



# Programme Report 2014-2015

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## INTRODUCTION

### Background

BreastCheck – The National Breast Screening Programme has been providing free mammograms to women aged 50-64 every two years since 2000. 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 breast cancer detected. Women who have a breast cancer detected are supported throughout their journey by radiographers, radiologists, surgeons, pathologists, breast care nurses and administrative staff who are experienced and committed to providing care of the highest standard.

BreastCheck is now in its sixteenth year of screening and has provided almost 1.37 million mammograms to over 480,000 women and detected more than 8,500 cancers.

### BreastCheck EUREF accreditation

BreastCheck has been awarded the highest level of accreditation by EUREF, the European Reference Centre for Breast Screening. In particular, the accreditation team commented on the excellent multidisciplinary clinical team structure, operating to international standards. They noted good team dynamics and commended the physical environments which are well equipped and welcoming for women. They also provided some useful recommendations to help enhance the service delivered to women. The accreditation team commended the delivery of a high standard in service delivery despite sub-optimal staffing levels.

### The extension of BreastCheck to women aged over 65

It has long been the intention of BreastCheck to extend screening upwards to women aged 69. By the end of 2021, all eligible women aged 50-69 will be invited for free routine mammograms. Women aged 50-64 who are currently part of the BreastCheck programme will be re-called for mammograms while within the wider age range. The first women in the older age cohort have received their invitations. In general, the age extension will be introduced on an age group basis. The model chosen for extension is agreed to be the safest and most effective. It is vital that the current service offered to women is not impacted and that no unnecessary risk is introduced by lengthening the time between screening appointments.

### Screening statistics

During the reporting period (1 January-31 December 2014) 181,807 women were invited for screening. Of those, 177,724 were eligible and 135,966 women attended for a mammogram. The uptake rate at 76.5 per cent was a significant increase from the previous year (70.2%) and surpassed the programme standard of 70 per cent. Eight hundred and ninety women had a cancer detected, representing 6.5 cancers for every 1,000 women screened. The number of invasive cancers detected was 692 and 198 women were diagnosed with a ductal carcinoma in situ (DCIS). In 2014, uptake remained highest among women who had previously participated in the programme.

## PROGRAMME STATISTICS RELATING TO 2014-2015

The figures reported relate to women invited by BreastCheck between 1 January and 31 December 2014 and who were screened or treated in 2014 and/or 2015. 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' (4th edition).

In 2014, 181,807 women were invited for screening (Table 1, Figure 1). Of these, 177,724 were eligible for screening and 135,966 women attended for screening. The uptake rate based on the eligible population and the known target population acceptance rate both surpassed the standard of 70 per cent and represent an increase from 70.2% and 68.2% respectively in 2013.

The standardised detection ratio (SDR) is used to measure the overall performance of a screening programme. The overall SDR in 2014 was 1.22 (1.23 in 2013); well above the target of 0.75, which reflects continuing good programme performance (Table 1).

**Table 1: Screening activity overall**

| Performance parameter   | 2014    |
|---|---------|
| Number of women invited   | 181,807 |
| Number of eligible women invited*   | 177,724 |
| Number of women who opted out of the programme                                  | 1,439   |
| Number of women who attended for screening                                      | 135,966 |
| Eligible women acceptance rate* (includes women who opted out of the programme) | 76.5%   |
| Known target population acceptance rate**                                       | 74.2%   |
| Number of women re-called for assessment  | 5,345   |
| Number of open benign biopsies  | 214     |
| Number of cancers detected  | 890     |
| Cancers detected per 1,000 women screened                                       | 6.5     |
| Number of invasive cancers  | 692     |
| Number of in situ cancers   | 198     |
| Number of invasive cancers <15mm  | 336     |
| Standardised detection ratio  | 1.22    |

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

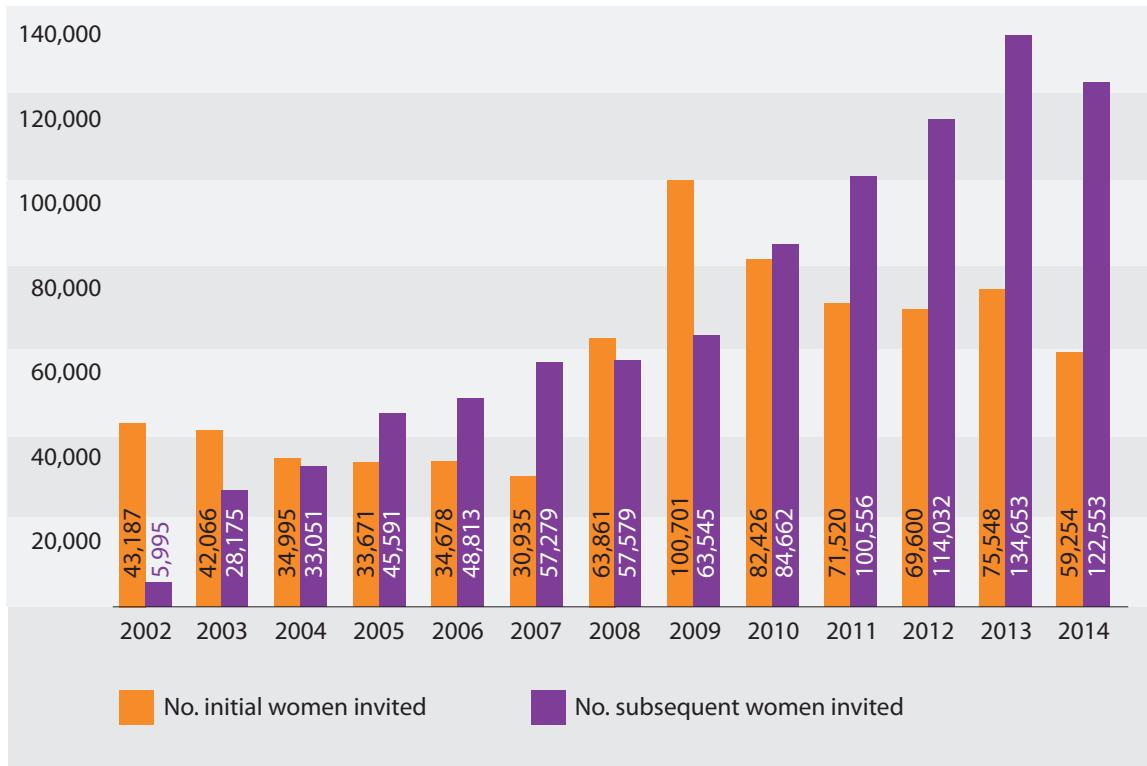
\*\* Known target population refers to all women of screening age that are known to the programme.

### Details of the ineligible categories

Excluded – women in follow-up care for breast cancer, not contactable by An Post and 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 and women unwilling to reschedule or other.

**Figure 1: Numbers invited 2002-2014 - initial and subsequent women**



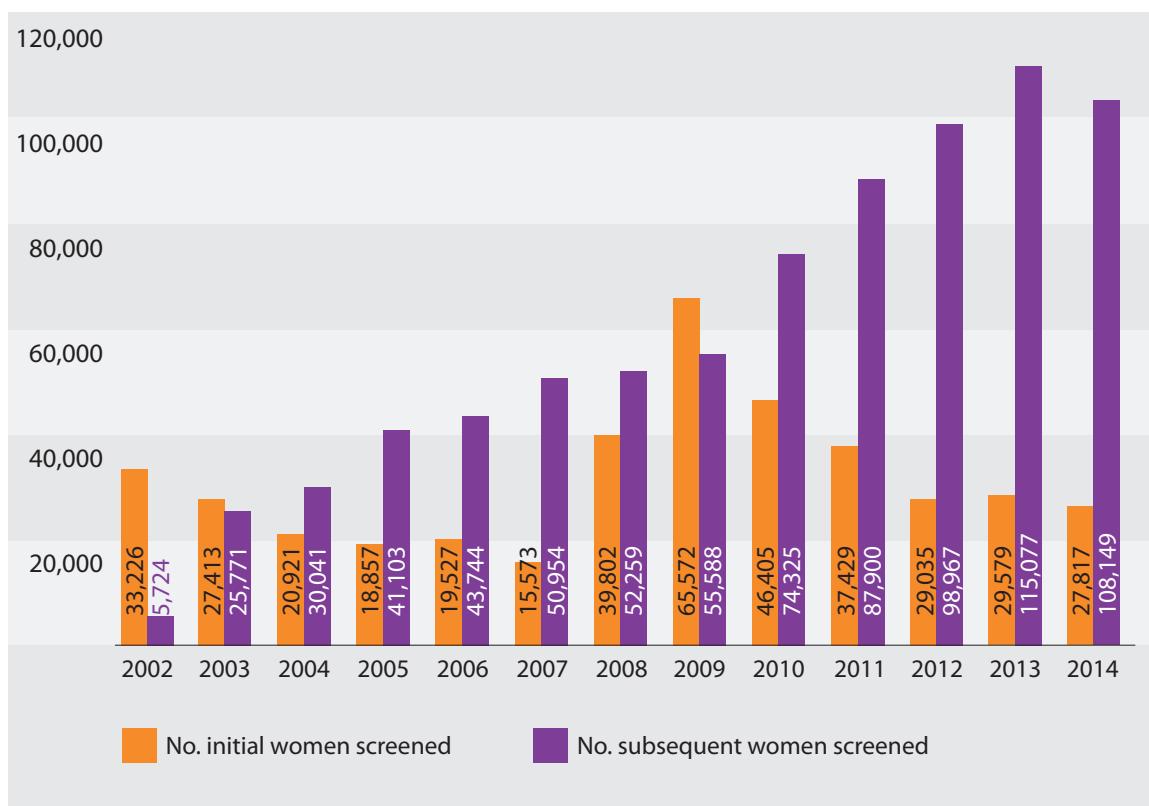
In 2014, the number of women invited for the first time decreased from 2013 (Figure 1) as expected, as the programme moves with time to a steady state ratio of first invited to subsequent invited. However in 2014, the number of women invited for the second or subsequent time also decreased.

The number of women screened has also fallen slightly (Figure 2) reflecting the decreased number of women invited. However overall the uptake rates in all categories have increased in 2014, and may reflect the new promotional campaign, the introduction of text message reminders and continuing screening promotion work. The eligible women and known target population acceptance rates have increased in those invited for the first time, but remain outside the standard 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  | 40,020                   | 19,234                 | 122,553               |
| Number of eligible women invited   | 36,713                   | 19,234                 | 121,777               |
| Number of women who opted out of the programme                                 | 43                       | 0                      | 1,396                 |
| Number of women screened   | 25,339                   | 2,478                  | 108,149               |
| Eligible women uptake rate<br>(including women who opted out of the programme) | 69.0%                    | 12.9%                  | 88.8%                 |
| Known target population uptake rate  | 63.2%                    | 12.9%                  | 87.3%                 |

**Figure 2: Numbers screened 2002-2014 - initial and subsequent women**



In 2014, 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 previous 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**

| Performance parameter  | Age group |       |       |
|--|-----------|-------|-------|
|  | 50-54     | 55-59 | 60-64 |
| Number of women invited  | 34,209    | 3,328 | 2,296 |
| Number of eligible women invited   | 32,376    | 2,478 | 1,706 |
| Number of women who opted out of the programme                                 | 35        | 3     | 5     |
| Number of women screened   | 24,204    | 668   | 368   |
| Eligible women uptake rate<br>(including women who opted out of the programme) | 74.8%     | 27.0% | 21.6% |
| Known target population uptake rate  | 70.7%     | 20.1% | 16.0% |

**Table 4: Previous non-attenders**

| Performance parameter                    | Age group |       |       |
|--|-----------|-------|-------|
|  | 50-54     | 55-59 | 60-64 |
| Number of previous non-attenders invited | 6,081     | 7,296 | 5,823 |
| Number of women screened                 | 1,300     | 746   | 421   |
| Known target population uptake rate      | 21.4%     | 10.2% | 7.2%  |

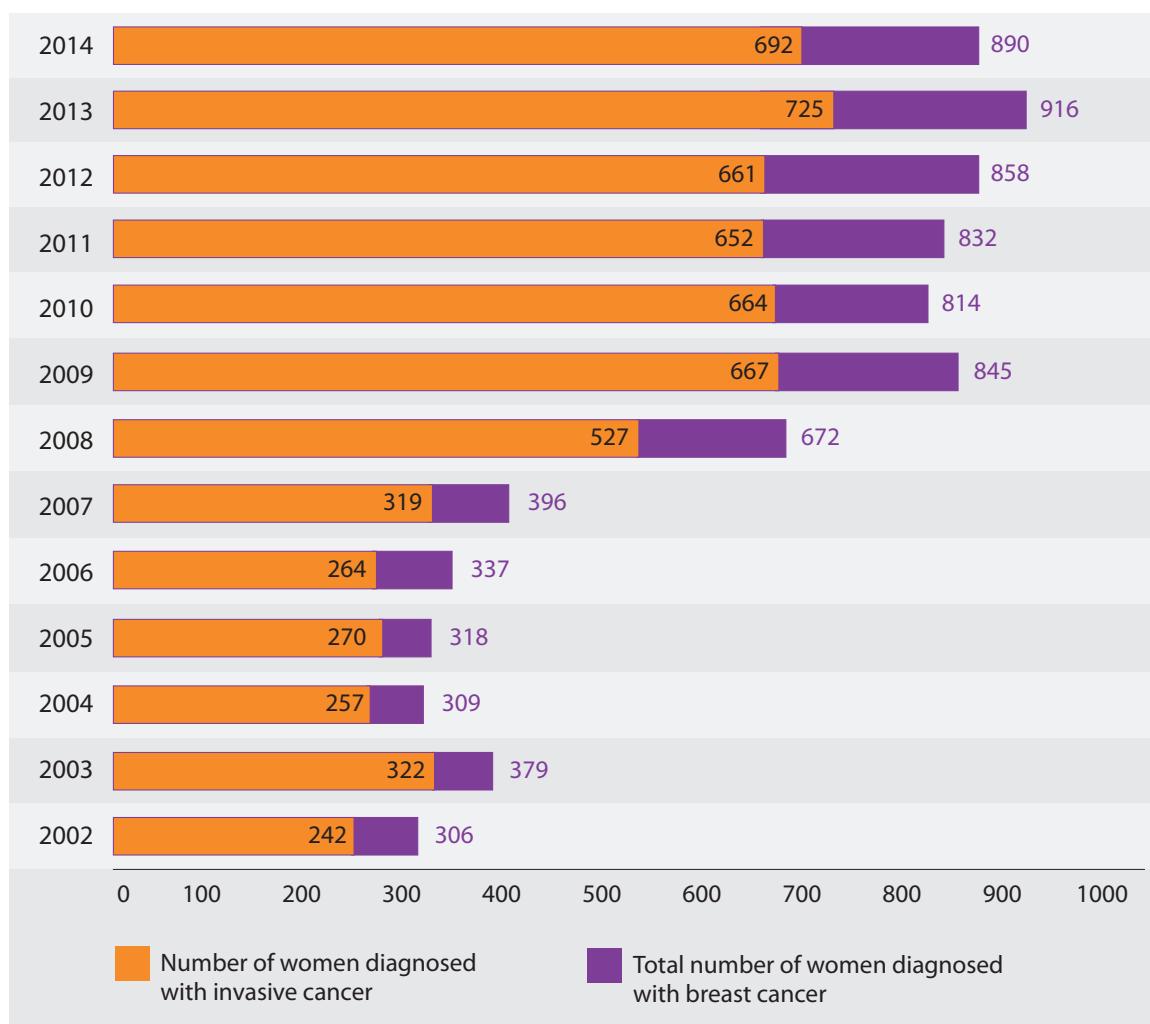
**Table 5: Subsequent invited population**

| Performance parameter  | Age group |        |        |
|--|-----------|--------|--------|
|  | 50-54     | 55-59  | 60-64  |
| Number of women invited  | 26,614    | 48,400 | 47,315 |
| Number of eligible women invited   | 26,357    | 48,017 | 47,186 |
| Number of women who opted out of the programme*                          | 211       | 476    | 709    |
| Number of women screened   | 23,684    | 42,766 | 41,310 |
| Eligible women uptake rate<br>(including women who opted not to consent) | 89.9%     | 89.1%  | 87.5%  |
| Known target population uptake rate                                      | 88.3%     | 87.5%  | 86.0%  |

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

Of those women invited in 2014 for either the first or a subsequent time, 890 were diagnosed with a cancer, of which 692 were invasive (Figure 3).

**Figure 3: Number of women diagnosed with breast cancer overall and the proportion with an invasive breast cancer 2002-2014**



Among women screened for the first time, the re-call rate remains above the standard at 8.4 per cent, and is higher than in 2013 (8%). The invasive cancer detection rates for age 50-51 and 52-64 years are well above the required standards (Table 6). Over 40 per cent of all invasive cancers detected in this first screened group are small (less than 15mm). The detection rate of DCIS has decreased since 2013, but remains above the expected 10-20 per cent of cancers detected.

**Table 6: Screening quality: First screen**

| Performance parameter  | 2014   | Standard |
|--|--------|----------|
| Number of women screened for first time  | 27,817 |          |
| Number of women re-called for assessment   | 2,342  |          |
| Re-call rate   | 8.4%   | <7%      |
| Number of benign open biopsies   | 124    |          |
| Benign open biopsy rate per 1,000 women screened                                     | 4.46   | <3.6     |
| Number of women diagnosed with cancer  | 248    |          |
| Cancer detection rate per 1,000 women screened                                       | 8.92   | ≥7       |
| Number of women with in situ cancer (DCIS)   | 54     |          |
| Pure DCIS detection rate per 1,000 women screened                                    | 1.94   |          |
| Number of women diagnosed with DCIS as % of all women diagnosed with cancer*         | 21.8%  | 10-20%   |
| Number of women diagnosed with invasive cancer                                       | 194    |          |
| Invasive cancer detection rate per 1,000 women screened                              | 6.97   |          |
| Invasive cancer detection rate per 1,000 women screened for women aged 50-51         | 6.18   | >2.9     |
| Invasive cancer detection rate per 1,000 women screened for women aged 52-64         | 9.28   | >5.2     |
| Number of women with invasive cancers <15 mm   | 81     |          |
| Number of women with invasive cancers <15 mm as % of all women with invasive cancers | 41.8%  | ≥40%     |
| Standardised detection ratio   | 1.25   | >0.75    |

\*See Table 8

Among women attending for subsequent screening, the re-call rate is much lower (2.8%), as is expected (Table 7). Over half of invasive cancers detected amongst these women are less than 15mm. The detection rate of DCIS among women attending for subsequent screening is high in 2014. The SDR is above the expected standard for both first screening and subsequent screening.

**Table 7: Screening quality: Subsequent screen**

| Performance parameter  | 2014    | Standard |
|--|---------|----------|
| Number of women returning for subsequent screen                                      | 108,149 |          |
| Number of women re-called for assessment   | 3,003   |          |
| Re-call rate   | 2.8%    | <5%      |
| Number of benign open biopsies   | 90      |          |
| Benign open biopsy rate per 1,000 women screened                                     | 0.83    | <2       |
| Number of women diagnosed with cancer  | 642     |          |
| Cancer detection rate per 1,000 women screened                                       | 5.94    | ≥3.5     |
| Number of women with in situ cancer (DCIS)   | 144     |          |
| Pure DCIS detection rate per 1,000 women screened                                    | 1.33    |          |
| Number of women diagnosed with DCIS as % of all women diagnosed with cancer*         | 22.4%   | 10-20%   |
| Number of women diagnosed with invasive cancer                                       | 498     |          |
| Invasive cancer detection rate per 1,000 women screened                              | 4.60    |          |
| Number of women with invasive cancers <15mm  | 255     |          |
| Number of women with invasive cancers <15 mm as % of all women with invasive cancers | 51.2%   | ≥40%     |
| Standardised detection ratio   | 1.21    | >0.75    |

\* See Table 8

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. 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 2014, the proportion of low grade DCIS represents over nine per cent of all DCIS detected and corresponds to two per cent of total cancers detected, or 1.3 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 screening.

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 receive 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          | 10 (18.5%)   | 8 (5.8%)           | 18 (9.4%)   |
| Intermediate | 12 (22.2%)   | 33 (24.1%)         | 45 (23.6%)  |
| High         | 32 (59.3%)   | 96 (70.1%)         | 128 (67.0%) |
| Total        | 54 (100%)    | 137 (100%)         | 191 (100%)  |

\* Three DCIS cases 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 (standard <2), but are slightly outside the programme standards for women being screened for the first time (standard <3.6).

**Table 9: Screening outcome: First screen by age group**

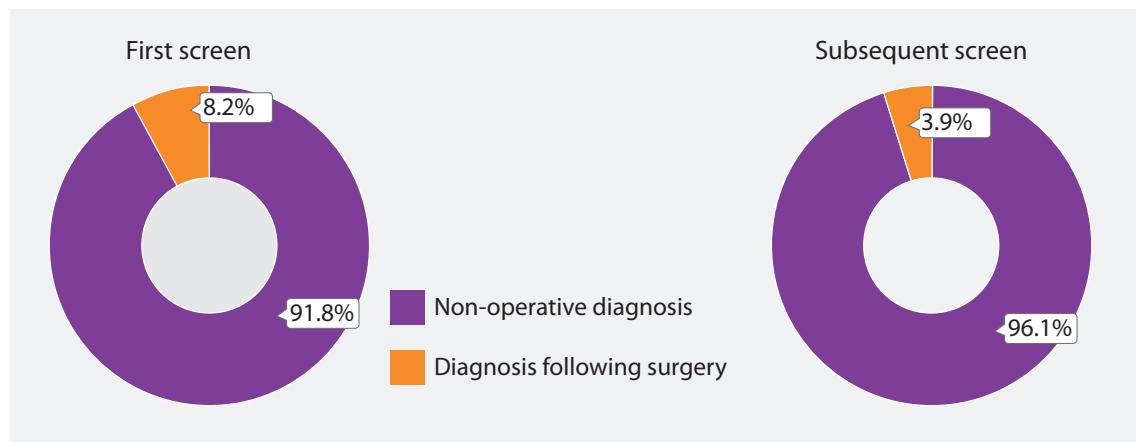
| Performance parameter                                  | Age group |       |       |
|--|-----------|-------|-------|
|  | 50-54     | 55-59 | 60-64 |
| Number of women screened                               | 25,504    | 1,414 | 789   |
| Percentage of women re-called for assessment           | 8.3%      | 8.8%  | 10.5% |
| Benign open biopsy rate per 1,000 women screened       | 4.47      | 6.36  | 1.27  |
| Overall cancer detection rate per 1,000 women screened | 8.55      | 9.19  | 21.55 |

**Table 10: Screening outcome: Subsequent screen by age group**

| Performance parameter                                  | Age group |        |        |
|--|-----------|--------|--------|
|  | 50-54     | 55-59  | 60-64  |
| Number of women screened                               | 23,684    | 42,766 | 41,310 |
| Percentage of women re-called for assessment           | 3.1%      | 2.6%   | 2.7%   |
| Benign open biopsy rate per 1,000 women screened       | 0.97      | 0.87   | 0.73   |
| Overall cancer detection rate per 1,000 women screened | 5.02      | 5.57   | 6.80   |

Ninety-two and ninety six per cent of first screened and subsequently screened 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  $\geq 70\%$ . 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 90 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 is some round slippage, with the percentage of women re-invited within 24 months of invitation at previous rounds below the target, at 76.3 per cent. However, the percentage of women re-invited for screening within 27 months of invitation at previous round is 97.7 per cent. The proportion of eligible women invited for screening within two years of becoming known to the programme is at the 90 per cent target, which represents an improvement from 84.6 per cent in 2013.

**Table 11: Women's Charter parameters**

| Performance parameter   | 2014  | Women's Charter Standard |
|---|-------|--------------------------|
| Women who received 7 days' notice of appointment  | 98.9% | ≥90%                     |
| Women who were sent results of mammogram within 3 weeks   | 99.4% | ≥90%                     |
| Women offered an appointment for assessment clinic within 2 weeks of notification of abnormal mammographic result | 90.6% | ≥90%                     |
| Women given results from assessment clinic within 1 week  | 95.0% | ≥90%                     |
| Women offered hospital admission for treatment within 3 weeks of diagnosis of breast cancer                       | 90.9% | ≥90%                     |
| Women re-invited for screening within 24 months of invitation at previous round                                   | 76.3% | ≥90%                     |
| Women re-invited for screening within 27 months of invitation at previous round                                   | 97.7% |                          |
| Women eligible for screening invited for screening within 2 years of becoming known to the programme              | 90.0% | ≥90%                     |



An tSeirbhís Náisiúnta Scagthástála  
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