NAoPri
National Audit of
Primary Breast Cancer

NATCAN
National Cancer Audit
Collaborating Centre

National Audit of Primary Breast Cancer State of the Nation Report 2025

An audit of care received by people diagnosed with primary breast cancer between 1 January 2020 and 31 December 2022 in England and Wales.

Version 2 - September 2025

NAoPri

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The Royal College of Surgeons of England (RCS) is an independent professional body committed to enabling surgeons to achieve and maintain the highest standards of surgical practice and patient care. As part of this it supports audit and the evaluation of clinical effectiveness for surgery. Registered Charity no: 212808.

The National Cancer Audit Collaborating Centre (NATCAN) is commissioned by the Healthcare Quality Improvement Partnership (HQIP) and funded by NHS England and Welsh Government as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). NATCAN delivers national audits in bowel, breast (primary and metastatic), kidney, lung, non-Hodgkin lymphoma, oesophago-gastric, ovarian, pancreatic and prostate cancers.

The Association of Breast Surgery is a registered charity dedicated to advancing the practice of breast surgery and the management of breast conditions for the benefit of the public. It is a multi-professional membership association, which promotes training, education, clinical trials and guideline composition and adoption. For further information, please refer to the website www.associationofbreastsurgery.org.uk. Registered charity no: 1135699

The UK Breast Cancer Group (UKBCG) is a forum for Clinical and Medical Oncologists. The UKBCG acts as a stakeholder to NICE, NHS England and other organisations; and undertakes key pieces of work, at times in collaboration with other bodies, with the overriding endpoint of improving patient care. The Group's objectives include advancing the education of clinical and medical oncologists in the subject of breast cancer, concerning its identification, diagnosis and treatment; promoting research for the public benefit in all aspects of breast cancer and publishing the results; and assisting in the treatment and care of persons suffering from breast cancer, or in need of rehabilitation, by the provision of education for healthcare professionals. Further information on the work of the UKBCG is communicated via this website on a regular basis https://ukbcg.org/. Registered charity no: 1177296

This work uses data that has been provided by patients and collected by the NHS as part of their care and support. For patients diagnosed in England, the data is collated, maintained and quality assured by the National Disease Registration Service (NDRS), which is part of NHS England. Access to the data was facilitated by the NHS England Data Access Request Service.

NHS Wales is implementing a new cancer informatics system. As a result, the quality and completeness of data from Wales is likely to have been impacted due to implementation of this new system across multiple NHS organisations (Health Boards), which has resulted in data being supplied by both old and new systems. Additionally, and reflecting the uncertainty of data quality, the data submitted to the audit may not have undergone routine clinical validation prior to submission to the Wales Cancer Network (WCN), Public Health Wales.

Contents

1. Introduction

The aim of the National Audit of Primary Breast Cancer (NAoPri) is to evaluate the patterns of care and outcomes for people with primary breast cancer in England and Wales, and to support services to improve the quality of care. This State of the Nation report publishes information on the care received by people diagnosed with breast cancer during 2020-22 in England and Wales. It is the audit's second annual assessment of NHS breast services and shares examples of good practice, as well as highlighting where care needs to improve.

Breast cancer care described for the patients diagnosed in the period 2020-22 will reflect the changes introduced in the NHS during 2020 because of the COVID-19 pandemic and will be atypical to some degree. These changes included a 3-month pause in breast screening units inviting all eligible women for breast screening and adaptations to initial treatments offered to people diagnosed with primary breast cancer[1].

The management of people with breast cancer is informed by various national guidelines[2,3,4,5,6]. From these guidelines, and in consultation with its professional and patient advisory groups, the NAoPri has developed five quality improvement (QI) goals and a set of associated indicators, details of which are published in the NAoPri Quality Improvement Plan. Some indicators outlined in the QI Plan remain in development. The indicators included in this report and accompanying Data Dashboard are outlined in Table 1.

Table 1. *Performance Indicators (PIs) *

	England ^	Wales #
PI 1: Percentage of patients who underwent triple diagnostic assessment (TDA) in a single hospital visit	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 2: Percentage of patients who had contact with a Clinical Nurse Specialist (CNS) recorded after diagnosis.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 3: Percentage of patients who had i) breast-conserving surgery within 12 months of diagnosis, or ii) mastectomy within 12 months of diagnosis.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 4: Percentage of patients who received neo-adjuvant chemotherapy.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 5: Percentage of patients who received adjuvant radiotherapy following i) breast-conserving surgery, and ii) mastectomy	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 6: Percentage of patients who received any chemotherapy.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 7: Percentage of patients who had an immediate reconstruction following a mastectomy.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 8: Percentage of patients who had re-operation within 12 months of their initial breast-conserving surgery.	Yes (01/20 – 12/22)	Yes (01/20 – 12/22)
PI 9: Percentage of patients who had an overnight hospital admission for treatment-related toxicity within 30 days of a systemic anti-cancer therapy (SACT) cycle.	No (Indicator under development)	No (Indicator under development)
PI10: Percentage of patients who survived their bereast cancer for at least 3 years from their initial breast cancer diagnosis	Yes (01/21 – 12/22)	Yes (01/21 – 12/22)

* See methodology supplement for the definitions of each performance indicator

^ England cohort: National Cancer Registration Dataset (NCRD)

Welsh cohort: Cancer Network Information System Cymru (CaNISC)

The NAoPri is one of ten national cancer audits conducted by the National Cancer Audit Collaborating Centre (NATCAN) and commissioned within the National Clinical Audit and Patient Outcomes Programme (NCAPOP), which is funded by NHS England and the Welsh Government. These audits include the National Audit of Metastatic Breast Cancer (NAoMe), for which a State of the Nation report is also available.

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[1] Lohfeld, L., Sharma, M., Bennett, D. et al. Impact of the COVID-19 pandemic on breast cancer patient pathways and outcomes in the United Kingdom and the Republic of Ireland – a scoping review. Br J Cancer (2024). https://doi.org/10.1038/s41416-024-02703-w

[2] National Institute for Health and Care Excellence. Early and locally advanced breast cancer: diagnosis and management. NICE guideline [NG101]. Available from: https://www.nice.org.uk/guidance/ng101 .

[3] National Institute for Health and Care Excellence. Breast Cancer. Quality standard [QS12]. Available from: https://www.nice.org.uk/guidance/qs12..

[4] Association of Breast Surgery (ABS). Guidelines available from: https://associationofbreastsurgery.org.uk/professionals/clinical-professional-standards

[5] UKBCG. Neo-adjuvant chemotherapy: multidisciplinary guidance. Available from: https://ukbcg.org/media/31670/neaoadjuvant-chemotherapy-manual-v1.pdf

[6] Biganzoli, L., et al., Updated recommendations regarding the management of older patients with breast cancer: a joint paper from the European Society of Breast Cancer Specialists (EUSOMA) and the International Society of Geriatric Oncology (SIOG). Lancet Oncol, 2021. 22(7): p. e327-e340. Available from: https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(20)30741-5/abstract

Throughout this report:

- the term NHS organisations is used to refer to English NHS trusts and Welsh NHS health boards, collectively.
- we refer to women and men as these correspond to the "sex" categories available in the data supplied. We acknowledge that some people may not identify using these binary woman–man categories.
- For all but one indicator, indicators are presented for both sexes combined. These overall figures may not apply specifically to men as they make up less than 1% of the NAoPri cohort. Where numbers permit and/or clinically relevant, results specifically for men are referred to in the text.

