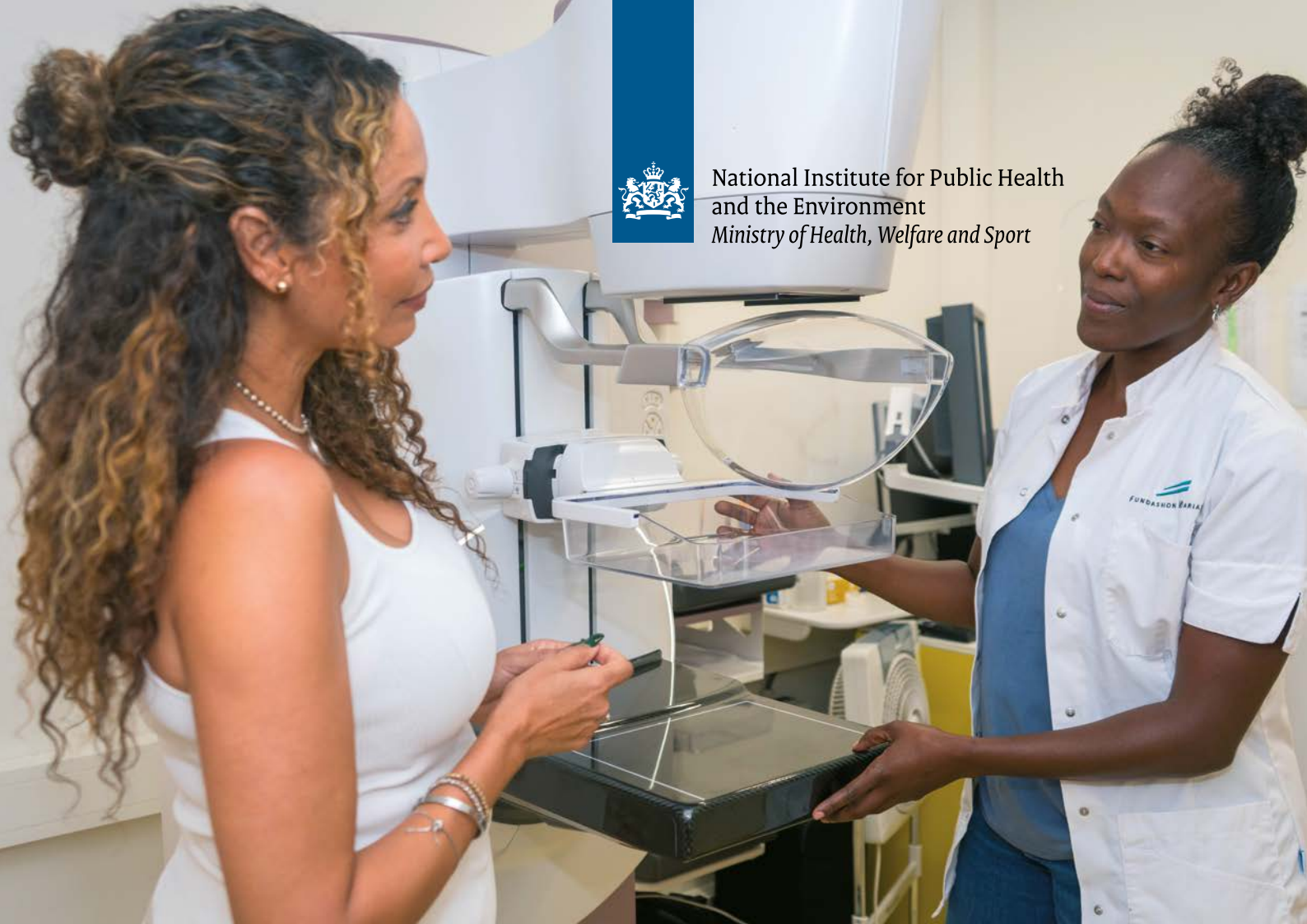




National Institute for Public Health
and the Environment
Ministry of Health, Welfare and Sport



Monitors screening programs in the Caribbean Netherlands

Figures population screening breast cancer Bonaire for 2022-2023

This is the second monitor about the breast cancer screening program (hereafter referred to as “the screening program”) in the Caribbean Netherlands.

Key findings

- **362** women participated in the second year of the screening program (**360** participants consented to the use of their diagnostic data)
- The referral rate in the second year was **7.5%**
- The detection rate was **1.7%**
- The positive prediction value was **26.1%**



1 Introduction

In 2020, the Center for Population Screening (RIVM-CvB) was commissioned by the Dutch Ministry of Health, Welfare, and Sport to set up and conduct cancer screening in the Caribbean Netherlands.

The screening program was introduced on 26 May 2021. When possible, RIVM- CVB made use of knowledge and expertise of the existing program in the European Netherlands (EU-NL) and follows the same process where possible. Sometimes this is not possible due to local circumstances. For example, there was no personal records database to aid with the preparations for the screening.

The second year of the screening program saw a number of changes. An amendment to the Public Health Act (*besluit Publieke Gezondheid*) enabled the team to use data from Bonaire's central personal records database (PIVA) to invite participants to participate in the screening. In addition, participants were informed about the screening program through a range of channels and they spontaneously signed up based on this information.

A software application developed specifically for the Caribbean Netherlands has been used to record screening data since September 2022.

This monitor provides an overview of the main results of the second year of the screening program in Bonaire (July 2022 - June 2023). For the monitor about the first year, visit: www.rivm.nl/en/population-screening-caribbean-netherlands/monitors.

2 Implementation of screening and Data Collection

Figure 1 provides an overview of the implementation of the screening program in Bonaire. The organization of the chain is roughly the same as in EU-NL, with a few differences.

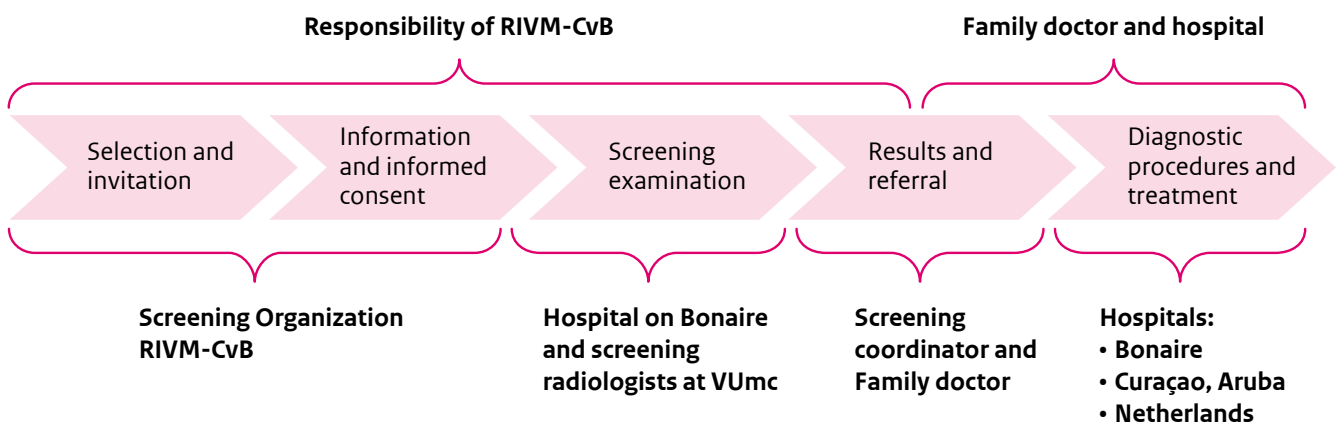
The most important of which are the following:

- In addition to structural invitations from PIVA, women can also register, via the screening organization, to participate in the screening program.
- The screening program is performed by a team (“the screening organization”) that is part of RIVM-CvB and is based on Bonaire.
- The screening program is carried out on the basis of informed consent. Prior to participation in the screening participants were informed about the screening process and the advantages and disadvantages of participating. They signed an informed consent form upon participation.
- On Bonaire, the use of paper forms is still common and data is entered manually.

The mammograms for the screening program were done at the Fundashon Mariadal Hospital (Kralendijk, Bonaire) by medical imaging and radiation experts (MBB’ers). MBB’ers satisfy the education and training requirements maintained for the EU-NL. The Dutch expert centre for screening (*Landelijk Expertisecentrum voor Bevolkingsonderzoek, LRCB*) carries out an annual evaluation, during which they check that the work of the MBB’ers meets the specified requirements. The annual evaluation for 2023 gave a positive result.

Mammograms were evaluated according to the standards used in the EU-NL by registered screening radiologists. The radiologists reported the screening results to the screening organization in Bonaire. Both positive (BI-RADS 0, 4, and 5) and negative (BI-RADS 1 and 2) results were reported back to the participants and their family doctor. In case of positive results, the family doctor provided further referral.

Figure 1. Primary process for breast cancer screening program in Bonaire



The screening organization uses aggregated and/or anonymized information about the outcomes of follow-up diagnostics and treatment for monitoring the screening program if participants have indicated their consent on the informed consent form.

A software application records and securely stores the screening data. This software application was used for this monitor.

3 Results breast cancer screening program

We present the results from July 2022 through June 2023 in this monitor.

3.1 Number of screening examinations conducted, age distribution, participant enrollment

From July 2022 through June 2023, mammograms were done on approximately 30 participants per month. A total of 362 participants participated in the screening, of which two participants did not consent to the use of their diagnostic data. Therefore, data from 360 participants have been used in this monitor, as it reports on diagnostic data.

During the telephone intake, participants were asked how they had heard about the screening program.

Most participants had heard of the screening program through their family doctor (33%) or an invitation letter (43%) (in total: 76%). Information through educational sessions, radio, TV, and Facebook was reported by 10% of the participants as the source. Of the respondents, 12% had heard of the screening program through other means.

Table 1. Age distribution of participants

Age	Number	Percentage
<50	2	0
50-54	93	26
55-59	74	20
60-64	81	22
65-69	73	20
70-74	33	9
>75	6	2
Total	362	100

The participants are roughly evenly distributed across the age groups of between 50 and 70 years old. In the groups with participants older than 70 years, the number of participants is lower (possibly because the proportion of women over 65 in the total population is also decreasing).

Of the participants, 49% indicated Papiamentu as their preferred language. Dutch, Spanish, or English was the preferred language for 28%, 15%, and 9%, of the participants.

3.2 Information collected by taking a medical history

A medical history form was completed prior to the mammograms being performed. This is part of the mammography procedure, similar to the procedure in EU-NL.

The answers to the questions on the form (e.g. date of last mammogram, surgeries, scars, prosthetics) are important for evaluating the mammogram. The forms were sent along with the mammograms and were available to the screening radiologists during the evaluation.

Of the participants, 50% reported receiving a mammogram in 2019, 2020, 2021, or 2022 (Table 2). Another 15% reported having received a mammogram up to more than 10 years ago. These mammograms were performed in Bonaire (Fundashon Mariadal Hospital) in all but one case.

For more than 50% of participants, previous screening mammograms had been sent and used for comparison. Of the participants, 20% reported having undergone breast surgery. Those surgeries mainly involved: removal of cysts/fibroadenomas or tumors and cosmetic surgeries

3.3 Results breast cancer screening program

The results of all the screening examinations were recorded. Of the 362 participants with a known screening result, 335 (92.5%) had a negative screening result (BI-RADS 1.2) (Table 3). For 14 (3.9%) participants, a BI-RADS 0 was reported, 13 (3.4%) participants received a BI-RADS 4, and 1 participant (0.3%) received a BI-RADS 5.

The referral rate is higher than the referral rates for the first screening and follow-up screening of the EU-NL program (source: [Monitor about breast cancer screening – EUR/RIVM 2022](#)). Further research is needed for comprehensive interpretation of these referral rates.

Table 2. Year of last mammogram

Last Mammogram	Number	Percentage
2022	4	1
2021	37	10
2020	76	21
2019	66	18
2018-2016	74	20
Prior to 2016	62	17
unknown or not entered	43	12
Total	362	100

Table 3. Positive screening results (BI-RADS 0, 4, and 5) of the breast cancer screening program

	Number	Percentage Referred	Referral Rate for 2022 Dutch Monitor, First Screening	Referral Rate for 2022 Dutch Monitor, follow-up screening
Total Received BI-RADS Results	362			
Referral rate	27	7.5	5.4	2.4
Referred with BI-RADS 5	1	0.3	0.2	0.2
Referred with BI-RADS 4	12	3.4	2.0	1.1
Referred with BI-RADS 0	14	3.9	3.3	1.2

Table 4. Diagnoses at referrals (BI-RADS 0, 4, and 5 screening results)

Screening result		Diagnosis		
		Breast cancer	No breast cancer	Diagnosis unknown
BI-RADS 0	14	1	11	2
BI-RADS 4	12	4	6	2
BI-RADS 5	1	1	0	0

Table 4 provides an overview of diagnoses following BI-RADS 0, 4, and 5 screening results.

Four diagnoses were (still) unknown. Based on the available data, the detection rate is 1.7%, and the positive predictive value is 26.1%. These are very small numbers, and for a more reliable estimate of these parameters, more data is needed.

4 Concluding remarks

This is the second monitor about breast cancer screening in Bonaire. The data are not yet sufficient to identify trends. The number of participants in 2022-2023 was lower than in 2021-2022 (when there were 945 participants). The organization of the screening program has been further developed in this pilot phase. The team has been expanded, the software application helps deliver the data, and several women have now had the opportunity to participate in the screening for a second time.

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The breast cancer population screening in the
Caribbean Netherlands is carried out by:

