aged 25 to 60, who are invited every five years for cervical-vaginal sample collection to detect high-risk human papillomavirus (HPV) DNA serotypes as the primary screening test.

Portugal currently has a high-coverage HPV vaccination programme, which is expected to lead to a significant future reduction in cervical cancer incidence within the cohort of vaccinated women progressively entering the screening programme.

The new European recommendations suggest adjusting the screening age range to 30–65 years, with five-year intervals. These adjustments consider individual risk based on HPV vaccination history and propose the option of offering self-sampling kits. These recommendations are under consideration for implementation in Portugal (7).

This screening programme enables the detection and treatment of premalignant lesions, as well as the early diagnosis and treatment of cervical cancer, thereby contributing to a reduction in incidence and mortality rates.

1.2.1. Implementation Status

The organised, population-based cervical cancer screening programme was first implemented in Portugal in 1990 by the Central Regional Health Administration (ARS Centro). It is currently implemented across all health regions in mainland Portugal and in all Island Health Units (USIs) of the Azores Autonomous Region (RAA).

In 2023, the Madeira Autonomous Region (RAM) launched its pilot programme for cervical cancer screening in 11 of the region's 47 Primary Health Care Centres (CS).

1.2.2. Screening Steps

Until 2023, in mainland Portugal, the RHAs were responsible for identifying the eligible population, who were subsequently invited to participate by their family doctors. For individuals without an assigned family doctor, the responsibility for invitations rested with the Clinical Board Director of the respective Primary Health Care Unit (ACeS).

In the autonomous regions of the Azores and Madeira, the entire process is managed by their respective Regional Health Services, namely the Azores Oncology Centre (COA) and the Regional Health Directorate of Madeira (DRS-RAM).

The primary test is conducted in primary health care units through the collection of biological material from the cervicovaginal region to detect high-risk HPV DNA.

Based on the results of the primary screening test, the following actions are taken:

- HPV DNA Test Results:

  - Negative test: Rescreening is performed within five years.

  - Positive test identifying subtypes 16 or 18: Referral to a hospital gynaecology consultation specialising in cervical pathology for diagnosis, treatment, or follow-up.

  - Positive test identifying non-16 or non-18 subtypes: Reflex cytology is performed on the previously collected biological material, with management based on the results: Atypical squamous cells of undetermined significance (ASC-US) or high-grade atypical squamous cells (ASC-H); Atypical glandular cells (AGC); Low-grade squamous intraepithelial lesion (LSIL) or high-grade squamous intraepithelial lesion (HSIL): Referral to a hospital gynaecology consultation specialising in cervical pathology for diagnosis, treatment, or follow-up.

  - Negative cytology: Rescreening is conducted within one year (in cases where cytology was performed in the context of a positive HPV test with non-16 or non-18 subtype identification).

1.3. Colorectal Cancer Screening

Colorectal cancer screening targets asymptomatic men and women aged 50 to 74, who are invited biennially to undergo a faecal occult blood test (FOBT) using the faecal immunochemical test (FIT) method.

This screening programme enables the detection and treatment of premalignant lesions, such as adenomas (large polyps), as well as the early diagnosis of colorectal cancer, thereby contributing to a reduction in incidence and mortality rates.

1.3.1. Implementation Status

The organised, population-based colorectal cancer screening programme was first implemented in Portugal in 2008 by the Central Regional Health Administration (ARS Centro). It is now implemented across all health regions in mainland Portugal and in all Island Health Units (USIs) of the Azores Autonomous Region (RAA).

In 2023, the Madeira Autonomous Region (RAM) launched its pilot programme, introducing colorectal cancer screening in 4 of the region's 47 Primary Health Care Units.

1.3.2. Screening Steps

Until 2023, in mainland Portugal, the Regional Health Administrations (RHAs) were responsible for identifying the eligible population and defining the methodology for inviting participation.

In the autonomous regions of the Azores and Madeira, the entire process is managed by their respective Regional Health Services, specifically the Azores Oncology Centre (COA) and the Regional Health Directorate of Madeira (DRS-RAM).

The collection of biological material is carried out by the individuals themselves, who subsequently return the used kit to their Primary Health Care Unit (ACeS)/Functional Unit (UF).

If the FIT test result is positive, the individual is invited to undergo a colonoscopy. During the colonoscopy, lesions that can be removed immediately are treated through polypectomy. All excised lesions are sent to a Pathology Department for analysis.

Individuals with colonoscopy-detected lesions that cannot be immediately removed or those whose excised lesions are diagnosed as neoplastic by Pathology are referred to hospital care for further diagnosis, treatment, or follow-up.

Chapter II

2. Methodology Used for Report Preparation

The appointment of the National Coordination Unit for Population-Based Screenings (CN-Rast_Pop) altered the process of data collection, which was previously the responsibility of the Regional Health Administrations (RHAs) through the Regional Coordinators for Oncological Diseases and is now centralised under the CN-Rast_Pop. In the autonomous regions, data collection remains under the responsibility of the Azores Oncology Centre (COA) in the Azores and the Regional Health Directorate/SESARAM, EPERAM – Screening Centre in Madeira.

At the beginning of each year, electronic tables containing monitoring indicators for screening activity are sent to the respective entities, based on data from regional screening sources.

In the analysis presented, the following considerations apply to the calculation of screenings conducted:

- Screening cycle periodicity: Breast cancer and colorectal cancer screenings are conducted biennially, while cervical cancer screenings have been conducted every five years since 2021. Thus, the annual target population represents approximately 50% and 20%, respectively, of the total eligible population for these screenings.
- Registered population: The population eligible for screening each year is based on those registered in the health units of each ACeS/USI/CS where the screening is carried out during that year. Consequently, the population to be screened in a given year is not derived from an arithmetic fraction of the total eligible population.

At the end of 2021, a centralised electronic tool was implemented to monitor the activities outlined by the national population-based cancer screening programmes. Consequently, the process of acquiring and processing performance indicator data for screening programmes has been standardised across mainland Portugal for cervical cancer and colorectal cancer screenings. Until the integration of data from breast cancer screening activities—currently subcontracted to external entities by the RHAs (LPCC for RHAs North, Centre, Lisbon and Tagus Valley, and Alentejo; AOA for RHA Algarve)—complete standardisation of screening data processing will not be achievable.

This change in the process for handling and extracting information represents a break in the historical series of data for 2021.

Screening data are presented disaggregated by:

- Functional Units (UF): All Family Health Units (USFs) and Personalised Healthcare Units (UCSPs) (see tables attached) within each ACeS/RHA for mainland Portugal.
- Island Units (USI): These correspond to the units in each of the nine islands of the Azores.
- Madeira: Since 2022, data disaggregation by the seven Directorate Centres comprising the ACeS in this region is no longer deemed coherent. It is worth noting that Madeira operates a single ACeS, encompassing 47 health centres, distributed across seven Directorate Centres: Western Zone Health Centre, Câmara de Lobos Health Centre, Funchal Zone I Health Centre, Funchal Zone II Health Centre, Santa Cruz Health Centre, Eastern Zone Health Centre, and Dr Francisco Rodrigues Jardim Health Centre.

The screening data for cervical cancer and colorectal cancer in Madeira are analysed separately, as they refer to pilot programmes and contain information gaps due to the cyberattack suffered by SESARAM in August 2023.

The monitoring of cancer incidence in Portugal, until 2017, was carried out by regional oncology registries. During this period, national incidence data resulted from processes of consolidation of epidemiological information. From 2018 onwards, following the publication of Law No. 53/2017 of 14 July, the National Oncology Registry (RON) was established, in which all new cancer cases identified in Portugal are recorded. The most recent published data refer to 2020.

Mortality data are provided by the National Institute of Statistics (INE), with standardised mortality rates by pathology calculated by the Directorate of Information and Analysis Services/DGS, based on results published by the INE.

Chapter III

3. Monitoring of Cancer Screenings

3.1. Breast Cancer Screening

The breast cancer screening programme is fully implemented across the entire national territory, including mainland Portugal and the autonomous regions of the Azores and Madeira (Table 1).

In 2023, a population coverage rate of 98,7% and an adherence rate of 56,2% were achieved (see description of indicators in Annex 7.27.2).

The apparent decrease in the number of invitees (783.767) in 2023 compared to 2022 (827.836) is related to the itinerant nature of this screening, where, in less populated areas, the entire eligible population is invited every other year (e.g., some of the less populated islands in the Azores).

In 2022 and 2023, the RAM provided population data, allowing the inclusion of this region in the national analysis of the Breast Cancer Screening activity (Table 2).

Table 1. Summary of Breast Cancer Screening Performance in Mainland Portugal and the Autonomous Region of the Azores | 2021 - 2023

	2021 N (%)	2022 N (%)	2023 N (%)
Total Target Population	1 558 331*	1 582 794	1 714 354
Eligible Population	1 446 536*	1 522 598	1 554 150
Excluded Population	69 895*	60 196	59 314
Eligible Population in the Year	741 895*	843 738	793 724
Invited (Population Coverage Rate)	696 750 (91%*)	827 836 (98%)	783 767 (99%)
Screened (Adherence Rate)	380 628 (55%)	423 260 (51%)	440 298 (56%)
Hospital Referral Criteria	2 516	2 997	2 940

*In 2021, the Autonomous Region of Madeira (RAM) did not provide population data.
Source: ARS's, Coordination of the Breast Cancer Screening Centre of RAM (EPERAM, SESARAM) and COA, 2022 and 2023. NCR/DE-SNS, Coordination of the Breast Cancer Screening Centre of RAM (EPERAM, SESARAM) and COA, 2024.

Table 2. Monitoring of the Breast Cancer Screening Program Indicators | 2023

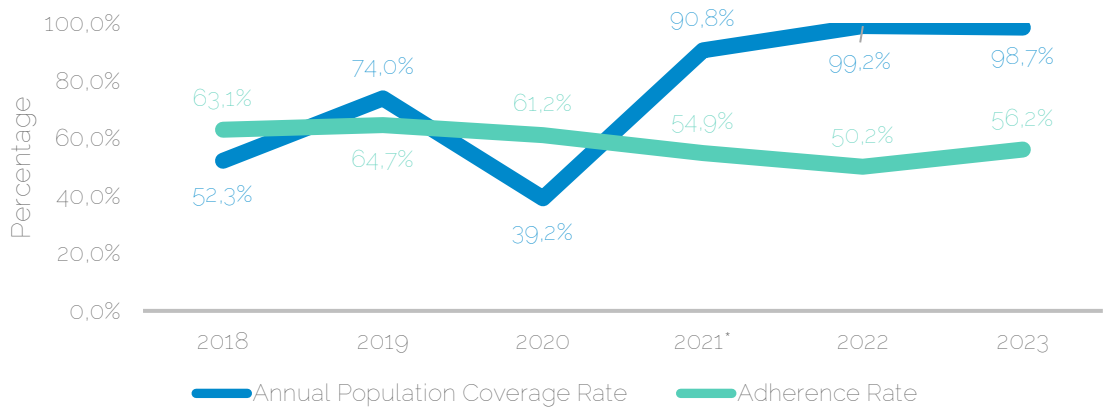
Indicator	ARS North	ARS Centre	ARS LVT	ARS Alentejo	ARS Algarve	RA Azores	RA Madeira	Total Mainland	National Total
Geographic Coverage Rate by ACeS/ ULS/USI	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Total Number of ACeS/ULS/USI	24	8	15	4	3	9	1	54	64
Nº of ACeS/ULS/USI with Screening	24	8	15	4	3	9	1	54	64
Geographic Coverage Rate / UF	100%	100%	100%	100%	100%	100%	100%	100%	100%
Total Number of UF/USI/CS	373	173	273	58	41	17	7	918	942
Nº of UF with Screening	373	173	273	58	41	17	7	918	942
Total Target Population	577 595	266 859	521 714	71 570	74 836	35 944	64 946	1 613 464	1 714 354
Eligible Population	556 036	240 173	521 714	69 113	69 165	34 760	63 189	1 456 201	1 554 150
Annual Eligible Population	278 018	132 517	260 857	42 533	31 413	16 788	31 595	745 341	793 724
Excluded Population	21 559	26 686	0	2 457	5 671	1 184	1 757	56 373	59 314
Nº Women Invited	271 189	132 517	260 860	42 533	31 413	16 788	28 467	738 512	783 767
Nº Women Screened	189 342	96 504	83 330	26 467	17 657	11 927	15 071	413 300	440 298
Annual Adherence Rate	69,8%	72,8%	31,9%	62,2%	56,2%	71,0%	52,9%	56,0%	56,2%
Annual Population Coverage Rate	97,5%	100,0%	100,0%	100,0%	100,0%	100,0%	90,1%	99,1%	98,7%
Annual Population Screening Rate	68,1%	72,8%	31,9%	62,2%	56,2%	71,0%	47,7%	55,5%	55,5%
Nº Assessment Consultations Conducted	17 768	3 488	1 275	258	313	325	916	23 102	24 343
% Assessment Consultations	9,4%	3,6%	1,5%	1,0%	1,20%	2,7%	6,1%	5,6%	5,5%
Nº of Biopsies Performed	809	0	373	114	118	53	166	1 414	1 633
% Biopsies	0,4%	0,0%	0,4%	0,4%	0,60%	0,4%	1,1%	0,3%	0,4%
Nº Positive Cases Referred	1 477	481	385	130	340	31	96	2 813	2 940
% Positive Cases Referred	0,8%	0,5%	0,5%	0,5%	1,4%	0,3%	0,6%	0,7%	0,7%

Source: NCR/DE-SNS, COA, and Coordination of the Breast Cancer Screening Centre of RAM (EPERAM, SESARAM), 2024.

3.1.1. Evolution of Breast Cancer Screening Indicators

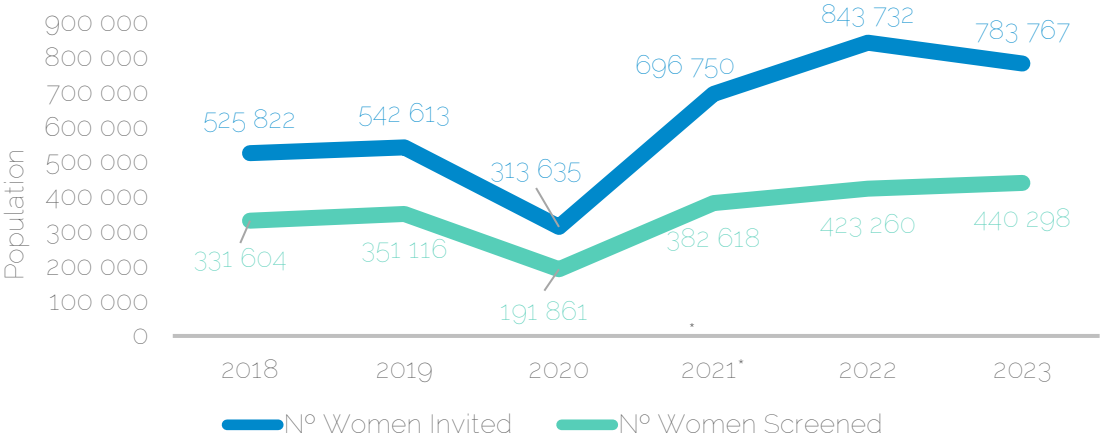
Figure 1, Figure 2, and Figure 3 present the historical evolution of breast cancer screening in recent years.

Figure 1. Annual Population Coverage Rate and Adherence Rate – Breast Cancer Screening | 2018-2023



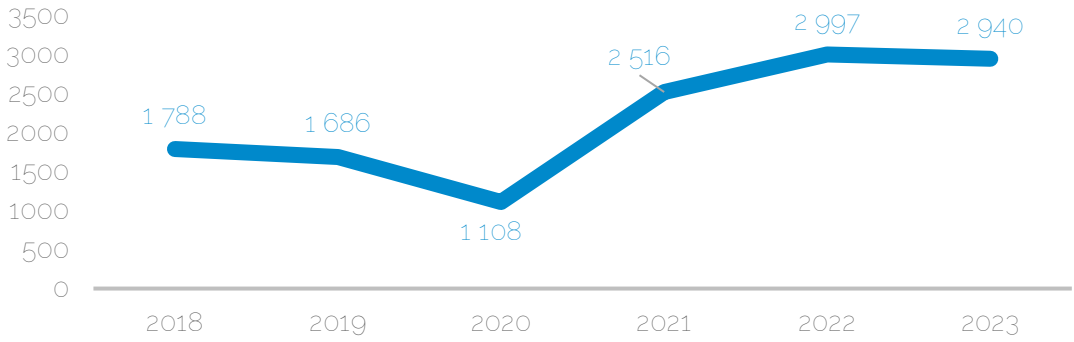
*Year up to which data from RAM are not included.
Source: NCR/DE-SNS, COA, and Coordination of the Breast Cancer Screening Centre of RAM (EPERAM, SESARAM), 2024.

Figure 2. Number of Women Invited and Screened – Breast Cancer Screening | 2018 – 2023



*Year up to which data from RAM are not included.
Source: NCR/DE-SNS and COA, 2024

Figure 3. Evolution of the Number of Positive Cases Referred - Breast Cancer Screening | 2018 – 2023



Source: NCR/DE-SNS, COA, and Coordination of the Breast Cancer Screening Centre of RAM (EPERAM, SESARAM) 2024.

In Table 3, Table 4, and Table 5, the evolution of some operational indicators of breast cancer screening over the past 3 years is presented.

A significant increase in population coverage in 2023 is highlighted for the RAM, as well as the low adherence rate to screening in Lisbon and Vale do Tejo when compared to all other regions.

Table 3. Comparison of the Eligible Population and Population Coverage – Breast Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2021 – 2023

	Annual Eligible Population			Nº of Invited Individuals			Population Coverage		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North	263 770	299 031	278 018	260 840	299 031	271 189	99%	100%	98%
Centre	118 826	148 720	132 517	100 560	148 720	132 517	85%	100%	100%
LVT	252 687	266 575	260 860	211 328	266 575	260 860	84%	100%	100%
Alentejo	52 137	34 695	42 533	52 137	28 236	42 533	100%	81%	100%
Algarve	33 610	46 548	31 413	30 175	46 548	31 413	90%	100%	100%
RAA	20 865	22 549	16 788	20 865	22 549	16 788	100%	100%	100%
RAM	ND	25 614	31 595	ND	16 177	28 467	ND	63%	90%
Total	741 895	843 732	793 724	675 905	827 836	783 767	91%	98%	99%

Source: NCR/DE-SNS, COA, and SESARAM, 2022, 2023, and 2024.

Table 4. Comparison of the Nº of Invited, Nº Screened, and Adherence Rates – Breast Cancer Screening – Mainland Portugal, Azores Autonomous Region, and Madeira Autonomous Region | 2021 – 2023

	Nº of Invited Individuals			Nº of Screened Individuals			Adherence Rate		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North	260 840	299 031	271 189	171 854	176 675	189 342	66%	59%	70%
Centre	100 560	148 720	132 517	70 785	97 318	96 504	70%	65%	73%
LVT	211 328	266 575	260 860	65 092	86 584	83 330	31%	32%	32%
Alentejo	52 137	28 236	42 533	33 220	17 876	26 467	64%	63%	62%
Algarve	30 175	46 548	31 413	14 328	20 064	17 657	47%	43%	56%
RAA	20 865	22 549	16 788	14 825	16 585	11 927	71%	74%	71%
RAM	20 845	16 177	28 467	12 514	8 158	15 071	60%	50%	53%
Total	696 750	827 836	783 767	382 618	423 260	440 298	55%	51%	56%

Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA, 2024.

Table 5. Evolution of Geographic, Population, and Screening Coverage Rates – Breast Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2021 – 2023

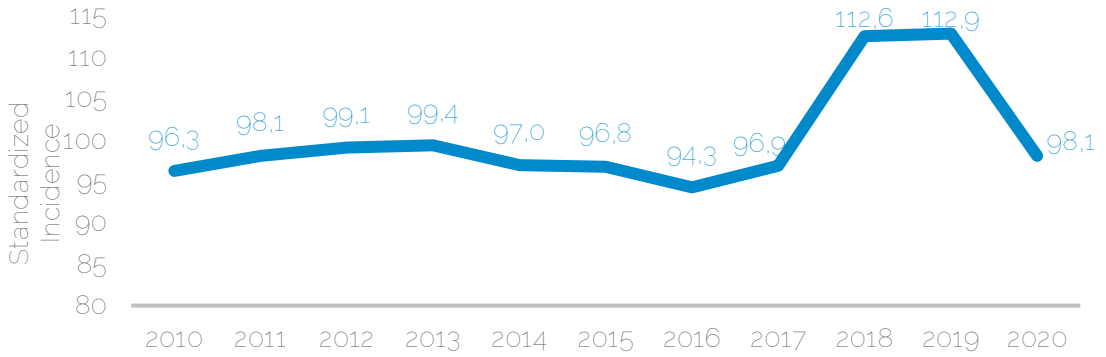
	2021	2022	2023
Geographic Coverage Rate by ACeS	92%	100%	100%
Geographic Coverage Rate by UF	85%	100%	100%
Annual Population Coverage Rate	91%	99%	99%
Annual Population Screening Rate	50%	51%	56%

Note: This table does not include data from RAM.
Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA, 2024.

3.1.2. Evolution of Incidence and Mortality from Breast Cancer

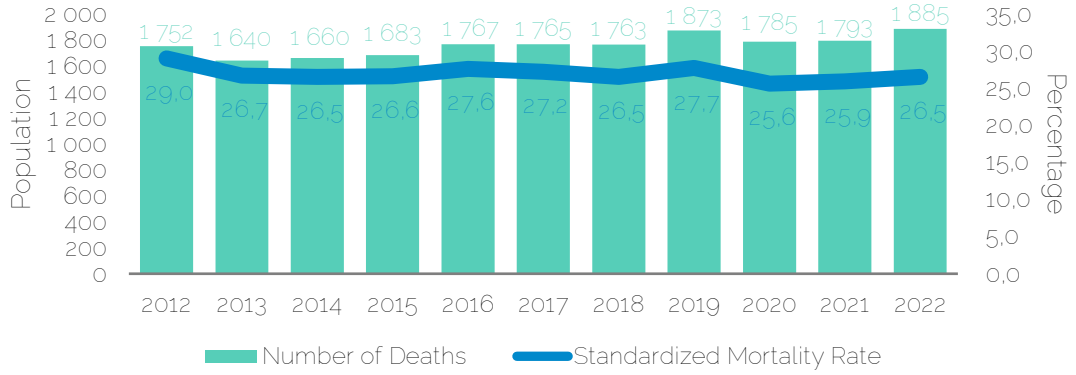
In recent years, the age-standardised mortality rate and the number of deaths has stabilised (Figure 5). According to the EUROSTAT 2023 report, the female breast cancer mortality rate for Portugal is considerably lower than the European average (PT – 26.4 and EU – 31.4) (12).

Figure 4. Standardized Incidence Rate | 2010 – 2020



Source: From 2010 to 2017: data from the RON Platform based on regional cancer registry records (Southern Regional Cancer Registry (ROR-Sul), Central and Northern Regional Cancer Registries (RORENO)). From 2018, 2019, and 2020: data from the RON Platform. A break in the series is considered between 2017 and 2018. Standardized incidence adjusted for age to the 1976 European population.

Figure 5. Standardized Mortality Rate and Number of Female Breast Cancer Deaths | 2012 – 2022



Source: Deaths by cause of death, INE (2024). Standardized rates calculated by DSIA/DGS, based on the 2013 European standard population defined by EUROSTAT, using the direct standardization method and five-year age groups. Malignant breast tumour, Codes C50 of CID 10. Rates expressed as the number of deaths per 100,000 inhabitants. The mortality rates for the year 2020 were revised following the publication of the Definitive Estimates of Resident Population by INE – revised values in March 2023 (regular general revision), based on the results of the 2021 Census.

3.2. Cervical Cancer Screening

In 2023, this screening was implemented in all ACeS (Health Centre Groupings) of mainland Portugal and the Autonomous Regions (RAA), and in 91% of UF/USI (Family Health Units/Island Health Units) of mainland Portugal and the RAA. In 2023, the RAM (Madeira Autonomous Region) initiated a pilot programme for this screening in 11 of the 47 Primary Health Care Units in the region (23%). As the data from the RAM still refer to a

pilot programme, and due to the cyberattack suffered by SESARAM in August 2023, which compromised some of the essential data for this analysis, the data from this region were not included in the national table.

In 2023, 332,644 women were invited for screening in mainland Portugal and the RAA, of whom 310,976 were screened, resulting in an attendance rate of 93.5%. A total of 41,973 women were identified with a positive primary test, of whom 20,206 met the referral criteria for hospital diagnosis/treatment/follow-up.

In the RAM, 624 women were screened, of whom 45 had a positive HPV test.

> The performance of the national cervical cancer screening programme in mainland Portugal and the RAA is detailed in Table 6,

Table 7, Table 8,

Table 9, and Table 10.

Table 6. Summary of the Performance of Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2021 – 2023

	2021 N (%)	2022 N (%)	2023 N (%)
Total Target Population	2 654 514	2 838 286	3 080 239
Eligible Population	2 628 857	2 768 307	2 873 353
Excluded Population	25 657	69 979	140 134
Eligible Population in the Year	525 771	553 661	562 262
Invited (Population Coverage Rate)	265 988 (51%)	353 057 (64%)	332 644 (59%)
Screened (Adherence Rate)	251 224 (94%)	330 859 (94%)	310 976 (94%)
Primary Positive Tests	27 494 (11%)	38 353 (12%)	41 973 (14%)
Hospital Referral Criteria	16 538	16 559	20 206

Fonte: ARS e COA, 2022 e 2023 e NCR/DE-SNS e COA 2024.

Table 7. Monitoring of the Indicators of the Cervical Cancer Screening Program – Mainland Portugal and Azores Autonomous Region | 2023

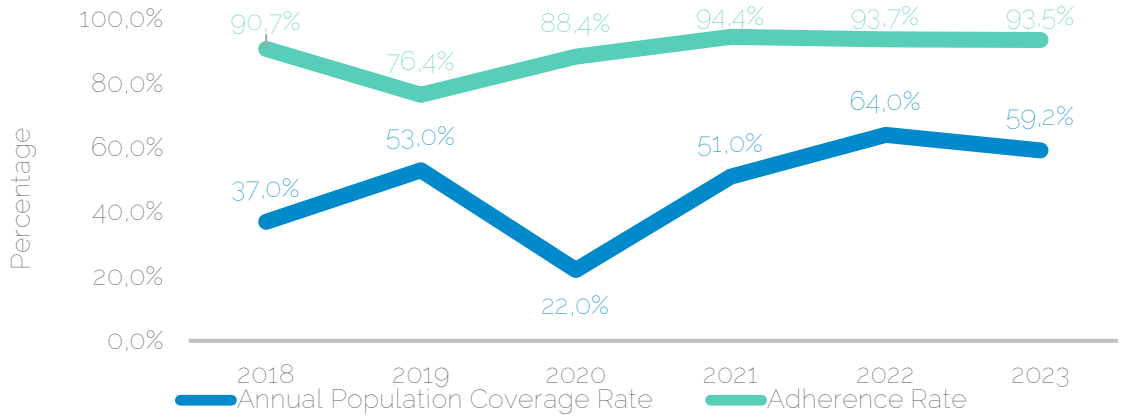
Indicator	ARS North	ARS Centre	ARS LVT	ARS Alentejo	ARS Algarve	RA Azores	Total Mainland	Mainland and Azores
Geographic Coverage Rate	100,0%	100%	100,0%	100%	100%	100%	100,0%	100,0%
Total Nº of ACeS/ULS/USI	24	8	15	4	3	9	54	63
Nº of ACeS/ULS/USI with Screening	24	8	15	4	3	9	54	63
Geographic Coverage Rate /UF	100,0%	100,0%	70,3%	100,0%	100,0%	100,0%	90,9%	91,0%
Total Nº of UF	373	173	286	58	39	17	929	946
Nº of with Screening	373	173	201	58	39	17	844	861
Total Target Population	1 093 697	429 769	1 152 603	139 409	131 257	66 752	3 013 487	3 080 239
Eligible Population	1 050 267	371 282	1 123 234	131 880	129 938	66 752	2 806 601	2 873 353
Annual Eligible Population	211 296	74 256	211 743	26 001	25 616	13 350	548 912	562 262
Excluded Population	43 430	58 487	29 369	7 529	1 319	0	140 134	140 134
Nº of Women Invited	154 260	47 110	88 630	19 983	11 049	11 689	321 032	332 644
Nº of Women Screened	142 919	45 150	86 404	16 240	10 764	9 499	301 477	310 976
Annual Adherence Rate	92,6%	95,8%	97,5%	81,3%	97,4%	81,8%	93,9%	93,5%
Annual Population Coverage Rate	73,0%	63,4%	41,9%	76,9%	43,1%	87,0%	58,5%	59,2%
Annual Population Screening Rate	67,6%	60,8%	40,8%	62,5%	42,0%	71,2%	54,9%	55,3%
Nº of Positive HPV Tests	20 648	6 191	10 424	1 904	1 378	714	41 259	41 973
Nº of Reflex Cytologies	20 648	5 257	8 402	1 897	1 153	686	38 043	38 729
Nº of Women Referred for Cervical Pathology Consultation	10 199	3 656	4 387	697	824	443	19 763	20 206
% Positive Primary Tests	14,4%	13,7%	12,1%	11,7%	12,8%	7,5%	13,7%	13,5%

Source: NCR/DE-SNS and COA, 2024.

3.2.1. Evolution of Cervical Cancer Screening Indicators

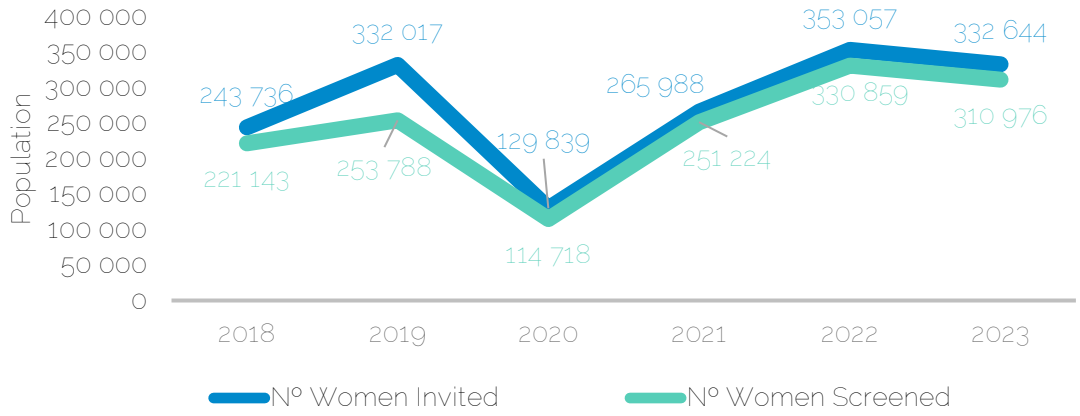
Figure 6 and Figure 7 illustrate the historical evolution of cervical cancer screening between 2018 and 2023.

Figure 6. Annual Population Coverage Rate and Adherence Rate – Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2018 – 2023



Source: ARS and COA, 2019 to 2023, and NCR/DE-SNS and COA, 2024.

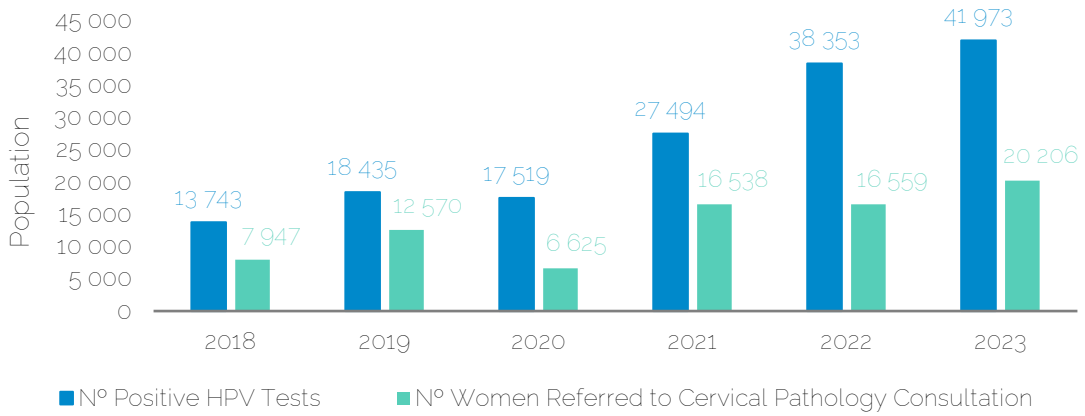
Figure 7. Evolution of the Nº of Invited and Screened Women – Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2018 – 2023



Source: ARS and COA, 2019 to 2023, and NCR/DE-SNS and COA, 2024.

The activity of this screening in terms of women invited and screened slightly decreased in 2023 compared to the previous year, as observed in Figure 8.

Figure 8. Evolution of the Nº of Positive HPV Tests and Nº of Women Referred for Cervical Pathology Consultation – Cervical Cancer Screening | 2018 – 2023



Source: NCR/DE-SNS and COA, 2024.

Table 8. Comparison of the Eligible Population and Population Coverage – Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2021 – 2023

	Annual Eligible Population			Nº of Invited Individuals			Population Coverage		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North	192 020	213 914	211 296	127 568	159 338	154 260	66%	74%	73%
Centre	86 044	75 048	74 256	59 749	69 167	47 110	69%	92%	63%
LVT	186 895	199 599	211 743	49 676	82 355	88 630	27%	41%	42%
Alentejo	23 132	23 252	26 001	11 171	19 860	19 983	48%	85%	77%
Algarve	24 844	28 766	25 616	7 429	10 824	11 049	30%	38%	43%
RAA	12 835	13 082	13 350	10 395	11 513	11 689	81%	88%	87%
Total	525 770	553 661	562 262	265 988	353 057	332 644	51%	64%	59%

Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA, 2024.

Table 9. Comparison of the Nº of Invited, Nº Screened, and Adherence Rates – Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2021 – 2023.

	Nº of Invited Individuals			Nº of Screened Individuals			Adherence Rate		
	2021	2023	2023	2021	2022	2023	2021	2022	2023
North	127 568	159 338	154 260	119 966	147 799	142 919	94%	93%	93%
Centre	59 749	69 167	47 110	58 190	66 761	45 150	97%	97%	96%
LVT	49 676	82 355	88 630	48 013	79 975	86 404	97%	97%	98%
Alentejo	11 350	19 860	19 983	11 171	16 817	16 240	98%	85%	81%
Algarve	7 429	10 824	11 049	7 228	10 537	10 764	97%	97%	97%
RAA	10 395	11 513	11 689	7676	8 970	9 499	74%	78%	81%
Total	266 167	353 057	332 644	252 244	330 859	310 976	95%	94%	94%

Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA, 2024.

Table 10. Evolution of Geographic, Population, and Screening Coverage Rates – Cervical Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2020 – 2022

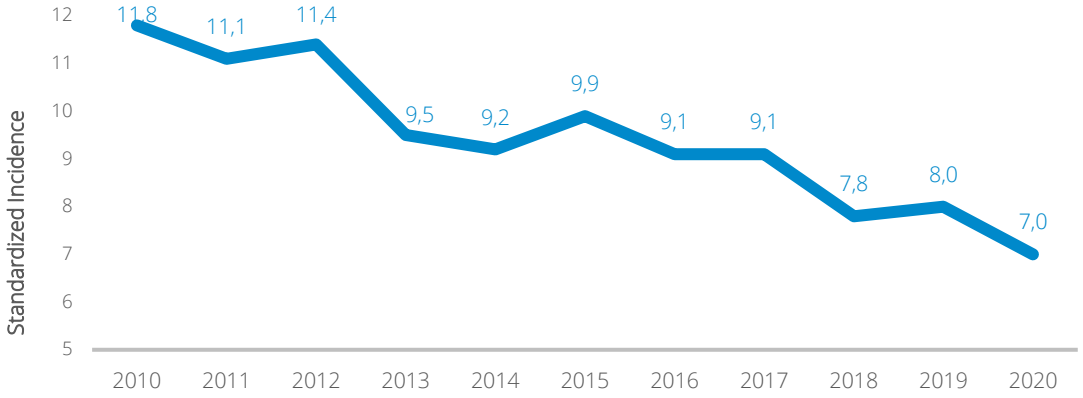
	2020	2021	2022
Geographic Coverage Rate by ACeS	100%	100%	100%
Geographic Coverage Rate by UF	86%	89%	91%
Annual Population Coverage Rate	53%	64%	59%
Annual Population Screening Rate	40%	60%	55%

Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA, 2024.

3.2.2. Evolution of Incidence and Mortality for Cervical Cancer

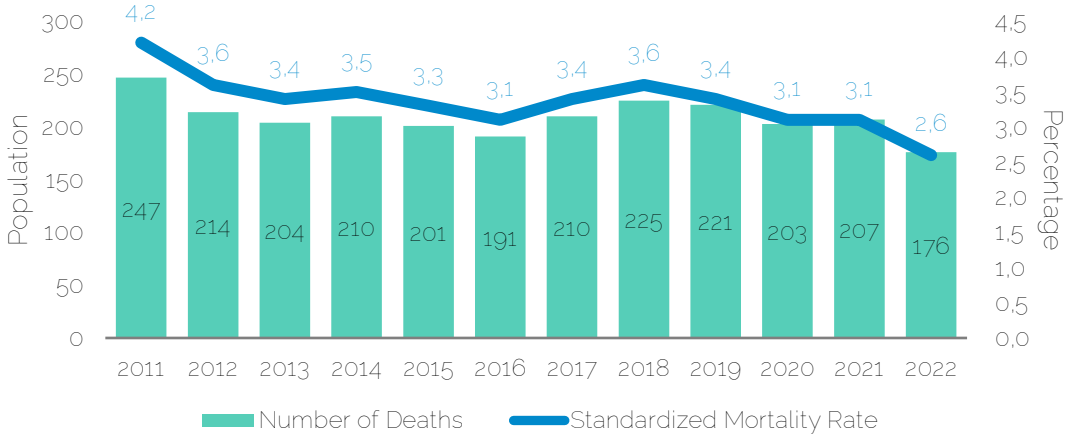
In recent years, the age-standardised incidence rate has been declining, while the age-standardised mortality rate and the number of deaths have stabilised (Figure 9, Figure 10).

Figure 9. Standardized Incidence Rate | 2010 - 2020



Source: From 2011 to 2017: data from publications of the National Cancer Registry produced by the Southern Regional Cancer Registry (ROR-Sul), Central Regional Cancer Registry (ROR Centro), and Northern Regional Cancer Registry (RORENO). From 2018 to 2021: data from the RON Platform. A break in the series is considered between 2017 and 2018. Standardized incidence adjusted for age to the 1976 European population.

Figure 10. Standardized Mortality Rate and No. of Cervical Cancer Deaths | 2011 – 2022



Source: Deaths by cause of death, INE (2024). Standardized rates calculated by DSIA/DGS, based on the European standard population (version 2013) defined by EUROSTAT, using the direct standardization method and five-year age

groups. Malignant neoplasm of the cervix, ICD-10 code C53. Rates are expressed as the number of deaths per 100,000 inhabitants. The mortality rates for 2020 were revised following the release of the Definitive Resident Population Estimates by INE – revised values in March 2023 (regular general revision), based on the results of the 2021 Census.

3.3. Colorectal Cancer Screening

The colorectal cancer screening is implemented across almost the entire territory of Mainland Portugal and the Autonomous Regions. In 2023, the geographical coverage by ACeS/Island Health Units (USI) was 100%.

In 2023, the RAM started a pilot programme for this screening in 4 of the 47 health centres in the region (8%). Since the data from the RAM still refers to a pilot programme and the fact that SESARAM suffered a cyberattack in August 2023, which compromised some of the essential data for this analysis, the data from this region were not included in the national table.

In 2023, 518,961 individuals were invited in Mainland Portugal and the RAA, of which 277,540 were screened, corresponding to an adherence rate of 52%. A total of 15,772 individuals tested positive in the primary test, of whom 5,099 underwent a colonoscopy.

In the RAM, 85 individuals were invited, all of whom were screened. There were 4 individuals with a positive FIT test, and all of them underwent a colonoscopy.

The performance of the national colorectal cancer screening programme is described in Table 11, Table 12, Table 13, Table 14, and Table 15.

Table 11. Summary of the Performance of the Colon and Rectal Cancer Screening Program – Mainland Portugal and Azores Autonomous Region | 2021 – 2023

	2021 N (%)	2022 N (%)	2023 N (%)
Total Target Population	3 432 972	3 538 344	3 360 100
Eligible Population	2 923 375	3 052 343	3 221 041
Excluded Population	509 597	486 001	139 059
Eligible Population in the Year	1 461 688	1 526 172	1 610 521
Invited (Population Coverage Rate)	382 593 (26%)	503 591 (33%)	518 961 (32%)
Screened (Adherence Rate)	193 407 (51%)	206 754 (41%)	277 540 (54%)
Primary Positive Tests	12 804	12 305	15 772
Colonoscopies Performed	4 463	4 351	5 099
Number of Colonoscopies with Lesions	1.622	1.572	1 625
Number of Patients Referred to Hospital	567	501	685

Source: ARS and COA, 2021 and 2022, and NCR/DE-SNS and COA, 2024.

Table 12. Monitoring of the Indicators of the Colon and Rectal Cancer Screening Program – Mainland Portugal and Azores Autonomous Region | 2023

Indicator	ARS North	ARS Centre	ARS LVT	ARS Alentejo	ARS Algarve	RA Azores	Total Mainland	Mainland and Azores
Geographic Coverage Rate	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%
Total Nº of ACES/ULS/USI	24	8	15	4	3	9	54	63
Nº of ACES/ULS/USI with Screening	24	8	15	4	3	9	54	63
Geographic Coverage Rate by UF	100,0%	100,0%	67,5%	89,7%	100,0%	100,0%	89,3%	89,5%
Total Nº of UF/CS	373	173	286	58	39	17	929	946
Nº of UF/CS with Screening	373	173	193	52	39	17	830	847
Total Target Population	973 098	611 193	1 347 772	173 225	179 223	75 589	3 284 511	3 360 100
Eligible Population	902 791	579 903	1 314 430	169 157	179 171	75 589	3 145 452	3 221 041
Annual Eligible Population	451 396	289 952	657 215	84 579	89 586	37 795	1 572 726	1 610 521
Excluded Population	70 307	31 290	33 342	4 068	52	0	139 059	139 059
Nº of PSOF Kits Sent	363 088	52 103	74 157	21 305	92	11 493	510 744	518 961
Nº of Screened Individuals (Nº of Kits Received with Biological Material)	154 864	40 209	57 077	18 134	81	6 858	270 365	277 540
Annual Adherence Rate	42,7%	77,2%	77,0%	86,0%	88,0%	36,0%	52,9%	53,5%
Annual Population Coverage Rate	80,4%	18,0%	11,3%	25,2%	0,1%	21,7%	32,5%	32,2%
Annual Population Screening Rate	34,3%	13,9%	8,7%	21,4%	0,1%	19,0%	17,2%	17,2%
Nº of Positive PSOF Tests	9 057	2 147	2 964	1293	3	308	15 464	15 772
Nº of Colonoscopies	2 505	866	989	431	1	307	4 792	5 099
% Colonoscopies	1,6%	2,2%	1,7%	2,4%	1,2%	4,3%	1,8%	1,8%
Nº of Individuals with Positive Findings after Colonoscopy	873	345	108	107	1	191	1 434	1 625
% of Individuals with Positive Findings after Colonoscopy	0,6%	0,9%	0,2%	0,6%	1,2%	2,7%	0,5%	0,6%
Nº of Positive Lesions Referred to the Hospital	138	118	24	62	1	171	514	685

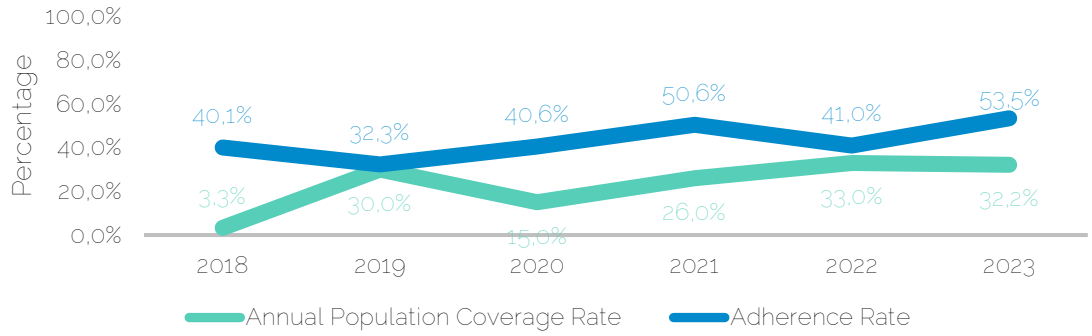
Source: NCR/DE-SNS and COA, 2024.

3.3.1. Evolution of Colorectal Cancer Screening

Figure 11, Figure 12, and Source: NCR/DE-SNS and COA, 2024.

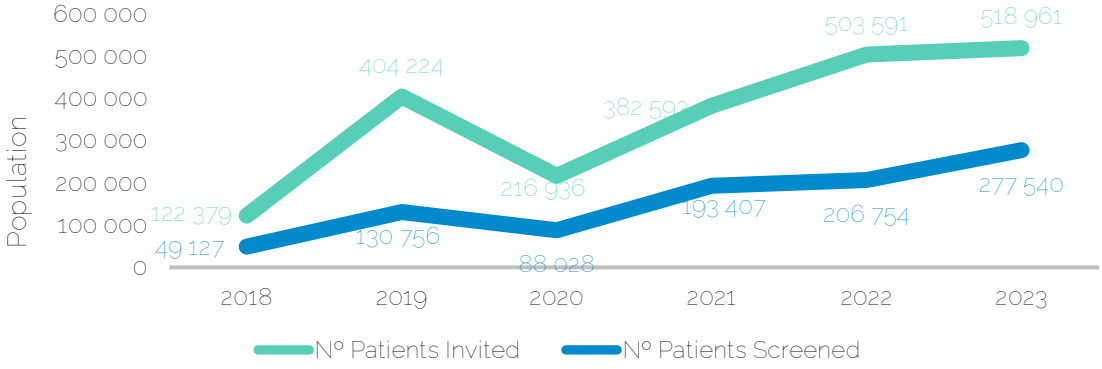
Figure 13 display the historical evolution of colorectal cancer screening.

Figure 11. Annual Population Coverage Rate and Adherence Rate – Colon and Rectal Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2018 – 2023



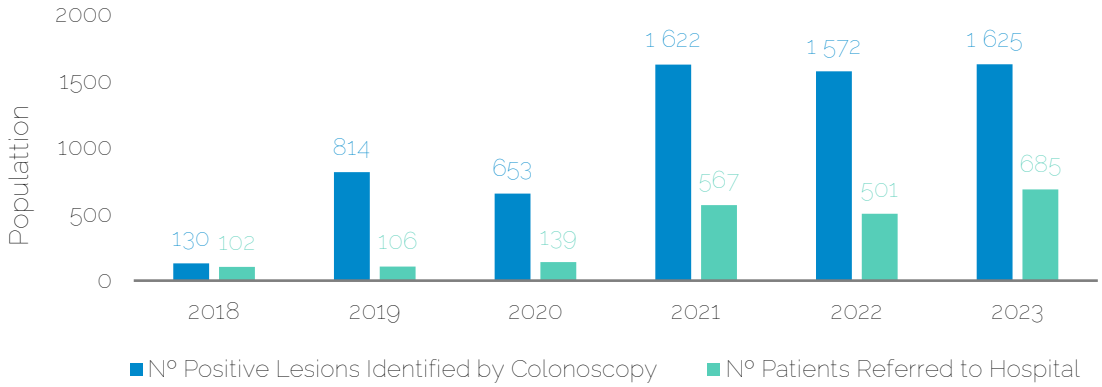
Source: NCR/DE-SNS and COA, 2024.

Figure 12. Evolution of the Nº of Invited and Screened Individuals – Colon and Rectal Cancer Screening – Mainland Portugal and Azores Autonomous Region | 2018 – 2023



Source: NCR/DE-SNS and COA, 2024.

Figure 13. Evolution of the Nº of Positive Lesions and Referred Cancers | 2018 – 2023



Source: NCR/DE-SNS and COA, 2024.

In Table 13 and Table 14 the evolution of some operational indicators of colorectal cancer screening is shown.

The activity of this screening continues to increase along with the adherence rate; however, the population coverage rate remains very low.

Table 13. Comparison of the Eligible Population and Population Coverage – Colorectal Cancer Screening – Mainland Portugal and the Azores Autonomous Region | 2021–2023

	Annual Eligible Population			Nº of Invited Individuals			Population Coverage		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North	419 802	438 055	451 396	314 236	378 157	363 088	75%	86%	80%
Centre	286 232	285 409	289 952	32 489	42 926	52 103	11%	15%	18%
LVT	554 368	589 863	657 215	21 985	45 416	74 157	4%	8%	11%
Alentejo	83 802	84 674	84 579	3 881	16 713	21 305	5%	20%	25%
Algarve	80 123	95 861	89 586	4 112	11 494	92	5%	12%	0,1%
RAA	37 362	32 311	37 795	5 890	8 885	19 138	16%	27%	22%
Total	1 461 689	1 526 173	1 610 521	382 593	503 591	518 961	26%	33%	32%

Source: ARS and COA 2022 and 2023, and NCR/DE-SNS and COA 2024.

Table 14. Comparison of the Number of Invited, Number Screened, and Population Adherence Rates – Colorectal Cancer Screening – Mainland Portugal and the Azores Autonomous Region | 2021–2023

	Nº of Invited Individuals			Nº of Screened Individuals			Adherence Rate		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
North	314 236	378 157	363 088	145 351	119 053	154 864	46%	31%	43%
Centre	32 489	42 926	52 103	22 711	34 107	40 209	70%	79%	77%
LVT	21 985	45 416	74 157	16 205	29 432	57 077	74%	65%	77%
Alentejo	3 881	16 713	21 305	3 295	12 863	18 134	85%	77%	86%
Algarve	4 112	11 494	92	1 164	3 899	81	28%	34%	88%
RAA	5 890	8 885	19 138	4 681	7 400	6 658	79%	83%	36%
Total	382 593	503 591	518 961	193 407	206 754	277 540	51%	41%	54%

Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA 2024.

Table 15. Evolution of Geographic, Population, and Screening Coverage Rates – Colorectal Cancer Screening - Mainland Portugal and the Azores | 2021 – 2022

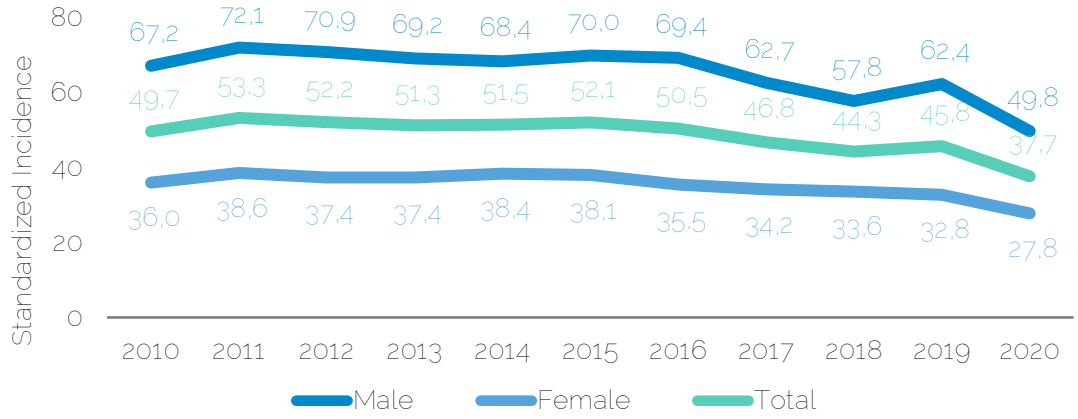
	2020	2021	2022
Geographic Coverage Rate by ACeS	100%	100%	100%
Geographic Coverage Rate by UF	78%	90%	90%
Annual Population Coverage Rate	26%	33%	32%
Annual Screening Population Rate	13%	14%	17%

Note: This table does not include data from the Madeira Autonomous Region.
Source: ARS and COA, 2022 and 2023, and NCR/DE-SNS and COA 2024.

3.3.2. Evolution of Incidence and Mortality from Colorectal Cancer

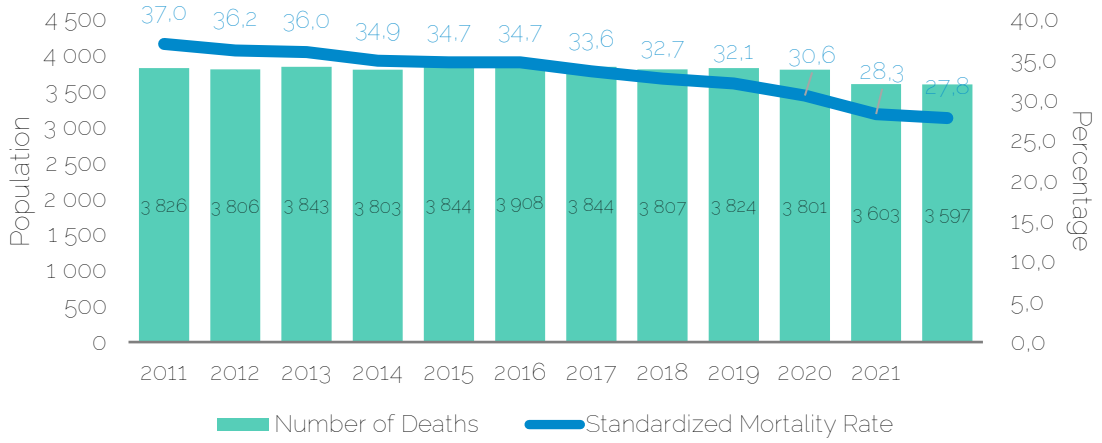
In recent years, the number of deaths has stabilised, and the age-standardised mortality rate has been decreasing (Figure 14, Figure 15).

Figure 14. Standardized Incidence Rate | 2010 – 2020



Source: From 2011 to 2017: data from publications of the National Cancer Registry compiled by ROR-Sul, ROR Centro, and RORENO. From 2018 to 2021: data from the RON Platform. A break in the time series is considered between 2017 and 2018. Standardized incidence adjusted for age to the 1976 European population.

Figure 15. Standardized Mortality Rate and Number of Deaths from Colon and Rectal Cancer | 2011 – 2022



Source: Deaths by cause of death, INE (2024). Standardized rates calculated by DSIA/DGS, based on the 2013 European Standard Population defined by EUROSTAT, using the direct standardization method and five-year age groups. Malignant tumour of the colon, rectum, and anus ICD-10 Codes C18-C21. Rates expressed as number of deaths per 100,000 inhabitants. The mortality rate values for the year 2020 were revised following the release of the Definitive Population Estimates by INE – revised values in March 2023 (regular general revision), based on the results of the 2021 Census.

Chapter IV

4. Conclusions

The population-based cancer screening has a significant impact on the reduction of disease incidence, early diagnosis, and the consequent increase in disease-free life and reduced morbidity. At the same time, it promotes a reduction in the social burden of cancer and the direct costs related to the necessary healthcare for treatment. These screening programmes also provide opportunities for intervention in health education and the promotion of social cohesion by ensuring equity and universality of care provided to citizens.

In 2023, the Breast Cancer Screening achieved 99% population coverage, meaning that Portugal remains well above the 90% target set in the Europe's Beating Cancer Plan for 2025 (13).

Regarding the Cervical Cancer Screening, 100% of ACeS and 91% of Functional Units in mainland Portugal offer this programme to their users. In the autonomous regions, the Azores provide this screening to the population with 100% geographic coverage, while Madeira started a pilot programme in 23% of the region's health centres. The population coverage in 2023 decreased by 5 percentage points (59%) compared to 2022 (64%).

As for Colo-Rectal Cancer Screening, in 2023 it has a geographic coverage rate of 100% for ACeS and 90% for Functional Units in mainland Portugal, and 100% in the Autonomous Regions. In recent years, this screening has experienced the most growth. Population coverage slightly decreased (32%) compared to 2022 (33%), and the adherence rate significantly increased to 54%, compared to 2022 (41%). The RAM started a pilot programme in 8% of the region's health centres in 2023.

In the coming years, it will be essential to improve the information systems that support screening activities. The sharing of information between the monitoring systems for screening and the National Cancer Registry (RON) is crucial for a complete view of the entire process. Investments in this area have the potential to promote systematic auditing and closer monitoring of the entire process, driving operational changes and assessing the real effectiveness of the programmes.

With the publication of Standard 004/2024 – General Methodology for Population-Based Cancer Screenings (8), the harmonisation of cancer screening at the national level will begin, which will be completed with the publication of new standards for population-based cancer screenings. These normative documents could help increase the population coverage rate, particularly regarding new methodologies for inviting individuals to screen for cervical and colorectal cancer screenings.

In 2024, the PNDO/DGS began preparing the future Strategy for the Control of HPV Infection in Portugal, with a multidisciplinary, interinstitutional, and multisectoral approach. This strategy aims to control HPV infection in Portugal to reduce the incidence of all associated neoplasms. This document will include proposals for intervention at the primary prevention, early diagnosis, vaccination, and literacy levels, with a special focus on reducing regional inequalities. Specifically, it will ensure accessibility for vulnerable populations through the integration of various communities and associations in this endeavour, such as migrants, LGBTQI+, sex workers, prisoners, socioeconomically disadvantaged populations, and other minority groups.

It will also be important to invest in information and awareness campaigns to increase adherence to screenings.

Chapter V

5. Future Actions

To improve the coverage and quality of organised population-based cancer screenings and their respective developments, the following actions are essential:

- Definition of criteria to standardise the costs of Complementary Diagnostic and Therapeutic Means associated with screening programmes (mammograms, cytology, HPV tests, colonoscopies, etc.) and of the follow-up consultations, which should be similar across all regions.
- Establishment of specific funding lines for population-based cancer screening programmes in Local Health Units (ULS) to encourage health units to promote these screenings.
- Standardisation of screening procedures across all regions through the implementation of Standard 004/2024 on the General Methodology for Population-Based Cancer Screenings (8) and the publication of standards for the three population-based cancer screenings.
- Development of public outreach and information programmes to improve adherence rates, specific to each screening programme.
- Promotion of pilot programmes for new cancer screenings (lung cancer screening, gastric cancer screening, prostate cancer screening).
- Implementation of new European recommendations regarding ongoing cancer screenings: age group changes for breast cancer screening, incorporation of self-sampling in cervical cancer screening, among others (7).
- Flexibility/expansion of screening hours to increase access and adherence rates.
- Integration of information on breast cancer screening activities into the Population-Based Screening Management Platform.
- Implementation of mechanisms for monitoring and periodic certification of the technical quality of laboratories responsible for primary tests, and of units performing secondary tests integrated into screening programmes.
- Implementation of control and monitoring mechanisms to ensure compliance with clinically appropriate timelines for the treatment of positive cases identified.
- Control of opportunistic cancer screening test prescriptions in areas fully covered by population-based cancer screenings.
- Formalisation of the interface between electronic platforms for screening management, the National Cancer Registry (RON), and vaccination registries (in the case of cervical cancer screening).
- Development of an electronic tool for the publication and consultation of screening activity data by the public on the Directorate-General of Health website.

Chapter VI

6.Bibliography and References

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Chapter VII

7. Appendices

7.1. Maturity of Population-Based Cancer Screening Programmes

Dimension	Item	RCM	RCCU	RCCR
General Information	Start of the Programme (Year)	1990	1990	2008
	Target Population – Ages (Years)	50-69	25-60	50-74
	Screening Interval (Years)	2	5	2
Programme Organization	Is the screening programme population-based?	Yes	Yes	Yes
	Is there a national cancer screening policy?	Yes	Yes	Yes
	Is the screening policy documented by a legal document (legislative tool) or in an official recommendation?	Yes	Yes	Yes
	Is there a team responsible for implementing the policy?	Yes	Yes	Yes
	Is there public funding for the screening?	Yes	Yes	Yes
	Is there funding from Health Insurance?	No	No	No
	Are screening tests provided to the user at no cost?	Yes	Yes	Yes
	Are diagnostic exams required after a screening test provided to the user at no cost?	Yes	Yes	Yes
Invitation for Screening and Subsequent Assessments	Is the issuance of invitations based on centralized records?	Yes	No	No
	Are invitations sent by letter?	Yes	No	Yes
	Do invitations include a pre-scheduled appointment?	Yes	No	No
	Does the programme explicitly invite users with a positive primary screening test for subsequent evaluation?	Yes	Yes	Yes
Monitoring and Quality Assurance of the Cancer Screening Programme	In breast cancer screening, what is the proportion of users screened by digital mammography?	100%	-	-
	In breast cancer screening, are mammograms subject to double reading?	Yes	-	-
	Is there a team responsible for quality assurance?	No	No	No
	Is there a record of screening activity?	Yes	Yes	Yes
	Are screening data collected on an individual user basis?	Yes	Yes	Yes
	Are screening data integrated with the Cancer Registry?	No	No	No
	Is the performance of the screening programme publicly reported?	Yes	Yes	Yes

Consent for Screening	Is there quality control of the collected data?	No	No	No
	Does the Screening Programme require formal informed consent?	Yes	Yes	No
	Does the Screening Programme provide written information about the risks and benefits of screening?	Yes	No	Yes

7.2. Screening Indicators

Framework of Breast Cancer Screening Indicators

Indicator Name	Indicator Calculation	Frequency
Geographic Coverage Rate by ACeS	N. º of ACeS with screening divided by the total number of ACeS	Biannual
Geographic Coverage Rate by CS or UF	N. º of CS or UF with screening/ Toal N. º of CS or UF	Biannual
Total Target Population	Total N. º of women in the screening age range registered	Annual
Excluded Population	Total N. º of women excluded from screening for clinical reasons	Annual
Eligible Population	Target population – Excluded population	Annual
Annual Eligible Population	Eligible population / Screening frequency	Annual
N. º of Invited Women	Total N. º of women with scheduled breast cancer screening	Biannual
Annual Adherence Rate	Total N. º of women screened / N. º of invited women	Biannual
Annual Population Coverage Rate	N. º of invited women / Annual Eligible Population	Annual
Annual Population Screening Rate	N. º of women screened / Annual Eligible Population	Annual
% Assessment Consultations Conducted	N. º of women screened with calibration consultation performed divided by the total number of women screened	Annual
% Biopsies	N. º of women screened with biopsy performed divided by the total number of women screened	Annual
% Positive Cases	N. º women screened with positive calibration divided by the total number of women screened	Annual
N. º Positive Cases Referred	N. º of women screened with positive calibration referred to the hospital	Annual

Framework of Indicators for Colorectal Screening

Indicator Name	Indicator Calculation	Frequency
Geographic Coverage Rate by ACeS	N. º of ACeS with Screening / N. º Total of ACeS	Biannual
Geographic Coverage Rate by CS or UF	N. º of CS or UF with Screening / N. º Total of CS or UF	Biannual
Total Target Population	Total of Individuals in the Screening Age Range Registered	Annual
Excluded Population	Total of Individuals Excluded from Screening for Clinical Reasons	Annual
Eligible Population	Target Population – Excluded Population	Annual
Annual Eligible Population	Eligible Population / Screening Periodicity	Annual
N. º of Invited Individuals	N. º Total of Individuals Invited for Colorectal Cancer Screening	Biannual
N. º of Patients with Scheduled Screening	N. º Total of Individuals who Received a Kit for Colorectal Cancer Screening	Biannual
Annual Adherence Rate	N. º Total of Screened Individuals / N. º of Invited Individuals	Biannual
Annual Population Coverage Rate	N. º Invitations Sent / Annual Eligible Population	Annual
Annual Population Screening Rate	N. º Screened Individuals / Annual Eligible Population	Annual
Nº of FOBT Tests (Faecal Occult Blood Tests)	N. º Total of FOBT Tests Performed	Biannual
N. º of Patients with Positive FOBT	N. º of FOBT Tests with Positive Results	Annual
% Colonoscopies	N. º of Individuals with Colonoscopy Performed / Total Screened Individuals	Annual
N. º Cases with Positive Lesions	Total Individuals with Positive Lesions Identified by Colonoscopy	Annual
% Cases with Positive Lesions	N. º Individuals with Positive Lesions Identified by Colonoscopy / Total Screened Individuals	Annual
% Colonoscopies with Identified Positive Lesions	N. º Individuals with Positive Lesions after Colonoscopy / N. º of Colonoscopies	Annual
N. º of Positive Cases Referred	N. º Screened Individuals with Positive Colonoscopy Referred to the Hospital	Annual

Total Target Population – N. º Total of Individuals in the Age Range for Screening per Screening Cycle.
Screening Cycle – Screening Periodicity in Years (every 2 years for Breast Cancer and Colorectal Cancer Screening, every 5 years with HPV as the primary test, and every 3 years with Cytology as the primary test for Cervical Cancer Screening).
Annual Target Population – N. º of Individuals within the screening age range in a given year (Total Target Population / Screening Periodicity).
Annual Excluded Population – N. º of Individuals Excluded from Screening for Clinical Reasons during the Year.
Annual Eligible Population – N. º of Eligible Individuals for Screening during the Year (Annual Target Population - Annual Excluded Population).
N. º Invited Individuals – N. º of Individuals Invited for Screening.
Geographic Coverage Rate by ACeS/USI – Ratio between the N. º of ACeS/USI covered by Screening and the Total N. º of ACeS/USI in Mainland Portugal and Autonomous Regions.
Geographic Coverage Rate by Functional Unit/Health Centre – Ratio between the N. º of UF/Health Centres with implemented screening and the Total N. º of UF/Health Centres in Mainland Portugal and Autonomous Regions.

Population Coverage Rate – Ratio between the N. º of Invited Individuals for screening and the Annual Eligible Population, representing the fraction of the eligible population effectively invited for screening in the given year.
Population Screening Rate – Ratio between the N. º of Screened Individuals and the Annual Eligible Population, representing the fraction of the eligible population screened in the given year.
Screening Adherence Rate – Ratio between the N. º of Screened Individuals and the N. º of Invited Individuals for screening.
Positive Percentage – Ratio between the N. º of Primary Tests with positive results (mammography, HPV test, or FOBT) and the Total Screened Individuals.
Biopsy Rate – Ratio between the N. º of Biopsies (Breast Cancer Screening) performed and the Total Screened Individuals.
Assessment Consultation Percentage – Ratio between the N. º of Assessment Consultations (Breast Cancer Screening) conducted and the Total Screened Individuals.
Colonoscopy Percentage – Ratio between the N. º of Colonoscopies performed and the Total Screened Individuals.
Positive Lesions Percentage – Ratio between the N. º of Individuals with positive lesions identified in colonoscopy and the Total Screened Individuals in Colorectal Cancer Screening (RCCR).
Referral Percentage – Ratio between the N. º of Individuals identified with criteria for hospital referral and referred to hospital consultation and the Total Screened Individuals.

7.3. Cancer Screening Data for 2021, 2022, and 2023 by Regional Health Administrations (ARS) and Local Health Units (ACeS)

Breast Cancer Screening

ARS North	N. º Invited Individuals				N. º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Alto Ave	18 407	16 036	25 711	60%	13 050	11 798	18 364	56%	71%	74%	71%	-2
Alto Minho	9 505	24 936	10 875	-56%	7 149	17 409	8 731	-50%	75%	70%	80%	10
Alto Tâmega e Barroso	7 360	6 856	6 377	-7%	5 095	4 325	4 593	6%	69%	63%	72%	9
Aveiro Norte	12 833	7 194	12 976	80%	9 053	4 323	10 156	135%	71%	60%	78%	18
Baixo Tâmega	6 517	17 341	10 352	-40%	4 648	12 166	7 850	-35%	71%	70%	76%	6
Barcelos / Esposende	17 061	9 519	19 440	104%	11 249	5 534	14 429	161%	66%	58%	74%	16
Braga	11 335	18 655	14 212	-24%	10 099	10 881	10 618	-2%	89%	58%	75%	16
Douro Sul	8 207	2 269	6 631	192%	6 192	1 639	5 109	212%	75%	72%	77%	5
Espinho/Gaia e Gaia	15 272	32 122	20 446	-36%	12 149	15 869	12 669	-20%	80%	49%	62%	13
Famalicão	9 362	14 605	3 173	-78%	5 411	10 071	2 541	-75%	58%	69%	80%	11
Feira/Arouca	6 760	16 069	14 854	-8%	4 737	8 557	7 572	-12%	70%	53%	51%	-2
Gerês/ Cabreira	7 970	7 115	2 802	-61%	5 881	5 454	2 316	-58%	74%	77%	83%	6
Gondomar	10 537	14 401	7 029	-51%	8 193	6 743	6 200	-8%	78%	47%	88%	41
Maia/Valongo	17 691	13 266	18 321	38%	8 910	5 594	11 103	98%	50%	42%	61%	18
Marão e Douro Norte	6 686	8 866	8 118	-8%	3 999	5 840	5 396	-8%	60%	66%	66%	1
Matosinhos	12 299	16 857	15 572	-8%	8 280	6 420	9 303	45%	67%	38%	60%	22
Nordeste	9 028	9 933	8 332	-16%	7 131	7 642	6 003	-21%	79%	77%	72%	-5
Porto Ocidental e Porto Oriental	24 177	16 054	17 831	11%	10 534	8 876	11 819	33%	44%	55%	66%	11
Póvoa de Varzim/ Vila do Conde	10 888	16 694	7 027	-58%	5 411	8 183	4 657	-43%	50%	49%	66%	17
Santo Tirso/ Trofa	14 069	4 480	12 556	180%	9 500	2 886	9 703	236%	68%	64%	77%	13
Vale does Sousa Norte	13 623	9 328	13 768	48%	9 090	6 736	10 891	62%	67%	72%	79%	7

Vale does Sousa Sul	11 253	16 435	14 786	-10%	6 093	9 729	9 319	-4%	54%	59%	63%	4
ARS Norte	260 840	299 031	271 189	-9%	171 854	176 675	189 342	7%	66%	59%	70%	11

Source: ARS Norte, 2021, 2022, and 2023. a) ACeS that did not carry out Breast Cancer Screening (RCM).

ARS Centre	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variação 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Baixo Mondego	25 852	29 523	29 857	1%	17 189	18 197	21 045	16%	66%	62%	70%	9
Baixo Vouga	26 443	23 503	39 475	68%	18 709	15 342	28 590	86%	71%	65%	72%	7
Dão Lafões	11 055	27 304	15 836	-42%	8 317	19 605	12 365	-36,9%	75%	72%	78%	6
Pinhal Interior Norte	13 639	2 698	15 959	492%	9 212	1 883	11 273	499%	68%	70%	71%	1
Pinhal Litoral	2 246	36 016	7 852	-78%	1 623	21 418	5 715	-73%	72%	59%	73%	13
Cova Beira	4 014	8 705	4 011	-54%	2 985	6 089	3 032	-50%	74%	70%	76%	6
Guarda	11 808	9 568	13 153	37%	8 927	6 818	10 114	48%	76%	71%	77%	6
Castelo Branco	5 503	11 403	6 374	-44%	3 823	7 966	4 370	-45%	69%	70%	69%	-1
ARS Centro	100 560	148 720	132 517	-11%	70 785	97 318	96 504	-1%	70%	65%	73%	7

Source: ARS Centre, 2021, 2022 e 2023.

ARS-LVT	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Almada Seixal	51 295	25 618	24 336	-5%	10 345	6 259	5 928	-5%	20%	24%	24%	0
Amadora	a)	11 003	11 381	NA	a)	3 587	3 350	NA	NA	33%	29%	NA
Arco Ribeirinho	19 025	21 097	15 051	-29%	5 046	3 944	4 006	2%	27%	19%	27%	8
Arrábida	16 506	16 521	16 142	-2%	3 228	5 298	5 626	6%	20%	32%	35%	3
Cascais	a)	11 499	16 048	NA	a)	3 331	4 011	NA	NA	29%	25%	NA
Estuário Tejo	26 663	15 081	16 159	7%	9 153	4 359	7 613	75%	34%	29%	47%	18
Lezíria	16 387	14 041	14 008	0%	8 676	9 346	5 616	-40%	53%	67%	40%	-26
Lisboa Central	a)	15 608	18 611	NA	a)	3 612	3 857	NA	NA	23%	21%	NA
Lisboa Norte	a)	17 103	17 911	NA	a)	4 974	4 940	NA	NA	29%	28%	NA
Lisboa Ocidental e Oeiras	a)	19 443	16 828	NA	a)	4 556	4 572	NA	NA	23%	27%	NA
Loures Odivelas	31 528	31 597	24 227	-23%	5 549	7 178	4 970	-31%	18%	23%	21%	-2
Médio Tejo	18 755	13 453	16 674	24%	11 563	8 727	9 204	5%	62%	65%	55%	-10
Oeste Norte	14 755	14 056	13 534	-4%	8 337	8 124	9 825	21%	57%	58%	73%	15
Oeste Sul	11 454	15 198	14 251	-6%	2 552	4 854	3 589	-26%	22%	32%	25%	-7
Sintra	4 960	25 257	25 699	2%	643	8 435	6 223	-26%	13%	33%	24%	-9
ARS LVT	211 328	266 575	260 860	-2%	65 092	86 584	83 330	-4%	31%	32%	32%	-1

Source: ARS LVT, 2021, 2022, and 2023. a) ACeS without implemented Breast Cancer Screening (RCM).

ARS Alentejo	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Alentejo Central	16 331	7 624	15 840	108%	10 574	4 832	9 930	106%	65%	63%	63%	-1
Alentejo Litoral	16 492	10 811	3 864	-64%	10 603	6 390	2 113	-67%	64%	59%	55%	-4
Baixo Alentejo	6 199	2 486	14 746	493%	3 389	1 563	9 144	485%	55%	63%	62%	-1
Norte Alentejano	9 292	7 315	8 083	10%	6 490	5 091	5 280	4%	70%	70%	65%	-4
ARS Alentejo	48 314	28 236	42 533	51%	31 056	17 876	26 467	48%	64%	63%	62%	-1

Source: ARS Alentejo, 2021, 2022, and 2023.

ARS Algarve	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Barlavento	6 367	11 869	15 140	28%	3 068	5 443	6 900	27%	48%	46%	46%	0
Central	14 617	34 679	7 588	-78%	5 727	14 621	4 533	-69%	39%	42%	60%	18
Sotavento	9 191	a)	8 685	NA	5 533	a)	6 224	NA	60%	NA	72%	NA
ARS Algarve	30 175	46 548	31 413	-33%	14 328	20 064	17 657	-12%	47%	43%	56%	13

a) In 2020 and 2022, it was not a year for breast cancer screening in ACES Sotavento. This screening is itinerant. In 2022, the breast cancer screening (RCM) was carried out in the municipalities of S. Brás de Alportel, Loulé, Albufeira, Silves, Lagoa, Monchique, Aljezur, Vila do Bispo, and Faro. Source: ARS Algarve, 2021, 2022, and 2023 (Excel RCM with extraction on March 27th).

RA Açores	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
USI	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Santa Maria	976	b)	c)	NA	892	b)	c)	NA	91%	NA	NA	NA
São Miguel	13 506	11 536	9 856	-15%	9 190	7 729	6 508	-16%	68%	67%	66%	-1
Terceira	4 994	5 525	4 557	-18%	3 668	4 192	3 483	-17%	73%	76%	76%	1
Graciosa	772	b)	790	NA	577	b)	590	NA	75%	NA	75%	NA
São Jorge	a)	1 558	a)	NA	a)	1 369	a)	NA	NA	88%	NA	NA
Pico	a)	2 608	a)	NA	a)	2 343	a)	NA	NA	90%	NA	NA
Faial	a)	1 322	1 518	15%	a)	952	1 293	36%	NA	72%	85%	13
Flores	553	b)	c)	NA	453	b)	c)	NA	82%	NA	NA	NA
Corvo	64	b)	67	NA	55	b)	53	NA	86%	NA	79%	NA
RAA	20 865	22 549	16 788	-26%	14 835	16 585	11 927	-28%	71%	74%	71%	-3

a) These USI conduct breast cancer screening in even years; b) These USI conduct breast cancer screening in odd years; Source: COA, 2021, 2022, and 2023.

Cervical Cancer Screening

ARS North	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Alto Ave	11 410	14 518	13 618	-6%	10 116	13 061	12 323	-6%	89%	90%	90%	1
Alto Minho	8 336	10 570	10 438	-1%	7 698	9 141	9 268	1%	92%	86%	89%	2
Alto Tâmega e Barroso	2 171	2 950	3 048	3%	2 100	2 772	2 826	2%	97%	94%	93%	-1
Aveiro Norte	3 810	6 797	6 727	-1%	3 321	5 677	5 344	-6%	87%	84%	79%	-4
Baixo Tâmega	7 060	6 706	6 624	-1%	6 716	6 456	6 362	-1%	95%	96%	96%	0
Barcelos/ Esposende	7 213	8 381	7 634	-9%	6 972	7 814	7 149	-9%	97%	93%	94%	0
Braga	9 334	9 924	9 586	-3%	9 062	9 732	9 429	-3%	97%	98%	98%	0
Douro Sul	2 372	3 464	2 777	-20%	2 133	3 173	2 560	-19%	90%	92%	92%	1
Espinho/Gaia	5 323	6 270	5 848	-7%	4 996	5 923	5 488	-7%	94%	94%	94%	-1
Famalicão	4 162	4 399	4 671	6%	4 130	4 330	4 575	6%	99%	98%	98%	0
Feira/Arouca	6 556	7 245	7 197	-1%	6 278	6 560	6 426	-2%	96%	91%	89%	-1
Gaia	3 748	5 820	5 611	-4%	3 673	5 449	5 254	-4%	98%	94%	94%	0
Gerês/Cabreira	4 885	5 363	5 087	-5%	4 602	5 062	4 755	-6%	94%	94%	93%	-1
Gondomar	3 691	6 941	6 964	0%	3 640	6 773	6 597	-3%	99%	98%	95%	-3
Maia/Valongo	3 992	5 616	7 695	37%	3 903	5 541	7 440	34%	98%	99%	97%	-2
Marão e Douro Norte	2 822	4 231	5 376	27%	2 444	3 809	4 653	22%	87%	90%	87%	-3
Matosinhos	6 684	5 074	5 145	1%	6 612	4 941	5 066	3%	99%	97%	98%	1
Nordeste	3 177	4 260	5 202	22%	2 531	3 391	4 372	29%	80%	80%	84%	4
Porto Ocidental	4 247	5 891	5 166	-12%	4 155	5 790	4 986	-14%	98%	98%	97%	-2
Porto Oriental	3 094	3 845	3 489	-9%	2 978	3 807	3 467	-9%	96%	99%	99%	0
Póvoa de Varzim/Vila do Conde	5 070	6 332	5 872	-7%	4 999	6 228	5 794	-7%	99%	98%	99%	0
Santo Tirso/Trofa	3 628	5 439	4 500	-17%	3 235	5 148	4 362	-15%	89%	95%	97%	2
Vale does Sousa Norte	8 737	11 904	8 518	-28%	7 918	10 228	7 373	-28%	91%	86%	87%	1
Vale does Sousa Sul	6 046	7 398	7 467	1%	5 754	6 993	7 050	1%	95%	95%	94%	0
ARS Norte	127 568	159 338	154 260	-3%	119 966	147 799	142 919	-3%	94%	93%	93%	0

Source: ARS Norte, 2021, 2022, and 2023.

ARS Centre	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Baixo Mondego	12 157	14 572	10 163	-30%	11 905	14 228	9 864	-31%	98%	98%	97%	-1
Baixo Vouga	16 022	17 161	10 201	-41%	15 871	16 694	9 894	-41%	99%	97%	97%	0
Dão Lafões	9 446	10 625	8 329	-22%	9 150	10 176	8 004	-21%	97%	96%	96%	0
Pinhal Interior Norte	3 313	4 300	3 153	-27%	3 455	4 173	2 905	-30%	104%	97%	92%	-5
Pinhal Litoral	9 557	10 262	6 750	-34%	9 345	10 061	6 637	-34%	98%	98%	98%	0
Cova Beira	2 932	2 475	2 200	-11%	2 614	2 381	2 113	-11%	89%	96%	96%	0
Guarda	3 273	4 839	4 576	-5%	2 875	4 291	4 074	-5%	88%	89%	89%	0
Castelo Branco	3 049	4 933	1 738	-65%	2 975	4 757	1 659	-65%	98%	96%	95%	-1
ARS Centro	59 749	69 167	47 110	-32%	58 190	66 761	45 150	-32%	97%	97%	96%	-1

Source: ARS Centre, 2021, 2022 e 2023.

ARS LVT	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Almada Seixal	10 221	10 975	8 590	-22%	9 830	10 457	8 294	-21%	96,2%	95,3%	96,6%	1
Amadora	3 649	4 810	3 566	-26%	3 335	4 745	3 523	-26%	91,4%	98,6%	98,8%	0
Arco Ribeirinho	3 483	4 609	5 388	17%	3 335	4 434	5 185	17%	95,8%	96,2%	96,2%	0
Arrábida	3 148	4 194	6 246	49%	3 122	4 111	6 098	48%	99,2%	98,0%	97,6%	0
Cascais	1 969	4 665	5 936	27%	1 941	4 586	5 850	28%	98,6%	98,3%	98,6%	0
Estuário Tejo	2 928	5 830	6 741	16%	2 801	5 671	6 465	14%	95,7%	97,3%	95,9%	-1
Lezíria	3 661	6 492	5 862	-10%	3 615	6 347	5 776	-9%	98,7%	97,8%	98,5%	1
Lisboa Central	3 436	6 627	5 877	-11%	3 393	6 506	5 792	-11%	98,7%	98,2%	98,6%	0
Lisboa Norte	4 426	5 847	5 140	-12%	4 358	5 685	5 024	-12%	98,5%	97,2%	97,7%	1
Lisboa Ocidental e Oeiras	4 430	5 302	5 495	4%	4 339	5 225	5 447	4%	97,9%	98,5%	99,1%	1
Loures Odivelas	2 327	7 153	8 557	20%	2 272	6 946	8 361	20%	97,6%	97,1%	97,7%	1
Médio Tejo	709	2 496	4 170	67%	684	2 417	4 090	69%	96,5%	96,8%	98,1%	1
Oeste Norte	991	3 782	4 946	31%	966	3 739	4 795	28%	97,5%	98,9%	96,9%	-2
Oeste Sul	3 880	5 130	5 671	11%	3 617	4 758	5 353	13%	93,2%	92,7%	94,4%	2
Sintra	418	4 443	6 445	45%	405	4 348	6 351	46%	96,9%	97,9%	98,5%	1
ARS LVT	49 676	82 355	88 630	8%	48 013	79 975	86 404	8%	96,7%	97,1%	97,5%	0

Source: ARS LVT, 2021, 2022 e 2023.

ARS Alentejo	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Alentejo Central	4 465	8 510	6 951	-18%	4 092	4 092	5 386	32%	92%	48%	77%	29
Alentejo Litoral	2 249	4 100	3 991	-3%	2 074	2 074	3 525	70%	92%	51%	88%	38
Baixo Alentejo	1 805	2 553	4 215	65%	1 689	1 689	3 280	94%	94%	66%	78%	12
Norte Alentejano	2 831	4 697	4 826	3%	2 296	2 296	4 049	76%	81%	49%	84%	35
ARS Alentejo	11 350	19 860	19 983	1%	10 151	10 151	16 240	60%	89%	51%	81%	30

Source: ARS Alentejo, 2021, 2022, and 2023 (SILMA Reports - BI Indicators, extraction on March 30th).

ARS Algarve	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Barlavento	4049	2934	2890	-1%	3 911	3 911	2 785	-29%	97%	133%	96%	-37
Central	2 029	6 426	6 907	7%	1 981	1 981	6 749	241%	98%	31%	98%	67
Sotavento	1 351	1 464	1 252	-14%	1 336	1 336	1 230	-8%	99%	91%	98%	7
ARS Algarve	7 429	10 824	11 049	2%	7 228	7 228	10 764	49%	97%	67%	97%	31

Source: ARS Algarve, 2021, 2022, and 2023 (SILMA Reports with extraction on March 23rd).

RA Açores	N.º Invited Individuals	N.º Screened Individuals	Adherence Rate

USI	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023 (pp)
Santa Maria	145	617	326	-47%	122	583	322	-45%	84%	94%	99%	4
São Miguel	5 182	5 447	6 772	24%	3 457	4 235	4 806	13%	67%	78%	71%	-7
Terceira	2 949	2 533	2 517	-1%	2 359	1 955	2 438	25%	80%	77%	97%	20
Graciosa	267	387	189	-51%	188	181	189	4%	70%	47%	100%	53
São Jorge	346	568	555	-2%	314	456	555	22%	91%	80%	100%	20
Pico	668	1 423	740	-48%	615	1 122	638	-43%	92%	79%	86%	7
Faial	714	377	377	0%	523	314	338	8%	73%	83%	90%	6
Flores	53	161	185	15%	50	122	185	52%	94%	76%	100%	24
Corvo	71	a)	28	NA	48	a)	28	NA	68%	NA	100%	NA
RAA	10 395	11 513	11 689	2%	a)	8 968	9 499	6%	NA	78%	81%	3

a) In 2020, the Cervical Cancer Screening (RCCU) was suspended. The 3rd round was completed by 31/12/2019. The 4th round was scheduled to begin in mid-2020, with the primary HPV test, involving laboratory processing at the Pathology Laboratory of Ponta Delgada Hospital. For this, adaptation works, equipment acquisition/installation, recruitment of 2 laboratory technicians, professional training, and adaptations to the IT platform were planned for the first half of 2020, but these were cancelled due to the pandemic. This screening was strongly resumed in 2021, with the goal of screening the entire population within 4 years, instead of the 5 years originally planned, because of the new methodology implemented to recover screenings that were not carried out in 2020. Source: COA, 2021, 2022, and 2023.

Colorectal Cancer Screening

ARS North	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ULS	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023 (pp)
Alto Ave	20 468	24 365	26 307	8%	12 668	8 073	12 727	58%	62%	33%	48%	15
Alto Minho	18 128	30 447	20 644	-32%	7 017	9 237	8 808	-5%	39%	30%	43%	12
Alto Tâmega e Barroso	7 310	4 075	6 624	63%	2 703	1 063	2 864	169%	37%	26%	43%	17
Aveiro Norte	15 373	11 803	15 504	31%	7 413	4 431	5 847	32%	NA	38%	38%	0
Baixo Tâmega	21 342	5 927	10 716	81%	9 966	2 454	6 775	176%	NA	41%	63%	22
Barcelos/ Esposende	14 867	4 811	10 194	112%	7 409	1 741	5 997	244%	50%	36%	59%	23
Braga	10 623	7 784	21 531	177%	2 743	3 002	7 647	155%	26%	39%	36%	-3
Douro Sul	16 913	8 622	10 440	21%	7 739	2 611	4 824	85%	46%	30%	46%	16
Espinho/Gaia	17 004	20 718	19 696	-5%	4 896	6 231	8 577	38%	29%	30%	44%	13
Famalicão	15 999	11 125	14 784	33%	6 541	4 374	6 263	43%	NA	39%	42%	3
Feira/Arouca	20 027	14 339	7 282	-49%	10 239	4 224	2 724	-36%	51%	29%	37%	8
Gaia	688	23 599	20 451	-13%	4 454	6 225	7 443	20%	647%	26%	36%	10
Gerês/ Cabreira	272	9 280	6 858	-26%	176	3 620	848	-77%	65%	39%	12%	-27
Gondomar	24 690	21 688	23 500	8%	11 798	7 118	9 782	37%	48%	33%	42%	9
Maia/Valongo	24 262	24 991	25 043	0%	7 790	7 355	8 881	21%	32%	29%	35%	6
Marão e Douro Norte	7 017	11 718	12 630	8%	4 840	4 209	4 621	10%	69%	36%	37%	1
Matosinhos	11 689	20 507	24 946	22%	5 192	3 854	9 003	134%	44%	19%	36%	17
Nordeste	2 997	22 832	14 522	-36%	317	8 057	10 034	25%	a)	35%	69%	34
Porto Ocidental	22 987	23 152	14 112	-39%	10 127	5 371	5 632	5%	44%	23%	40%	17
Porto Oriental	11 672	14 135	11 308	-20%	6 057	2 938	3 623	23%	52%	21%	32%	11
Póvoa de Varzim/Vila do Conde	6 260	23 263	5 201	-78%	1 276	7 504	3 985	-47%	20%	32%	77%	44
Santo Tirso/Trofa	12 728	14 242	10 501	-26%	6 592	4 871	5 209	7%	52%	34%	50%	15

Vale does Sousa Norte	10 253	8 777	21 848	149%	7 113	3 753	9 455	152%	69%	43%	43%	1
Vale does Sousa Sul	667	15 957	8 446	-47%	285	6 737	3 295	-51%	43%	42%	39%	-3
ARS Norte	314 236	378 157	363 088	-4%	145 351	119 053	154 864	30%	46%	31%	43%	11

Source: ARS Norte, 2021, 2022, and 2023. a) ACeS without implemented CRC screening (RCCR).

ARS Centre	N. º Invited Individuals				N. º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Baixo Mondego	2 929	5 133	4 604	-10%	1 991	3 497	3 373	-4%	68%	68%	73%	5
Baixo Vouga	4 227	6 289	7 154	14%	3 306	4 745	5 789	22%	78%	75%	81%	5
Dão Lafões	8 011	9 378	11 931	27%	5 655	6 852	8 893	30%	71%	73%	75%	1
Pinhal Interior Norte	4 351	6 619	6 801	3%	2 670	4 203	5 105	21%	61%	63%	75%	12
Pinhal Litoral	6 492	8 682	9 780	13%	4 858	5 898	7 042	19%	75%	68%	72%	4
Cova Beira	1 846	1 650	2 289	39%	1 256	1 062	1 843	74%	68%	64%	81%	16
Guarda	2 276	5 211	6 275	20%	1 363	4 039	5 443	35%	NA	78%	87%	9
Castelo Branco	2 357	5 258	3 269	-38%	1 612	3 811	2 721	-29%	68%	72%	83%	11
ARS Centro	32 489	48 220	52 103	8%	22 711	34 107	40 209	18%	70%	71%	77%	6

Source: ARS Centro, 2021, 2022, and 2023. a) ACeS without implemented CRC screening (RCCR).

ARS LVT	N. º Invited Individuals				N. º Screened Individuals				Adherence Rate			
ACES/ ULS	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023	2021	2022	2023	Variation 2022/ 2023 (pp)
Almada Seixal	7 739	11 071	14 127	28%	6 444	8 128	11 802	45%	83%	73%	84%	10
Amadora	3 233	3 957	3 793	-4%	2 610	2 187	2 564	17%	81%	55%	68%	12
Arco Ribeirinho	556	1 183	2 436	106%	422	781	1 889	142%	76%	66%	78%	12
Arrábida	254	1 604	9 297	480%	201	877	6 814	677%	79%	55%	73%	19
Cascais	1 338	2 638	4 856	84%	1 079	1 810	3 747	107%	81%	69%	77%	9
Estuário Tejo	620	2 543	6 731	165%	528	2 082	5 880	182%	85%	82%	87%	5
Lezíria	533	2 378	6 718	183%	287	1 848	5 376	191%	54%	78%	80%	2
Lisboa Central	2 171	4 056	4 004	-1%	1 679	2 988	3 024	1%	77%	74%	76%	2
Lisboa Norte	2 045	6 709	6 996	4%	1 548	3 642	4 618	27%	76%	54%	66%	12
Lisboa Ocidental e Oeiras	1 975	4 001	783	-80%	176	1 300	443	-66%	9%	32%	57%	24
Loures Odivelas	3	193	4 735	2353%	1	78	3 358	4205%	33%	40%	71%	31
Médio Tejo	467	835	1 300	56%	428	676	1 028	52%	92%	81%	79%	-2
Oeste Norte	94	250	1 368	447%	76	173	985	469%	81%	69%	72%	3
Oeste Sul	770	1 370	2 622	91%	587	923	2 102	128%	76%	67%	80%	13
Sintra	187	2 628	4 391	67%	139	1 939	3 447	NA	74%	74%	79%	5
ARS LVT	21 985	45 416	74 157	63%	16 205	29 432	57 077	94%	74%	65%	77%	12

Source: ARS LVT, 2021, 2022 e 2023.

ARS Alentejo	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ULS	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023 (pp)
Alentejo Central	1 375	6 658	6 169	-7%	1 150	5 552	5 128	-8%	84%	83%	83%	0
Alentejo Litoral	514	3 804	3 952	4%	455	2 103	3 487	66%	89%	55%	88%	33
Baixo Alentejo	733	1 767	5 050	186%	509	1 408	4 120	193%	69%	80%	82%	2
Norte Alentejano	1 262	4 484	6 134	37%	1 177	3 800	5 579	47%	93%	85%	91%	6
ARS Alentejo	3 884	16 713	21 305	27%	3 291	12 863	18 314	42%	85%	77%	86%	9

Source: ARS Alentejo, 2021, 2022 e 2023.

ARS Algarve	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
ACES/ULS	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023 (pp)
Barlavento	a)	2 821	2	-100%	a)	782	2	-100%	NA	28%	100%	72
Central	a)	4 259	73	-98%	a)	1 488	70	-95%	NA	35%	96%	61
Sotavento	4 112	4 414	17	-100%	1 164	1 629	9	-99%	28%	37%	53%	16
ARS Algarve	4 112	11 494	92	-99%	1 164	3 899	81	-98%	28%	34%	88%	54

Source: ARS Algarve, 2021, 2022, and 2023 (SiIMA Reports and SGI-SIRCCR with extraction on March 23rd, Colon and Rectal Cancer Screening. Data extracted as the RCCR used 2 SI systems during these years; the presented values account for the sum of the 2 SI systems. In each indicator, the sum of the values from the SiiMA Screenings + SGI values is included). a) ACeS with suspended RCCR.

RA Açores	N.º Invited Individuals				N.º Screened Individuals				Adherence Rate			
USI	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023	2021	2022	2023	Variation 2022/2023 (pp)
Santa Maria	4	b)	1 749	NA	4	b)	804	NA	100%	NA	46%	NA
São Miguel	2 483	3 705	11 493	210%	2 155	3 053	3 715	22%	87%	82%	32%	-50
Terceira	1 784	3 547	0	-100%	1 154	2 905	317*	NA	65%	82%	NA	NA
Graciosa	3	303	0	-100%	3	223	23	-90%	100%	74%	NA	NA
São Jorge	5	b)	2 927	NA	20**	b)	847	NA	NA	NA	29%	NA
Pico	1 426	340	860	153%	1 196	340	20	-94%	84%	100%	2%	-98
Faial	190	945	2 109	123%	149	592	1 449	145%	78%	63%	69%	6
Flores	a)	283	a)	NA	a)	244	a)	NA	NA	86%	NA	NA
Corvo	a)	55	a)	NA	a)	43	a)	NA	NA	78%	NA	NA
RAA	5 895	9 178	19 138	109%	a)	7 400	6 858	NA	NA	81%	36%	-45

a) When the pandemic broke out, there were 300 pending screening colonoscopies. From April 2020 onwards, hospitals suspended colonoscopies. Although COA pressured the 3 hospitals to carry out the delayed colonoscopies, the recovery was very slow. This situation led to the suspension of screening, as there was no guarantee of downstream response for positive primary tests. b) The USI of Corvo carried out screening in 2018. c) USIs did not carry out screening in 2021. d) No invitations were sent in 2022. Source: COA Platform, 2021, 2022, and 2023 (extraction 30.03.2023).

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