Additional materials that accompany this report include:

- A methodology supplement with details about the Audit's data sources and methods
- An online glossary that explains technical terms used in this report
- Information about the outlier policy
- Resources to support local monitoring of practice and quality improvement, such as provider-level results on the Data Dashboard and downloadable reports and a local action plan template.
- A summary of this report for people diagnosed with primary breast cancer and for the public will soon be made available on the Audit's website.

1.1 Data sources and cohort definition

The Audit derives its indicators using information that is routinely collected by the NHS as part of the care and support given to people diagnosed with breast cancer, rather than data that has been collected specifically for the Audit.[7] For people diagnosed or treated in England, the data are collated, maintained and quality assured by NHS England's National Disease Registration Service (NDRS). For people diagnosed or treated in Wales, data are provided by Wales Cancer Network (WCN)[8], using the Cancer Network Information System Cymru (CaNISC) or Cancer Dataset Form (CDF).

The State of the Nation Report uses the National Cancer Registration Dataset (NCRD) for England. Although this report is being published in September 2025, it includes data on women diagnosed with breast cancer up until the end of December 2022, the latest year of available NCRD registration data. Compared to the more timely Rapid Cancer Registration Dataset (RCRD), which includes diagnoses with a 12-18 month delay, the NCRD has more extensive data available, including hormone receptor status. It is also more complete, with only 13% of patients missing tumour stage in the NCRD, compared with around 30% in the RCRD. This tumour information is crucial to many of our performance indicators and using the NCRD increases the validity of our findings. To further support quality improvement activities, NAoPri also publishes quarterly reports of a subset of performance indicators (England only), which RCRD data is suitable for. We will continue to work to improve timeliness of our reports in future years. There is more information regarding the timeliness of this data on the NATCAN website.

For full details of the data and methods used within this report, please see the NAoPri Methodology Supplement.

The NAoPri dataset for analysis includes individuals aged 18 years or older diagnosed with primary breast cancer (ICD-10 diagnosis code: C50 or D05), without evidence of distant metastasis at or within 6 months of diagnosis (stages 0 to 3C) and diagnosed in an NHS hospital within England and Wales. In this report, we evaluate the care received by people diagnosed between 1st January 2020 and 31st December 2022. All performance indicators, except immediate breast reconstruction, include both men and women. Immediate breast reconstruction is reported for women only, as it is rarely relevant to male breast cancer treatment.

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[7] The audits in NATCAN do not 'collect' clinical data. The cancer audits utilise the nationally mandated flows of data from hospitals to the National Disease Registration Service (NDRS) in NHSE and the Wales Cancer Network in Public Health Wales, thereby minimising the burden of data collection on provider teams

[8] NHS Wales is part way through a cancer informatics implementation programme which is designed to improve the data capture and reporting capabilities of NHS Wales. This ongoing implementation is impacting the data quality within NHS Wales in the short term with multiple systems being used and different implementation dates across cancer sites and organisations resulting in a complex data landscape. NHS Wales has committed to continue to submit audit data annually until data submissions are sourced exclusively from the new cancer informatics solution. This will be from 2026 onwards that NHS Wales will be able to supply quarterly data using this new integrated, and more accessible digital platform.

The cohort consisted of 135,115 individuals, including 134,161 women (England: n= 127,054; Wales: n=7,107) and 954 men (England: n=912; Wales: n=42). We report on the cohort as a whole and broken down by sub-groups, most commonly by broad groupings of disease stage (Table 2).

Table 2. People with breast cancer included in this report (diagnosed 2020-22), by stage at diagnosis.

	England		**Wales**	
	Number	**%**	**Number**	**%**
Total primary breast cancer	127,966	100%	7149	100%
Non-invasive breast cancer (stage 0)	13,376	10%	703	10%
Invasive breast cancer (stages 1-3C, unknown)	114,590	90%	6,446	90%
Early invasive breast cancer (EIBC; stages 1-3A)	94,745	74%	5,340	75%
Locally advanced breast cancer (LABC; stages 3B-3C)	4,624	4%	262	4%
Stage unknown	15,221	12%	844	12%

2. Infographic

NAoPri
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Primary Breast Cancer

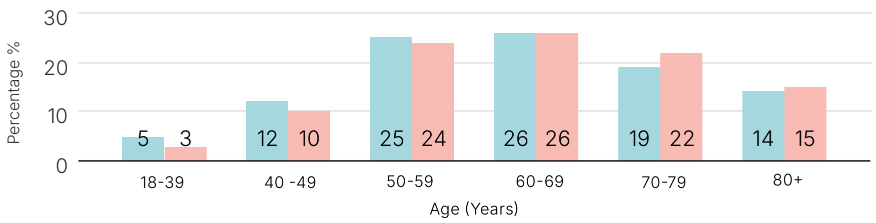
Summary of results for people (women and men) diagnosed with primary breast cancer (stage 0 to 3) in England and Wales between 1st January 2020 and 31st December 2022.

Key: E **England** W **Wales**

Total: 134,161 women and 954 men diagnosed 2020-2022

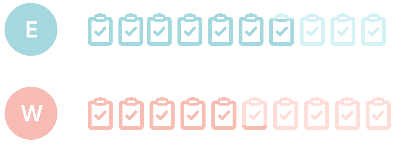
E **England: 127,966**
(127,054 women and 912 men)

W **Wales: 7,149**
(7,017 women and 42 men)



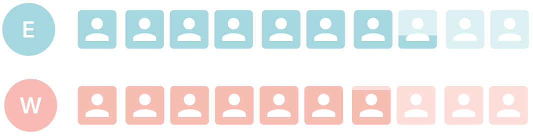
Triple Diagnostic Assessment

68% of patients in England* and 51% in Wales underwent Triple Diagnostic Assessment — meaning they received clinical assessment, imaging, and biopsy during a single hospital visit leading to their diagnosis.



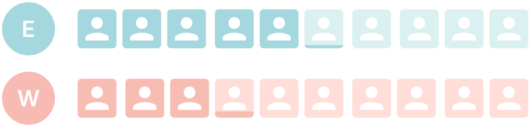
Surgery

Among those who had surgery within 12 months of diagnosis, 73% of people in England and 69% in Wales had Breast Conserving Surgery as their first surgery. The rest of individuals had mastectomy (lighter boxes) as their primary surgery.



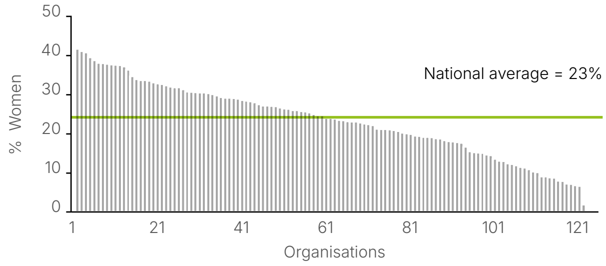
Neo-Adjuvant Chemotherapy (NACT)

Among patients with stage 2 to 3A triple negative or HER2 positive breast cancer who underwent surgery within 12 months of diagnosis, 52% in England and 32% in Wales received neo- adjuvant chemotherapy (chemotherapy before surgery).



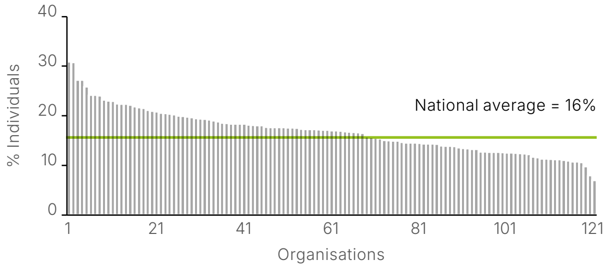
Immediate Breast Reconstruction

Among women who had a mastectomy, 24% in England and 13% in Wales underwent immediate breast reconstruction at the time of their mastectomy, with marked variation observed between different organisations.



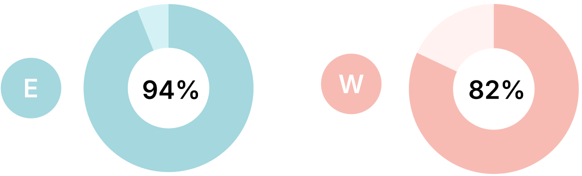
Re-operation

Within 12 months of initial breast-conserving surgery, 16% of individuals in England and 20% in Wales required at least one re-operation. Again, marked variation was observed between different organisations.



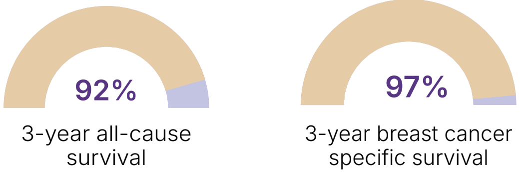
Clinical Nurse Specialist (CNS) Contact

For those with data available, 94% of people in England and 82% in Wales had contact with a CNS after diagnosis. However, data completeness was 78% for England and 93% for Wales.



Survival

Among individual diagnosed with primary breast cancer (Stage 1 to 3A) in England and Wales, 3-year all-cause survival was 92%. 3-year breast cancer-specific survival was 97%.



Note that due to differences in methodology between reports, direct comparisons between the 2024 report and this 2025 report should not be used to infer about trends over time.

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* Data field for triple diagnostic assessment for England was not mature enough for use in this report. An algorithm was applied to estimate this for England. Details can be found in the methodology supplement.

3. Recommendations

Developed in collaboration with the NAoPri Audit Advisory Committee based on key findings in this report

Recommendation	Audience	Audit Findings	Quality Improvement Goal	National Guidance/Standards/Resources
Clinical Recommendations				
1. Ensure that people with breast cancer have access to Triple Diagnostic Assessment (TDA) in a single visit and, if required, identify methods to increase the provision of this service.	England: Cancer Alliances working with breast care teams and clinical management in NHS trusts. Wales: Breast care teams and clinical management in NHS health boards.	We estimated that 68% of non-screen-detected cases (England, algorithm-based) and 51% (Wales) of people had TDA in a single visit.	Goal #1 – Improve the movement of patients through the care pathway.	*NICE Quality Standard 12 - Quality Statement 1:* Timely diagnosis. People with suspected breast cancer referred to specialist services are offered the triple diagnostic assessment in a single hospital visit.
2. Review the use of neo-adjuvant chemotherapy for people with triple negative and HER2+ early invasive breast cancer. Reduce the levels of unexplained regional variation, with particular emphasis in increasing use among those showing low rates and ensuring neo-adjuvant chemotherapy is offered to eligible patients in line with guideline recommendations	England: Cancer Alliances working with breast care teams and clinical management in NHS trusts. Wales: Breast care teams and clinical management in NHS health boards.	Among all 121 NHS breast units in England and Wales, rates of neo-adjuvant chemotherapy among triple negative or HER2+ patients with stage 2-3A disease were <40% for 23 units and >60% for 23 units.	Goal #3 – Reduce unwarranted variation for patients having non-surgical oncological treatments.	*NICE NG101 summary of recommendations:* Offer neo-adjuvant chemotherapy to people with invasive breast cancer as an option to reduce tumour size. *ABS Neo-adjuvant Chemotherapy: Multidisciplinary Guidance*
3. Review rates of immediate breast reconstruction (IBR) and, where rates are lower than expected, act to improve access by ensuring it is offered to all women as part of a balanced shared decision-making process, unless precluded by comorbidity or adjuvant therapies.	England: Cancer Alliances working with breast care teams and clinical management in NHS trusts. Wales: Breast care teams and clinical management in NHS health boards	In England and Wales, 23% of patients undergoing mastectomy had IBR. By Cancer Alliance, the proportion having IBR ranged from <20% to >40%.	Goal #4 – Improve access to breast reconstruction after mastectomy.	*NICE NG101 recommendation 1.5 Breast Reconstruction* Offer immediate breast reconstruction to women who have been advised to have a mastectomy, including those who need radiotherapy, unless they have comorbidities that rule out reconstructive surgery. Breast Surgery: GIRFT Programme National Specialty Report
4. Review rates of re-operation following breast conserving surgery (BCS) and, where rates are higher than expected, units should review local protocols with the view to complying with best practice.	England: Cancer Alliances working with breast care teams and clinical management in NHS trusts. Wales: Breast care teams and clinical management in NHS health boards	16% (England) and 20% (Wales) of people had a re-operation within 12 months of BCS. One in five trusts had re-operation rates >20%.	Goal #5 - Improve and reduce unwarranted variation in primary breast cancer outcomes.	This aligns with *NICE NG101 recommendation 1.4.3* Offer further surgery (re-excision or mastectomy, as appropriate) after breast-conserving surgery where invasive cancer or DCIS is present at the radial margins. ABS: The Management of radial surgical margins in relation to breast conserving surgery for invasive breast cancer ABS: Recommendations for the management of radial surgical margins in patients undergoing breast conserving surgery for DCIS

Recommendation	Audience	Audit Findings	Quality Improvement Goal	National Guidance/Standards/Resources
Data Quality Recommendations				
5. Confirm breast multidisciplinary teams (MDT) have a data lead responsible for ensuring the quality of national data submissions. Reviews of data completeness should include full tumour characterisation, ER and HER2 status (for invasive breast cancer), performance status, the NABCOP fitness assessment (aged 70+ years), Triple Diagnostic Assessment (TDA) and contact with Clinical Nurse Specialists (CNS).	England: Cancer Alliances working with breast care teams and clinical management in NHS trusts. Wales: Breast care teams and clinical management in NHS health boards	Data completeness in England and Wales combined was <80% for performance status and CNS contact. In England, we estimated TDA using an algorithm as data was not available to use for the current reporting period. In Wales, data completeness for TDA was 51%.	Goals #1 –5	The COSD is the main source for the Rapid Cancer Registration Dataset. Improved completeness of this dataset is required to ensure accurate quarterly reporting. The Welsh Health Circular mandates high quality data submissions.
Note that due to differences in data and methodology between reports, direct comparisons between the 2024 and 2025 reports should not be used to infer about trends over time.				

4. Results for England and Wales

4.1 Data completeness

Key Messages
Align with Recommendation #5

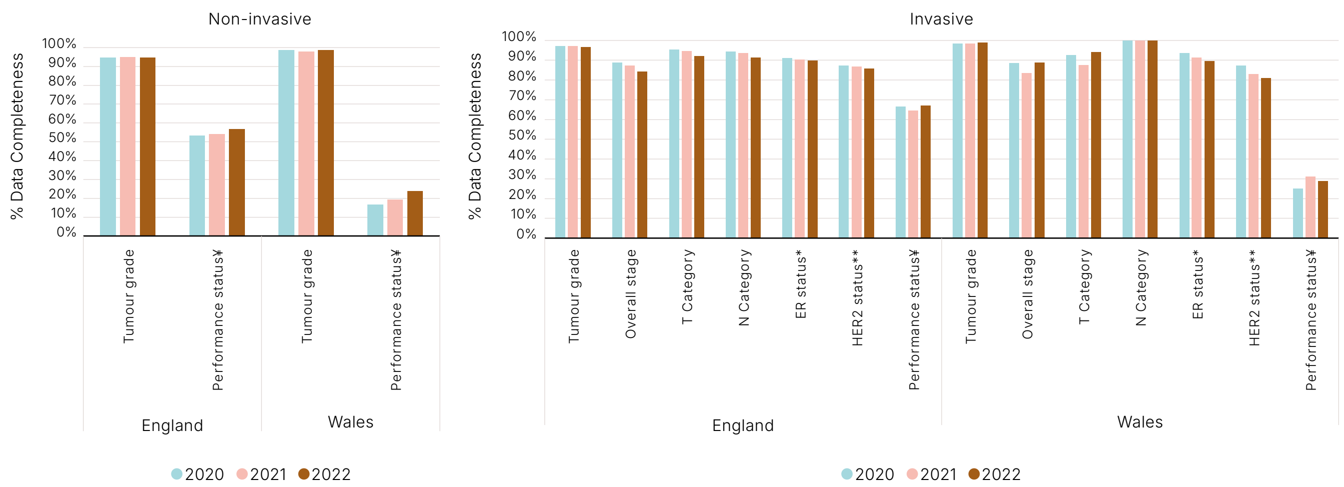
- Data completeness is <70% for performance status in England and Wales. Among people with invasive disease, data completeness is <90% for overall stage and HER2 status.
- Data completeness for contact with a Clinical Nurse Specialist in England (78%), and for Triple Diagnostic Assessment in Wales (51%) needs improvement. The data item for Triple Diagnostic Assessment in England was not provided for the current reporting period.

Patient & tumour characteristics

Treatment options for individuals with breast cancer are influenced by the characteristics of their tumour and their general health and fitness. The recording of this information in national cancer datasets is vital to understand patterns of care within the NHS and whether they are appropriate.

Figure 1 shows data completeness for selected clinical data items. Among people with non-invasive breast cancer, data completeness for performance status, although improving, remains low. Among people with invasive disease, completeness is decreasing or unchanged for most tumour and patient characteristics. Data completeness, particularly for items where completeness has declined, is a concern given the importance of these data for monitoring and quality improvement.

Figure 1. Percentage of records with complete data for selected items for people diagnosed with primary breast cancer in England and Wales. 2020-2022.



Notes: * ER status = oestrogen receptor status, ** HER2 status = human epidermal growth factor receptor 2 status, ¥ Performance Status (score: 0-5) is a fitness assessment tool used in oncology to stratify people based on their ability to conduct activities of daily living, more details refer to the methodology supplement. Data were impacted by the COVID-19 pandemic and so may be atypical during 2020-2021.

Process measures: Clinical Nurse Specialist (CNS) & Triple Diagnostic Assessment (TDA)

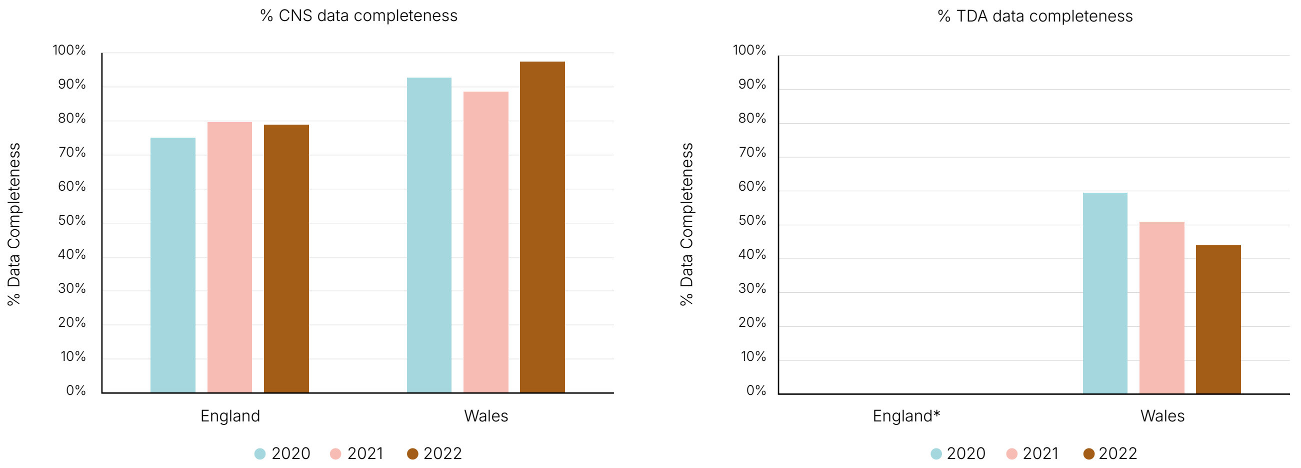
Of the 10 performance indicators reported by the NAoPri, whether people with breast cancer: (1) have contact with a Clinical Nurse Specialist (CNS) and (2) undergo triple diagnostic assessment (TDA), are two process measures that should be collected routinely in national datasets (formerly CaNISC in Wales, now replaced by the Cancer Data Form [CDF] and COSD in England). Any inference on the extent to which these processes are being completed is limited by insufficient information.

The CNS data item was 78% complete in England and 93% complete in Wales (Figure 2). We suggest a target of at least 90% completeness for the CNS data item to support robust reporting and meaningful interpretation.

In 2022, a bespoke data item for TDA was introduced in England (COSD Version 9). However, as this report covers patients diagnosed between 2020 and 2022, the data item was not available for the full reporting period and remains insufficiently mature for use in this analysis. To estimate how many patients undergo TDA in England, we used an algorithm that derives this information from other data fields about the date the person is first seen regarding their breast cancer diagnosis, and the date of their histology sample. Details can be found in the methodology supplement.

Going forward, the COSD data item, completed by a member of the local team, should ideally be used to measure this performance indicator. In Wales, a bespoke data item is available but only present for just over half of patients (Figure 2).

Figure 2. Percentage of records with complete data for CNS & TDA among people diagnosed with primary breast cancer in England and Wales. 2020-2022.



Notes: CNS = Clinical Nurse Specialist, TDA = Triple Diagnostic Assessment. * TDA data completeness in England is 0%, as the bespoke TDA data item was not available for the full reporting period and is not yet sufficiently mature for use.

4.2 Patterns of care in England and Wales

Figure 3 shows the national performance indicator values for England and Wales, based on the year in which people were diagnosed. In England, the values for most indicators increased between 2020 and 2021-2022 but did not show a persistent trend over the three years, suggesting lower values in 2020 may have been attributable to the COVID-19 pandemic. A modest decrease was observed in the proportion of people who received any chemotherapy over the three years.

In Wales, there was notable decline in several indicators including the percentage of people who underwent TDA, who had contact with a CNS, who received adjuvant radiotherapy, and who had any chemotherapy. The proportion of people receiving breast conserving-surgery increased over the three-year period. Indicators linked specifically to recommendations are described in more detail in the sections below.

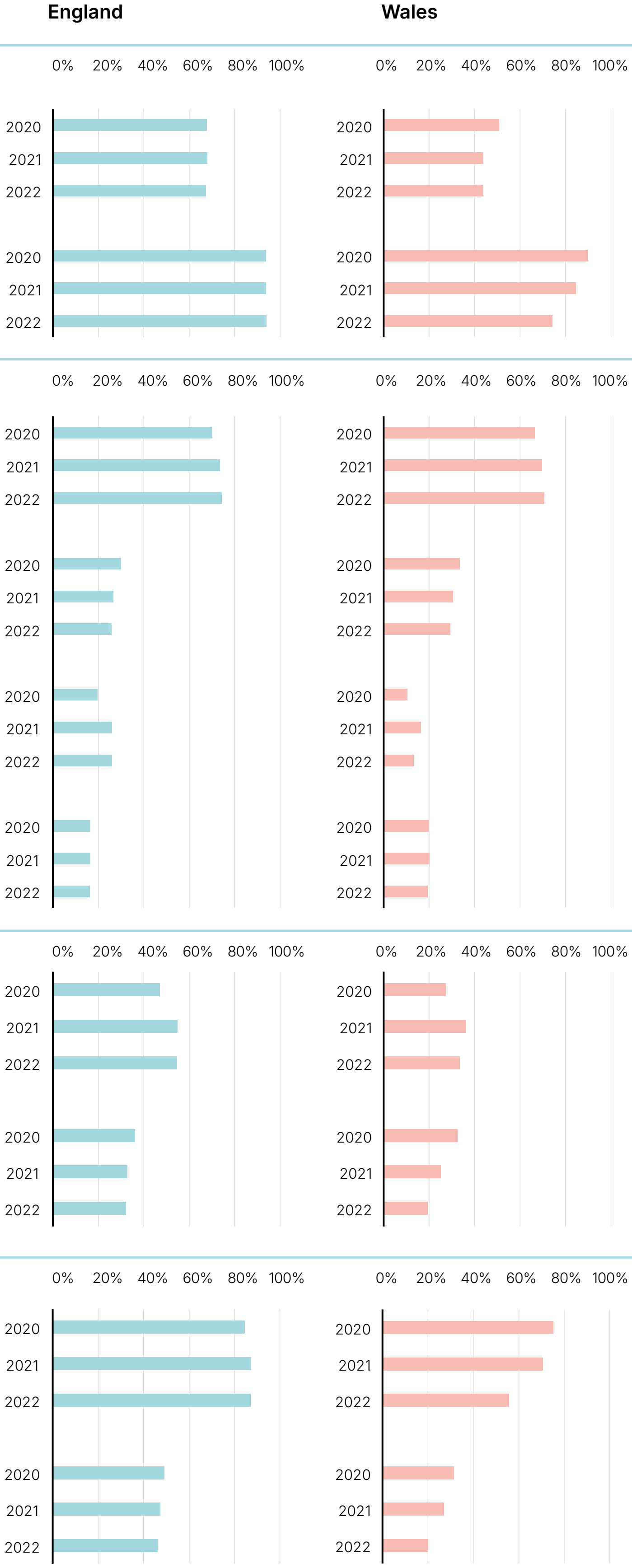
Diagnosis and treatment planning

Key Messages

Align with Recommendation #1

- In England, 68% of non-screen-detected cases had Triple Diagnostic Assessment (estimated by algorithm), while in Wales, 51% were recorded as having had Triple Diagnostic Assessment according to a specific data field.
- When recorded, nearly all people diagnosed with breast cancer see a CNS. However, recording for this variable is still low in England (<80%) so the true percentage is not known.

Figure 3. Indicator values for people with breast cancer diagnosed in England and Wales, by year of diagnosis. 2020-2022.



Diagnosis and Treatment Planning

PI 1: Percentage of people who underwent Triple Diagnostic Assessment (TDA) in a single hospital visit. Women referred via screening were not included.

PI 2: Percentage of people who had contact with a Clinical Nurse Specialist (CNS) after diagnosis. Limited to those who had data on CNS contact*.

Surgical Treatment

PI 3 (i): Percentage of people who had breast-conserving surgery (as their primary surgery) among those who had surgery within 12 months of diagnosis.

PI 3 (ii): Percentage of people who had mastectomy (as their primary surgery) among those who had surgery within 12 months of diagnosis.

PI 7: Percentage of women recorded as having had an immediate breast reconstruction with their mastectomy. Limited to women with stage 0 – 3A disease.

PI 8: Percentage of women recorded as having had a re-operation within 12 months of their initial breast conserving surgery.

Systemic Anti-Cancer Treatment

PI 4: Percentage of women who received neoadjuvant chemotherapy. Limited to those with stage 2–3A, triple negative or HER2 positive breast cancer.

PI 6: Percentage of women who received adjuvant or neo-adjuvant chemotherapy. Limited to those with stage 1–3A breast cancer.

Radiotherapy Treatment

PI 5 (i): Percentage of women who received radiotherapy following breast-conserving surgery. Limited to women with stage 1 - 3A disease.

PI 5 (ii): Percentage of women who received radiotherapy following mastectomy. Limited to women with stage 1 - 3A disease.

Notes: PI = Performance Indicator, HER2 = human epidermal growth factor receptor 2. Data were impacted by the COVID-19 pandemic and so will be atypical during 2020-2021. TDA was estimated using an algorithm in England (see text below for more information) and using a bespoke data item in Wales. * Data completeness for CNS in England was 75% in 2020, 80% in 2021, and 79% in 2022. In Wales, it was 93% in 2020, 88% in 2021, and 97% in 2022. "Stage 0–3A" and "Stage 1–3A" include cases with unknown stage, whereas "Stage 2–3A" does not. Note that due to differences in methodology between reports, direct comparisons between the 2024 report and this 2025 report should not be used to infer about trends over time.

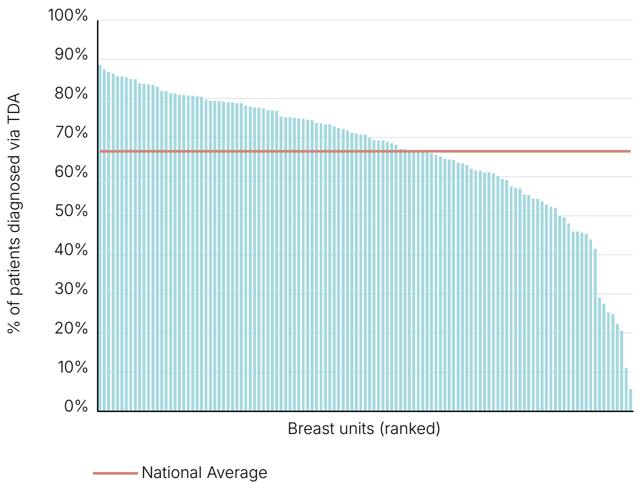
Triple Diagnostic Assessment (TDA) is a key component of breast cancer service provision, and aligns with Quality Statement 1 in the NICE Breast Cancer Quality Standard (QS12). It refers to clinical examination, ultrasound/mammography and clinical or ultrasound-guided biopsy all occurring at a single clinic visit. A TDA should allow a prompt, definitive cancer diagnosis to be made or refuted. By helping to reduce stress associated with multiple visits, TDA is associated with higher levels of patient satisfaction.

The TDA metric is calculated among people who present symptomatically excluding those diagnosed through screening. These patients comprise about two thirds of all patients diagnosed in England. For the audits, we assign patients to the trust recorded as their ‘trust at diagnosis’. Especially for screened patients, this may or may not be the trust where they are treated depending on referral patterns. At a trust level, the percentage of patients diagnosed via screening ranges from <2% to >50%. As the audit matures, we hope to work with trusts to better understand these patterns and ensure patients are being assigned to the most appropriate trust. TDA is not expected for all people with breast cancer, as some require more complex diagnostic investigations. See the NAoPri methodology document for details on identifying screen-detected patients.

For this report, as the bespoke TDA data item introduced in England in 2022 was not available for the full reporting period (2020–2022) and remains insufficiently mature for use, indicator values for English NHS trusts were estimated using the date of first contact (from the Cancer Waiting Times dataset) and the date of histology sample (from COSD). Put simply, if these dates matched, it was assumed the person had undergone TDA. While reliable and timely imaging data would have further increased the validity of this indicator, such data were not available, and so it was assumed that the biopsy would only take place if imaging had also taken place. For further information, please see the NAoPri methodology document. In future, we hope to use the COSD item for TDA which was introduced in 2022. In Wales, the bespoke data item for TDA was used.

There is significant variation in the percentage of people who appear to undergo TDA by unit (Figure 4). Overall, in England and Wales respectively, 68% and 51% of people diagnosed with breast cancer underwent TDA. In just under 15% of units, fewer than 50% of people diagnosed through non-screening routes appeared to undergo TDA. This may be due to true differences in practice or problems with data flows for certain units. The proportion of women undergoing TDA was slightly higher than men in England (68% vs. 66%) but significantly higher in women compared to men in Wales (52% vs. 10%).

Figure 4. Percent of people undergoing TDA by unit, where each breast unit is represented by a bar on the graph. People with breast cancer diagnosed in England and Wales, 2020-2022.



Notes: TDA = Triple Diagnostic Assessment. TDA as estimated by algorithm in England and through a bespoke data item in Wales. Data were impacted by the COVID-19 pandemic and so will be atypical during 2020-2021.

All people should have access to and contact with a CNS. Among people diagnosed in 2020-22 who had CNS data recorded, 94% were reported to see a CNS at diagnosis in England and 82% in Wales (Figure 3). However, as completeness of the data item on CNS contact was just 79% for England and Wales (78% for England and 93% for Wales), true overall levels of performance are uncertain (see Section 4.1). If we use a denominator of all persons diagnosed with primary breast cancer (and do not restrict to those who had data on CNS contact), we estimate that 73% of persons in England and 76% of persons in Wales had contact with a CNS after diagnosis. Using this approach, approximately 1 in 7 units had over 90% of their patients recorded as having contact with a CNS, whereas 1 in 12 units had CNS contact recorded for fewer than 50% of patients.

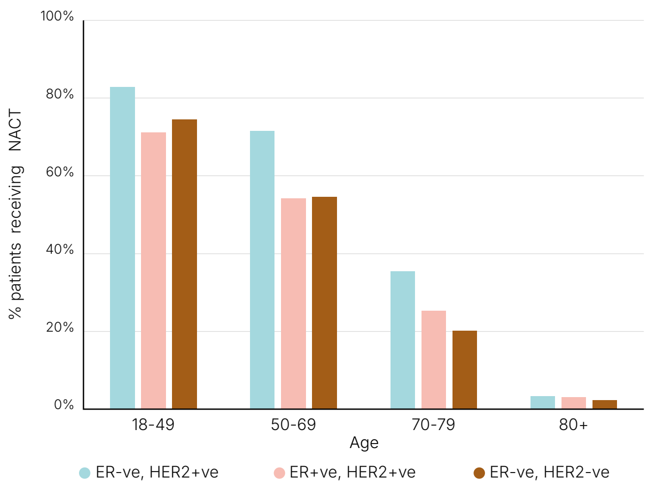
Use of neo-adjuvant chemotherapy (NACT)

Key Messages
Align with Recommendation #2

- Across England and Wales, approximately half of stage 2-3A, triple negative or HER2+ patients have neo-adjuvant chemotherapy.
- There is significant regional and age-related variation in the uptake of neo-adjuvant chemotherapy.

NICE guideline NG101 recommends the use of neo-adjuvant chemotherapy (NACT) in circumstances when it can be beneficial in reducing the size of tumours and involved lymph nodes. The recommendations support the use of NACT in many individuals with HER2 positive or ER negative invasive breast cancer in cases where adjuvant chemotherapy is indicated, as it can help guide subsequent post-operative systemic treatment decisions. Figure 5 describes the use of NACT according to age and hormone receptor status. The use of NACT is reported for England and Wales combined to enable this subgroup analysis.

Figure 5. Percent of women receiving NACT. Restricted to women with stage 2-3A breast cancer diagnosed in England and Wales between 2020 and 2022 and undergoing surgery within 12 months of diagnosis. Stratified by age and hormone receptor status.



Notes: ER = oestrogen receptor, HER2 = human epidermal growth factor receptor 2, NACT = neo-adjuvant chemotherapy. People with stage 1 disease have been excluded as they are unlikely to be treated with NACT unless deemed high risk for recurrence. Stage 3B/3C have been excluded to align with grouping of early invasive disease. Men were excluded from this graph as NACT use was uncommon. Data were impacted by the COVID-19 pandemic and so may be atypical during 2020-2021.

Among people with stage 2-3A invasive breast cancer who had surgery within 12 months of diagnosis and had triple negative or HER2 positive disease, 51% received NACT. In England, rates of NACT use increased from 47% in 2020 to 55% in 2022. In Wales, rates rose from 27% to 34% over the same period. The lower rate observed in 2020 may have been impacted by the COVID-19 pandemic. The use of NACT decreased with age and was rarely used among people aged 80+ years (Figure 5). Across the 121 breast units, following adjustment for case mix, rates of NACT among triple negative or HER2+ patients with stage 2-3A disease were under 40% for 23 NHS breast units and over 60% for 23 NHS breast units.

Although guidelines support the use of NACT in suitable people with HER2 positive and ER negative disease, there is no target as to what the desired proportion of patients receiving NACT should be. Units showing low rates of NACT use are encouraged to review whether patients are being offered NACT in line with guideline recommendations.

Immediate breast reconstruction (IBR) after mastectomy

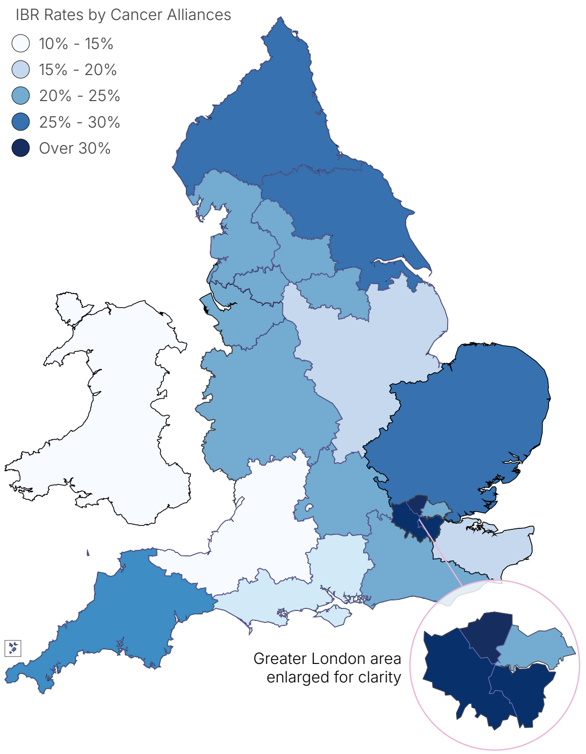
Key Messages
Align with Recommendation #4

- Across England and Wales, just under a quarter of women undergoing mastectomy have immediate breast reconstruction.
- There is significant regional variation in uptake of IBR.

The National Institute for Health and Care Excellence (NICE) in 2002 first recommended that reconstruction be available to people with breast cancer undergoing mastectomy. Immediate breast reconstruction (IBR) is a treatment option after informed shared decision-making discussion unless it is deemed unsuitable due to impaired fitness or comorbidities. Alternatively, delayed reconstruction may be offered after the initial cancer surgery and any adjuvant treatments (e.g., chemotherapy and radiotherapy), while some people may choose to forgo reconstruction entirely. This audit presents IBR data in the full knowledge that it represents part of the reconstruction picture. Offering IBR requires having the necessary surgical resources available at the appropriate times. Additionally, decision-making about IBR can be complex, particularly when adjuvant radiotherapy is planned. The data on IBR should initiate informed local discussion on reconstructive practice. Although mastectomy is common in men, IBR is exceptionally rare and therefore men have been excluded from this indicator.

In England and Wales, 23% of women who had a mastectomy between 2020 and 2022 received IBR. Use of IBR did decrease significantly in 2020, likely because of the COVID-19 pandemic. IBR rates were lower in older people, and those who had a more advanced tumour stage. People with DCIS were significantly more likely to receive IBR compared to those with early invasive disease (40% of people DCIS vs 22% of people with early invasive disease). After adjusting for patient and tumour characteristics in each Cancer Alliance, there remained significant variation across England and Wales with the rate of IBR ranging from 13% to 34% (Figure 6). At a unit level, the adjusted rates of IBR range from 2% to 42%.

Figure 6. Adjusted IBR rate by Cancer Alliance and Cancer Network. Women with early invasive breast cancer diagnosed in England and Wales, 2020-2022.



Notes: IBR = immediate breast reconstruction. Adjusted for case mix. Data were impacted by the COVID-19 pandemic and so will be atypical during 2020-2021.

Overall, a minority of people receive IBR, with significant variation in the rates between regions and units. Local assessment of reconstructive resources and surgeon opinions are needed to ensure equitable care and address any deficiencies.

4.3 Outcomes

One of the five QI goals adopted by the NAoPri was to "improve and reduce unwarranted variation in primary breast cancer outcomes" (Goal 5). Three performance indicators, aligned with this goal, were outlined in the NAoPri QI Plan:

i. Percentage of people who had a re-excision/re-operation surgery within 12 months of initial breast conservation surgery – reported for the first time below.

ii. Percentage of people who had an overnight hospital admission for treatment-related toxicity within 30 days of a systemic anti-cancer therapy cycle – under development.

iii. Percentage of people who survived at least 5 years from the date of breast cancer diagnosis, in addition to 1-year and 3-year survival as presented below.

Re-operation

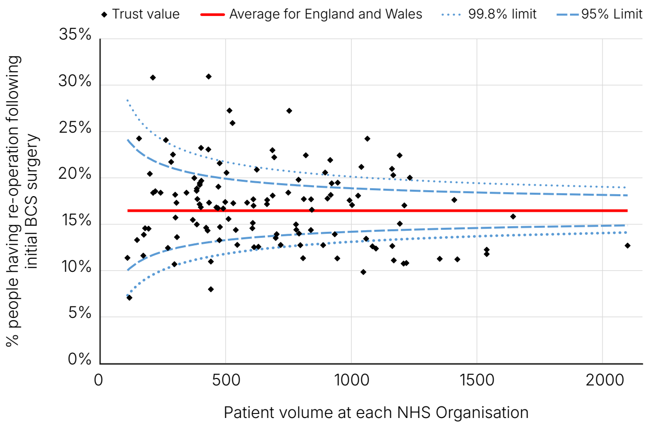
Key Messages
Align with Recommendation #5

- Approximately 1 in 6 people who undergo breast-conserving surgery undergo re-operation within a year.
- The rate varies significantly by breast unit, from 1 in 3 in the units with the highest re-operation rates to 1 in 14 in those with the lowest.

Breast-conserving surgery (BCS) is the most common surgical approach among people with DCIS or operable invasive breast cancer. A subset of people who have BCS will require at least one re-operation, aligned with NICE guidance (NG101), due to inadequate resection margins shown on histopathological examination. Re-operation is associated with poorer cosmetic outcomes, adds to the treatment burden, and has a negative impact on quality of life. Furthermore, re-operation may result in delays to adjuvant treatment. We have excluded men from this indicator because most men have a mastectomy.

Overall, among people with early breast cancer (stage 0 to 3A) who had BCS, 16% of people in England and 20% of people in Wales underwent re-operation within 12 months of their initial BCS. There is variation in re-operation rates across organisations in England and Wales (Figure 7). Where rates of re-operation following breast conserving surgery (BCS) are higher than expected, units should review local protocols on preoperative work-up, localisation, specimen orientation, surgical technique and consistent histopathologic margin assessment with the view to increasing clear margin rates. Conversely, low re-operation rates may also prompt review of local practice with regards to initial mastectomy rates and appropriate recommendation of re-operation in line with best practice.

Figure 7. Funnel plot showing variation in the percentage of people requiring re-operation following initial breast conserving surgery across NHS organisations in England and Wales.



Notes: Data were impacted by the COVID-19 pandemic and so will be atypical during 2020-2021.

Survival

To ensure the data was timely and to decrease the impact of the COVID-19 pandemic, breast-cancer specific survival metrics were limited to individuals diagnosed in 2021 and 2022. In England and Wales, 3-year all-cause survival and breast cancer-specific survival are 92% and 97%, respectively.

The Audit has implemented a process to identify providers which are outliers for 3-year survival. More information about the outlier process can be found here. No NHS organisations have been identified as outliers in this report.

5. Commentary

This second NAoPri State of the Nation report provides a description of the care delivered in NHS hospitals across England and Wales to people diagnosed with primary breast cancer between 2020 and 2022.

It has focused on the patterns and variations in care in England and Wales, as they relate to five key recommendations. Each recommendation links to at least one of the 5 NAoPri Quality Improvement goals, outlined in the Quality Improvement Plan.

The audit has analysed individuals' care based on their place of diagnosis (either at an English or Welsh breast unit). Information about the performance of NHS organisations is available on the NAoPri website and it is important that NHS trusts and Cancer Alliances in England, and NHS hospitals and health boards in Wales, use the Data Dashboards to review their performance and, where indicated, initiate local QI activities using the Local Action Plan for adopting recommendations.

Data quality is a key focus for the NAoPri team, and we are committed to working in partnership with NHS England and NDRS to support improvements in data completeness and quality. Organisation-level data completeness for a subset of items is published in the NAoPri Data Dashboards, updated quarterly. Breast Units should review these Data Dashboards and, where data completeness falls below the recommended national target, liaise with their nominated data lead to identify ways to improve this. For example, data incompleteness affected the ability of the audit to state firm conclusions about the performance of breast units on the indicators for: (1) Triple Diagnostic Assessment and (2) contact with a CNS.

Triple Diagnostic Assessment has many benefits, and it is important to be able to evaluate its delivery. Despite concerns that there are data gaps, the available information demonstrates many breast units in England and Wales are not providing TDA to all newly referred people. Units should evaluate their delivery of TDA and take appropriate remedial steps to rectify deficiencies. For example, Units might want to review the availability, frequency, capacity and organisation of dedicated one-stop clinics, including adequate access to trained staff and radiological resources.

It is encouraging that access to a CNS at diagnosis was reported for 93% of people where this data item was completed. It is commendable that Wales have high levels of data completeness for CNS contact. However, in England, variation in data completeness for this item in COSD means there is uncertainty about overall national performance levels. While some individual units are performing very well with over 90% completeness, data quality remains inconsistent across the country, limiting the ability to draw firm conclusions at a national level.

Breast reconstruction can be a core component of recovery for women who have a mastectomy. While there are several reasons women may not undergo breast reconstruction, women should be able to access immediate reconstruction if this was their preferred path after shared decision-making discussions. Immediate reconstruction rates decreased in 2020-2021 due to the COVID-19 pandemic but subsequently increased toward pre-pandemic levels. The likelihood of immediate reconstruction varies across England and Wales, with the highest rates in London. Individual organisations should be aware of their IBR rate. If the IBR rate is below national average, units should consider reviewing and standardising processes for how reconstruction options are discussed with patients (e.g., adequate clinic slots, experienced surgeon), consider what additional support is provided to help patients with their decision-making (e.g., CNS support, lectures), or improve access to oncoplastic surgery (e.g., local Plastics referral pathways, theatre availabilities). Further detailed analysis and understanding of different patterns of care on a regional level are ongoing, including an analysis of the frequency of distinct types of reconstruction across units.

The use of any chemotherapy, and neo-adjuvant chemotherapy, was also subject to significant variation by unit. In this year's report, the indicator for NACT was refined to better reflect the population for whom NACT may be appropriate, limiting to those with stage 2-3A HER2+ or triple negative disease. Nevertheless, only half of patients in this group received NACT, and in approximately 20% of trusts, fewer than 40% were receiving it. While a specific target has not been determined nationwide, we would expect NACT to be used particularly in people under the age of 70 with HER2+ or triple negative disease, with nodal involvement or tumours greater than 30mm in size. In the first instance, units should consider reviewing their practice for this sub-group of patients. This might include review of multidisciplinary team stance on NACT use in line with current guidelines, access to resources required to facilitate and monitor NACT (e.g., CT/MRI scans, tumour/node clipping, oncology services), and implementation of a pathway to facilitate the use of NACT.

A national prospective study in the UK in 2016 found that the re-operation rate after BCS was 17.2%.[9] In this audit of data from 2020 to 2022, the equivalent proportion was 16%, which is comparable. Units need to be aware of and audit their re-operation rates. If rates are found to be significantly higher than the national average, Units may want to review their pre-operative work-up (e.g., imaging and localisation techniques), initial mastectomy rates, intra-operative practice (e.g., use of specimen x-rays and cavity shaves), histopathology practices (e.g., specimen orientation) and practices relating to discussion and offer of re-operation. Minimising re-operation following BCS helps reduce patient stress and poor cosmetic outcomes, while also saving providers time and costs.

To further support quality improvement activities, NAoPri publishes quarterly reports of a subset of performance indicators (England only), which use more timely Rapid Cancer Registration Data. These reports are intended to complement and align with existing data improvement initiatives led by NHSE and NDRS, enabling regular monitoring of more recent activity and provide further impetus and opportunities to improve outcomes for people with primary breast cancer.

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[9] Tang, S. S. K., Kaptanis, S., Haddow, J. B., Mondani, G., Elsberger, B., Tasoulis, M. K., ... & Masannat, Y. (2017). Current margin practice and effect on re-excision rates following the publication of the SSO-ASTRO consensus and ABS consensus guidelines: a national prospective study of 2858 women undergoing breast-conserving therapy in the UK and Ireland. *European Journal of Cancer,* 84, 315-324.