BreastCheck

An Clár Náisiúnta Scagthástála Cíoch

The National Breast Screening Programme

Programme Report

2016-2017

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
www.breastcheck.ie

BreastCheck
An Clár Náisiúnta Scagthástála Cíoch
The National Breast Screening Programme

An tSeirbhís Náisiúnta Scagthástála
National Screening Service
Cuid d'Fheidhmeannacht na Seirbhíse Sláinte. Part of the Health Service Executive.

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BreastCheck
An Clár Náisiúnta Scagthástála Cíoch
The National Breast Screening Programme

Introduction from the
Head of Screening, National Screening Service

The National Screening Service (NSS), part of the Health Service Executive, has gained significant expertise, as well as a positive national and international reputation in the development, implementation and delivery of successful population based screening programmes in Ireland.

The NSS manages four screening programmes:

BreastCheck – The National Breast Screening Programme,

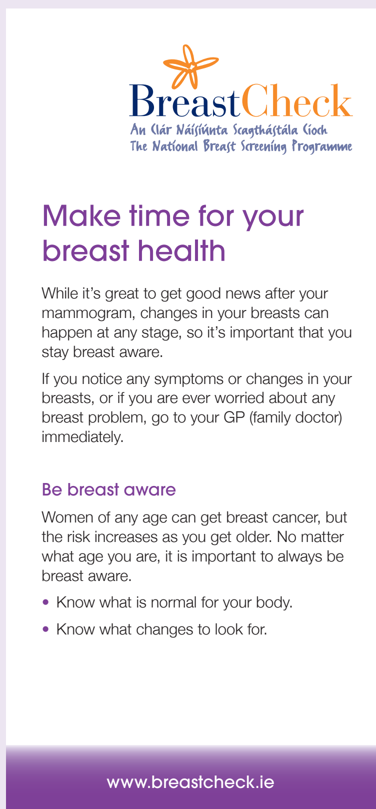
CervicalCheck – The National Cervical Screening Programme,

Diabetic RetinaScreen - The National Diabetic Retinal Screening Programme and

BowelScreen - The National Bowel Screening Programme.

The aim of BreastCheck is to reduce deaths from breast cancer by finding and treating the disease at the earliest possible stage. At this point, a detected cancer is usually easier to treat and there are greater treatment options available. Most women screened are found to be perfectly healthy. However, a small number of women will have a breast cancer detected. Women who have a breast cancer detected are supported throughout their journey by BreastCheck radiographers, radiologists, surgeons, pathologists, breast care nurses and administrative staff, all of whom are experienced and committed to providing care of the highest possible standard. As we publish this report in 2018, BreastCheck enters its 19th year in operation, and there is much to celebrate. The programme has provided more than 1.7 million mammograms to over 540,000 women and detected over 11,000 cancers. This report highlights the successes and challenges for the programme and relate to women invited by BreastCheck between 1 January and 31 December 2016 and screened or treated in 2016 and/or 2017.

"The programme has provided more than 1.7 million mammograms to over 540,000 women and detected over 11,000 cancers."



Since 2000, BreastCheck has been providing free mammograms to women aged 50 to 64 every two years. One significant achievement outlined in this report is the continuation of the BreastCheck age-range extension which was launched in late 2015 for women aged 65 years, with the aim of extending screening upward to women aged 69, over time. Given that this report clearly demonstrates that the incidence of breast cancer increases with age, this is a most welcome development.

Indeed, despite a national shortage of radiographers, BreastCheck has successfully delivered almost 140,000 screens and detected 975 cancers in the period 2016 to 2017.

Moving forward, 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.

Charles O'Hanlon
Head, National Screening Service

Highlights of 2016-2017

NO. ELIGIBLE WOMEN INVITED

186,181

WOMEN SCREENED

139,839

CONTINUING ROLL-OUT OF AGE EXTENSION TO WOMEN AGED 65 AND OVER

INVITED

13,000+

SCREENED

10,000+

NUMBER OF CANCERS DETECTED

975

WOMEN WHO WERE SENT RESULTS OF MAMMOGRAM WITHIN 3 WEEKS

99.2%

STANDARD IS **90%**

INCREASED UPTAKE ON PREVIOUS YEAR

2015=74.7%
2016=75.1%

WOMEN OFFERED HOSPITAL ADMISSION FOR TREATMENT WITHIN 3 WEEKS OF DIAGNOSIS OF BREAST CANCER

92.7%

STANDARD IS **90%**

Programme Report

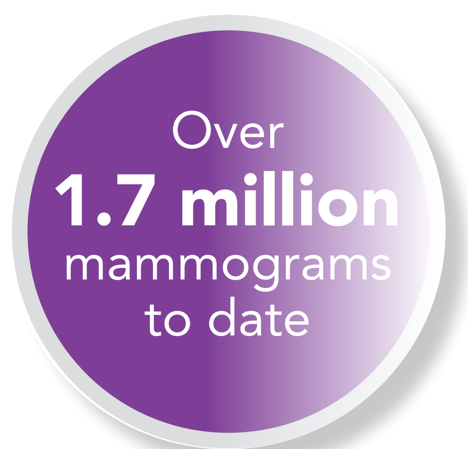
Background

Breast cancer is the most commonly diagnosed cancer in women in Ireland.* On average, over 2,900 women are diagnosed with invasive breast cancer in Ireland each year.[1]

BreastCheck – The National Breast Screening Programme has been providing free mammograms to women aged 50 to 64 every two years since 2000 and is currently extending the age-range on a phased basis. By 2021, all 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.[2,3]

To date the programme has provided more than 1.7 million mammograms to over 540,000 women and detected over 11,000 cancers.



* Excluding non-melanoma skin cancer.

Screening activity overall

The figures reported relate to women invited by BreastCheck for screening between 1 January and 31 December 2016. Some of these women may have been screened or treated in 2016 and/or early 2017.

Programme standards, against which performance is measured, are based on the 'European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis' (4th edition)[4] and the BreastCheck 'Guidelines for Quality Assurance in Mammography Screening' (4th edition).[5]

During 2016, 190,332 women were invited by BreastCheck for screening (Table 1, Figure 1). Of these, 186,181 were eligible for screening and 139,839 women attended for screening. This reflects a screening uptake rate based on the eligible population of 75.1 per cent, which is well above the standard of 70 per cent. This rate represents an increase of 0.4 per cent when compared to statistics from 2015.

BreastCheck can only be effective in achieving its goal of reducing the number of mortalities from breast cancer in the population if at least 70 per cent of eligible women attend for screening.

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 in 2016 was 1.32 (1.33 in 2015), surpassing the target of 0.75, which reflects continued high achievement in programme performance (Table 1).

Table 1: Screening activity overall 2016-2017

Performance parameter	2016
Number of women invited	190,332
Number of eligible women invited*	186,181
Number of women who opted out of the programme	1,517
Number of women attended for screening	139,839
Eligible women uptake rate* (includes women who opted out of the programme)	75.1%
Number of women re-called for assessment	5,897
Number of open benign biopsies	162
Number of cancers detected	975
Cancers detected per 1,000 women screened	7.0
Number of invasive cancers	752
Number of ductal carcinoma in situ (DCIS)	223
Number of invasive cancers < 15mm	386
Standardised detection ratio	1.32

* 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 not contactable by An Post, women who have a physical/mental incapacity (while BreastCheck attempts to screen all eligible women, certain forms of physical or mental incapacity may preclude screening), women with a terminal illness or other.

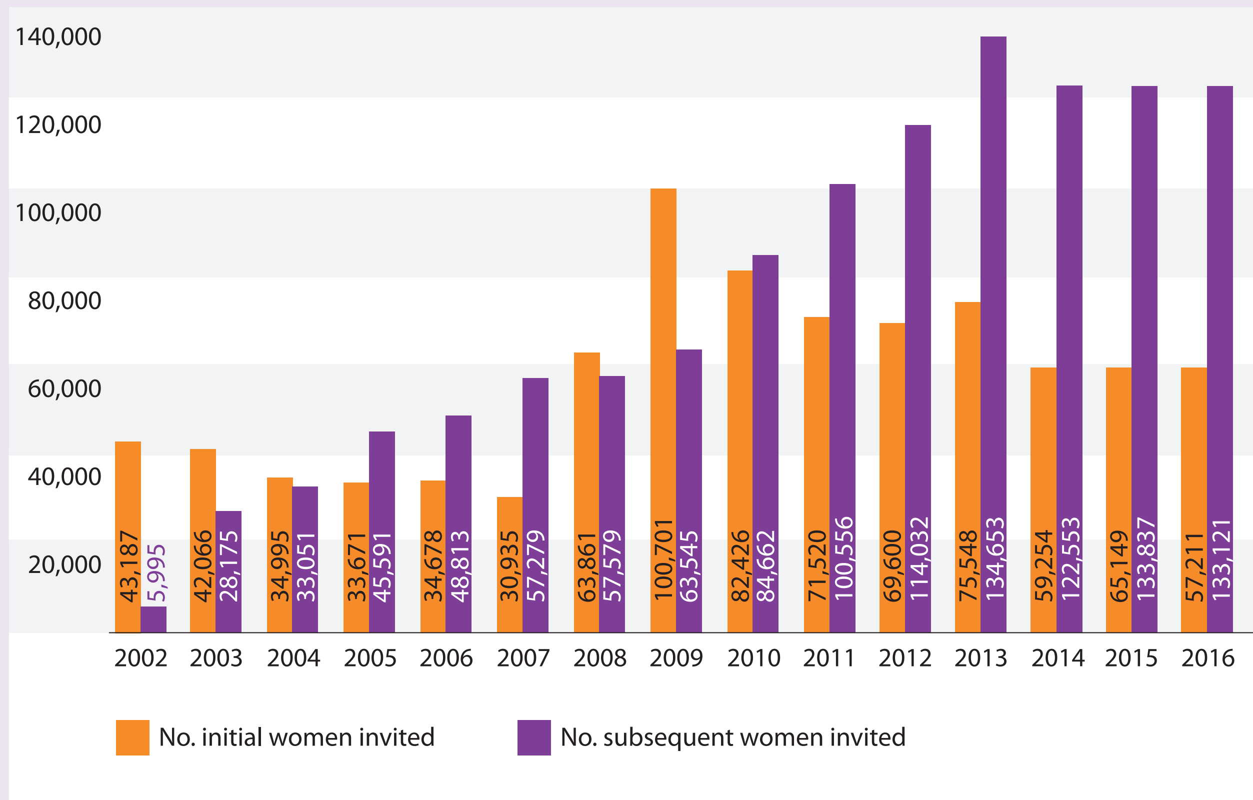
Suspended – women on extended holiday or working abroad, women who had a mammogram within the last year, women who opt to wait until the next round, women who wished to defer appointment, women who did not wish to reschedule or other.

Screening activity by screening invitation type

Initial women are those who have been invited to have their first BreastCheck mammogram. In 2016, the number of initial women invited decreased slightly from 2015 (Figure 1). There was also a decrease in the number of subsequent women invited in 2016; these are women who have previously attended BreastCheck and are being invited for the second or subsequent time.

In the last quarter of 2015, BreastCheck age-range extension was launched for women aged 65 and over. A small number of these women had never been invited before. This may have been because some women immigrated or returned to Ireland or perhaps they had recently made themselves known to the programme by self-registration. However, the majority had previously been invited for screening so the age extension resulted in a higher number of subsequent women and a small number of initial women aged 65 and over being invited.

Figure 1: Numbers invited 2002-2016 - initial and subsequent women



The total eligible population uptake rate was above the programme standard at 75.1 per cent. However, there remain significant differences between subsections of the screening cohort. The uptake rates among those women who have previously attended and are re-invited for subsequent screening remains high at over 87 per cent. However, among those invited for the first time, the eligible women uptake rate has decreased in 2016 and is below the standard of 70 per cent (Table 2).

Those who have previously been invited but did not attend are known as previous non-attenders (PNAs). The uptake rate among PNAs is low and is unchanged from 2015 at 11.2 per cent, 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.

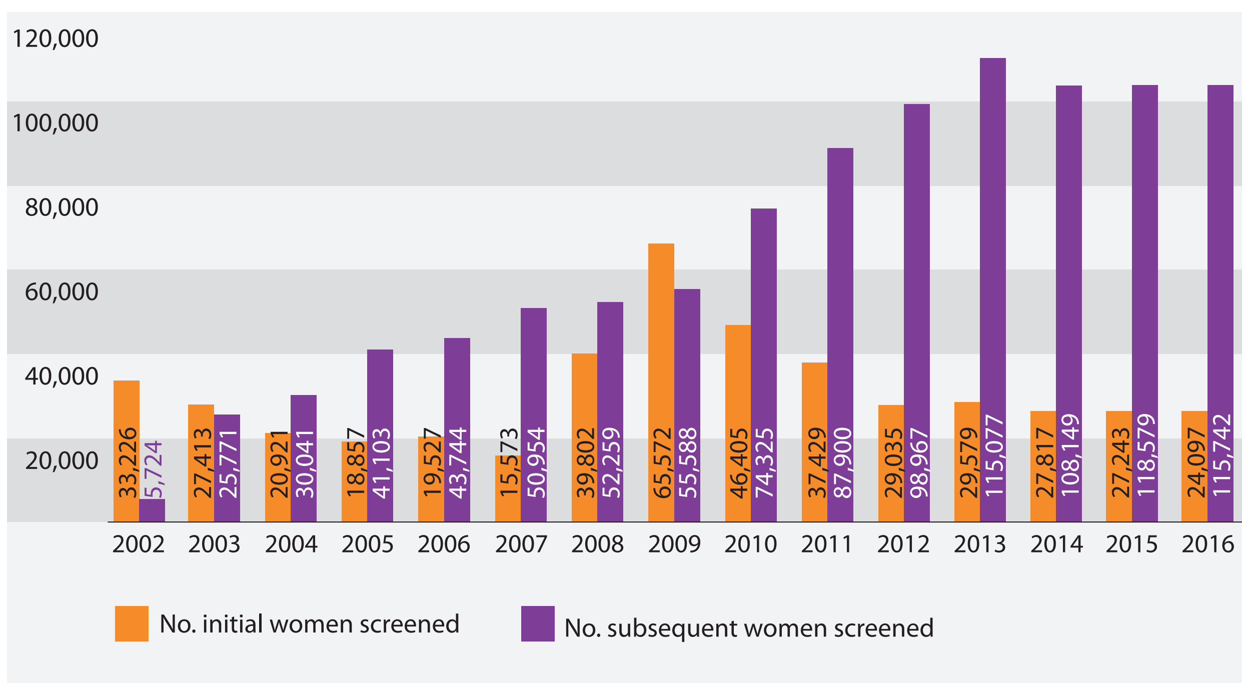
BreastCheck has a dedicated screening promotion department to seek to address lower uptake in sections of the population. They work with colleagues in the state and voluntary sector to encourage participation in BreastCheck among people who, due to issues of social exclusion or other reasons, may not be participating in BreastCheck. As part of the work of this team, training was provided to primary care healthcare workers for the travelling community in a number of counties, as well as to key staff working in residential settings for people with intellectual disability. The screening promotion team also attended a number of professional conferences for nurses working in these areas. Such engagement increases the awareness of screening among staff, with a consequent increase in engagement with BreastCheck.

Table 2: Screening activity by screening invitation type 2016-2017

Performance parameter	First invited population	Previous non-attenders	Subsequent population
Number of women invited	36,171	21,040	133,121
Number of eligible women invited	32,927	21,040	132,214
Number of women who opted out of the programme	49	0	1,468*
Number of women screened	21,746	2,351	115,742
Eligible women uptake rate (including women who opted out of the programme)	66.0%	11.2%	87.5%

* Opted out of the programme in a previous round, but remain in the target population.

Figure 2: Numbers screened 2002-2016 - initial and subsequent women



Screening activity by age group

Although, the total eligible population uptake rate at 75.1 per cent was above the programme standard of 70 per cent, there were significant differences between age groups. Among women invited for the first time, uptake remains highest in younger women aged 50 to 54, with lower uptake rates reported in higher age-groups (Table 3).

The age gradient is more marked among previous non-attenders, reflecting not only a difference due to age but also the effect of persistent non-attenders in the calculation of rates in the older age groups (Table 4). Among those invited for subsequent screening, there are continuing high uptake rates in all age groups (Table 5).

Table 3: First invited population 2016-2017

Performance parameter	Age group			
	50-54	55-59	60-64	65+
Number of women invited	30,889	2,915	1,956	316
Number of eligible women invited	28,936	2,218	1,447	238
Number of women who opted out of the programme	21	5	4	10
Number of women screened	20,767	543	321	53
Eligible women uptake rate (including women who opted out of the programme)	71.8%	24.5%	22.2%	22.3%

Table 4: Previous non-attenders population 2016-2017

Performance parameter	Age group			
	50-54	55-59	60-64	65+
Number of previous non-attenders invited	6,470	7,569	5,553	1,440
Number of women screened	1,308	695	295	51
Eligible population uptake rate	20.2%	9.2%	5.3%	3.5%

It is known that those clients who attend their first appointment are more likely to attend subsequent invitations for screening. This can be seen by the consistently high uptake rates among subsequent invited clients across all age groups, all reporting uptake rates of 86 per cent or higher, as shown in Table 5.

"It is known that those clients who attend their first appointment are more likely to attend subsequent invitations for screening."

Table 5: Subsequent invited population 2016-2017

Performance parameter	Age group			
	50-54	55-59	60-64	65+
Number of women invited	27,876	47,441	45,931	11,857
Number of eligible women invited	27,610	47,181	45,845	11,562
Number of women who opted out of the programme*	215	540	700	13
Number of women screened	24,868	41,296	39,414	10,149
Eligible women uptake rate (including women who opted not to consent)	90.1%	87.5%	86.0%	87.8%

* Opted out of the programme in a previous round, but remain in the target population.

Screening activity by county

BreastCheck delivers screening on a two-yearly cycle to all regions of the country. The overall eligible uptake rate of screening by county over the 2 year period up to end of 2016 is shown in Figure 3. It can be seen that all counties surpassed the standard of 70 per cent uptake, with seven counties achieving over 80 per cent uptake and one county achieving 90 per cent uptake.

Given these results, while there is much to celebrate, it must be noted that there are many pockets of areas within counties where the standard of 70 per cent uptake is not achieved, particularly in areas of deprivation e.g. inner cities. 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 3: Eligible uptake rates of screening by county for 2 year period ending 31 December 2016

% Uptake

- ≥ 90%
- 80% - <90%
- 70% - <80%

70km
40mls

Cancers detected

Of those women invited in 2016 for either the first or a subsequent time, 975 were diagnosed with a cancer, of which 752 were invasive (Figure 4). This is one of the highest numbers of cancers detected by the programme, since its inception.

Figure 4: Number of women diagnosed with breast cancer overall and the proportion with an invasive breast cancer 2002-2016

Year	Number of women diagnosed with invasive cancer	Total number of women diagnosed with breast cancer
2016	752	975
2015	785	986
2014	692	890
2013	725	916
2012	661	858
2011	652	832
2010	664	814
2009	667	845
2008	527	672
2007	319	396
2006	264	337
2005	270	318
2004	257	309
2003	322	379
2002	242	306

0 100 200 300 400 500 600 700 800 900 1000

Screening quality

Programme standards for screening quality are based on the 'European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis' (4th edition)[4] and the BreastCheck 'Guidelines for Quality Assurance in Mammography Screening' (4th edition)[5] which govern key aspects of the screening process as well as diagnosis, pathology and surgery.

It can be seen in Table 6 that, among first screened women, the invasive cancer detection rates for age 50 to 51 and 52 to 64 years are well above the required standards. In addition, the benign open biopsy rate is just at the programme standard of 3.6 per 1,000 women screened. Almost 45 per cent of all invasive cancers detected in this first screened group are small (less than 15mm), which means improved treatment outcomes for clients. Moreover, the percentage of ductal carcinoma in situ (DCIS) as a proportion of all cancers has decreased since 2015 (21.2%), and is now within the expected range of 10 to 20 per cent of cancers detected (Table 6).

Table 6: Screening quality: first screen

Performance parameter	2016	Standard
Number of women screened for first time	24,097	
Number of women re-called for assessment	2,368	
Re-call rate	9.8%	<7%
Number of benign open biopsies	86	
Benign open biopsy rate per 1,000 women screened	3.6	<3.6
Number of women diagnosed with cancer	214	
Cancer detection rate per 1,000 women screened	8.9	≥7
Number of women with ductal carcinoma in situ (DCIS)	41	
Pure DCIS detection rate per 1,000 women screened	1.70	
Number of women diagnosed with DCIS as % of all women diagnosed with cancer*	19.2%	10-20%
Number of women diagnosed with invasive cancer	173	
Invasive cancer detection rate per 1,000 women screened	7.18	
Invasive cancer detection rate per 1,000 women screened for women aged 50-51	6.73	>2.9
Invasive cancer detection rate per 1,000 women screened for women aged 52-64	8.35	>5.2
Number of women with invasive cancers <15 mm	77	
Number of women with invasive cancers <15 mm as % of all women with invasive cancers	44.5%	≥40%
Standardised detection ratio (SDR)	1.43	>0.75

* See Table 8 for details of DCIS grade

Among women attending for subsequent screening, the cancer detection rates for all ages are high at 6.57 per 1,000 women screened, well over the standard of 3.5 per 1,000 women screened. Indeed, over half of invasive cancers detected amongst subsequent women are less than 15mm and therefore more easily treatable. The rate of benign open biopsy is within the programme standards for women at subsequent screening (<2 per 1,000 women screened).

"Over half of invasive cancers detected amongst subsequent women are less than 15mm and therefore more easily treatable."

Table 7: Screening quality: subsequent screen

Performance parameter	2016	Standard
Number of women returning for subsequent screen	115,742	
Number of women re-called for assessment	3,529	
Re-call rate	3.0%	<5%
Number of benign open biopsies	76	
Benign open biopsy rate per 1,000 women screened	0.66	<2
Number of women diagnosed with cancer	761	
Cancer detection rate per 1,000 women screened	6.57	≥3.5
Number of women with ductal carcinoma in situ (DCIS)	182	
Pure DCIS detection rate per 1,000 women screened	1.57	
Number of women diagnosed with DCIS as % of all women diagnosed with cancer*	23.9%	10-20%
Number of women diagnosed with invasive cancer	579	
Invasive cancer detection rate per 1,000 women screened	5.0	>2.4
Number of women with invasive cancers <15mm	309	
Number of women with invasive cancers <15 mm as % of all women with invasive cancers	53.4%	≥40%
Standardised detection ratio	1.28	>0.75

* See Table 8 for details of DCIS grade

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 high-grade DCIS.

In women screened both for the first time and for a subsequent time, the proportion of low grade DCIS represented just 8.1 per cent of all DCIS detected (Table 8). This corresponds to 1.9 per cent of total cancers detected, or 1.3 per 10,000 women screened. Evidence has shown that many intermediate and high grade DCIS may progress to invasive cancers over time if left untreated. Almost 90 per cent of DCIS detected by BreastCheck was of intermediate or high grade.

Although not every woman with DCIS will develop invasive cancer, even if it is not treated, it is impossible 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 would never have become an invasive cancer.

Table 8: Grade of DCIS 2016-2017

Tumour Grade	First screen	Subsequent screen	Total
Low	6 (14.6%)	12 (6.6%)	18 (8.1%)
Intermediate	17 (41.5%)	39 (21.4%)	56 (25.1%)
High	18 (43.9%)	123 (67.6%)	141 (63.2%)
Grade not assessable	0 (0%)	8 (4.4%)	8 (3.6%)
Total	41 (100%)	182 (100%)	223 (100%)

"Almost 90 per cent of DCIS detected by BreastCheck was of intermediate or high grade."

Screening outcome by age group

In women screened both for the first time and for a subsequent time, the overall cancer detection rate rises with increasing age, reflecting the fact that increasing age is an important risk factor for breast cancer (Tables 9 & 10).

Benign open biopsy rates are highest among women aged 50 to 54 screened for the first time.

It must be noted that the very small number of women over 65 screened for the first time distorts rates in this age group (Tables 9).

"increasing age is an important risk factor for breast cancer"

Cancers with non-operative diagnosis 2016-2017

Over 94 per cent and almost 97 per cent of first screened and subsequently screened women with cancer respectively were diagnosed by core biopsy performed by radiologists at the assessment clinic prior to any surgery (Figure 5). This is well above the standard of greater than or equal to 70 per cent. A non-operative diagnosis means that a woman will know her diagnosis prior to any surgical intervention and can plan her surgical treatment in advance with the breast cancer surgeon. This has been an important feature of BreastCheck since its inception, highlighting the quality and expertise of both the radiology and pathology functions of the programme.

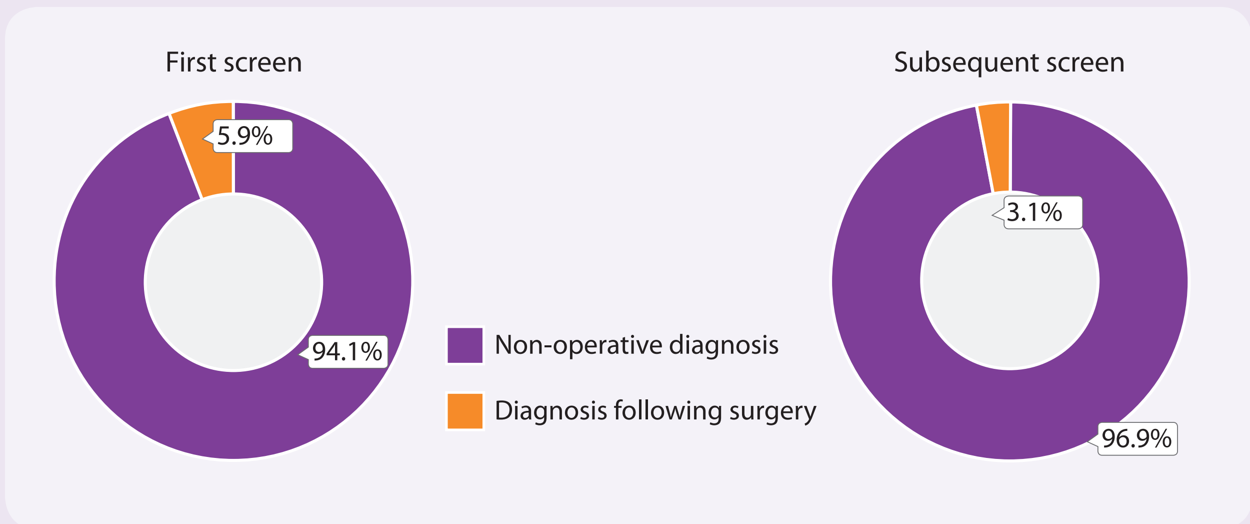
Table 9: Screening outcome: First screen by age group 2016-2017

Performance parameter	Age group			
	50-54	55-59	60-64	65+
Number of women screened	22,075	1,238	616	104
Percentage of women re-called for assessment	8.5%	9.4%	10.4%	9.6%
Benign open biopsy rate per 1,000 women screened	3.76	2.42	1.62	0.0
Overall cancer detection rate per 1,000 women screened	8.83	9.69	8.12	9.62

Table 10: Screening Outcome: Subsequent screen by age group 2016-2017

Performance parameter	Age group			
	50-54	55-59	60-64	65+
Number of women screened	24,868	41,296	39,414	10,149
Percentage of women re-called for assessment	3.5%	3.0%	2.8%	3.2%
Benign open biopsy rate per 1,000 women screened	0.88	0.70	0.53	0.49
Overall cancer detection rate per 1,000 women screened	5.39	6.01	7.43	8.47

Figure 5: Cancers with non-operative diagnosis 2016-2017



BreastCheck Women's Charter

BreastCheck seeks 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, 4th Edition.[5] The programme performed well against the majority of commitments identified in the Charter during 2016.

