



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

For early detection of cancer in the Caribbean Netherlands

Monitor national program for breast cancer screening Bonaire 2021-2022



This is the first monitor on the national program for breast cancer screening (BVOK-BK) in the Caribbean Netherlands.

Key findings

- In the first year, 995 women took part (945 of whom gave consent to use their data)
- The referral rate in the first year was 3.6%
- The detection rate was 0.4%
- The positive predictive value was 13.8%

1 Introduction

In 2020, the Dutch Ministry of Health, Welfare and Sport ordered the Center for Population Screening of the National Institute for Public Health and the Environment (RIVM-CvB) to implement a population screening program in the Caribbean Netherlands for certain types of cancer.

This program started on 26 May 2021. Proven practices of the European-Dutch population screening program (EU-NL) were applied if possible. Sometimes, the program had to be changed because of local circumstances. For example, it was not possible to use the Key Register of Persons to help with preparation. Instead, other means of communication (letters, radio and TV, Facebook, etc.) were used to inform members of the target group that they had the option to take part in the BVOK-BK. The set-up of the entire screening chain was completed in late May 2021. This included a screening organization, information materials, a client registration system, a mammogram facility, facilities for diagnosis and treatment, and computer systems to support the primary process and data registration. The chain was set up in cooperation with healthcare partners on Bonaire, patient organizations and other local partners.

This report is a summary of the key findings from the first year of the BVOK-BK on Bonaire (June 2021–June 2022).

2 Primary process and data collection

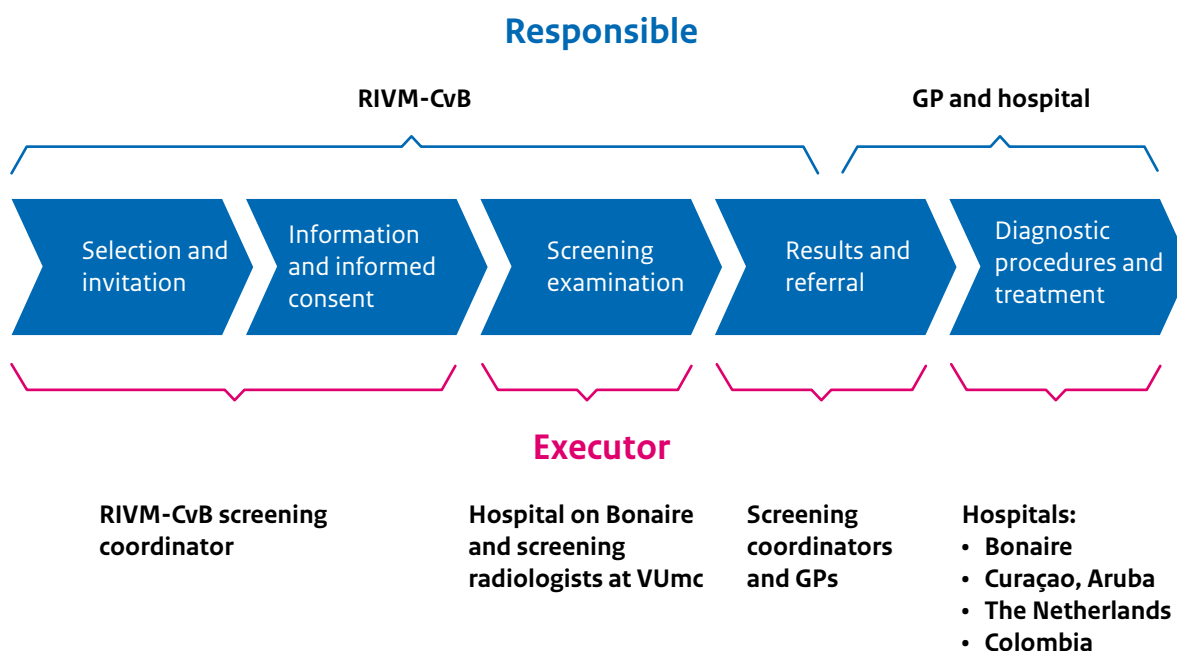
Figure 1 shows how the BVOK-BK is carried out on Bonaire. The chain is organized in more or less the same way as in the EU-NL program, with a few differences. The most important differences are these:

- The Key Register of Persons was not used to send out invitations during the reporting period.
- The BVOK-BK is carried out by a team (the ‘screening organization’) that is part of RIVM-CvB, and is located on Bonaire.
- Those who take part in the program sign a form to give their informed consent.
- As paper forms are still common on Bonaire, data are sometimes entered into the computer systems by hand.

The mammograms for the BVOK-BK are made by radiographers in the Fundashon Mariadal hospital in Kralendijk, Bonaire. These radiographers meet the EU-NL standards for radiographer education and training.

In keeping with the EU-NL standards, the mammograms are assessed by registered screening radiologists. The radiologists report the results of the screenings to the screening coordinator on Bonaire. The screening coordinator reports positive results (BI-RADS 0, 4 or 5) to GPs, so that participants can be referred. The coordinator also reports negative results (BI-RADS 1 or 2) to participants and their GPs.

Figure 1. Primary process of the national program for breast cancer screening (BVOK-BK) on Bonaire



Before the screening, those who take part in the BVOK-BK are given an explanation of the screening process and the pros and cons of taking part. They are then asked to sign an informed consent form. This form states that they have been properly informed and have agreed to take part in the screening.¹

The screening organization uses aggregated and/or anonymized information about the outcomes of follow-up diagnostics and treatment to monitor the BVOK-BK. Participants give permission to use their data for monitoring on the informed consent form. Data of participants who gave no permission is excluded for use in the monitor.

The screening data are registered in a computer program that was built to register screening data, ensuring safe data storage.

3 Results of the BVOK-BK

The BVOK-BK screening program on Bonaire began on 26 May 2021. From that date, people could make an appointment for a screening.

3.1 Number of screening examinations performed, age distribution, participant sign-up

From the start of June 2021 until the end of June 2022, mammograms were taken of between 16 and 20 participants each week. In total there were 995 participants, but 50 of them did not give consent to use their data. Therefore this report refers to 945 participants.

At the start of the BVOK-BK, there were no legal grounds for processing data from the central Key Register of Persons on Bonaire (PIVA). For this reason, media campaigns were used to inform the public about the option to take part in the screening program. In a survey, participants were asked how they had heard about the BVOK-BK.

Most participants said they had heard about the BVOK-BK from their GP (28%) or through a letter of invitation (27%) (for a total of 56%). A further 12% said they had heard about the screening through information provided in information sessions, on radio and TV and on Facebook, while 32% of respondents said they had heard about the BVOK-BK through another source.

¹ 945 participants in the screening gave their consent.

Table 1. Age distribution of participants

Age	Number	Percentage
<50	9	1
50 to 55	233	25
55 to 60	237	25
60 to 65	216	23
65 to 70	125	13
70 to 75	113	12
>75	12	1
Total	945	100

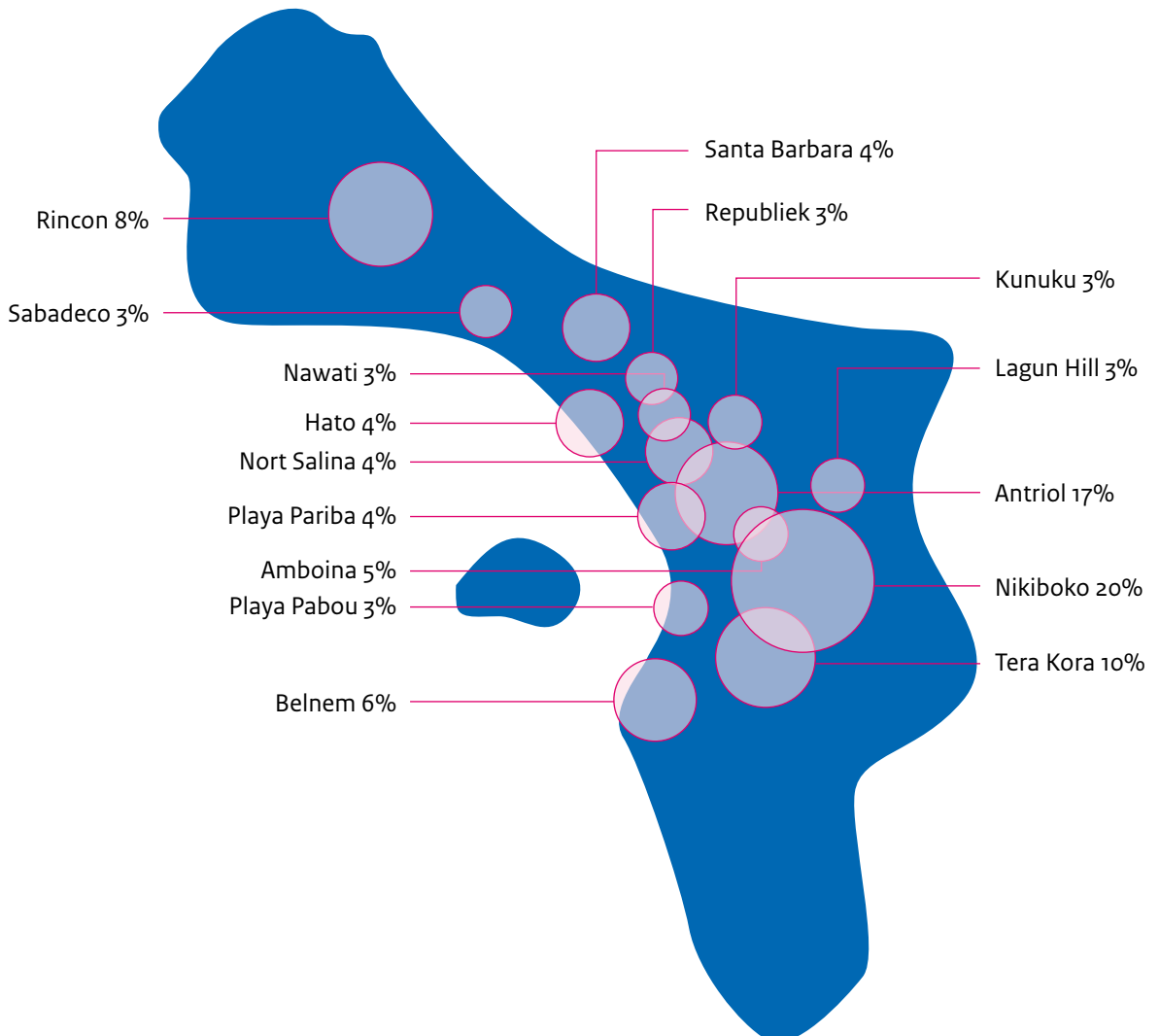
A roughly equal number of participants were between 50 and 65 years old. There were fewer participants from age groups older than 65 (possibly because there is a smaller group of women over 65 in the population as a whole).

43% of the participants said Dutch was their preferred language. For Papiamentu, Spanish and English, this was 40, 13 and 9% respectively.

Figure 2 shows which districts participants were from. Most participants came from the Nikiboko, Antriol and Tera Kora districts. These are the largest districts on Bonaire.

Figure 2. Where BVOK-BK participants were from (district)

This figure shows from which districts the participants come from. Most participants came from the Nikiboko, Antriol and Tera Kora districts. These districts are located in Kralendijk and are the largest districts on Bonaire.



3.2 Information gained when taking medical histories

Before the mammograms are made, each participant is asked to fill out a medical history form as part of the mammogram procedure (like in the EU-NL procedure). The answers a person gives to the questions on the form (for example about the date of their last mammogram, operations, scars and prostheses) are useful when it comes to assessing their mammogram. The forms were sent along with the mammograms and were available to the screening radiologists during the assessment.

43% of the participants said they had had a mammogram in 2019 or 2020 (Table 2). Another 45% said it had been more than 10 years since their last mammogram. Most of these mammograms had been taken on Bonaire (69%) or in the Netherlands (7%). Smaller percentages of mammograms had been taken in other countries in the Caribbean and in the United States. For more than 50% of the participants, historical mammograms were also sent along to

be assessed alongside the new mammograms (oral information from the screening radiologists at VUmc). 18% of the participants said they had had an operation. These operations generally involved the removal of cysts/fibroadenomas, operations in connection with malignant tissue, and cosmetic surgeries.

3.3 Results of the BVOK-BK

The results of all screening examinations were registered. Of the 945 participants for which a screening result is known, 909 (96.2%) received a negative result (BI-RADS 1 or 2) (Table 3). A BI-RADS of 0 was reported for 20 participants (2.1%), while 15 participants (1.6%) received a BI-RADS of 4 and a single participant (0.1%) received a BI-RADS of 5.

The referral rate was between the referral rate for the first screening and the follow-up screening of the EU-NL program (source: National Program for Breast Cancer Screening Monitor, IKNL 2021). Additional research is needed for a more detailed interpretation of this referral rate.

Table 2. Year of last mammogram

Last mammogram	Number	Percentage
2021	2	0
2020	146	15
2019	259	27
2018	113	12
More than three years ago	116	12
More than five years ago	145	15
More than 10 years ago	52	6
Never	65	7
Unknown or left blank	47	5
Total	945	100

Table 3. Positive screening results (BI-RADS 0, 4 and 5) of the BVOK-BK

	Number	Percentage referred	Referral rate for first screening, EU-NL program 2021	Referral rate for follow-up screening, EU-NL program 2021
Total # of BI-RADS results received	945			
Referral rate	36	3.8	5.9	2.1
Referred with BI-RADS 5	1	0.1	0.2	0.2
Referred with BI-RADS 4	15	1.6	2.1	0.9
Referred with BI-RADS 0	20	2.1	3.6	1.0

Table 4. Diagnoses after referral (screening results of BI-RADS 0, 4 and 5)

Screening result		Diagnosis		
		Breast cancer	No breast cancer	Diagnosis not known
BI-RADS 0	20	0	16	4
BI-RADS 4	15	3	9	3
BI-RADS 5	1	1	0	0

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

A number of diagnoses is still unknown. Based on the available data, the detection rate was 0.4% and the positive predictive value was 13.8%. The number of diagnoses is still small and more data are needed for a more reliable estimate of these parameters.

In the first months of the BVOK-BK, participants were asked to fill out a survey after the screening examination. In total, the answers of 194 participants were registered (Table 5). Overall, participants were satisfied with the quality of the information leaflet, the quality of the verbal information provided by the screening coordinator and the information provided by the hospital. The survey was limited in scope. A better user satisfaction survey is in the works.

3.4 Promptness of result reporting and participant satisfaction

In 86% of cases, the screening radiologists met the deadline for reporting the assessment results (within 10 working days, defined here as within 14 days of the mammogram being sent to them).

Table 5. Satisfaction of participants with how the BVOK-BK was carried out

Question	Good	Neutral	Bad
How do you feel about the examination?	75	19	7
Information material	97	2	1
Information provided by the screening coordinator	99	1	0
Information provided by the hospital	92	5	4

NB: number of participants who filled out the survey = 194. The numbers in the table are percentages.

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and sustainability

This breast cancer screening program in the
Caribbean Netherlands is carried out by:

