BreastCheck

An Clár Náisiúnta Scagthástála Cioch

The National Breast Screening Programme

Programme Report

2013-2014

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Background

The National Screening Service (formerly the National Cancer Screening Service) encompasses four national programmes – BreastCheck – The National Breast Screening Programme, CervicalCheck – The National Cervical Screening Programme, BowelScreen – The National Bowel Screening Programme and Diabetic RetinaScreen – The National Diabetic Retinal Screening Programme. The National Screening Service is part of the Health and Wellbeing division of the Health Service Executive (HSE).

BreastCheck – The National Breast Screening Programme has been providing free mammograms to women aged 50-64 every two years, since 2000. The programme completed its first fully national screening round in 2010. To date the programme has provided over 1.2 million mammograms to over 450,000 women and detected over 7,900 cancers.

Introduction

The aim of BreastCheck is to detect breast cancers at the earliest possible stage. At this point, a detected cancer is usually easier to treat and there are greater treatment options available. The majority of women screened are found to be perfectly healthy however, a small number of women will have a cancer detected.

A specialised team supports women to make an informed decision on treatment. Throughout her interaction with the programme a woman will be supported by radiographers, radiologists, surgeons, pathologists, breast care nurses and administrative staff who are experienced and committed to optimising her care.

Screening statistics

The figures outlined in this report relate to women invited by BreastCheck for screening between 1 January and 31 December 2013. Some of these women may have been screened or treated in 2013 and/or 2014.

During 2013, 210,201 women were invited by BreastCheck for screening. Of those invited 206,028 were eligible for screening and 144,656 women attended for screening. This reflects an increase of over 16,000 women compared to the figure of 128,002 in 2012. Despite this increase in numbers of women screened, for the first time since screening began, the programme missed its known target population uptake rate of 70 per cent.

Through targeted communications, national and local screening promotion and tailored advertising campaigns, the programme aims to address this drop in the number of women attending their appointments. 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 invited women attend their screening appointments.

Among those women who have previously not attended an appointment, the acceptance rate 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.

The true benefit of screening lies in the repeat nature of the test. During the reporting period, uptake rates among those eligible women who have previously attended and are re-invited for subsequent screening remain above 85 per cent.

Of those invited in 2013 for either the first or a subsequent time, 916 women were diagnosed with a cancer.

The BreastCheck Women's Charter outlines the programme's commitment to women invited for screening in terms of programme standards and service delivery. During the reporting period, the programme performed strongly against the

standards outlined. Over 98 per cent of women received at least seven days' notice of their appointment and over 99 per cent received the results of their mammogram within three weeks.

Over 93 per cent of women were offered an appointment at an assessment clinic within two weeks of notification of an abnormal result and over 95 per cent received their results following assessment within one week. Although the number of women (84.6%) invited for screening within two years of becoming known to the programme remains outside the target of 90 per cent, it represents a significant improvement on the 2012 figure of 76.8 per cent. BreastCheck continues to strive to meet and where possible, surpass, all programme standards as part of its commitment to women.

Detection of DCIS

Ductal carcinoma in situ (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. Most women with DCIS have no symptoms. DCIS is graded as high, intermediate and low grade. If DCIS is not treated, the cells may spread from the ducts into the surrounding breast tissue and become an invasive cancer. Evidence has shown that many intermediate and high grade DCIS progress to invasive cancers over time if left untreated. These represent the majority of DCIS detected by BreastCheck.

For women invited in 2013, the number of low grade DCIS detected represented less than nine per cent of all DCIS detected and corresponds to less than two per cent of total cancers detected (1.2 per 10,000 women screened). As it is impossible to tell which DCIS will develop into invasive cancer, a small number of women will receive treatment for a DCIS that would never have become an invasive cancer.

Age range extension

Risk of breast cancer increases with age, and 76 per cent of breast cancer cases in Ireland occur in women over the age of 50.

The National Screening Service (NSS) welcomed the Government's announcement to extend the upper screening age of BreastCheck from 65 to 69. This is in fulfilment of a Programme for Government commitment and is in line with EU guidelines on breast cancer screening. Currently BreastCheck provides screening for women aged 50 to 64. With coverage extending to include women from 50 to 69, the total eligible population for BreastCheck will grow to approximately 540,000 women.

BreastCheck will substantially increase its staffing levels to accommodate the additional screening demands safely and effectively. Staff will be recruited across the range, including qualified radiographers for the four screening units and associated mobile units and medical consultants. Much of 2015 will primarily be a pre-implementation phase with screening of the extended cohort scheduled to commence in late 2015.

The BreastCheck model for implementation is to extend screening on a phased basis over three screening rounds. Capital investment will also be made.

This work will be carried out by the National Screening Service in tandem with the continued roll-out of the BowelScreen and Diabetic RetinaScreen programmes and development of CervicalCheck. Quality is paramount in the delivery of national population based screening programmes and ensuring quality assured outcomes is a fundamental principle of screening.

PROGRAMME STATISTICS RELATING TO 2013-2014

The figures reported relate to women invited by BreastCheck between 1 January and 31 December 2013 and who were screened or treated in 2013 and/or 2014. Programme standards, against which performance is measured, are based on 'European Guidelines for Quality Assurance in Mammography Screening' (4th edition) and the BreastCheck 'Guidelines for Quality Assurance in Mammography Screening' (3rd edition).

Screening numbers and related activity show a sustained increase this year (Table 1, Figure 1). In 2013 210,201 women were invited for screening. Of these 206,028 were eligible for screening and 144,656 women attended for screening, which reflects an increase of over 16,000 women compared to the figure of 128,002 in 2012. The uptake rate based on the eligible population surpassed the target uptake of 70 per cent, however the known target population acceptance rate was just below 70%.

The standardised detection ratio (SDR) is a useful composite score by which to measure the performance of a screening programme. The overall SDR in 2012 was 1.26 and is 1.23 for 2013 which reflects good overall programme performance by BreastCheck in the reporting year (Table 1).

Table 1: Screening activity overall

Performance parameter	2013
Number of women invited	210,201
Number of eligible women invited*	206,028
Number of women who opted not to consent	1,785
Number of women attending for screening	144,656
Eligible women acceptance rate* (including women who opted not to consent)	70.2%
Known target population acceptance rate**	68.2%
Number of women re-called for assessment	5,570
Number of open benign biopsies	241
Number of cancers detected	916
Cancers detected per 1,000 women screened	6.3
Number Invasive cancers	725
Number of in situ cancers	191
Number of invasive cancers < 15mm	341
Standardised Detection Ratio	1.23

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

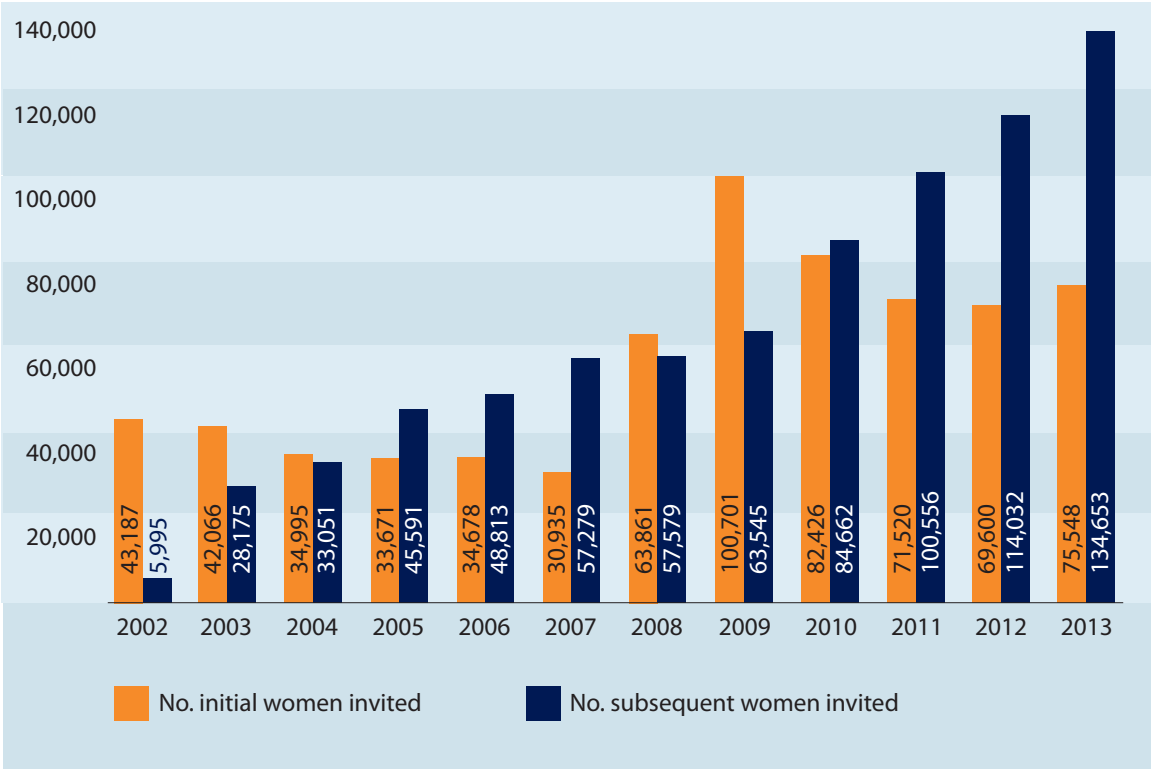
** Known target population refers to all women of screening age that are known to the programme.

Details of the ineligible categories

Excluded – women in follow-up care for breast cancer, 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), terminal illness or other.

Suspended – women on extended vacation 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 unwilling to reschedule or other.

Figure 1. Numbers invited 2002-2013 - initial and subsequent women



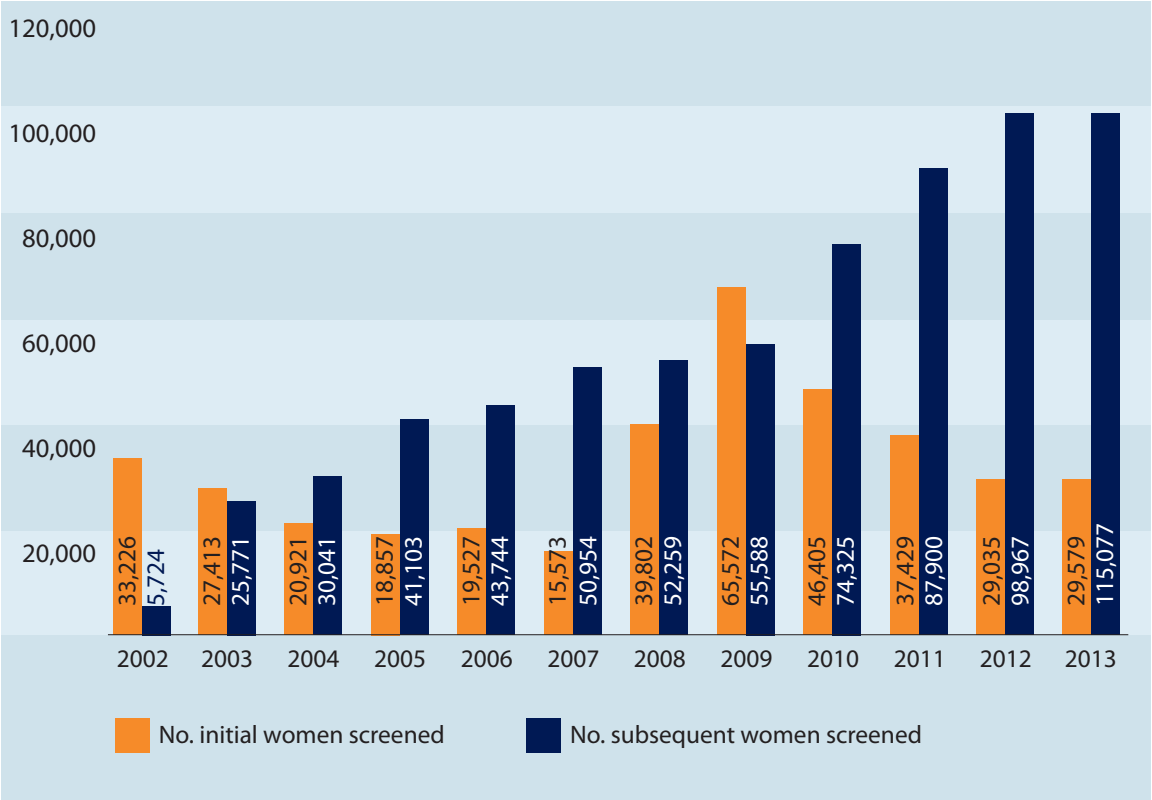
In 2013, the number of women invited for the first time increased slightly from 2012. The number of women invited for the second or subsequent time continued to rise. This reflects the progression towards a steady state, following completion in 2010 of the first round of screening following national expansion of BreastCheck. This also reflects small numbers of younger women entering the programme and large numbers of women re-attending BreastCheck (Table 2, Figures 1 and 2).

The eligible women and known target population acceptance rates have increased in those invited for the first time but remain outside the target of 70 per cent (Table 2). Among those who have previously not attended, the acceptance rate 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. Uptake rates among those women who have previously attended and are re-invited for subsequent screening remain well above 80 per cent.

Table 2: Screening activity by screening invitation type

Performance parameter	First invited population	Previous non-attenders	Subsequent population
Number of women invited	41,572	33,976	134,653
Number of eligible women invited	37,817	33,976	134,235
Number of women who opted out of the programme	42	0	1,743
Number of women screened	25,750	3,829	115,077
Eligible women uptake rate (including women who opted out of the programme)	68.1%	11.3%	85.7%
Known target population uptake rate	61.9%	11.3%	84.4%

Figure 2: Numbers screened 2002-2013 - initial and subsequent women



In 2013, there was a continued fall in uptake among women invited for the first time in both the 55-59 and 60-64 groups compared to previous years. Uptake remains highest in younger women invited for the first time (Table 3). The age gradient is 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 the pattern of similarly high uptake rates in all age groups persists (Table 5).

Table 3: First invited population

Performance parameter	Age group 50-54	55-59	60-64
Number of women invited	35,228	3,633	2,526
Number of eligible women invited	33,312	2,558	1,789
Number of women who opted out of the programme	30	4	8
Number of women screened	24,331	831	488
Eligible women uptake rate (including women who opted out of the programme)	73.0%	32.5%	27.3%
Known target population uptake rate	69.0%	22.8%	19.3%

Table 4: Previous non-attenders

Performance parameter	Age group 50-54	55-59	60-64
Number of previous non-attenders invited	10,585	12,930	10,409
Number of women screened	1757	1239	818
Known target population uptake rate	16.6%	9.6%	7.9%

Table 5: Subsequent invites

Performance parameter	Age group 50-54	55-59	60-64
Number of women invited	30,757	56,031	47,434
Number of eligible women invited	30,512	55,739	47,561
Number of women who opted out of the programme*	271	598	874
Number of women screened	26,666	47,962	39,819
Eligible women uptake rate (including women who opted not to consent)	87.4%	86.0%	83.7%
Known target population uptake rate	86.7%	85.6%	83.9%

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

Of those women invited in 2013 for either the first or a subsequent time, 916 were diagnosed with a cancer of which 725 were invasive (Figure 3). Among women screened for the first time the re-call rate at 8.0 per cent is lower than in 2012 (8.2 per cent) but remains above the standard. The invasive cancer detection rates for age 50-51 and 52-64 years are well within the required standards (Table 6), and over one third of all invasive cancers detected in this group were small (less than 15mm). The detection rate of ductal carcinoma in situ (DCIS) has decreased since 2012. Among women attending for subsequent screening the re-call rate is much lower, as is expected. In these women over half of invasive cancers detected were less than 15mm (Table 7). The SDR is above the expected standard for both first screening and subsequent screening.

Figure 3: Number of women diagnosed with breast cancer overall and the proportion with an invasive breast cancer 2002-2013

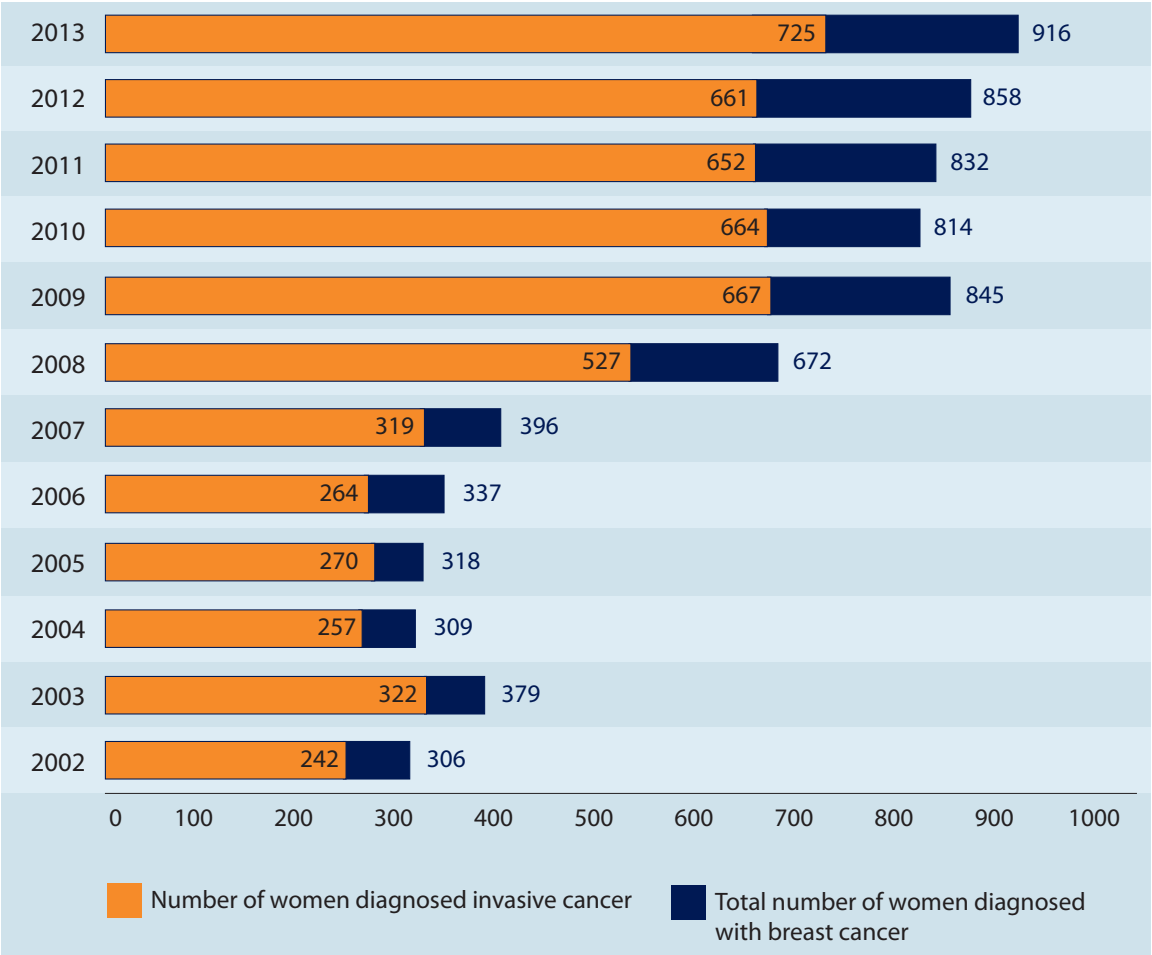


Table 6: Screening quality: First screen

Performance parameter	2013	Standard
Number of women screened for first time	29,579	
Number of women re-called for assessment	2,362	
Re-call rate	8.0%	<7%
Number of benign open biopsies	118	
Benign open biopsy rate per 1,000 women screened	3.99	<3.6
Number of women diagnosed with cancer	261	
Cancer detection rate per 1,000 women screened	8.82	≥7
Number of women with in situ cancer (DCIS)	60	
Pure DCIS detection rate per 1,000 women screened	2.03	
Number of women diagnosed with DCIS as % of all women diagnosed with cancer*	23.0%	10-20%
Number of women diagnosed with invasive cancer	201	
Invasive cancer detection rate per 1,000 women screened	6.80	
Invasive cancer detection rate per 1,000 women screened for women aged 50-51	6.16	>2.9
Invasive cancer detection rate per 1,000 women screened for women aged 52-64	8.18	>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	38.3%	≥40%
Standardised detection ratio	1.32	>0.75

* See Table 8 for detail of DCIS grade

Table 7: Screening quality: Subsequent screen

Performance parameter	2013	Standard
Number of women returning for subsequent screen	115,077	
Number of women re-called for assessment	3,208	
Re-call rate	2.8%	<5%
Number of benign open biopsies	123	
Benign open biopsy rate per 1,000 women screened	1.07	<2
Number of women diagnosed with cancer	655	
Cancer detection rate per 1,000 women screened	5.69	≥3.5
Number of women with in situ cancer (DCIS)	131	
Pure DCIS detection rate per 1,000 women screened	1.14	
Number of women diagnosed with DCIS as % of all women diagnosed with cancer*	20.0%	10-20%
Number of women diagnosed with invasive cancer	524	
Invasive cancer detection rate per 1,000 women screened	4.55	
Number of women with invasive cancers <15mm	264	
Number of women with invasive cancers <15 mm as % of all women with invasive cancers	50.4%	≥40%
Standardised detection ratio	1.20	>0.75

* See Table 8 for detail of DCIS grade

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). It is thought that low grade DCIS is less likely to become an invasive cancer than high-grade DCIS.

Table 8 shows that for women invited in 2013 the number of low grade DCIS represented less than nine per cent of all DCIS detected and corresponds to less than two per cent of total cancers detected or 1.2 per 10,000 women screened. Evidence has shown that many intermediate and high grade DCIS progress to invasive cancers over time if left untreated. These represent the majority of DCIS detected by BreastCheck.

However not every woman with DCIS will develop invasive cancer, even if it is not treated. But 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

Tumour grade	First screen	Subsequent screen*	Total
Low	9 (15.0%)	8 (6.1%)	17 (8.9%)
Intermediate	24 (40.0%)	33 (25.2%)	57 (29.8%)
High	27 (45.0%)	89 (67.9%)	116 (60.7%)
Total	60 (100%)	131 (100%)	191 (100%)

* One DCIS had grade not assessable

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 55-59 screened for the first time (Table 9). Overall rates of benign open biopsy are within the programme standards for women at subsequent screening, but are slightly outside the programme standards for women being screened for the first time (first screen <3.6 per 1,000 women screened; subsequent screen <2 per 1,000 women screened).

Table 9: Screening outcome: First screen by age group

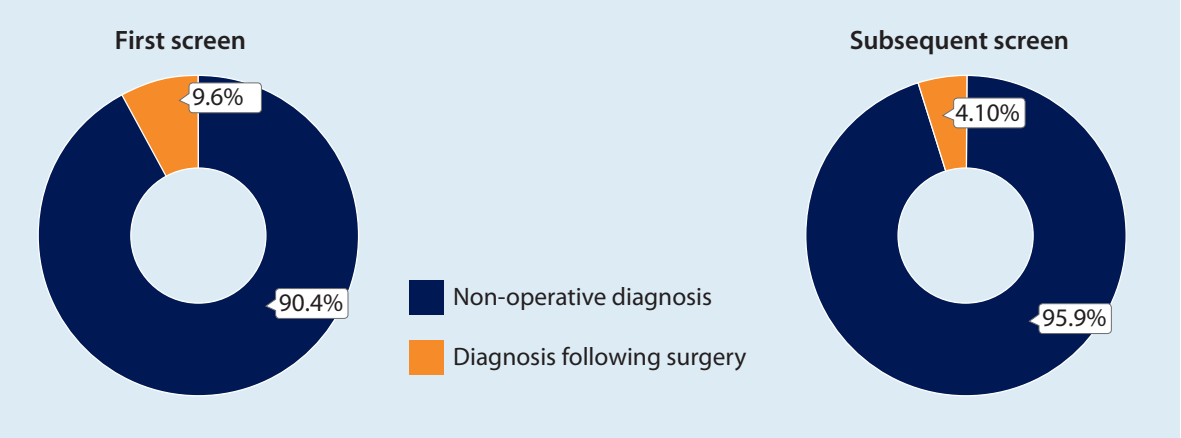
Performance parameter	Age group		
	50-54	55-59	60-64
Number of women screened	26,088	2,070	1,306
Percentage of women re-called for assessment	7.9%	8.0%	8.6%
Benign open biopsy rate per 1,000 women screened	4.02	4.35	2.30
Overall cancer detection rate per 1,000 women screened	8.47	10.63	13.78

Table 10: Screening outcome: Subsequent screen by age group

Performance parameter	Age group		
	50-54	55-59	60-64
Number of women screened	26,666	47,962	39,819
Percentage of women re-called for assessment	2.9%	2.8%	2.7%
Benign open biopsy rate per 1,000 women screened	1.39	1.21	0.70
Overall cancer detection rate per 1,000 women screened	4.39	5.42	6.78

Ninety and 96 per cent of first screen and subsequent screen women with cancer, respectively, were diagnosed by core biopsy or fine needle aspiration performed by radiologists at the assessment clinic prior to any surgery (Figure 4). This is far in excess of the standard of ≥70%. 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 the programme since its inception highlighting the quality and expertise of both the radiology and pathology functions of the programme.

Figure 4: Cancers with non-operative diagnosis



The programme seeks to achieve or surpass all standards outlined in the Women's Charter. Most women receive seven days notice of appointment and receive their mammogram results within three weeks. Over 93 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 at 84.7 per cent remains just outside the standard of 90 per cent. The percentage of women re-invited for screening within 27 months of invitation at previous round is above the target at 92.6 per cent. Although the proportion of eligible women invited for screening within two years of becoming known to the programme (84.6%) remains outside the target of 90 per cent, it represents a significant improvement since 2012 when it was 76.8 per cent.

Table 11: Women's Charter parameters

Performance parameter	2013	Women's Charter Standard
Women who received 7 days notice of appointment	98.1%	≥90%
Women who were sent results of mammogram within 3 weeks	99.1%	≥90%
Women offered an appointment for Assessment Clinic within 2 weeks of notification of abnormal mammographic result	93.4%	≥90%
Women given results from Assessment Clinic within 1 week	95.7%	≥90%
Women offered hospital admission for treatment within 3 weeks of diagnosis of breast cancer	84.7%	≥90%
Women re-invited for screening within 27 months of invitation at previous round	92.6%	≥90%
Women eligible for screening invited for screening within 2 years of becoming known to the programme	84.6%	≥90%

An tSeirbhís Náisiúnta Scagthástála
National Screening Service

BreastCheck
An Clár Náisiúnta Scagthástála Cíoch
The National Breast Screening Programme

CervicalCheck
An Clár Náisiúnta Scagthástála Ceirbheacs
The National Cervical Screening Programme

BowelScreen
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The National Bowel Screening Programme

Diabetic RetinaScreen
An Clár Náisiúnta Scagthástála Reitini do Dhaibéitigh
The National Diabetic Retinal Screening Programme

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