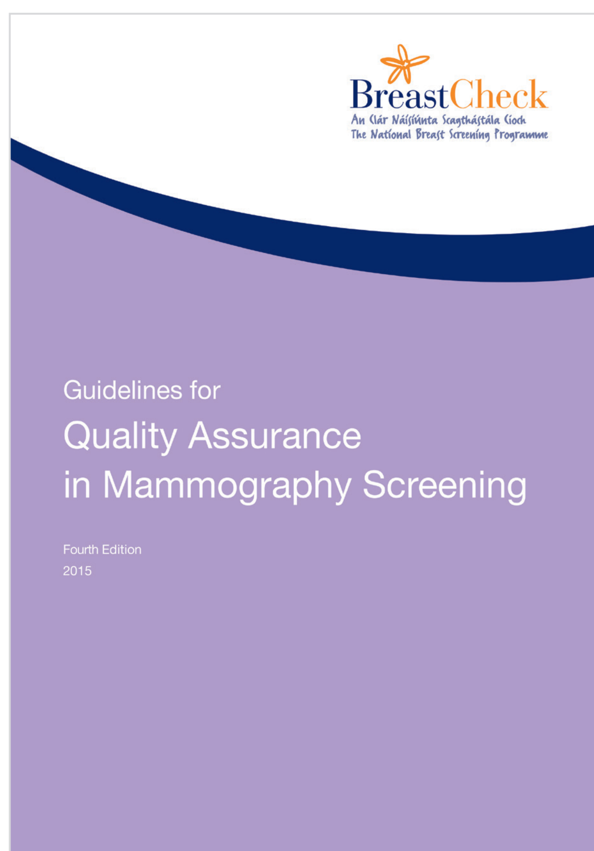
Most women received seven days notice of an appointment and received their mammogram results within three weeks. Almost 92 per cent of women re-called for assessment following a screening mammogram were offered an assessment appointment within two weeks of an abnormal mammogram (Table 11). The percentage of women with cancer offered hospital admission within three weeks of diagnosis has risen in recent years and is now above the standard of 90 per cent.

There are some areas that the programme continually focuses on to improve. The percentage of women re-invited within 24 months of their previous invitation is reported at 54.6 per cent of clients, which is below the programme target of 90 per cent. To address this, the programme has offered additional weekend screening sessions and continues to work to improve the recruitment and retention of radiographers. These efforts mean that, over 90 per cent of women were re-invited for screening within 28 months of invitation at previous round, shortly after the two year charter target.

"the programme has offered additional weekend screening sessions and continues to work to improve the recruitment and retention of radiographers."

Table 11: BreastCheck Women's Charter parameters

Performance parameter	2016	Women's Charter Standard
Women who received 7 days notice of appointment	98.6%	≥90%
Women who were sent results of mammogram within 3 weeks	99.2%	≥90%
Women offered an appointment for Assessment Clinic within 2 weeks of notification of abnormal mammographic result	91.8%	≥90%
Women given results from Assessment Clinic within 1 week	95.9%	≥90%
Women offered hospital admission for treatment within 3 weeks of diagnosis of breast cancer	92.7%	≥90%
Women re-invited for screening within 24 months of invitation at previous round	54.6%	≥90%
Women eligible for screening invited for screening within 2 years of becoming known to the programme	85.5%	≥90%



Conclusion

The publication of this report formally concludes the performance of BreastCheck's 17th year in operation. There is much to celebrate with a number of key important outcomes delivered:

Highlights

- Almost 140,000 mammograms provided
- 975 cancers detected, one of the highest in the history of the programme
- Increase in uptake rate since 2015
- Achieving timeline standard for hospital admission for primary treatment
- Continuing roll-out of age extension with over 13,000 women aged 65 and over being invited and over 10,000 screened

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An tSeirbhís Náisiúnta Scagthástála
National Screening Service

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Seirbhís Sláinte
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