DRAFT FOR CONSULTATION

HSE National Clinical Guideline: Post-treatment follow-up of patients with breast cancer

Cover page

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Post-treatment follow-up of patients with breast cancer

National Policy ☐ National Procedure ☐ National Protocol ☐ National Guideline ☐
National Clinical Guideline ☒

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The purpose of this National Clinical Guideline is to provide evidence-based recommendations on post-treatment follow-up of patients with breast cancer through the integration of the best research evidence with clinical expertise, patient values and experiences.

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Disclaimer

This guideline ("the Guideline") was developed by a multidisciplinary Guideline Development Group ("the Group") and is based upon the best clinical evidence available together with the clinical expertise of the Group members. The Guideline supersedes all previous Health Service Executive (HSE), National Cancer Control Programme (NCCP), and National Clinical Effectiveness Committee (NCEC) guidelines for the post-treatment follow-up of patients with breast cancer. The NCCP is part of the HSE and any reference in this disclaimer to the NCCP is intended to include the HSE. Please note, the Guideline is for guidance purposes only. The appropriate application and correct use of the Guideline is the responsibility of each health professional. The Group's expectation is that health professionals will use clinical knowledge and judgment in applying the principles and recommendations contained in this guideline. These recommendations may not be appropriate in all circumstances and it may be necessary to deviate from this guideline. Clinical judgment in such a decision must be clearly documented. Care options should be discussed with the patient, his/her significant other(s), and the multidisciplinary team on a case-by-case basis as necessary. The NCCP accepts no liability nor shall it be liable, whether arising directly or indirectly, to the user or any other third party for any claims, loss or damage resulting from any use of the Guideline.

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1 Background

1.1 Purpose

The purpose of this National Clinical Guideline is to provide evidence-based recommendations on post-treatment follow-up of patients with breast cancer through the integration of the best research evidence with clinical expertise, patient values and experiences. This guideline aims to address areas of care with new and emerging evidence, reduce variation in practice, and improve patient experience and service delivery.

1.2 Mandate

The National Cancer Strategy 2017-2026 (Department of Health, 2017) states that: "The NCCP will develop further guidelines for cancer care in line with National Clinical Effectiveness Committee (NCEC) standards" (Recommendation 37).

1.3 Scope

The scope of the guideline is to provide clinical recommendations on post-treatment follow-up of patients with breast cancer. This guideline does not cover patients undergoing active treatment of their breast cancer or patients receiving palliative care.

1.4 Target audience

The guideline was developed by a multidisciplinary Guideline Development Group ("the Group") – a full list of members can be found in Appendix I.

This guideline is intended for all health professionals involved in post-treatment follow-up of patients with breast cancer. This guideline is also relevant to those involved in clinical governance, in both primary and secondary care, to help ensure that arrangements are in place to deliver appropriate care for the population covered by this guideline.

Whilst the guideline is focused on clinical care, it is expected to be of interest to patients with breast cancer and their significant others. The **Plain Language Summary** of this guideline outlines what is covered in this guideline along with a suggested list of questions you may want to ask your healthcare professionals (see section 2.4).

A full list of the abbreviations and a glossary of terms used in this guideline can be found in Sections 4 and 5, respectively.

While the regional executive officer (REO) of each HSE health region, and the chief executive officer (CEO), general manager and clinical lead of each cancer centre/hospital have corporate responsibility for the implementation of the

recommendations in this guideline, each member of the multidisciplinary team is responsible for the implementation of the individual guideline recommendations relevant to their discipline.

1.5 Target population

The target population covered in this guideline are adult (18 years or older) patients who have completed treatment for breast cancer.

2 Clinical Guideline & Recommendations

2.1 Summary of Recommendations

Recommendation 2.3.1.1

For patients with breast cancer, who have completed local treatment*, one clinical follow-up appointment with the surgical team is recommended at one year post-treatment.

*surgery, radiotherapy

Quality of evidence: Low **Grade of recommendation:** Conditional

Recommendation 2.3.1.2

For patients with breast cancer who have completed local treatment* and develop symptoms suspicious for local recurrence or metastasis, an urgent referral by their GP to the appropriate clinic (breast surgery or medical oncology, depending on symptoms) is recommended.

*surgery, radiotherapy

Quality of evidence: Low **Grade of recommendation:** Strong

Recommendation 2.3.1.3

For patients with breast cancer, who are undergoing systemic therapy, clinical follow-up with the medical oncology team is recommended, the frequency of which will be determined by the team on an individual basis.

Quality of evidence: Very low **Grade of recommendation:** Conditional

Recommendation 2.3.1.4

For patients who have completed local treatment for breast cancer, annual mammography is recommended for three years post-treatment.

Patients are then eligible for mammography every two years through the national breast screening programme (BreastCheck).

- If patients complete their three years of annual mammography post-treatment and are still younger than the eligibility age for BreastCheck (50 years), they should continue annual mammography until age 50.
- If patients complete their three years of mammography and are older than the screening age (> 69 years), they should continue annual mammography for an additional two years (five years in total post-treatment).

- If patients have ductal carcinoma in situ (DCIS) or triple negative breast cancer, they should have annual mammography for five years before transitioning to mammography every two years with BreastCheck.

Quality of evidence: Moderate **Grade of recommendation:** Conditional

Recommendation 2.3.1.5

Annual mammography is not routinely recommended in the following patients with breast cancer (across all age groups):

- patients who are diagnosed with metastatic disease
- patients who are not suitable for surgical intervention
- patients who have had a bilateral mastectomy
- patients with a life expectancy of less than five years.

Quality of evidence: Very low **Grade of recommendation:** Conditional

2.2 Overarching practical considerations for patient care

The following practical considerations for patient care are applicable across all recommendations in this guideline:

A core component of the follow-up protocol is patient education and access to specialist care, when required.

- Patients should be informed in detail about their proposed follow-up schedule – when they should receive their follow-up mammograms – when they should expect the results – how this will be communicated to them – what will happen if there is something found on a mammogram.

- Patient should receive education on signs and symptoms of recurrence.
    - Breast awareness information should be culturally sensitive and available in a range of languages.

    - Patients should understand how to re-access the service if they develop any signs or symptoms.
        - Patients should be advised that they should report any symptoms or concerns when they occur to their GP.
        - Patients should be given information on who to contact and how to contact them should they have concerns.

    - Patients should be made aware of psychosocial support services and programmes available to them in the hospital (via Psycho-Oncology MDTs) and in the community (via Cancer Support Centres) - information should be provided to help patients cope with ongoing uncertainties and the challenges of adjusting to the “new normal” of survivorship.

    - Patient education should also focus on health promotion and well-being—including smoking cessation, minimising alcohol intake, maintaining a healthy weight, increasing physical activity, energy balance, and social engagement.

GP education is also important - GPs should also be informed about re-access to services (e.g. e-referral via Healthlink).

2.3 Clinical questions, evidence statements, and recommendations

2.3.1 In patients with breast cancer, who have completed treatment, what is the optimum radiological (mammographic) and clinical follow-up protocol?

Evidence Summary

The NCRI reported that there are approximately 215,000 cancer survivors in Ireland, an increase of 50% over the past decade (NCRI, 2023). Breast cancer is the most common cancer among survivors, accounting for c.23% of all survivors. The majority (88%) of women diagnosed with breast cancer are still alive 5 years after diagnosis.

Post-treatment follow-up after breast cancer is an essential part of care that aims to support patients to ensure the best possible long-term health outcomes. The main objectives include:

- To facilitate surveillance imaging (e.g. mammography)
- To monitor for, identify and manage local recurrence or new breast cancer
- To monitor compliance with hormone/anti-cancer therapy
- To manage and treat side-effects and/or late-effects of treatment and patient concerns (e.g. lymphoedema, psychological distress)
- To provide psychosocial information, support and reassurance to patients.

A follow-up protocol traditionally has involved regular clinical appointments, annual mammography, and self-examination. The specific detail of the protocol varies depending on factors such as the stage of the cancer, treatment received, and individual patient characteristics. The exact benefits of this model of follow-up are unclear.

Lifetime risk of recurrence
The lifetime risk of recurrence of breast cancer varies depending on several factors, including the type and stage of breast cancer at diagnosis, the treatments received, and individual patient characteristics, such as age at diagnosis and hormone receptor status. Triple-negative breast cancers have a higher risk of recurrence, especially in the first few years after treatment, as they tend to be more aggressive. Those with ER+ breast cancers, have a low early risk of recurrence but can recur years later (Courtney et al., 2022; van Maaren et al., 2018).

Local recurrence refers to the recurrence of a breast cancer in the same breast after initial treatment. Locoregional recurrence refers to the return of a breast cancer in the same area initially treated and/or nearby lymph nodes and tissues. Significant variations in locoregional recurrence occur across breast cancer subtypes, with lowest rates in luminal cancers and highest rates in triple-negative breast cancers (McGuire et al., 2017). The annual incidence rate of isolated ipsilateral breast cancer recurrence in women diagnosed with an early invasive breast cancer is around 0.6% (range: 0.4-1.1%) (Spronk et al., 2018).

Contralateral breast cancer refers to the development of a new primary breast cancer in the opposite breast to the one affected by the initial breast cancer diagnosis. It is distinct from a local recurrence or metastasis. The annual incidence

rate of contralateral breast cancer in women diagnosed with an early invasive breast cancer is around 0.5% (range: 0.2-0.7%) (Spronk et al., 2018).

Quality of the evidence
Nine studies were identified to answer this question (1 RCT; 2 meta-analyses; 1 prospective; 3 retrospectives; and 2 qualitative).

There is consistent evidence in terms of mammographically-detected recurrences, with most relapses identified by mammography or by patients. Evidence suggests that annual breast clinical appointments provide little value with regard to the detection of local recurrence or for their efficacy as part of the optimum follow-up of breast cancer patients post treatment. Where recurrences were found at a clinical visit, a very high proportion presented with symptoms.

The recently published Mammo-50 trial, a multicentre, randomised, phase 3 non-inferiority study conducted in the UK, evaluated the efficacy of annual versus less frequent mammographic surveillance in women aged 50 and older who had undergone curative surgery for invasive or non-invasive breast cancer (Dunn et al., 2025). Between 2014 and 2018, 5,235 participants were randomised to receive either annual mammograms or less frequent mammograms—every two years for those who had breast-conserving surgery and every three years for those who had a mastectomy.

- Breast-cancer specific survival - After a median follow-up of 5.7 years, the study found rates were comparable between the two groups: 98.1% in the annual surveillance group and 98.3% in the less frequent surveillance group (hazard ratio [HR] = 0.92, 95% CI = 0.64–1.32).
- Five-year recurrence-free interval was 94.1% in the annual mammography group and 94.5% in the less frequent mammography group (adjusted HR = 1.00, 95% CI = 0.81–1.23).
- Overall survival rate at five years was 94.7% in the annual group and 94.5% in the less frequent group (adjusted HR = 1.07, 95% CI 0.87–1.33). These findings suggest that less frequent mammographic surveillance is non-inferior to annual surveillance in this population, potentially allowing for extended intervals between mammograms without compromising patient outcomes.

A significant portion of recurrences were detected through symptomatic referrals or emergency admissions, 224 (64.9%) of 345 breast cancer events were detected in this manner (108 [61.7%] of 175 in the annual mammography group and 116 [68.2%] of 170 in the less frequent mammography group).

It was acknowledged that the number of patients with DCIS in the Mammo-50 trial was small and, given that invasive recurrence after DCIS occurs more frequently in the first five years after surgery compared with later years and the markedly different role of mammography in women who have had breast conserving surgery, mammographic de-escalation in this group might not be justified.

A retrospective study conducted on an Irish cohort assessed diagnostic modalities for detecting recurrent breast cancer with a focus on evaluating the role of annual clinical examination (Horan et al., 2023). The results revealed that 75/140 (53.6%) patients with a history of breast cancer were found to have abnormalities

radiologically leading to a diagnosis of recurrence or second breast primary, while 65/140 (46.4%) were found to have clinically detected abnormalities which led to a diagnosis of recurrence or second primary. Of those diagnosed clinically, 59/65 (90.7%) presented to the breast clinic with a symptom that was self-detected. This study highlighted the limited value of routine annual clinical follow-up in detecting recurrence and emphasised the importance of radiological surveillance and timely evaluation of patients with new breast symptoms. It does however acknowledge that there may be a role for clinical surveillance in higher-risk patients.

Early, asymptomatic, mammography-detected recurrence associated with significantly better survival than symptom-detected or clinically detected recurrence. A meta-analysis by Lu et al. (2009) showed that early detection (mammographically-detected during routine clinic visit in patients without symptoms) of a local recurrence of breast cancer improved survival of patients with breast cancer recurrences compared to late detection (patient detected due to symptoms) - HR: 1.68 (95%CI: 1.48–1.91, p<0.0001). Recurrences assessed in patients without symptoms were related to a higher probability of survival than when symptoms were present (HR: 1.56; 95% CI: 1.36–1.79) and survival was better in studies where recurrences were found by mammography instead of those assessed clinically (HR: 2.44; 95% CI: 1.78–3.35; p = 0.01).

Similarly, Myller et al. (2021) conducted a prospective study in Finland and analysed a cohort of breast cancer patients to determine how recurrences were detected. Routine mammograms detected a significant portion of locoregional recurrences (41%). The first indicator in 53% of locoregional recurrences (LRR) was abnormalities in imaging, followed by palpable or visible lesion detected by the patient (26%), findings in clinical examination (15%), and pain (6% of cases). Survival after LRR was longer if the recurrence was detected asymptomatically at pre-planned control visit or was detected by mammogram than if the LRR was detected otherwise or was symptomatic (p=0.046). This study emphasised the importance of patient-initiated contact.

Saltbaek et al. (2020) carried out a retrospective study in Denmark to determine the proportion of recurrences detected at scheduled visits compared to other modes of detection, such as patient-requested extra outpatient visits, referrals from general practitioners or other specialists, and scheduled mammograms. Additionally, the study explored the symptoms reported and the duration of symptoms for different modes of recurrence detection and examined whether age, time since primary diagnosis, and type of recurrence was associated with the mode of recurrence detection. Three hundred and ten patients had recurrent breast cancer categorised as locoregional (26%), locoregional and distant (15%), or distant (59%). Most recurrences were detected by referral from GP/other specialist (47%); 21% at a scheduled outpatient visit; 15% at a patient-requested extra outpatient visit; and 11% on a scheduled mammography. The majority (88%) of recurrences detected at scheduled outpatient visits were symptomatic. The most frequent symptoms were pain, dyspnea, and fatigue. Patients whose recurrence was detected at a scheduled outpatient visit had experienced symptoms considerably longer (median 21 weeks) than patients requesting a consultation in the outpatient clinic (median three weeks) or by their GP (median eight weeks) (p < 0.001).

A retrospective study from the UK examining the pattern of treatable relapses, with regard to timing and method of detection found that the majority of relapses (51%) were mammographically detected, 33.5% were symptomatic, 13.5% were clinically detected, and 2% were diagnosed incidentally (Montgomery et al., 2007). Overall survival for those who developed an ipsilateral breast relapse was significantly reduced among those with recurrence diagnosed clinically compared with either other method (log rank 2 df p = 0.0002). There was no association between method of detection of relapse and survival in patients who developed a new contralateral breast cancer. Similarly, there was no association between method of detection of recurrence and survival in patients who had isolated ipsilateral axillary relapse. Overall five-year survival for patients with an ipsilateral breast recurrence was 87.5% from original operation, and 64% from diagnosis of recurrence. Overall five-year survival from time of relapse for patients with contralateral breast relapse was 81% and for patients with axillary relapse it was 61%. This study found very low numbers of relapses were detected clinically, compared to mammography which makes a much larger and more significant contribution.

In the UK, current recommendations are for annual mammograms for five years after diagnosis (or until the woman enters the NHS Breast Screening Programme). Thereafter, women continue to have mammograms as part of the screening programme (every three years) and visit their GP if they have any concerns (Royal College of Radiologists, 2019; National Institute for Health and Care Excellence [NICE], 2018).

A systematic review to investigate the usefulness of imaging surveillance in terms of cancer detection and interval cancer rates after mastectomy with or without reconstruction for patients with prior breast cancer, found lower rates of clinically occult (non-palpable) cancer compared with cancer detection rates, across mammography suggesting limited value of routine imaging in this group (Smith et al., 2022).

Factors that determine increased risk of recurrence/second primary
According to Courtney et al. (2022), factors that predict shorter time to recurrence include increased grade, triple negative subtype, HER2+ subtype, while ER and PR positivity, as well as receiving adjuvant endocrine therapy, were associated with longer time to recurrence.

A population-based study by van Maaren et al. (2018), assessed recurrence and survival outcomes over 10 years among different breast cancer subtypes in the Netherlands.

- Local recurrences* were most often diagnosed in patients with HER2 positive disease (7.5%), followed by triple negative (7.1%), luminal B (5.0%), and luminal A (3.7%).
- Regional recurrences* within 10 years were most often diagnosed in the triple negative subtype (5.2%), followed by luminal B (4.5%), HER2 positive (4.0%), and luminal A (1.7%).

*All differences among the subtypes were statistically significant.

- For the HER2 positive and triple negative subtypes, a clear peak was observed at 2 years after diagnosis for all types of recurrences, especially for

distant metastases. Notably, the hazard of distant metastasis for luminal A and B showed a more constant pattern, and after 4 years the hazard of HER2 positive and triple negative subtypes became much lower than that of the luminal subtypes, with luminal B disease showing the greatest hazard of recurrence from this time point on. Results were specified for the use of trastuzumab.

- Triple negative disease was associated with a significantly lower 10-year OS, compared to luminal A [HR 1.25 (95% CI: 1.05–1.48)] - after correction for age, tumour stage, nodal stage, sub localisation of the tumour within the breast, differentiation grade, type of surgery, adjuvant systemic therapy, targeted therapy and axillary lymph node dissection. Luminal B and HER2 positive disease showed equal 10-year OS as luminal A.

- Regarding for confounding adjusted 10-year RFS, in which was corrected for age, tumour stage, nodal stage, sub localisation of the tumour within the breast, differentiation grade, histological tumour type, multifocality, type of surgery, adjuvant systemic therapy and targeted therapy, luminal B showed lower RFS compared to luminal A [HR 1.22 (95% CI:0.99–1.50)], although not statistically significant. However, HER2 positive and triple negative showed significantly worse 10-year RFS compared to luminal A.

Another retrospective review by Witteveen et al. (2020) analysed long-term breast cancer recurrence patterns in the Netherlands and determined how the current age-based recommendations on the follow-up schedules after 5 years corresponded to the actual risk of locoregional recurrence and second primary (SP) tumours. Of the 18,568 patients, 65% were within primary breast cancer screening age (50–75 years) after 5 years of follow-up. During the 10 years of follow-up, 852 (4.6%) developed an LRR, 868 (4.7%) a second primary (SP), and 2,484 (13.4%) a DM as first event.

- Median disease-free interval (DFI) was 3.7 years (interquartile range [IQR] 1.8–6.5) for patients with an LRR as a first event.
- Median DFI before an SP was slightly longer at 4.8 years (IQR 2.3–7.1).
- The cumulative incidence of LRR and SP combined in the first 5 years of follow-up of the complete population was 5.7%. The cumulative incidence for LRR and SP together followed the same pattern and was higher as well for women aged 60–74 than the risk of women aged <60 and >74 years.
- Other factors with both a greater and significant effect on the risk of recurrence than age were receiving endocrine treatment (subhazard ration[sHR] 0.52, p < .001, vs. no endocrine treatment), chemotherapy (sHR 0.58, p < .001, vs. no chemotherapy), and grade of differentiation (grade II: sHR 1.25, p = .021, vs. grade I; grade III: sHR 1.34, p = .015, vs. grade I).
- LRR and SP combined resulted in at least twice the risk of recurrence in women with a history of breast cancer (<60: 5.9%, 95% CI 5.3–6.6; 60–74: 6.3%, 95% CI 5.6–7.1; >74: 4.7%, 95% CI 3.9–5.9), compared with the risk of a primary tumour in the healthy screening population.

In summary:

- Mammography plays a crucial role in detecting local/in-breast recurrences early.
- Early, asymptomatic detection is associated with better survival.
- Less frequent mammographic surveillance (compared to the current annual schedule) is safe for women ≥50 years at diagnosis but we do not have evidence to support change in women under the age of 50 years.
- Mammographic surveillance (in the contralateral breast) above that recommended for the public may be unnecessary post-mastectomy.
- Routine clinical visits have limited value in recurrence detection.
- Emphasis should be placed on patient education. Symptom awareness and reporting may improve timely detection without relying on scheduled visits.
- Guaranteed rapid access back to the appropriate clinic when needed is necessary, for prompt symptom evaluation.

Benefits and Harms

The benefits of follow-up mammography in patients with breast cancer who have completed local treatment include:

- Early detection of local recurrence or new primary, with potential to improve survival rates.
- Early treatment/clinical trials (with the aim of improving outcomes).
- A standardised approach to monitoring patients' post-treatment.
- Psychological benefits due to close monitoring.
- Reassurance – regular surveillance in the crucial years post-treatment can provide reassurance to patients and reduce their anxiety over fear of recurrence.

While acknowledging all the benefits of follow-up mammography, safe de-escalation of mammographic surveillance has also been shown (Dunn et al., 2025). Moving to the national breast screening programme (BreastCheck) when it is safe to do so, will allow for the double reading of all mammograms, providing added reassurance.

Furthermore, reducing hospital/clinic visits will empower patients to self-examine and report any concerns promptly.

There are also potential harms to consider, including:

- False positives – mammograms can detect benign changes leading to additional investigations and unnecessary anxiety.
- False negatives – mammography is not 100% sensitive, particularly in women with dense breasts or with post-treatment changes to their breasts.
- Overdiagnosis/overtreatment – detection of some recurrences/new primaries that may not be life-threatening but could lead to unnecessary treatment.

- Risk of exposure to radiation – while patients are exposed to low doses of radiation, this accumulates over time.
- Psychological implications for patient – can trigger anxiety in the lead up to mammogram – impacting on well-being and quality of life.
- Physical discomfort/pain experienced during mammographic imaging.
- Health service burden – increasing pressures in rapid access clinics as new patient referrals continue to increase; unnecessary visits add to demand for clinic appointments and potentially lengthening waiting times for new referrals.

The proposed reduction in the overall number of follow-up mammograms will help to maximise patient benefits and alleviate some of the harms.

Follow-up care should consider the patient's risk level. For low-risk patients, less intensive follow-up may be appropriate, while higher-risk patients may benefit from closer monitoring. A shared decision-making approach between patients and healthcare providers can help optimise follow-up schedules and maximise benefits while minimising unnecessary harms.

Preferences and values

Patients' preferences and values regarding follow-up care after local treatment for breast cancer vary widely based on personal experiences, perceived benefits and harms, and emotional well-being.

Moore et al. (2022) explored patients' experiences of nurse-led patient-initiated follow-up services in the UK and identified a number of patient factors that had an impact on their ability to self-manage:

- Empowerment over own health
- Self-efficacy (breast self-examination, symptom monitoring, help-seeking)
- Motivation (persistence at seeking help for concerns)
- Knowledge (managing treatment side-effects, breast self-examination)
- Barriers/facilitators to seeking help (awareness of who to contact, attending a support group)
- Uncertainty (fear of recurrence)
- Illness perceptions (susceptibility to a cancer recurrence)

According to Tompkins et al. (2016) patient empowerment is key to the success of self-managed care as it relies on survivors taking a participatory role in maintaining their health and wellbeing. A fundamental problem arises if women are unable to self-manage, as they do not have the skills, confidence or support to do so.

The multidisciplinary Guideline Development Group including patient representatives recognise that knowledge and trust are important patient values and influence adherence to follow-up schedules. It is essential for patients to be well informed regarding the risk of recurrence and the need for follow-up post-treatment to detect a

recurrence. This should be clearly communicated to patients and is essential for informed decision-making.

It is important that patients are afforded the opportunity to ask questions about the benefits and harms of follow-up and particular investigations (e.g. radiation exposure during radiological imaging). This should help reassure patients that they are receiving the best level of care based on current evidence.

The justification for the type and frequency of follow-up investigations/appointments should also be fully explained to the patient. This is important as a reduced number of follow-up appointments may cause anxiety and fear in some patients especially during the early stages after treatment when there are uncertainties surrounding the future of their condition. Similarly, unnecessary ongoing follow-up appointments may cause anxiety and fear in some patients.

Open communication around timelines, such as when investigations/appointments may be scheduled; when results will be available and how those results will be communicated are important in managing patient's expectations and maintaining trust. The values of disclosure and understanding are embedded into patient/clinician communication and may have the benefit of reducing some of the patient anxiety around follow-up.

Informed patients should also be reassured that they have individualised rapid access to clinic if they require it. This depends on education and empowerment regarding self-examination and sign/symptom awareness.

The Breast Check programme recently received EUREF, the European Reference Organisation for Quality Assured Breast Screening and Diagnostic Services, accreditation, which provides independent external reassurance of the quality of the screening programme and further builds trust and confidence in the programme. Double reading is also performed on all mammograms.

Resources, capacity, equity and implementation considerations

The proposed recommendations will reduce breast clinical appointments for patients, without compromising patient safety.

Implementation of the recommendations may also increase clinic capacity in the Rapid Access Clinics (RACs) for newly diagnosed patients. This has the potential to increase HSE efficiencies and optimise the use of resources.

Increased resources will be required for the National Screening Service (e.g. radiographers, radiologists), when patients have completed their follow-up schedule with their treating hospital and subsequently (re-) enrol with BreastCheck, if required. IT infrastructure may be required to identify this patient cohort within the BreastCheck database.

A cost-effectiveness study is being carried out in the UK by the Mammo-50 group.

Clinical Follow-Up

Recommendation 2.3.1.1

For patients with breast cancer, who have completed local treatment*, one clinical follow-up appointment with the surgical team is recommended at one year post-treatment.

*surgery, radiotherapy

Quality of Evidence: Low **Grade of recommendation:** Conditional

Recommendation 2.3.1.2

For patients with breast cancer who have completed local treatment* and develop symptoms suspicious for local recurrence or metastasis, an urgent referral by their GP to the appropriate clinic (breast surgery or medical oncology, depending on symptoms) is recommended.

*surgery, radiotherapy

Quality of Evidence: Low **Grade of recommendation:** Strong

Recommendation 2.3.1.3

For patients with breast cancer, who are undergoing systemic therapy, clinical follow-up with the medical oncology team is recommended, the frequency of which will be determined by the team on an individual basis.

Quality of Evidence: Very low **Grade of recommendation:** Conditional

Radiological follow-up

Recommendation 2.3.1.4

For patients who have completed local treatment for breast cancer, annual mammography is recommended for three years post-treatment.

Patients are then eligible for mammography every two years through the national breast screening programme (BreastCheck).

- If patients complete their three years of annual mammography post-treatment and are still younger than the eligibility age for BreastCheck (50 years), they should continue annual mammography until age 50.

- If patients complete their three years of mammography and are older than the screening age (> 69 years), they should continue annual mammography for an additional two years (five years in total post-treatment).

- If patients have ductal carcinoma in situ (DCIS) or triple negative breast cancer, they should have annual mammography for five years before transitioning to mammography every two years with BreastCheck.

Quality of Evidence: Moderate **Grade of recommendation:** Conditional

Recommendation 2.3.1.5

Annual mammography is not routinely recommended in the following patients with breast cancer (across all age groups):

- patients who are diagnosed with metastatic disease
- patients who are not suitable for surgical intervention
- patients who have had a bilateral mastectomy
- patients with a life expectancy of less than five years.

Quality of Evidence: Very low **Grade of recommendation:** Conditional

Good practice points

A follow-up schedule for all patients should be agreed between the clinician and the patient.

All patients should know who is responsible for their follow-up care (i.e. consultant) and who is their point of contact.

All patients should receive a Treatment Summary & Care Plan (Discharge Summary) on discharge from hospital post-treatment and when they complete their mammographic follow-up surveillance/schedule.

The Discharge Summary should be shared with the patients' GP to ensure unnecessary imaging does not occur.

In patients with breast cancer who are documented high/very-high risk of recurrent or second primary in the breast, the frequency of mammography and clinical follow-up will be determined by their risk profile, as discussed with their treating team.

For male patients with breast cancer, consider annual mammography for five years post-treatment.

Cross-sectional imaging (e.g. CT, bone scan, PET-scan) is not routinely recommended as part of the post-treatment follow-up schedule.

Summary of details found by BreastCheck should be shared with the hospital following a recurrence.

2.4 Plain Language Summary

Summary of National Clinical Guideline

This National Clinical Guideline contains evidence-based recommendations.

This guideline is for patients who have completed treatment for breast cancer. It describes the recommended follow-up schedule. It covers:

- What type of follow-up should be considered (e.g. breast clinical appointment, mammogram)
- The frequency of follow-up appointments based on age and cancer type
- What to do if symptoms develop

This guideline does not cover patients undergoing active treatment of their breast cancer or patients receiving palliative care.

Not all patients will need to have the same follow-up schedule - this is a joint decision with their doctor. Ask your doctor or any member of your treating team if you have any questions about your follow-up schedule, this is information which should be made available to you.

What does this guideline mean for you?

Questions you may want to ask your healthcare professionals?

- Who do I contact if something doesn't feel right or I am feeling unwell after treatment?
- How frequent will my follow-up appointments be?
- Who will arrange my follow-up appointments?
- What happens during my breast clinical follow-up appointment?
- How should I prepare for my mammogram?
- Are there any potential risks or complications?
- When will I get the results of my mammogram and who will give them to me?
- What happens next?

Understanding the language

Medical Term	Plain language explanation
Local recurrence	Refers to the recurrence of a breast cancer in the same breast after initial treatment.
Locoregional recurrence	Refers to the return of a breast cancer in the same area initially treated and/or nearby lymph nodes and tissues.
Contralateral breast cancer	Refers to the development of a new primary breast cancer in the opposite breast to the one affected by the initial breast cancer diagnosis.

3 Methodology

3.1 Establishment of a Guideline Development Group

A Guideline Development Group was responsible for the development and delivery of this National Clinical Guideline and included representatives from relevant medical professionals and stakeholders (see Appendix I for a list of the members of the Group).

3.2 List of clinical questions

Clinical question 2.3.1 (B_Rad_7)

In patients with breast cancer, who have completed treatment, what is the optimum radiological (mammographic) and clinical follow-up protocol?

Population	Patients with breast cancer (post-treatment)
Intervention	Physical/clinical examination Annual mammogram
Control	-
Outcome	To detect a recurrence – sensitivity, specificity, positive predictive value, negative predictive value - Type - Timing - Duration - Quality of life - Impact on patient - Resources/capacity - Cost effectiveness

3.3 Describe and document the evidence search

An evidence search was carried out on the above clinical question. A systematic literature review protocol developed for the guideline development process by the HSE librarians in conjunction with the NCCP, was used and is available upon request. The literature search strategy is also available upon request.

3.4 Describe the method of screening and evidence appraisal

An NCCP evidence methodologist and senior research officer screened the literature searches independently to identify relevant primary papers. Any disagreements on primary paper inclusion were agreed through discussion.

All primary papers deemed suitable for inclusion were appraised using validated checklists developed by the Scottish Intercollegiate Guideline Network (SIGN).

There were three main points considered when appraising the research evidence:

- Are the results valid? (internal validity)
- What are the results? (statistical and clinical significance)

- Are the results applicable/generalisable to the patient/population of the guideline? (external validity)

3.5 Formulation and grading of recommendations

The evidence to address the clinical question, both from primary literature and international guidelines, was extracted into an evidence table for review by the Group.

Recommendations were formulated through a formal structured process. An 'Evidence to Decision Framework' was completed for the clinical question. The following domains were discussed by the Group.

Evidence summary

The body of evidence was reviewed and discussed taking into account the types of studies available, the quality of those studies and their degree of bias, the precision of the results, and whether all studies were consistent in their findings. The directness of the evidence and generalisability to the target population were also considered.

Benefit and harm

The balance of potential benefits versus potential harms of the proposed recommendations were considered.

Preferences and values

The preferences and values of the patient were discussed and considered, noting particularly the acceptability of the proposed recommendations to patients and their carers' in the context of the balance of benefits and harms.

Resources, capacity, equity and implementation considerations

Any factors which may affect the implementation of the proposed recommendations were discussed and documented. Potential issues around equity was explicitly considered.

Recommendations

Following discussion on the four domains above the recommendations were agreed by the Group. The following terms were considered for use in recommendations:

- is recommended
- should be considered
- may be considered
- is not recommended.

The use of these terms are dependent on all four domains outlined above. Each recommendation was assigned a quality of evidence and a grade of recommendation by the Group. Good practice points and practical considerations for

patient care were also agreed by the Group. Further information on the grading systems used are documented in Appendix III.

3.6 Consultation

National review

The draft guideline was signed-off by the Group before going to national stakeholder review.

It was placed on the NCCP website and circulated to relevant organisations and individuals for comment between [date month] and [date month year].

Stakeholders were asked to comment on the comprehensiveness of evidence used to form the recommendations. Stakeholders were required to submit feedback with supporting evidence on a form provided along with a completed conflict of interest form.

International review

The draft guideline was also submitted for international expert review. The Group nominated the following experts to provide feedback on the draft guideline:

- [insert name, title, and location of all international reviewers]

The reviewers were chosen by the Group based on their in-depth knowledge of the subject area and guideline development processes. The review followed the same procedure as the National Review.

All feedback received was reviewed by the Group. Suggested amendments and supporting evidence were reviewed and consensus reached to accept or reject the amendments. All modifications were documented and the report is available upon request.

3.7 National implementation plan

An implementation plan was developed based on the NCEC Implementation Guide (DoH, 2018). It outlines the actions required to implement this guideline, who has lead responsibility for delivering the action, the timeframe for completion and the expected outcomes of implementation (see Appendix IV).

This National Clinical Guideline including the implementation plan should be reviewed by the multidisciplinary team and senior management in each cancer centre/hospital as it outlines the actions required to implement the recommendations.

The REO of each HSE health region, and the CEO, general manager and clinical lead of each cancer centre/hospital have corporate responsibility for the implementation of the National Clinical Guideline and to ensure that all relevant staff are appropriately supported to implement the guideline.

The National Clinical Guideline has been circulated and disseminated through the professional networks who participated in developing and reviewing this document.

3.8 Governance and approval

The final draft of the guideline was Quality Assured internally by a member of the NCCP Evidence and Quality Team to confirm adherence to the National Standards for Clinical Practice Guidance (National Clinical Effectiveness Committee, 2025).

The guideline, along with confirmation of the outcome of the Quality Assurance process, was then submitted to the NCCP National Executive on [date month year] for approval. A full list of the members can be found in Appendix II.

3.9 Communication and dissemination plan

This National Clinical Guideline is available on the HSE National Central Repository.

A Communication and Dissemination Plan was developed by the Group to raise awareness of the development of this guideline, to ensure effective communication and collaboration with all key stakeholders throughout the various stages of guideline development process and to maintain momentum for the widespread adoption of the guideline.

In conjunction with the HSE Communications Division, key stakeholders were identified and a list of strategies was developed to inform them of the new guideline. The implementation of the guideline will also be supported by communication and dissemination. Details of the Communication and Dissemination Plan are available in Appendix V.

3.10 Plan for national monitoring, evaluation and audit

Monitoring and evaluation

Each cancer centre/hospital should implement a systematic process of gathering information and tracking over time to ensure implementation of the recommendations within this guideline.

Monitoring and Evaluation of this National Clinical Guideline will be done through structured engagement of the NCCP and the HSE health regions and the NCCP Breast Cancer Clinical Leads Group.

Audit

The Group members during recommendations meeting identified the following recommendation(s) as suitable for audit:

- For patients with breast cancer, who have completed local treatment*, one clinical follow-up appointment with the surgical team is recommended at one year post-treatment.
  *surgery, radiotherapy

- For patients who have completed local treatment for breast cancer, annual mammography is recommended for three years post-treatment.

An audit tool was developed in conjunction with the Group and is available upon request by contacting guidelines@cancercontrol.ie.

3.11 Review/update

This guideline was issued on [date month year] and will be considered for review by the NCCP in three years.

Surveillance of the literature base will be carried out periodically by the NCCP. Any updates to the guideline in the interim period where new evidence emerges or as a result of the three year review will be noted in the guidelines section of the NCCP websites.

4 Abbreviations

CEO	Chief Executive Officer
CI	Confidence interval
CNS	Clinical nurse specialist
CT	Computed tomography
DCIS	Ductal carcinoma in-situ
DFI	Disease free interval
DM	Distant metastasis
ER	Estrogen receptor
GDG	Guideline development group
GP	General Practitioner
HER2	Human epidermal growth factor receptor 2
HIQA	Health Information & Quality Authority
HR	Hazard ratio
HSE	Health Service Executive
IQR	Interquartile range
LRR	Locoregional recurrence
MDT	Multidisciplinary team
NCCP	National Cancer Control Programme
NCEC	National Clinical Effectiveness Committee
NCRI	National Cancer Registry Ireland
NICE	National Institute for Health and Care Excellence
OS	Overall survival
p	p-value
PET	Positron emission tomography
PR	Progesterone receptor
RAC	Rapid Access Clinic

RCT	Randomised controlled trial
REO	Regional Executive Officer
sHR	Subhazard ratio
SIGN	Scottish Intercollegiate Guideline Network
SP	Second primary
UK	United Kingdom

5 Glossary of Terms

Benefits and Harms
Benefits refer to improved quality of life and reductions in mortality and morbidity. There are physical risks of harm such as exposure to radiation and there are emotional and psychological risks of harm such as anxiety and depression.

Confidence intervals
Confidence intervals indicate the consistency, or variability of a result. If a study has 95% confidence interval calculated, the means that if the study was repeated multiple times with samples from the whole population and the confidence intervals were calculated for each of those repeated studies, then the true value would lie within the calculated confidence intervals 95% of the time.

Good practice points
Good practice points are based on the clinical expertise of the Guideline Development Group.

Hazard ratio
A measure of how often a particular event happens in one group compared to how often it happens in another group, over time.

p-value
The p-value is related to the significance level. If the critical alpha value is 0.05, then the p-value must be smaller than 0.05 for the test to have a statistically significant result. If the p-value is greater than the critical alpha value, then the test does not have a statistically significant result.

Practical considerations for patient care
These are statements developed with the patient Guideline Development Group members on issues that were important to them with regards to their own experience.

Preferences and values
The patient preferences and values statements were developed by the multidisciplinary Guideline Development Group including patient representatives. Patient members were given priority during guideline meetings to discuss preferences and values. The Guideline Development Group tried to identify what an informed patient and their families would prefer. The value statements refer to what the Guideline Development Group believe are the values that are driving patient and family preferences.

6 Appendix

Appendix I Members of the Guideline Development Group

A conflict of interest form was signed by all members of the GDG. No conflicts of interest were declared.

Name	Title/position	Role on guideline group
Co-Chairs of the Guideline Development Group		
Prof. Martin O'Sullivan	Consultant Surgeon, Cork University Hospital	Clinical co-chair and writing member
Prof. Deirdre Duke	Consultant Radiologist, Beaumont Hospital	Clinical co-chair and writing member
Dr Eve O'Toole	Head of Evidence and Quality Hub, National Cancer Control Programme	Evidence chair and writing member
Patient/Service User Partners		
Ms Kathleen O'Connor	Patient/Service User Partner	Writing member
Ms Aisling Dempsey	Patient/Service User Partner	Writing member
Ms Tina Hickey	Patient/Service User Partners	Writing member
Radiology		
Dr Laura Sweeney	Consultant Radiologist, University Hospital Waterford	Writing member
Dr Neasa Ni Mhuircheartaigh	Consultant Radiologist, Beaumont Hospital	Writing member
Dr Cressida Brennan	Consultant Radiologist, University Hospital Limerick	Writing member
Dr Angela O'Brien	Consultant Radiologist, Mater Hospital	Writing member
Dr Kate Hunter	Consultant Radiologist, St. Vincent's University Hospital/Merrion Unit	Writing member
Dr Jennifer Kerr	Consultant Radiologist, Mater Hospital/Eccles Street Unit	Writing member
Surgery		
Mr Michael Boland	Consultant Oncoplastic Breast Surgeon, St. Vincent's University Hospital	Writing member
Ms Edel Quinn	Consultant Oncoplastic Breast Surgeon, Cork University Hospital	Writing member
Prof. Carmel Malone	Consultant General and Breast Surgeon, Galway University Hospital	Writing member
Medical Oncology		
Dr Miriam O'Connor	Consultant Medical Oncologist, University Hospital Waterford	Writing member
Prof. Janice Walshe	Consultant Medical Oncologist, St. Vincent's University Hospital	Writing member

Nursing		
Ms Maeve Stenson	Advanced Nurse Practitioner - Breast Care, St. James's Hospital	Writing member
Ms Nichola McNamara	Registered Advanced Nurse Practitioner - Breast Care, University Hospital, Limerick	Writing member
Ms Susan Walsh	Registered Advanced Nurse Practitioner – Rapid Access Breast Services, Cork University Hospital	Writing member
Ms Orla Baldwin	Candidate Advanced Nurse Practitioner – Breast, Cork University Hospital	Writing member
GP		
Dr Una Kennedy	NCCP GP Advisor	Writing member
Dr Siobhan McDonagh	GP	Writing member
Evidence		
Ms Deirdre Love	Evidence Methodologist, NCCP	Project manager, researcher, writing member
Dr Niamh Kilgallen	Senior Research Officer, NCCP	Writing member
Ms Louise Mullen	National Lead – Cancer Survivorship, NCCP	Writing member
Ms Laoise Ryan	Surgical Oncology Programme Manager, NCCP	Writing member
Ms Cathleen Osborne	ADON Survivorship, NCCP	Writing member
Ms Linda Halton	HSE Librarian	Information services
Other		
Dr Alan Smith	Consultant in Public Health Medicine, National Screening Service	Writing member

The following people also contributed to the development of this guideline:

- xxx

Appendix II Membership of NCCP National Executive

Name	Role and position

Sign-off by Chair of Approval Governance Group

National Clinical Guideline: Post-treatment follow-up of patients with breast cancer was formally ratified and recorded in the minutes of the Approval Governance Group on [date month year].

Name:	
Title:	
Signature:	

Appendix III Grading the recommendations in this guideline

2025 levels of evidence and grading system

The Guideline Development Group assigned each recommendation a quality of evidence and grade of recommendation. The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach provides an explicit system for rating the quality of evidence and whether the recommendation is strong or conditional (Guyatt et al., 2008).

Quality of evidence

It is recognised in guideline development that just assessing the level of evidence does not take into account the methodological quality of each individual study or the quality of the body of evidence as a whole (Harbour and Miller, 2001). The Guideline Development Group used an amended GRADE system which considers the following factors when classifying the quality of evidence; high, moderate or low (Guyatt et al., 2008):

- Study design
- Study design limitations
- Consistency of results
- Directness of the evidence
- Imprecision of results
- Reporting bias

Table i: Quality of evidence adapted from GRADE working group 2013

High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.
Very Low	We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

Grade of recommendation

There are two grades of recommendation: strong or conditional. These reflects the balance of the following items:

- The quality of the body of evidence
- The balance between benefit and harm to patient
- Patient preferences and values
- Resources/cost

Table ii: Grade of recommendation adapted from GRADE working group 2013

Strong	A strong recommendation is one for which the Guideline Development Group is confident that the desirable effects of an intervention outweigh its undesirable effects (strong recommendation for an intervention) or that the undesirable effects of an intervention outweigh its desirable effects (strong recommendation against an intervention). Strong recommendations are not necessarily high priority recommendations. A strong recommendation implies that most or all individuals will be best served by the recommended course of action.
Conditional	A conditional recommendation is one for which the desirable effects probably outweighs the undesirable effects (conditional recommendation for an intervention) or undesirable effects probably outweigh the desirable effects (conditional recommendation against an intervention) but appreciable uncertainty exists. A conditional recommendation implies that not all individuals will be best served by the recommended course of action. There is a need to consider more carefully than usual the individual patient's circumstances, preferences, and values. When there are conditional recommendations caregivers need to allocate more time to shared decision-making, making sure that they clearly and comprehensively explain the potential benefits and harms to a patient.

Good practice points

Good practice points were based on the clinical expertise of the Guideline Development Group.

Practical considerations for patient care

Practical considerations for patient care are statements developed with the patients that were involved in the development of the guideline on issues that were important to them in relation to their own experience of the diagnosis and staging of their breast cancer.

Appendix IV National Implementation Plan

National Clinical Guideline	[insert title]
Date National Clinical Guideline approved	[date month year]
Expected date of full implementation	[year]

Implementation action	Implementation barriers / enablers	List of tasks to implement the action	Lead responsibility for delivery of the action	Expected completion date	Expected outcomes
	Enabler: Barrier:				

Appendix V Communication & Dissemination Plan

Key stakeholders were identified by the GDG and in conjunction with the HSE Communications Division, a list of strategies was developed to inform these stakeholders of the new guideline. Some strategies will include:

- Official publication and launch of the guideline.
- Direct communication from NCCP Director to hospital and cancer network managers raising awareness and setting out expectations/actions.
- Circulation to the networks who participated in developing and reviewing the guideline.
- Circulation to NCCP staff.
- Liaison with HSE Clinical Programmes, academic faculties and professional bodies for dissemination to their members.
- Inform the relevant voluntary organisations and patient advocacy groups that the guideline has been updated and is available for representation in their patient and public information.
- Promotion through the HSE/NCCP website, internal HSE media, social and print media.
- NCCP to include details of the guideline in presentations by clinical leads, sub-group chairs, NCCP Director.
- NCCP to promote the guideline at conferences, workshops, and CPD sessions.

A plain language summary of the guideline is included as a key element of the Communication and Dissemination Plan - for patients, their families and other non-specialists who may be interested in the potential implications of the recommendations within the guideline and what it may mean for them.

Description of stakeholder communications	Communication method	Owner	Timeline
Patients			
Plain language summary	Guideline	Project team	Pre 'go live'
Guideline Development Group			
New guideline alert	Email	Project team	Pre 'go live'
National stakeholders			
New guideline to Hospital Managers/Cancer Network Managers	Email	National Director, NCCP	Pre 'go live'
New guideline to relevant stakeholders (incl. National groups, organisations, faculties, patient support &	Email	Project team	Pre 'go live'

advocacy groups, international reviewers)			
New guideline to NCCP staff	Email	Project team	Pre ‘go live’
Press Release (HSE website)	Article	Project team/HSE Comms	Official launch
Social media coverage (Irish & English)	“X” posts	Project team	‘go live’ & official launch
News articles	Article	Project team/HSE Comms	Within 2 months of 'go live'
Patient information	Leaflet	Project team	‘go live’ & official launch
GP information	Leaflet	Project team	‘go live’ & official launch

Appendix VI Overview of included studies

Table 1: Overview of included studies

Study	Study design & population	Key results
Dunn et al. (2025)	RCT (UK) Women ≥50 years post-surgery n=5,235	- Breast-cancer specific survival - 98.1% in the annual surveillance group vs. 98.3% in the less frequent surveillance group - hazard ratio [HR] = 0.92, 95% CI = 0.64–1.32) - 5-year recurrence-free interval - 94.1% (annual) vs. 94.5% (less frequent) - adjusted HR = 1.00, 95% CI = 0.81–1.23) - Overall survival - 94.7% (annual) vs. 94.5% (less frequent) - adjusted HR = 1.07, 95% CI 0.87–1.33)
Horan et al. (2023)	Retrospective (Ireland) n=140	- 53.6% recurrences radiologically detected; 46.4% clinically (90.7% of these were self-detected by patient) - Clinical examination by surgical staff found <5% new cases - Median time to recurrence longer in radiological group compared to symptomatic group (33 vs. 23 months; p=0.1)
Lu et al. (2009)	Meta-analysis	- Survival was better in studies where recurrences were found by mammography vs. clinically (HR: 2.44; 95% CI: 1.78–3.35; p = 0.01) - Higher probability of survival in patients without symptoms vs. symptoms present (HR: 1.56; 95% CI: 1.36–1.79)
Myller et al. (2021)	Prospective (Finland) n=621 (2003-2013) 61 developed DM; 34 LRR	- Routine mammograms detected a significant portion of locoregional recurrences (41%) - First indicator of LRR in 53% was abnormalities on imaging (pain 6%) - Longer survival after LRR if recurrence detected asymptomatically or by mammogram vs. symptomatic (p=0.046) - Majority of distant metastases detected due to symptom (62%), linked to poorer survival (p=0.029) - Pain was the most common symptom

Saltbaek et al. (2020)	Retrospective (Denmark) n=310	- 47% recurrences detected by referral by GP/other specialist - 11% scheduled mammogram - Symptom duration was longer in patients whose recurrence was detected at a scheduled outpatient visit (median 21 weeks) vs. patients requesting a consultation in the outpatient clinic (median 3 weeks) or by their GP (median 8 weeks) ($p < 0.001$). - Most frequent symptoms – pain, dyspnae, fatigue
Montgomery et al. (2007)	Retrospective (UK) n=1,312	- Majority of recurrences were mammographically detected (51%), 33.5% were symptomatic, 13.5% were clinically detected - Overall survival was reduced/worse for clinically detected ipsilateral relapses
Smith et al. (2022)	Systematic review/meta-analysis Post-mastectomy	- Lower rates of clinically occult (non-palpable) cancer compared with cancer detection rates, across mammography, ultrasound and MRI

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