




BreastCheck Programme Report 2018 and 2019



An tSeirbhís Náisiúnta Scagthástála
National Screening Service


BreastCheck
An Clár Náisiúnta Scagthástála Cioch
The National Breast Screening Programme

BreastCheck Women's Charter

Screening commitment

- ★ All staff will respect your privacy, dignity, religion, race and cultural beliefs
- ★ Services and facilities will be arranged so that everyone, including people with special needs, can use the services
- ★ Your screening records will be treated in the strictest confidence and you will be assured of privacy during your appointment
- ★ Information will be available for relatives and friends relevant to your care in accordance with your wishes
- ★ You will always have the opportunity to make your views known and to have them taken into account
- ★ You will receive your first appointment within two years of becoming known to the programme
- ★ Once you become known to the programme you will be invited for screening every two years while you are in the eligible age range
- ★ You will be screened using high quality modern equipment which complies with Guidelines for Quality Assurance

We aim

- ★ To give you at least seven days notice of your appointment
- ★ To send you information about screening before your appointment
- ★ To see you as promptly as possible to your appointment time
- ★ To keep you informed about any unavoidable delays which occasionally occur
- ★ To provide pleasant, comfortable surroundings during screening
- ★ To ensure that we send results of your mammogram to you within three weeks

If re-call is required

We aim

- ★ To ensure that you will be offered an appointment for an Assessment Clinic within two weeks of being notified of an abnormal result
- ★ To ensure that you will be seen by a Consultant doctor who specialises in breast care
- ★ To provide support from a Breast Care Nurse
- ★ To ensure you get your results from the Assessment Clinic within one week
- ★ To keep you informed of any delays regarding your results

If breast cancer is diagnosed

We aim

- ★ To tell you sensitively and with honesty
- ★ To fully explain the treatment available to you
- ★ To encourage you to share in decision-making about your treatment
- ★ To include your partner, friend or relative in any discussions if you wish
- ★ To give you the right to refuse treatment, obtain a second opinion or choose alternative treatment, without prejudice to your beliefs or chosen treatment
- ★ To arrange for you to be admitted for treatment by specialised trained staff within three weeks of diagnosis
- ★ To provide support from a Breast Care Nurse before and during treatment
- ★ To provide you with information about local and national cancer support groups and self-help groups

Tell us what you think

- ★ Your views are important to us in monitoring the effectiveness of our services and in identifying areas where we can improve
- ★ You have a right to make your opinion known about the care you received
- ★ If you feel we have not met the standards of the Women's Charter, let us know by telling the people providing your care or in writing to the programme
- ★ We would also like to hear from you if you feel you have received a good service. It helps us to know that we are providing the right kind of service - one that satisfies you
- ★ Finally, if you have any suggestions on how our service can be improved, we would be pleased to see whether we can adopt them to further improve the way we care for you

You can help by

Keeping your appointment time

Giving at least three days notice if you wish to change your appointment

Reading any information we send you

Being considerate to others using the service and the staff

Please try to be well informed about your health

Let us know

If you change your address

If you have special needs

If you already have an appointment

Tell us what you think - your views are important.

**Freephone 1800 45 45 55
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Introduction



The aim of BreastCheck is to reduce mortality from breast cancer by finding and treating the disease at the earliest possible stage. The earlier a cancer is detected the easier it is to treat and there are greater treatment options available for the patient. BreastCheck provides free mammograms to women aged 50 to 68 every two years. The BreastCheck age-range extension was launched in 2015 for women aged 65 years, with the aim of extending screening upward to women aged 69 by the end of 2020. As breast cancer incidence increases with age, this is an important development for the programme. From the beginning of the programme in 2000 to the end of 2020, BreastCheck has delivered almost 2 million mammograms, and detected over 14,400 cancers. I would like to thank our colleagues both within and associated with the BreastCheck programme who support women throughout their journeys of care.

During the reported period 01 January 2018 – 31 December 2019, despite the shortage of radiologists and radiographers, the programme delivered over 336,000 mammograms which resulted in 2,341 cancers detected in that time by BreastCheck.

In the future, the most important goal for BreastCheck is to ensure that all women who participate in the programme can remain confident in the delivery of the service and reassured by the quality of care they receive. To ensure this, BreastCheck retains a resolute focus on making continual improvements to ensure high quality and effective care is provided to all clients.



Prof Ann O'Doherty
Clinical Director of BreastCheck

Highlights of 2018

168,582

number of women
attended for screening
in a year

1,190

highest number
of cancers detected
in a year

7,001

number of
women re-called for
assessment

99.2%

results of
mammograms sent
within three weeks

88.0%

hospital admission
offered within three
weeks of breast cancer
diagnosis

7.1

cancers detected
per 1,000 women
screened

Highlights of 2019

167,575

number of
women attended for
screening

1,151

number of
cancers detected

6,823

number of
women re-called for
assessment

99.1%

results of
mammograms sent
within three weeks

86.1%

hospital admission
offered within three
weeks of breast cancer
diagnosis

6.9

cancers detected
per 1,000 women
screened

Programme Report

Background

This report covers just over 2 years of screening, focusing on women invited for screening in 2018 and 2019.

BreastCheck – The National Breast Screening Programme has been providing free mammograms to women aged 50 to 64 every two years from 2000 to 2015 and is currently extending the age range on a phased basis. By the end of 2021, all eligible women aged 50-69 will be invited for breast screening.

The aim of BreastCheck is to detect breast cancers at the earliest possible stage, when the cancer is normally easier to treat and there are greater treatment options available. Although a mammogram will not pick up all breast cancers, evidence from the National Cancer Registry of Ireland shows a survival benefit and mortality reduction in women whose cancer is detected through screening by BreastCheck.¹

To the end of March 2020 the programme has provided more than 2 million mammograms to over 640,000 women and detected over 14,400 cancers.

Screening activity overall

The figures reported relate to women invited by BreastCheck for screening between 1 January 2018 and 31 December 2019. Some of the women may have been screened or treated in the year following their invitation.

Programme standards, against which performance is measured, are based on the *European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis*² and the *BreastCheck Guidelines for Quality Assurance in Mammography Screening*.³

Similar numbers of women were invited by BreastCheck for screening in 2018 and 2019 (Table 1, Figure 1). The screening uptake rate based on the eligible population was 74.3% in 2018, falling to 71.6% for 2019 but still remains above the standard of 70%.

The **standardised detection ratio** (SDR) is a useful composite score by which to measure the overall performance of a screening programme. The overall SDR of BreastCheck was 1.65 in 2018 and 1.68 in 2019 surpassing the target of 0.75, which reflects continued high achievement in programme performance (Table 1).

Table 1: Screening activity overall 2018-2019

Performance parameter	2018	2019
Number of women invited	232,380	239,792
Number of eligible women invited*	226,812	234,111
Number of women who opted out of the programme	1,665	1,584
Number of women attended for screening	168,582	167,575
Eligible women uptake rate* (includes women who opted out of the programme)	74.3%	71.6%
Number of women re-called for assessment	7,001	6,823
Number of open benign biopsies	229	209
Number of cancers detected	1,190	1,151
Cancers detected per 1,000 women screened	7.1	6.9
Number of invasive cancers	942	931
Number of ductal carcinoma in situ (DCIS)	248	220
Number of invasive cancers < 15mm	447	470
Standardised detection ratio	1.65	1.68

* *Eligible refers to the known target population less those women excluded or suspended by the programme based on certain eligibility criteria.*

Details of the ineligible categories

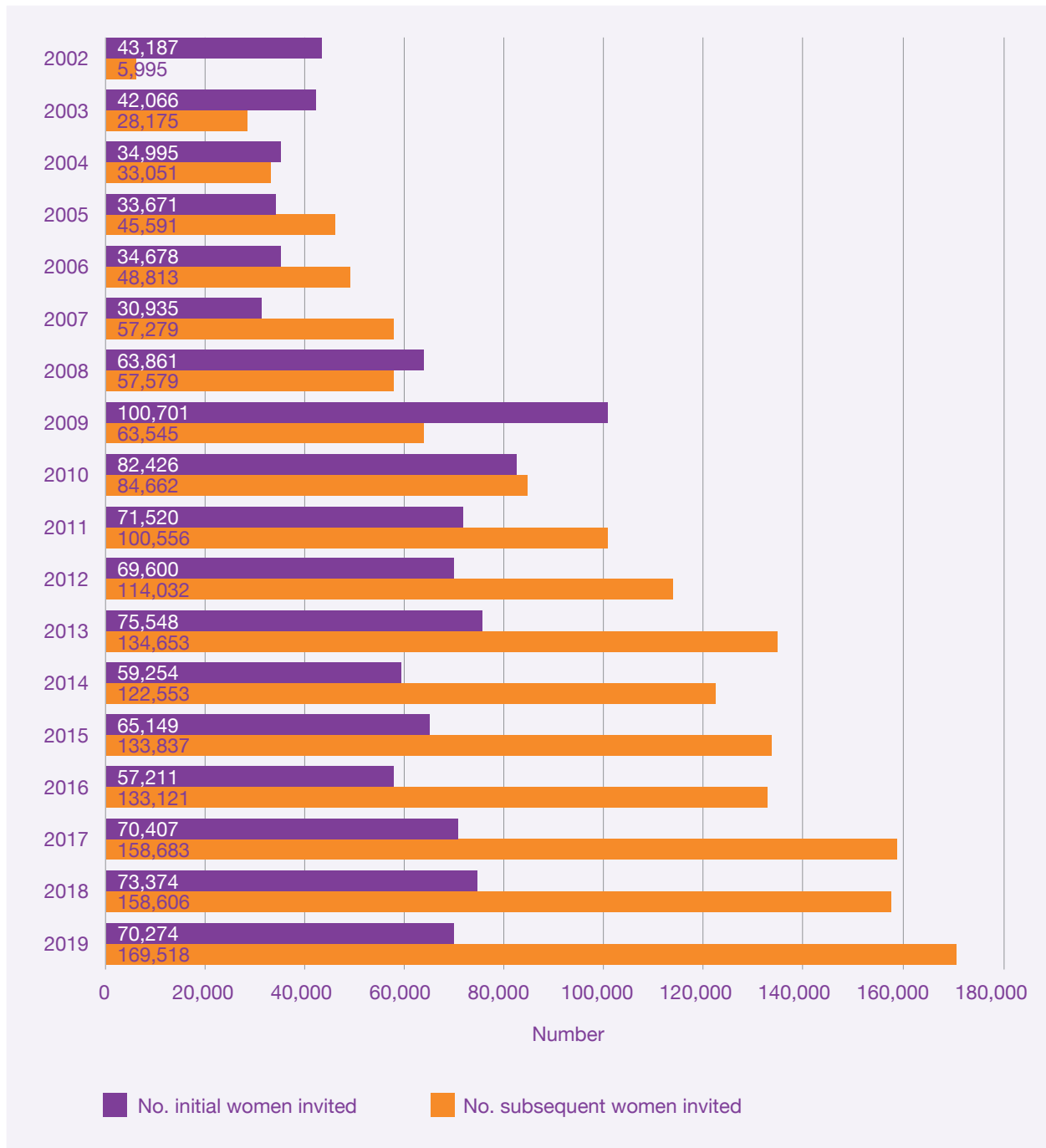
Excluded – Women in follow-up care for breast cancer; women who are not contactable by An Post; women who have a physical or mental disability (while BreastCheck attempts to screen all eligible women, certain forms of physical or mental disability may preclude screening); women with a terminal illness; or other reasons.

Suspended – Women on an extended holiday or working abroad; women who had a mammogram within the last year; women who opt to wait until the next round of screening; women who wished to defer their appointment; women who did not wish to reschedule their appointment; or other reasons.

Screening activity by screening invitation type

Initial women are those who have been invited to have their first BreastCheck mammogram. In recent years the number of initial invited women has plateaued (Figure 1). **Subsequent women** are those who have previously attended BreastCheck and are being invited for the second or subsequent time. The number of subsequent women invited rose in 2019.

Figure 1: Numbers invited 2002-2019 – initial and subsequent women



The **eligible women** uptake rates in those invited for the first time (new initial women) in 2018 and 2019 are below the standard of 70% (Figure 2). All initial women are given a second appointment if they do not attend the first appointment offered. For those women invited in late 2019, the repeat appointment may have been affected by COVID-19 restrictions.

Those who have previously been invited but did not attend are known as **previous non-attenders** (PNAs). The uptake rate among PNAs is low due to persistent non-attendance by some women who neither attend nor opt out of the programme, and so continue to be invited to have their first BreastCheck mammogram. This figure remains low in 2018 and 2019.

The uptake rates among those women who have previously attended and are re-invited for subsequent screening remains high in 2018 and 2019 at 87.7% and 85.7% respectively.

Figure 2. Eligible women uptake rates by year and invitation type

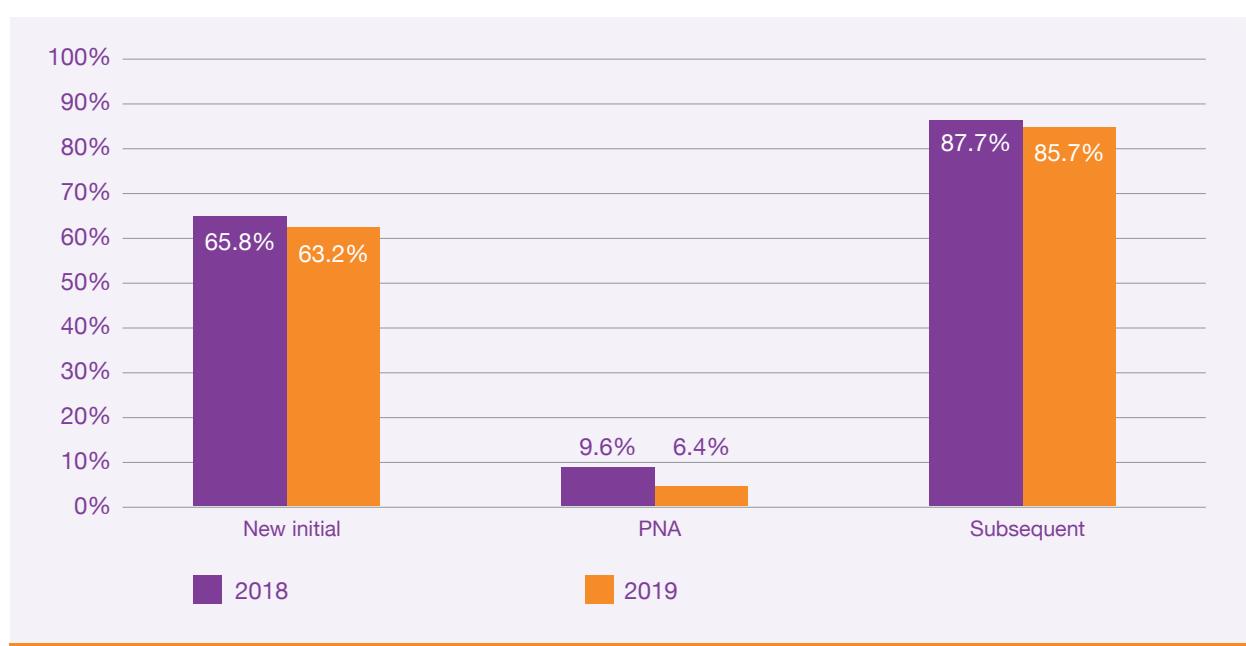
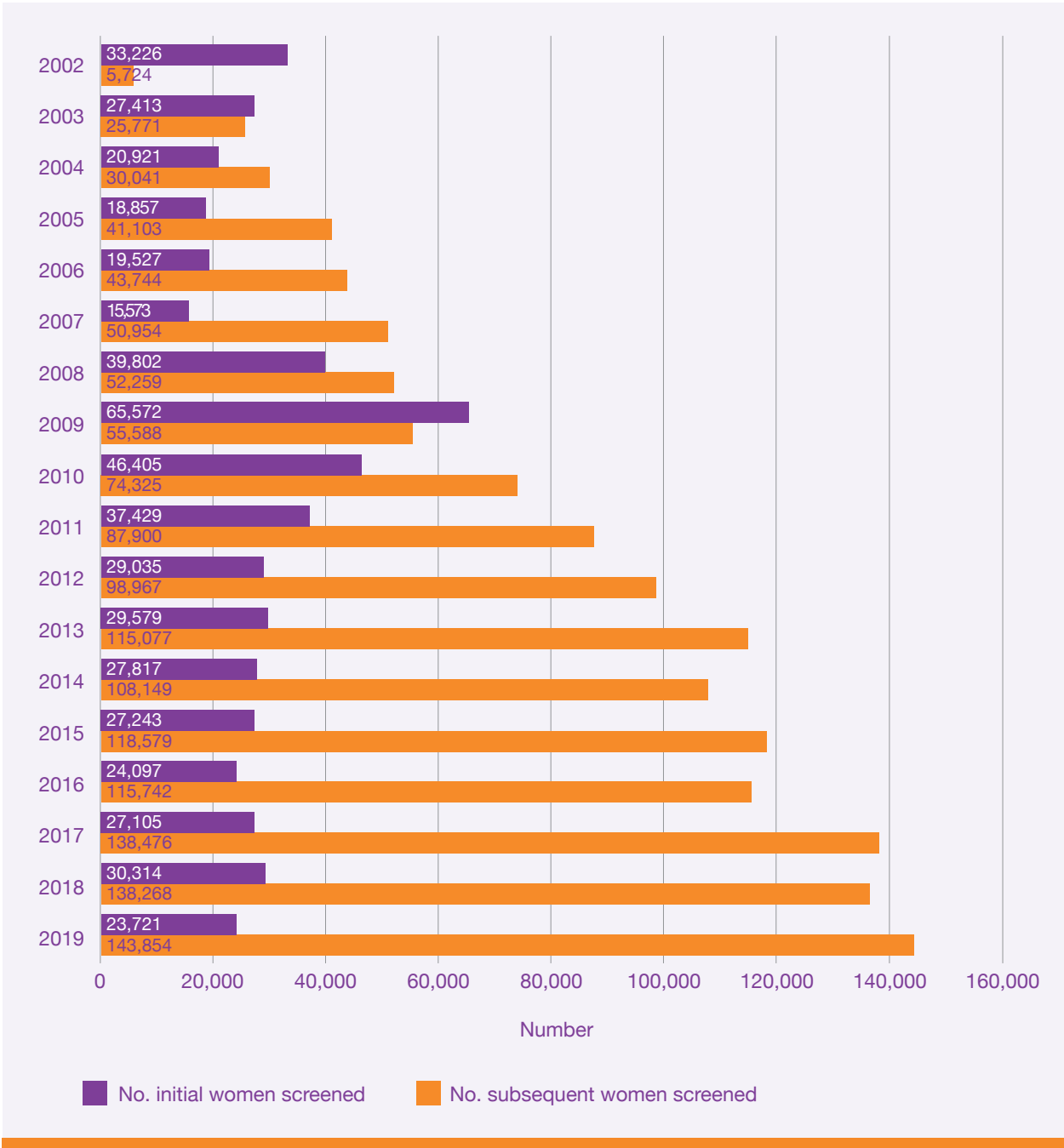


Figure 3 shows the trend in numbers screened between 2002 and 2019. While the number of initial women screened has reached a steady-state in recent years, 2019 saw the highest number of subsequent women screened by the Programme in a single year (Figure 3). These relative proportions are to be expected at this stage in the Programme's history.

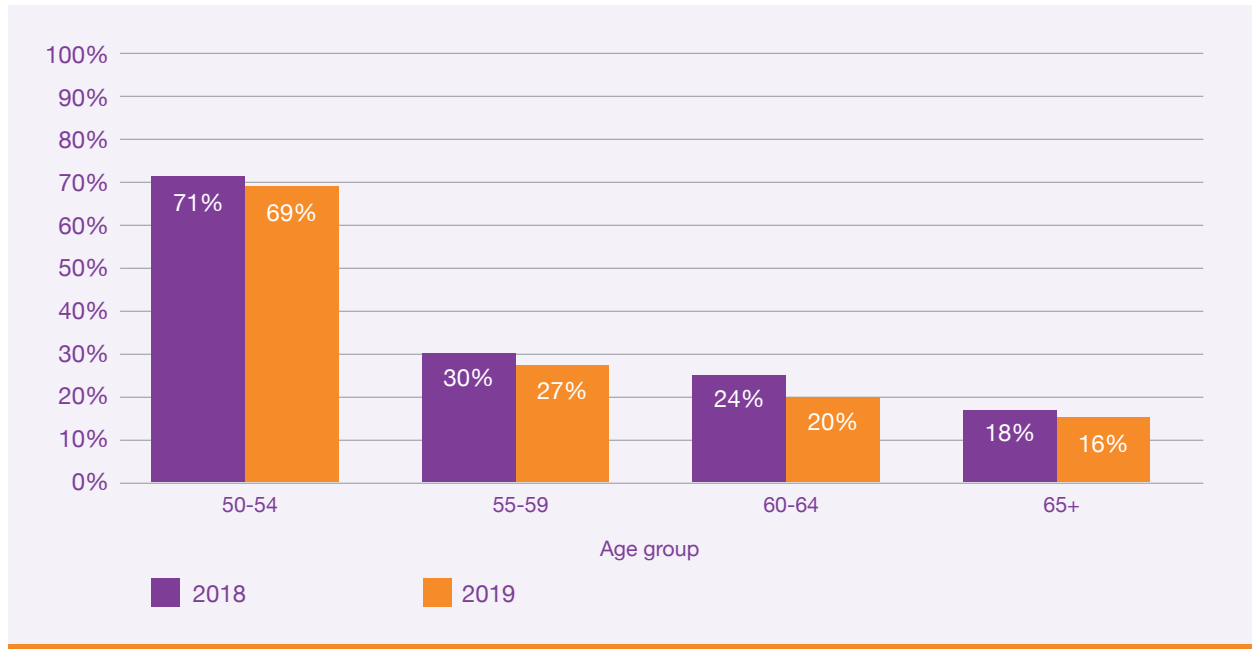
Figure 3: Numbers screened 2002-2019 – initial and subsequent women



Screening activity by age group

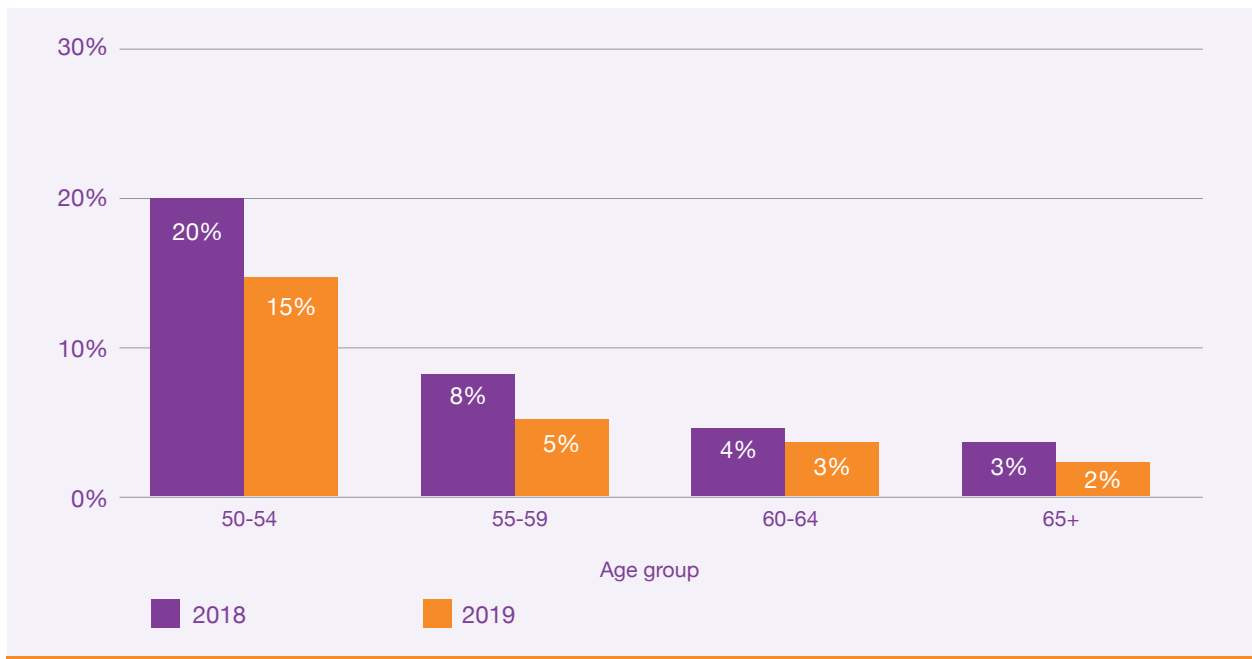
Among women invited for the first time, uptake remains highest in younger women aged 50 to 54, the age group with the greatest number of initial women. Those women who are invited to attend for the first time at an older age are less likely to attend (Figure 4).

Figure 4: First invited population 2018-2019 – eligible population uptake rate by age group and year



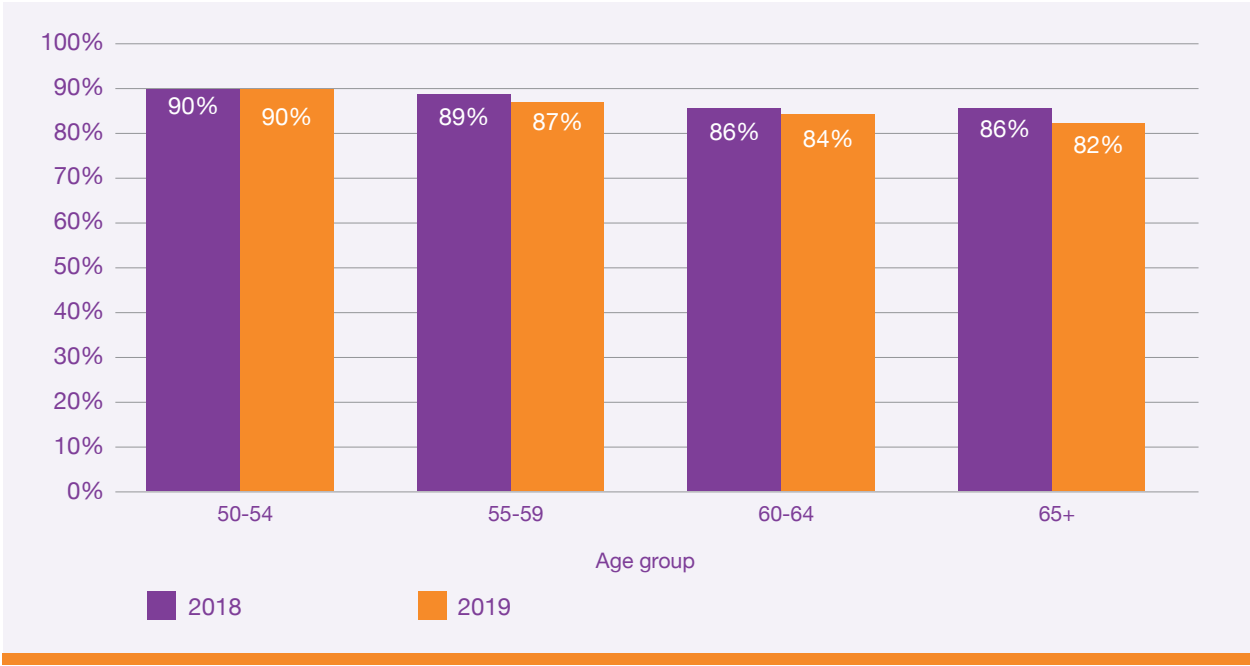
The age gradient is marked among previous non-attenders, reflecting not only a difference in attendance due to age but also the effect of persistent non-attenders in the calculation of uptake rates in the older age groups (Figure 5).

Figure 5: Previous non-attenders – eligible population uptake rate by age group and year



Among those invited for subsequent screening, there are continuing high uptake rates in all age groups (Figure 6). While there is also a downward trend in uptake for subsequent appointments with age, the effect is much smaller than for initial invitations, with well over 80% in all age groups attending the programme. This suggests that after women have attended at least once, they are happy to return, at any eligible age.

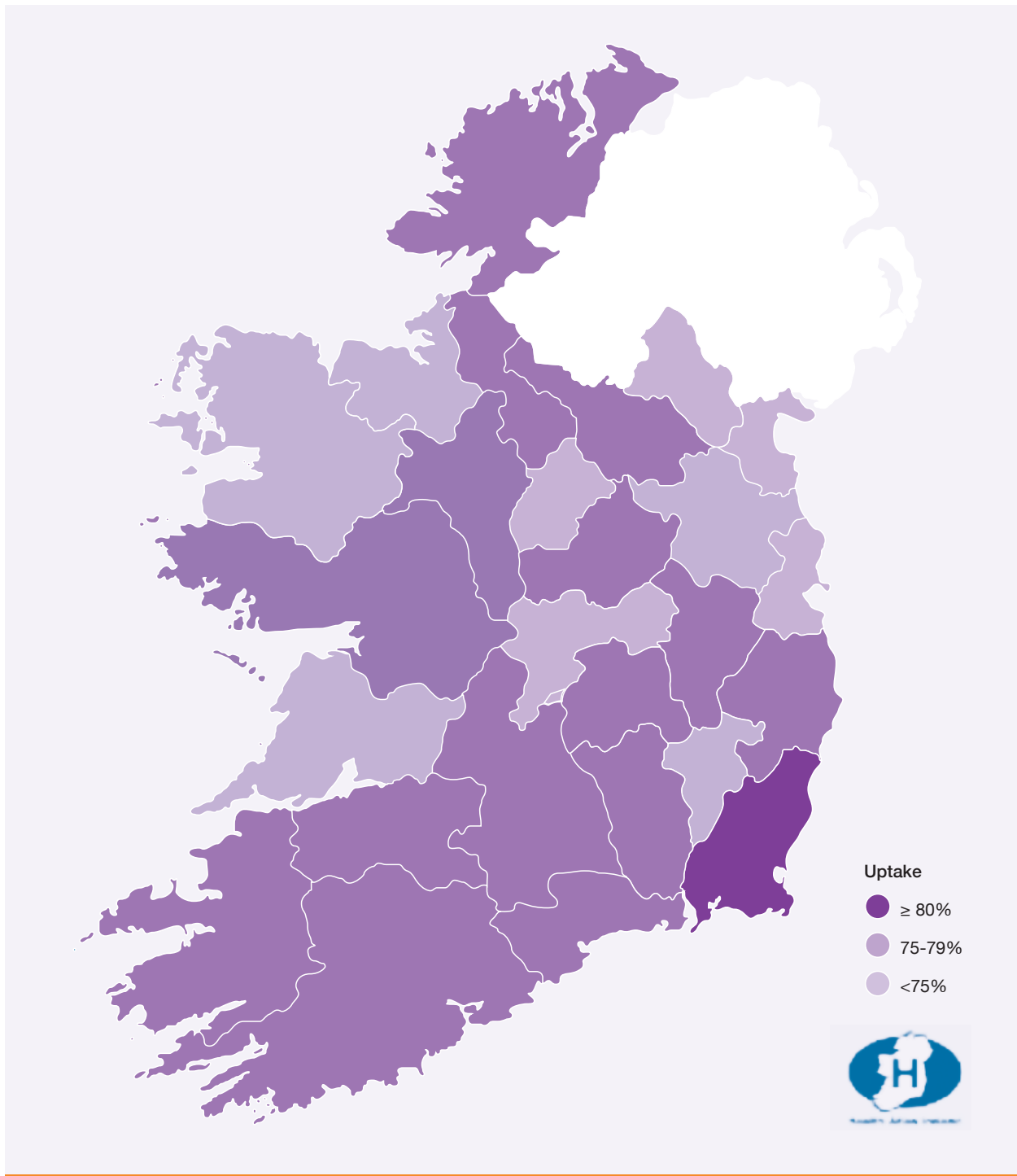
Figure 6: Subsequent invited population 2018-2019 – eligible women uptake rate by age group and year



Screening activity by county

BreastCheck delivers screening on a two-yearly cycle to all regions of the country. The overall uptake of screening over the two year screening interval 2018-2019 is shown in Figure 7. All counties surpassed the standard of 70% uptake while one county achieved over 80% uptake. While these achievements are to be celebrated it must be noted that there are many pockets of areas where the standard of 70% uptake is not achieved. These areas generally correspond to areas of deprivation such as inner city areas of large urban centres. BreastCheck dedicates additional promotional resources to these areas to increase uptake and to ensure women in these areas can avail of their screening opportunities.

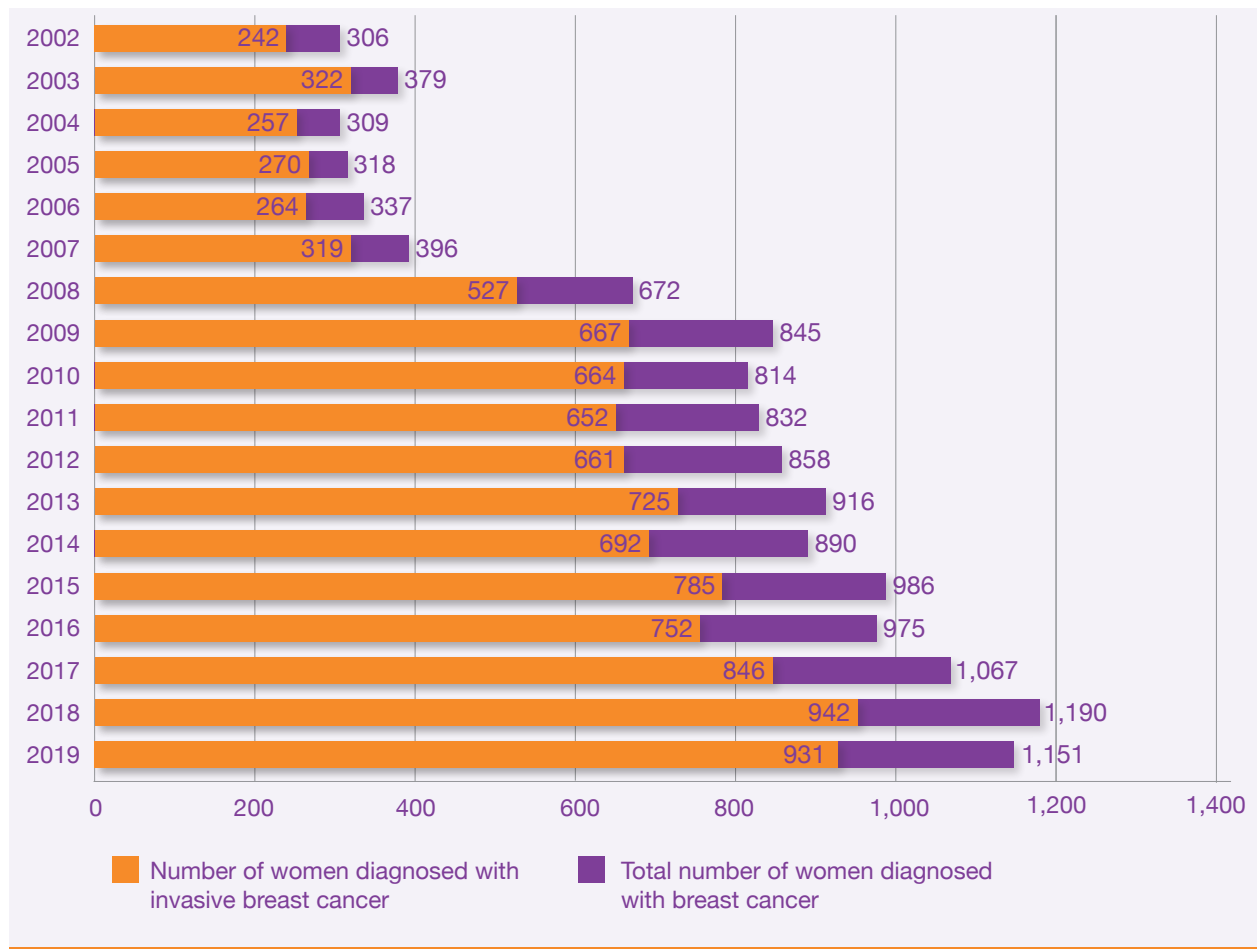
Figure 7: Uptake of screening by county 2018-2019



Cancers detected

Figure 8 shows an increasing number of **invasive cancers** (in orange) detected over time by the programme. Each of these cancers represents an early intervention and usually a good prognosis. **Ductal carcinoma in situ** is also detected by the screening programme, representing approximately 20% on average of all cancers detected.

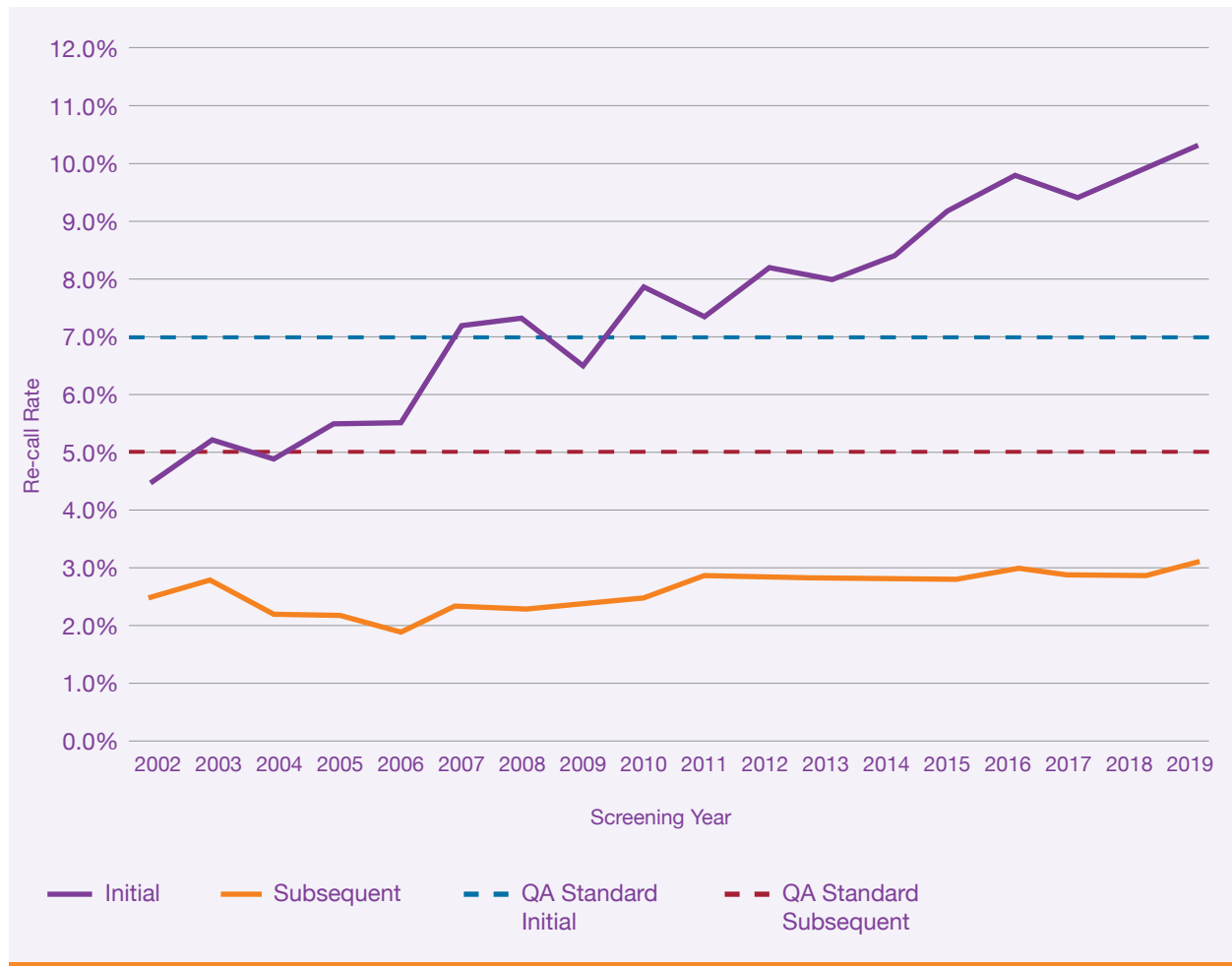
Figure 8: Number of women diagnosed with breast cancer overall and the proportion with an invasive breast cancer 2002-2019



Screening quality

Among women screened for the first time, the re-call rate remains outside the standard (<7%) at 10.3% in 2019, having increased from 9.9% in 2018; this continues the upward trend seen since 2006 (Figure 9, Table 2).

Figure 9: Re-call rate by year and invitation type (with relevant standards)



The benign open biopsy rate is outside the programme standard for women being screened for the first time at 3.9 in 2018 and 4.2 in 2019 (standard is less than 3.6 per 1,000 women screened). The invasive cancer detection rates for women aged 50 to 51 years, and 52 to 64 years, are well above the required standards in both 2018 and 2019. In both years over 40% of all invasive cancers detected in this first screened group are small (less than 15mm). The percentage of ductal carcinoma in situ (DCIS) as a proportion of all cancers was within the standard in 2018 (19.9%) however this has increased to 25.1% in 2019, and is outside the expected range of 10 to 20% of cancers detected (Table 2).

Table 2: Screening quality – first screen

Performance parameter	2018	2019	Standard
Number of women screened for first time	30,314	23,721	
Number of women re-called for assessment	2,988	2,434	
Re-call rate	9.9%	10.3%	<7%
Number of benign open biopsies	117	99	
Benign open biopsy rate per 1,000 women screened	3.86	4.17	<3.6
Number of women diagnosed with cancer	321	231	
Cancer detection rate per 1,000 women screened	10.59	9.74	
Number of women with ductal carcinoma in situ (DCIS)	64	58	
Pure DCIS detection rate per 1,000 women screened	2.11	2.45	
Women diagnosed with DCIS as % of all women diagnosed with cancer*	19.9%	25.1%	10-20%
Number of women diagnosed with invasive cancer	257	173	
Invasive cancer detection rate per 1,000 women screened	8.48	7.29	
Invasive cancer detection rate per 1,000 women screened for women aged 50-51	7.21	6.31	>2.9
Invasive cancer detection rate per 1,000 women screened for women aged 52-64	11.08	9.34	>5.2
Number of women with invasive cancers <15mm	110	70	
Women with invasive cancers <15mm as % of all women with invasive cancers	42.8%	40.5%	≥40
Standardised detection ratio (SDR)	1.72	1.48	>0.75

* See Table 4 for details of DCIS grade

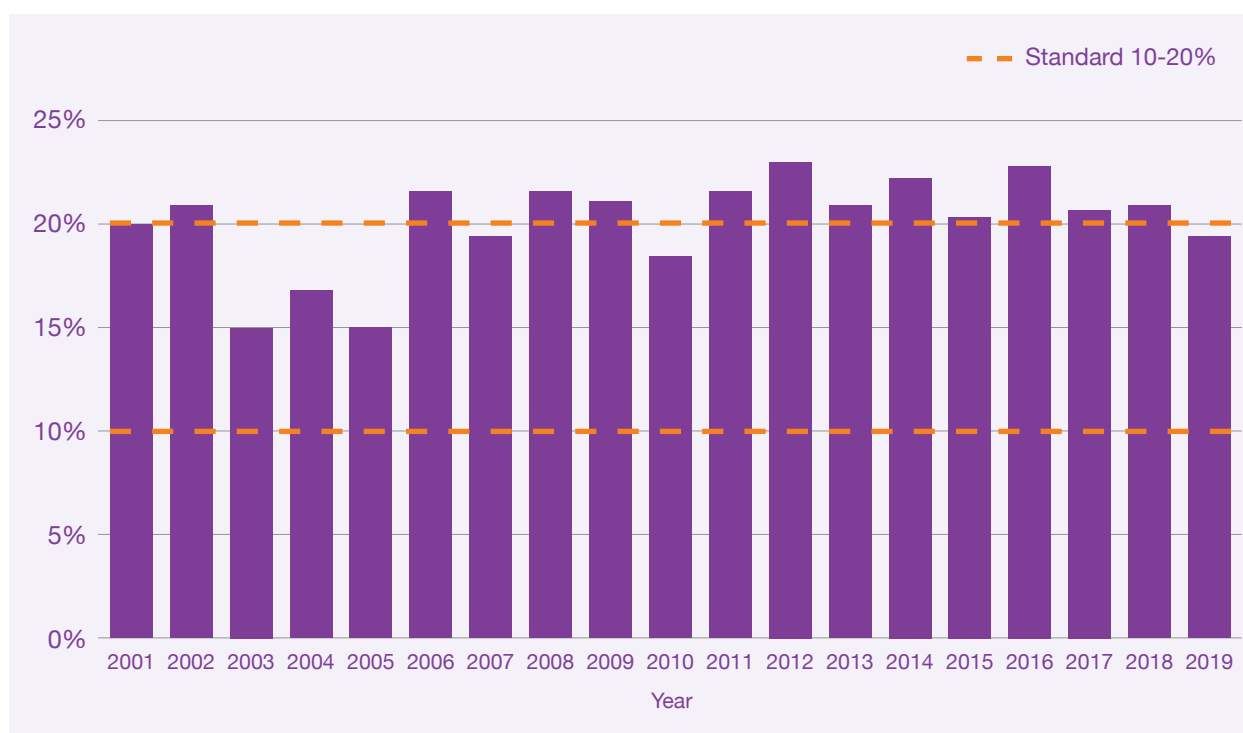
Among women attending for subsequent screening, the re-call rate is lower than among initial women, at 2.9% and 3.1% for 2018 and 2019 respectively, which is within the standard (<5%) (Figure 9, Table 3). Approximately half of all invasive cancers detected are in the very small category of <15mm with the best prognosis. The percentage of ductal carcinoma in situ (DCIS) as a proportion of all cancers among women invited and attending for subsequent screening in 2018 is outside the standard (10-20%) but has decreased to 17.6% in 2019 and is now within the standard. The overall rate of DCIS since the beginning of the programme is shown in Figure 10 and is within standard for 2019. The rate of benign open biopsy is within the programme standard (<2 per 1,000 women screened) for women at subsequent screening in both years. The standardised detection ratio (SDR) is above the expected standard (0.75) for both first screening and subsequent screening (Table 2 and Table 3).

Table 3: Screening quality – subsequent screen

Performance parameter	2018	2019	Standard
Number of women returning for subsequent screen	138,268	143,854	
Number of women re-called for assessment	4,013	4,389	
Re-call rate	2.9%	3.1%	<5%
Number of benign open biopsies	112	110	
Benign open biopsy rate per 1,000 women screened	0.81	0.76	<2
Number of women diagnosed with cancer	869	920	
Cancer detection rate per 1,000 women screened	6.28	6.40	
Number of women with ductal carcinoma in situ (DCIS)	184	162	
Pure DCIS detection rate per 1,000 women screened	1.33	1.13	
Women diagnosed with DCIS as % of all women diagnosed with cancer*	21.2%	17.6%	10-20%
Number of women diagnosed with invasive cancer	685	758	
Invasive cancer detection rate per 1,000 women screened	4.95	5.27	
Number of women with invasive cancers <15mm	337	400	
Women with invasive cancers <15mm as % of all women with invasive cancers	49.2%	52.8%	≥40%
Standardised detection ratio (SDR)	1.62	1.73	>0.75

* See Table 4 for details of DCIS grade

Figure 10: DCIS as a proportion of all cancers (expected 10-20%)



Ductal carcinoma in situ (DCIS)

DCIS is an early form of breast cancer where the cancer cells are inside the milk ducts and have not spread within or outside the breast. DCIS can also be described as pre-cancerous, pre-invasive, non-invasive or intraductal. If DCIS is not treated, the cells may spread from the ducts into the surrounding breast tissue and become an invasive cancer (one that can spread to other parts of the body). DCIS can be low, intermediate or high grade. It is thought that low grade DCIS is less likely to become an invasive cancer than intermediate or high-grade DCIS.

Over 60% of all DCIS detected by BreastCheck in 2018 and 2019 were high grade, with almost a further quarter of intermediate grade (Table 4). This corresponds to 17% of total cancers detected or 1.2 per 1,000 women screened in 2019 and 18% of total cancers detected or 1.2 per 1,000 women screened in 2018.

While not every woman with DCIS will develop invasive cancer, even if not treated, it is not possible to tell which DCIS will develop into invasive cancer and which will not. As a result, some women will get treatment for a DCIS that may never have become an invasive cancer.

Table 4: Grade of DCIS 2018-2019

DCIS Grade	2018						2019					
	First screen		Subsequent screen		Total		First screen		Subsequent screen		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Low	5	7.8	21	11.4	26	10.5	10	17.9	12	7.4	22	10.0
Intermediate	13	20.3	48	26.1	61	24.6	12	20.7	40	24.7	52	23.6
High	43	67.2	106	57.6	149	60.1	36	62.1	108	66.7	144	66.5
Grade not assessable	3	67.2	9	4.9	12	4.8	0	0	2	1.2	2	0.9
Total	64	100	184	100	248	100	58	100	162	100	220	100

Screening outcome by age group

In women screened for the first time, the overall cancer detection rate (CDR) generally rises with increasing age, reflecting the fact that increasing age is an important risk factor for breast cancer (Table 5, Figure 11). However, the very small number of women over 65 screened for the first time distorts rates in this age group (Table 5).

Benign open biopsy rates are highest among women aged 55 to 59 screened for the first time (Table 5, Figure 12).

Table 5: Screening outcome – first screen by age group 2018-2019

Performance parameter	2018				2019			
	50-54	55-59	60-64	65+	50-54	55-59	60-64	65+
Number of women screened	27,951	1,412	635	252	21,762	1,175	475	251
Percentage of women re-called for assessment	9.7%	11.2%	10.7%	12.3%	10.1%	11.7%	12.8%	12.4%
Benign open biopsy rate per 1,000 women screened	3.90	3.54	3.15	3.97	4.18	4.26	4.21	0.00
Overall cancer detection rate per 1,000 women screened	10.30	10.62	17.32	27.78	9.10	18.72	14.74	11.95

Figure 11: Cancer Detection Rate per 1,000 women screened – first screen by age group and year

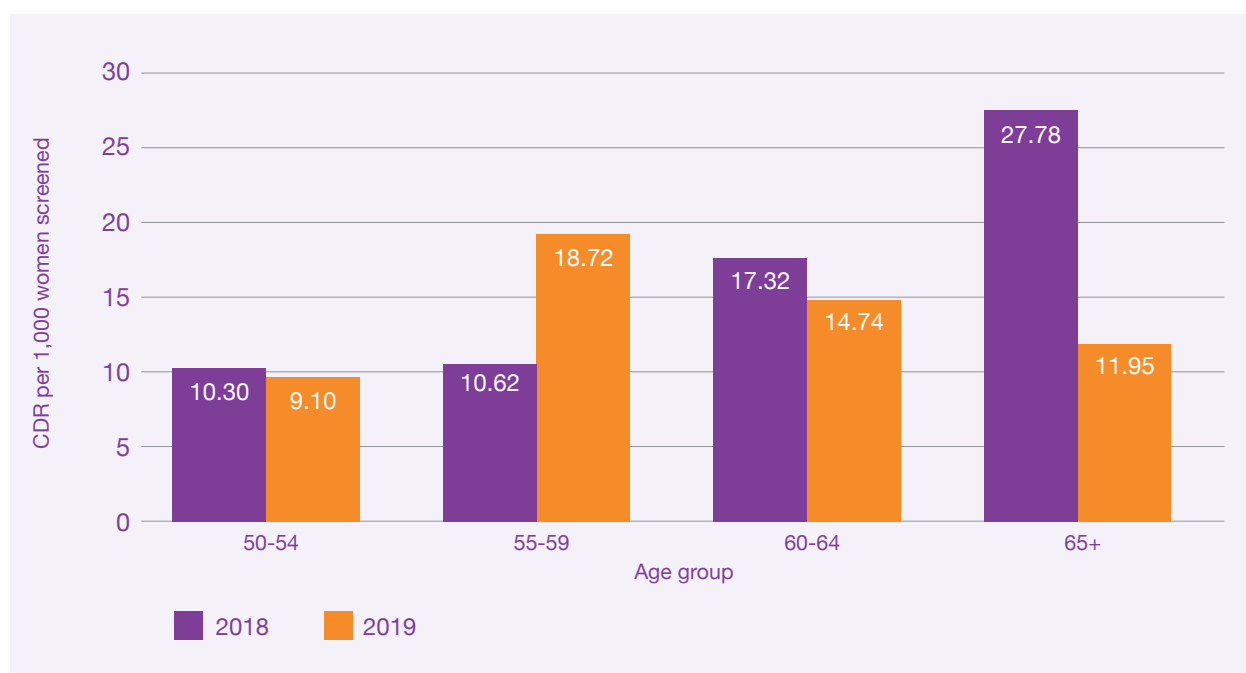
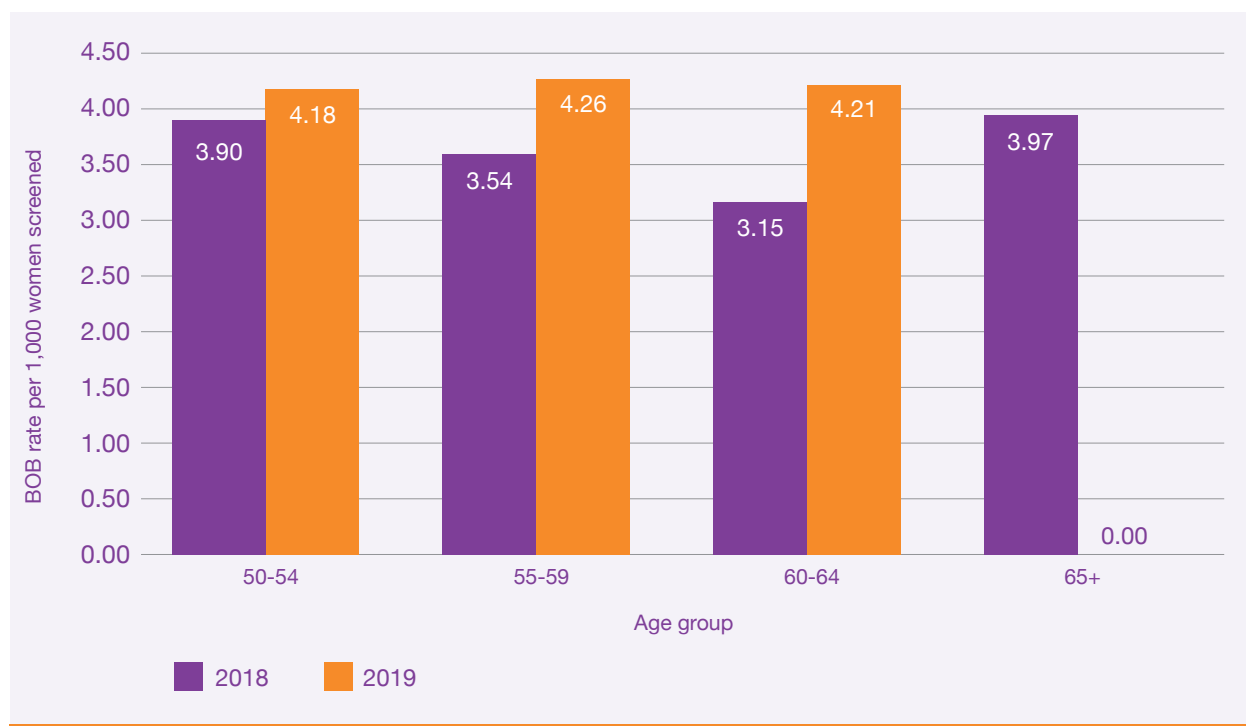


Figure 12: Benign open biopsy rate per 1,000 women screened – first screen by age group and year



In women screened for a subsequent time, the overall cancer detection rate rises with increasing age, again reflecting the importance of age as risk factor for breast cancer (Table 6, Figure 13). The benign open biopsy rate for 2018 and 2019 is within target in all age groups and generally decreases with age (Figure 14).

Table 6: Screening Outcome – subsequent screen by age group 2018-2019

Performance parameter	2018				2019			
	50-54	55-59	60-64	65+	50-54	55-59	60-64	65+
Number of women screened	23,915	47,552	40,344	26,445	25,264	47,818	42,831	27,930
Percentage of women re-called for assessment	3.5%	2.8%	2.6%	2.9%	4.0%	2.9%	2.8%	2.8%
Benign open biopsy rate per 1,000 women screened	0.92	0.93	0.62	0.76	1.31	0.79	0.44	0.72
Overall cancer detection rate per 1,000 women screened	4.89	5.40	6.92	8.02	4.79	5.79	7.66	6.95

Figure 13: Cancer Detection Rate per 1,000 women screened – subsequent screen by age group and year

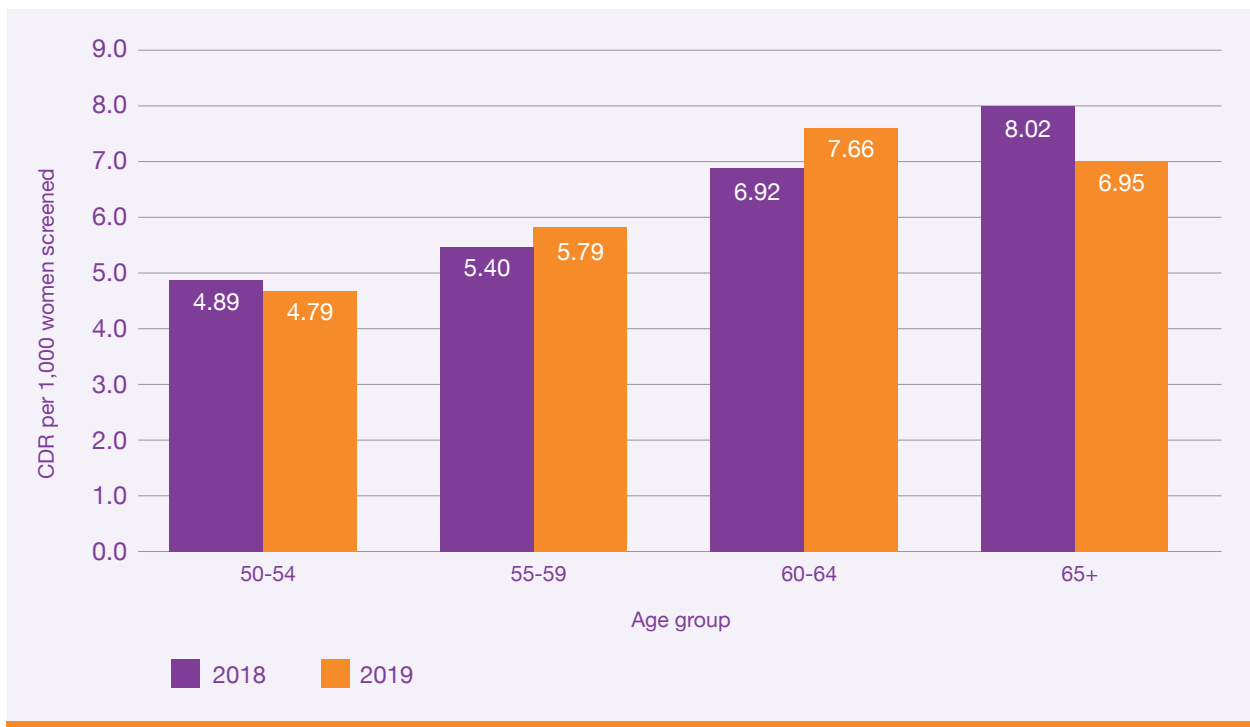
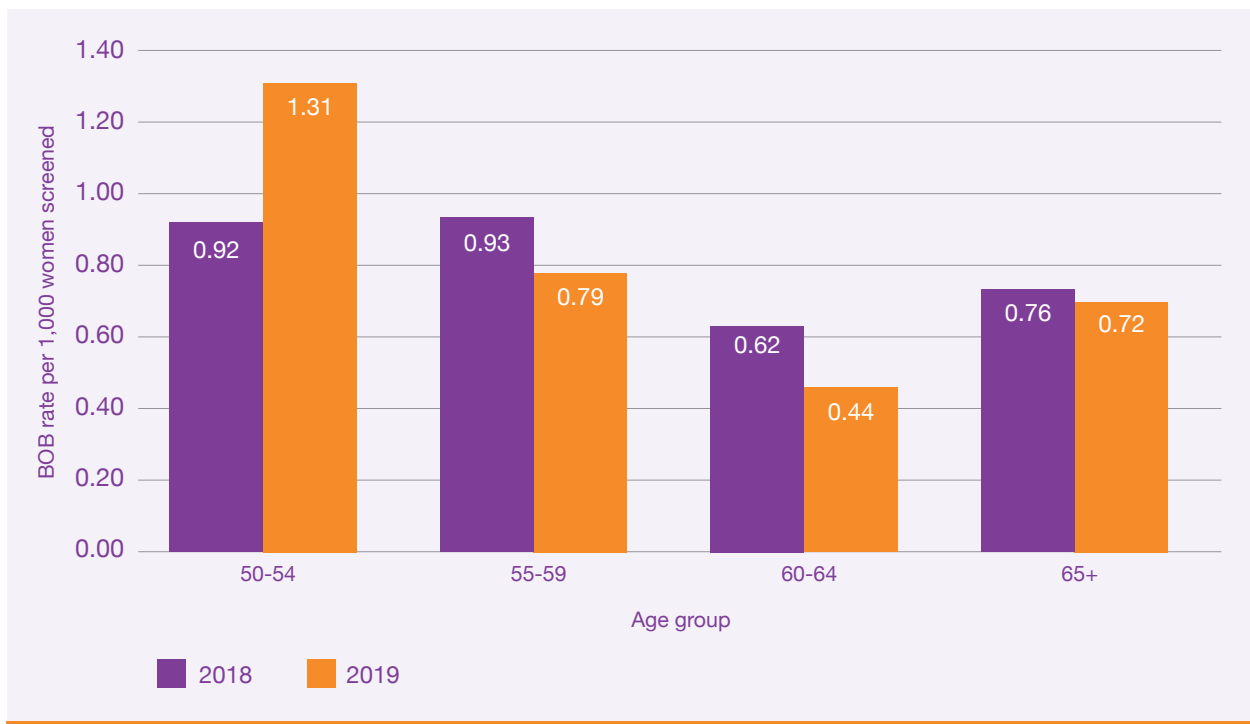


Figure 14: Benign open biopsy rate per 1,000 women screened – subsequent screen by age group and year



Cancers with non-operative diagnosis

At first screening in 2018 and 2019, over 95% and 92% of invasive cancers respectively were diagnosed by core biopsy, performed by radiologists at the assessment clinic prior to any surgery. Among subsequent women the proportions were higher, with 96% in 2018 and 97% in 2019 (Figures 15a and 15b). This is well above the standard of greater than or equal to 70%.

Figure 15a: Cancers with non-operative diagnosis – first screen

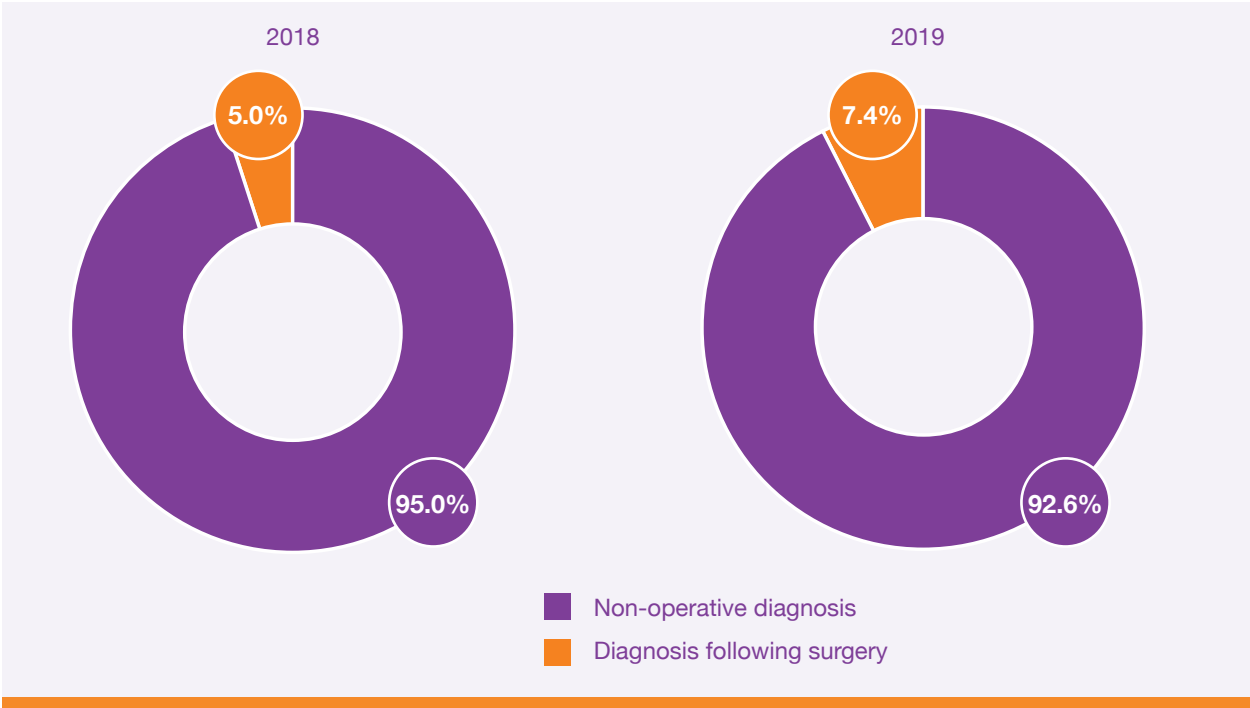
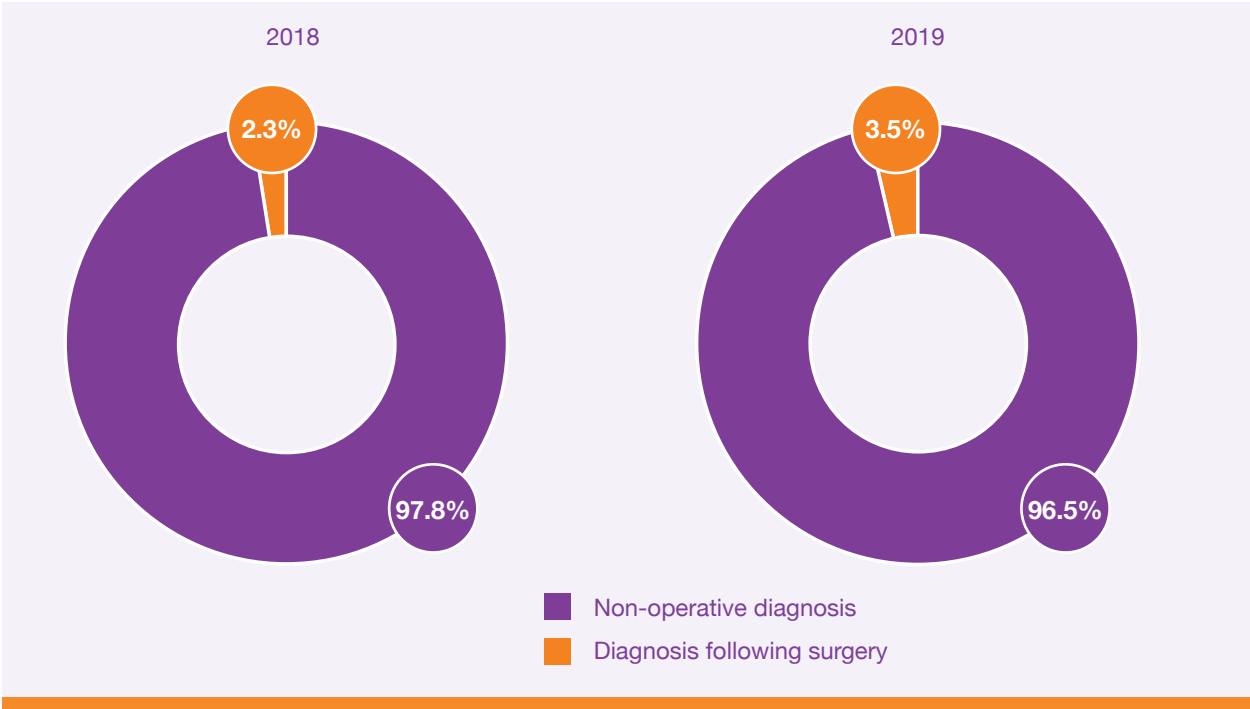


Figure 15b: Cancers with non-operative diagnosis – subsequent screen



BreastCheck Women's Charter

BreastCheck strives to achieve or surpass all standards outlined in the programme's Women's Charter, which is underpinned by the *Guidelines for Quality Assurance in Mammography Screening*.³ The programme performance against the commitments identified in the Charter during 2018 and 2019 is outlined in Table 7.

Most women received seven days' notice of an appointment and received their mammogram results within three weeks. In both reporting years approximately 88% of women re-called for assessment following a screening mammogram were offered an assessment appointment within two weeks of an abnormal mammogram result.

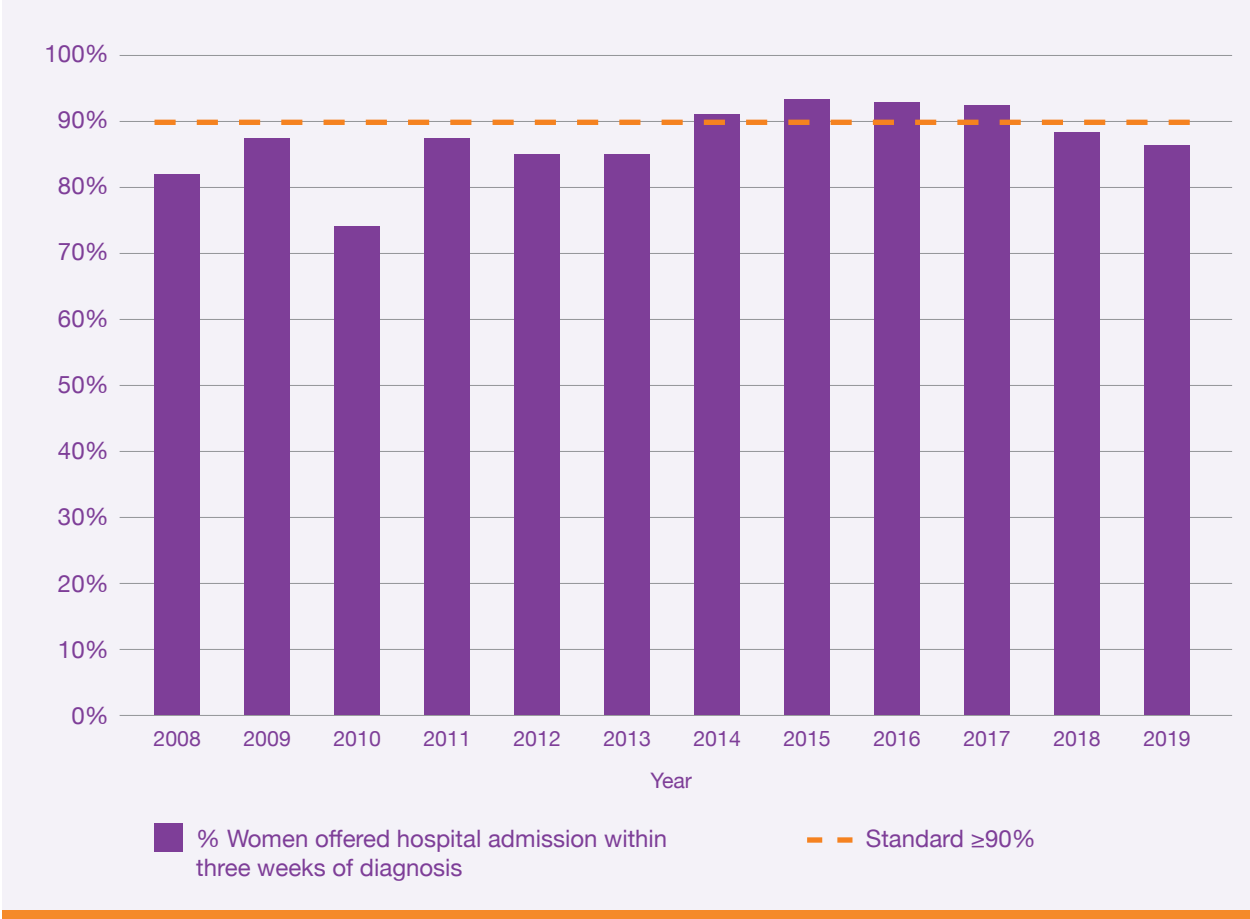
There are some opportunities for improvement, with the percentage of women re-invited within 24 months of invitation at previous rounds at 51% in 2019, which has increased from 2018 and remains below the programme target of 90%. However, over 91% of women were re-invited for screening within 27 months of invitation at previous round in 2019 and 87% in 2018. The proportion of eligible women invited for screening within two years of becoming known to the programme is approximately 80% for both years, and is below the programme standard. However, over 92% of eligible women were invited for screening within 27 months of becoming known to the programme in 2019 and 89.7% in 2018.

Table 7: BreastCheck Women's Charter parameters

Performance parameter	2018	2019	Women's Charter Standard
Women who received seven days' notice of appointment	98.7%	98.1%	≥90%
Women who were sent results of mammogram within three weeks	99.2%	99.1%	≥90%
Women offered an appointment for Assessment Clinic within two weeks of notification of abnormal mammographic result	87.6%	88.2%	≥90%
Women given results from Assessment Clinic within one week	91.4%	91.8%	≥90%
Women offered hospital admission for treatment within three weeks of diagnosis of breast cancer	88.0%	86.1%	≥90%
Women re-invited for screening within 24 months of invitation at previous round	45.3%	51.0%	≥90%
Women re-invited for screening within 27 months of invitation at previous round	87.2%	91.1%	
Women eligible for screening invited for screening within two years of becoming known to the programme	79.4%	81.8%	≥90%
Women eligible for screening invited for screening within 27 months of becoming known to the programme	89.7%	92.4%	

The percentage of women with cancer offered hospital admission within three weeks of diagnosis was 88.0% in 2018 and 86.1% in 2019 which is below the standard ($\geq 90\%$) in both years. Figure 16 demonstrates that this has been an ongoing challenge for the programme.

Figure 16: Women offered hospital admission for treatment within 3 weeks of diagnosis of breast cancer



References

1. *Cancer in Ireland 1994-2012: Annual Report of the National Cancer Registry*, National Cancer Registry Ireland; 2014
2. *European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis, Fourth Edition*, European Commission, Belgium; 2006
3. *Guidelines for Quality Assurance in Mammography Screening, Fourth Edition*, BreastCheck, Dublin; 2015



An tSeirbhís Náisiúnta Scagthástála
National Screening Service


BreastCheck
An Clár Náisiúnta Scagthástála Cioch
The National Breast Screening Programme