







NATIONAL BOWEL CANCER AUDIT

Indicators reported at trust/site/MDT level

Indicators

This document describes the indicators reported by the National Bowel Cancer Audit (NBOCA) at trust/site/MDT level on the <u>Trust Results</u> pages of the NBOCA website and in the NBOCA <u>Annual/State of the Nation Reports</u>. They report on:

- 1. Data quality
- 2. Management of all patients
- 3. Management of patients undergoing major resection
- 4. Management of rectal cancer patients
- 5. Patient Outcomes

In the State of the Nation Report, two types of indicator are reported (all at trust/site/MDT level):

- 1. Performance Indicators (QI targets)
- 2. Contextual measures: indicators that provide further context to the results

Data sources

The majority of data items come from the NBOCA dataset. The audit dataset is linked to the Hospital Episode Statistics Admitted Patient Care dataset (HES-APC) for England and Patient Episode Database Wales (PEDW) for Wales, in order to measure certain patient outcomes including emergency readmissions and stoma reversal. The mode of admission (elective or emergency) is recorded in HES/PEDW, as is the number of co-morbidities, which is defined according to the Charlson co-morbidity score.

The audit dataset is also linked to the National Radiotherapy Dataset (RTDS), which contains information about radiotherapy treatment received by patients, such as primary cancer site, intent, dose, number of attendances, first appointment date, and reason for treatment. Linkage to the Systemic Anti-Cancer Therapy (SACT) dataset, allows information to be obtained about chemotherapy use including administration date, regimen type, dose, and route of administration.

Reporting periods

The reporting period for each indicator has historically been from the date of diagnosis in the financial year ending in the previous calendar year (e.g. for the February 2024 State of the Nation Report, patients diagnosed 1st April 2021 to 31st March 2022). The exceptions are for 2-year mortality rate, adjuvant chemotherapy use for stage III colon cancer, severe acute toxicity after adjuvant chemotherapy for stage III colon cancer, rectal resection volume and 18-month unclosed diverting ileostomy rate. See the Frequently Asked Questions for these reporting periods.

In addition, due to the COVID-19 pandemic, the 2021 report only included patients undergoing major resection up until March 31^{st} 2020 to minimise the effects of COVID-19 within this cohort.

Quality Improvement

NBOCA launched a <u>Quality Improvement Plan</u> in October 2021, this has recently been updated to include a further metric, severe acute toxicity. The aim is to stimulate quality improvement targeted at two key aspects of colorectal cancer care:

- 1. Improving Patient Experience
- 2. Improving Cancer Outcomes

The QI Plan aims to involve all members of the multidisciplinary clinical team managing patients with colorectal cancer, covering all areas of the patient pathway, from diagnosis and perioperative care to adjuvant and neo-adjuvant oncological management, stage IV disease and end of life care. NBOCA is responsible for providing trusts/hospitals/MDTs with relevant performance indicators across the patient pathway. The descriptions of the performance indicators indicates which are QI targets.

IN ORDER TO BE PUBLISHED AT TRUST/SITE/MDT LEVEL ALL INDICATORS REQUIRE DATA ON A MINIMUM OF 10 PATIENTS ONCE OTHER EXCLUSIONS HAVE BEEN APPLIED

Unless otherwise stated the indicator is reported by the organisation performing surgery

Performance Indicators

(Local QI Targets 1-10 in the State of the Nation Report published February 2024)

| Title | Clinical nurse specia | list review |
|---------------|-----------------------|--|
| Type of | Management of all p | patients |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patien | ts with colorectal cancer who are seen by a clinical nurse |
| | specialist. | |
| Specification | Numerator | Number of patients with colorectal cancer seen by a |
| | | clinical nurse specialist. |
| | Denominator | Number of patients with colorectal cancer |
| | Further | Reported by diagnosing organisation. |
| | Information | |
| | QI target | Yes (1) |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "Patients with colorectal cancer should meet and have |
| | | access to a CNS as 'Key Worker' for advice and support |
| | | from the time of their initial diagnosis." |

| Title | Number of rectal car | ncer major resections |
|----------------|--------------------------------------|---|
| Type of | Management of rectal cancer patients | |
| indicator / | | |
| patient group | | |
| Indicator | The number of rectal | cancer patients undergoing a major resection |
| Specifications | Numerator | Number of rectal cancer patients undergoing major |
| | | resection |
| | Denominator | NA |
| | Further | NA |
| | Information | |
| | QI target | Yes (2) |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | National Institute for Health and Care Excellence. Clinical |
| | | guideline [NG151] (2020) |
| | | "Offer surgery to people with rectal cancer (cT1-T2, cN1- |
| | | N2, M0, or cT3-T4, any cN, M0) who have a resectable |
| | | tumour." |
| | | "Hospitals performing major resection for rectal cancer |
| | | should perform at least 10 of these operations each |
| | | year." |

| Title | 90-day mortality | |
|----------------|-----------------------|---|
| Type of | Patient Outcomes | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patient | ts who die within 90-days of major resection |
| Specifications | Numerator | Number of patients undergoing major resection who die |
| | | within 90 days of surgery. |
| | Denominator | Number of patients undergoing major resection. |
| | Further | Patients with invalid date of surgery because their date of |
| | Information | surgery is reported to be after their date of death, or their |
| | | date of surgery is missing are excluded. |
| | | Hospitals/MDTs with <20% data completeness overall, or |
| | | >80% patients missing ASA grade and/or TNM staging only |
| | | have their unadjusted result published. |
| | QI target | Yes (3) |
| | Risk adjusted | Yes |
| | Outlier reporting | Yes* |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "Colorectal units should expect to achieve an operative |
| | | mortality of less than 20% for emergency surgery and less |
| | | than 5% for elective surgery for colorectal cancer." |

| Title | 30-day unplanned re | turn to theatre |
|----------------|------------------------|---|
| Type of | Patient Outcomes | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patient | s who have an unplanned return to theatre within 30-days |
| | of their major resecti | ion |
| Specifications | Numerator | Number of patients with any OPCS code for reoperation in |
| | | HES/PEDW within 30 days of surgery |
| | Denominator | Number of patients undergoing major resection. |
| | Further | Patients who could not be linked to HES/PEDW are |
| | Information | excluded. |
| | | Hospitals/MDTs with <20% data completeness overall, or |
| | | >80% patients missing ASA grade and/or TNM staging only |
| | | have their unadjusted result published. |
| | QI target | Yes (4) |
| | Risk adjusted | Yes |
| | Outlier reporting | Yes* |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "Colorectal units should audit their leak rate for colorectal |
| | | cancer surgery." |

 $^{^{*}}$ Outlier reported unless otherwise stated in the State of the Nation report/ FAQs

| Title | 30-day unplanned re | admission |
|----------------|-----------------------|--|
| Type of | Patient Outcomes | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patient | s who have an emergency admission for any cause within |
| | 30-days of their majo | or resection |
| Specifications | Numerator | Number of patients who had an emergency readmission |
| | | for any cause, to any trust, within 30 days of their major |
| | | resection |
| | Denominator | Number of patients undergoing major resection. |
| | Further | Patients who could not be linked to HES/PEDW are |
| | Information | excluded. |
| | | Hospitals/MDTs with <20% data completeness overall, or |
| | | >80% patients missing ASA grade and/or TNM staging only |
| | | have their unadjusted result published. |
| | QI target | Yes (5) |
| | Risk adjusted | Yes |
| | Outlier reporting | Yes* |
| | Guideline | Not applicable |

| Title | 18-month unclosed i | leostomy |
|----------------|-------------------------|---|
| Type of | Patient Outcomes | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of rectal of | cancer patients who have an unclosed ileostomy 18-months |
| | after their anterior re | esection |
| Specifications | Numerator | Patients without a procedure code for stoma reversal within |
| | | 18-months of surgery, according to HES/PEDW |
| | Denominator | Rectal cancer patients undergoing an anterior resection, |
| | | according to NBOCA, and who receive an ileostomy within |
| | | 30 days of their procedure, according to HES/PEDW |
| | Further | Patients who could not be linked to HES/PEDW are |
| | Information | excluded. |
| | | Hospitals/MDTs with <20% data completeness overall, or |
| | | >80% patients missing ASA grade and/or TNM staging only |
| | | have their unadjusted result published. |
| | QI target | Yes (6) |
| | Risk adjusted | Yes |
| | Outlier reporting | Yes* |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "After low anterior resection, a temporary defunctioning |
| | | stoma should be considered." |
| | | "The permanent stoma rate following rectal cancer resection |
| | | of colorectal units should be audited." |

st Outlier reported unless otherwise stated in the State of the Nation report/ FAQs

| Title | Adjuvant chemother | тару |
|----------------|---|---|
| Type of | Management of patients having major resection | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patient | ts having adjuvant chemotherapy amongst stage III colon |
| | cancer patients unde | rgoing major resection |
| Specifications | Numerator | Number of patients having adjuvant chemotherapy according to either SACT or HES in England / according to PEDW in Wales |
| | Denominator | Patients undergoing major resection for pathological stage III colon cancer |
| | Further | Reported by organisation performing surgery |
| | Information | |
| | QI target | Yes (7) |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | National Institute for Health and Care Excellence. Clinical guideline [NG151] (2020) "For people with stage III colon cancer (pT1-4, pN1-2, M0) offer adjuvant chemotherapy." ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management "Adjuvant chemotherapy should be considered in older patients with stage III colorectal cancer, with appropriate tailoring of treatment." |

| Title | Severe acute toxicity | after adjuvant chemotherapy for stage III colon cancer |
|----------------|--|---|
| Type of | Management of patients having major resection | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients with severe acute toxicity amongst patients receiving | |
| | adjuvant chemothera | apy for stage III colon cancer |
| Specifications | Numerator | Number of patients with severe acute toxicity in overnight admissions in HES/ PEDW from the first cycle of chemotherapy to 8 weeks after the last cycle of chemotherapy |
| | Denominator | Number of patients receiving adjuvant chemotherapy according to either SACT or HES in England / according to PEDW in Wales (adjuvant chemotherapy numerator) |
| | Further Information | Reported by organisation delivering chemotherapy |
| | QI target | Yes (8) |
| | Risk adjusted | Yes |
| | Outlier reporting | No |
| | Guideline | Not applicable |

| Title | Neo-adjuvant therap | ру |
|----------------|--------------------------------------|---|
| Type of | Management of rectal cancer patients | |
| indicator / | | |
| patient group | | |
| Indicator | The proportion of pa | tients with rectal cancer undergoing a major resection who |
| | receive pre-operative | e radiotherapy |
| Specifications | Numerator | The number of rectal cancer patients undergoing major |
| | | resection who receive pre-operative radiotherapy |
| | | according to either RTDS or NBOCA data |
| | Denominator | Number of patients with rectal cancer undergoing major |
| | | resection |
| | Further | NA |
| | Information | |
| | QI target | Yes (9) |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | National Institute for Health and Care Excellence. Clinical |
| | | guideline [NG151] (2020) |
| | | "Offer preoperative radiotherapy or chemoradiotherapy |
| | | to people with rectal cancer that is cT1-T2, cN1-N2, M0, |
| | | or cT3-T4, any cN, M0." |

| Title | 2-year mortality rate | |
|----------------|-----------------------|---|
| Type of | Patient Outcomes | |
| indicator / | | |
| patient group | | |
| Indicator | 2-year mortality rat | e after major resection. |
| Specifications | Numerator | Number of patients undergoing major resection who die |
| | | within 2 years of surgery. |
| | Denominator | The sum of the time each patient was followed up for in |
| | | the two years following their major resection. |
| | Further | Patients with invalid date of surgery because their date of |
| | Information | surgery is reported to be after their date of death, or their |
| | | date of surgery is missing are excluded. |
| | | Hospitals/MDTs with <20% data completeness overall, or |
| | | >80% patients missing ASA grade and/or TNM staging only |
| | | have their unadjusted result published. |
| | QI target | Yes (10) |
| | Risk adjusted | Yes |
| | Outlier reporting | Yes* |
| | Guideline | Not applicable |

^{*} Outlier reported unless otherwise stated in the State of the Nation report/ FAQs

Contextual Measures

| Title | Case ascertainment | |
|---------------|------------------------|---|
| Type of | Data quality | |
| indicator / | | |
| patient group | | |
| Indicator | Case ascertainment | is expressed as a ratio of the number of colorectal cancer |
| | (CRC) patients report | ted to the audit compared to the total number of patients |
| | admitted for the first | t time to the participating units with a date of diagnosis of |
| | CRC within the audit | period, according to the HES data extract for patients |
| | diagnosed in England | d and PEDW for patients diagnosed in Wales. |
| Specification | Numerator | Number of CRC cases reported by each hospital/MDT. |
| | Denominator | Number of CRC cases recorded for each hospital/MDT |
| | | according to HES for England and PEDW for Wales. |
| | Further | Reported by diagnosing organisation. |
| | Information | Tertiary cancer centres that mainly provide oncological |
| | | treatment rather than diagnosing patientsare excluded. |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Audit and Outcome |
| | | Reporting |
| | | "Surgeons and trusts must make provisions for the |
| | | prospective collection of accurate clinical data for |
| | | submission to the NBOCA." |

| Title | Data completeness | of seven items for risk-adjustment in patients undergoing |
|---------------|-----------------------|---|
| | surgery | |
| Type of | Data quality | |
| indicator / | | |
| patient group | | |
| Indicator | The proportion of pa | itients with complete data for the variables required for |
| | risk-adjustment: age | , sex, ASA grade, pathological TNM stage (tumour, node, |
| | metastasis staging) a | and site of cancer. |
| Specification | Numerator | Number of patients with completion of 7 data items for |
| | | risk-adjustment. |
| | Denominator | Number of patients undergoing major resection. |
| | Further | NA |
| | Information | |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Audit and Outcome |
| | | Reporting |
| | | "Surgeons and trusts must make provisions for the |
| | | prospective collection of accurate clinical data for |
| | | submission to the NBOCA." |

| Title | Laparoscopic surger | у |
|----------------|------------------------|--|
| Type of | Data quality | |
| indicator / | | |
| patient group | | |
| Indicator | The proportion of pa | tients undergoing major resection who have an attempted |
| | laparoscopic resection | on |
| Specifications | Numerator | Number of patients with attempted laparoscopic major |
| | | resection |
| | Denominator | Number of patients undergoing major resection |
| | Further | Patients with missing surgical access data for major |
| | Information | resection are included in the denominator. |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | Laparoscopic surgery for colorectal cancer (NICE |
| | | technology appraisal guidance TA105) (2006) |
| | | "Laparoscopic (including laparoscopically assisted) |
| | | resection is recommended as an alternative to open |
| | | resection for individuals with colorectal cancer in whom |
| | | both laparoscopic and open surgery are considered |
| | | suitable." |
| | | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "Laparoscopic resection should be considered in all |
| | | patients with colon cancer. This should be performed by |
| | | suitably trained, experienced surgeons who should audit |
| | | outcomes and submit results to the NBOCA database." |

| Title | Length of stay | |
|----------------|----------------------------|---|
| Type of | Management of all patients | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patien | ts with length of hospital stay after major resection greater |
| | than five days | |
| Specifications | Numerator | Number of patients undergoing major resection with |
| | | length of stay in HES/PEDW greater than five days after |
| | | major resection |
| | Denominator | Number of patients undergoing major resection |
| | Further | Patients whose length of stay could not be determined |
| | Information | from HES/PEDW, either because they could not be linked |
| | | to HES/PEDW or because their date of discharge was |
| | | recorded as before their date of surgery in HES/PEDW are |
| | | excluded. |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "Peri-operative care in elective surgery should be based |
| | | on ERAS principles." |

| Title | Data completeness | of performance status |
|---------------|--|--|
| Type of | Data quality | |
| indicator / | | |
| patient group | | |
| Indicator | The proportion of patients with recorded performance status. | |
| Specification | Numerator | Number of patients with recorded performance status. |
| | Denominator | Number of patients diagnosed with CRC. |
| | Further | Reported by diagnosing organisation . |
| | Information | |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Audit and Outcome |
| | | Reporting |
| | | "Surgeons and trusts must make provisions for the |
| | | prospective collection of accurate clinical data for |
| | | submission to the NBOCA." |

| Title | Data completeness of pre-treatment TNM staging | |
|---------------|--|--|
| Type of | Data quality | |
| indicator / | | |
| patient group | | |
| Indicator | The proportion of patients with complete data for pre-treatment TNM staging. | |
| Specification | Numerator | Number of patients with complete pre-treatment TNM |
| | | staging. |
| | Denominator | Number of patients diagnosed with CRC. |
| | Further | Reported by diagnosing organisation. |
| | Information | |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Audit and Outcome |
| | | Reporting |
| | | "Surgeons and trusts must make provisions for the |
| | | prospective collection of accurate clinical data for |
| | | submission to the NBOCA." |

| Title | Distant metastases | at time of surgery |
|----------------|--|---|
| Type of | Management of patients having major resection | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection who have distant metastases at the time of surgery | |
| Specifications | Numerator | Number of patients undergoing major resection who are recorded as M1 on pathological staging, or who are recorded as Mx or M9 on pathological staging and M1 on pre-treatment staging. |
| | Denominator | Number of patients undergoing major resection |
| | Further | Patients recorded as Mx or M9 on pre- and post- |
| | Information | treatment staging are included in the denominator. |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | National Institute for Health and Care Excellence. Clinical guideline [NG151] (2020) "Consider resection, either simultaneous or sequential, after discussion by a multidisciplinary team with expertise in resection of disease in all involved sites." ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management "Synchronous and metachronous liver or lung metastases should be considered for potentially curative treatments." |

| Title | Urgent or emergency surgery | |
|----------------|--|--|
| Type of | Management of patients having major resection | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection who have urgent or | |
| | emergency surgery. | |
| Specifications | Numerator | Number of patients undergoing major resection recorded |
| | | as urgent or emergency surgery. |
| | Denominator | Number of patients undergoing major resection with |
| | | surgical urgency recorded. |
| | Further | Patients with no surgical urgency recorded are included in |
| | Information | the denominator. |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | Not applicable |

| Title | Lymph node yield | |
|----------------|---|---|
| Type of | Management of patients having major resection | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection where ≥12 lymph nodes are pathologically examined | |
| Specifications | Numerator | Number of patients undergoing major resection where |
| | | ≥12 lymph nodes are pathologically examined |
| | Denominator | Number of patients undergoing major resection |
| | Further | Patients with no lymph yield recorded are included in the |
| | Information | denominator |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Multidisciplinary |
| | | <u>Management</u> |
| | | "Known high-risk features in stage II cancers include pT4 |
| | | stage, obstructed tumours, poor or mucinous |
| | | differentiation, EMVI and fewer than 12 lymph nodes assessed histologically." |

| Title | Circumferential res | ection margins |
|----------------|--|---|
| Type of | Management of rectal cancer patients | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection for rectal cancer who have a positive circumferential resection margin (CRM) | |
| Specifications | Numerator Number of patients with rectal cancer undergoing major resection with positive CRM | |
| | Denominator | Number of rectal cancer patients undergoing major resection |
| | Further | Patients who have no recorded CRM are included in the |
| | Information | denominator |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the |
| | | Colon, Rectum and Anus (2017) – Surgical Management |
| | | "A R0 resection should be achieved in>90% of colorectal |
| | | cancers predicted to be resectable on appropriate staging." |

| Title | Abdominoperineal | resection (APER) |
|----------------|--|---|
| Type of | Management of rectal cancer patients | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection for rectal cancer who undergo APER | |
| Specifications | Numerator | Number of patients with rectal cancer undergoing major resection who have an APER |
| | Denominator | Number of rectal cancer patients undergoing major resection |
| | Further | None |
| | Information | |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management "Choice of rectal resection should be tailored to the individual patient, focussing on achieving RO resection, low morbidity and restorative procedures in appropriate cases." |

| Title | Abdominoperineal resection (APER)/ Hartmann's | |
|----------------|---|--|
| Type of | Management of rectal cancer patients | |
| indicator / | | |
| patient group | | |
| Indicator | Proportion of patients undergoing major resection for rectal cancer who undergo APER/pelvic exenteration/Hartmann's | |
| Specifications | Numerator | Number of patients with rectal cancer undergoing major resection who have an APER/ pelvic exenteration/ Hartmann's |
| | Denominator | Number of rectal cancer patients undergoing major resection |
| | Further | None |
| | Information | |
| | QI target | No |
| | Risk adjusted | No |
| | Outlier reporting | No |
| | Guideline | Not applicable |