

State of the Nation Report

An audit of the care received by people with bowel cancer in England and Wales focusing on people diagnosed between 1 April 2021 and 31 March 2022.

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Contents

The National Bowel Cancer Audit (NBOCA)	2
Key messages and recommendations	4
Chapter 1. Patients	5
Chapter 2. Quality Improvement	6
Chapter 3. Diagnosis	7
Chapter 4. Peri-operative Care	8
Chapter 5. Oncological Management and Stage IV Disease	11

The National Bowel Cancer Audit (NBOCA)

The National Bowel Cancer Audit (NBOCA) measures the quality and outcomes of care for patients diagnosed with bowel cancer in England and Wales. It supports hospitals in England and Wales to improve the quality of the care received by patients. Further information can be found [here](#).

Data Collection

In 2023, NBOCA moved into the [National Cancer Audit Collaborating Centre \(NATCAN\)](#), a centre of excellence which aims to drive improvements in detection, treatment, and outcomes for patients diagnosed with cancer. This is the final report to use data items collected directly by English NHS trusts or hospitals, and Welsh multidisciplinary teams (MDTs) into the NBOCA dataset. Future NBOCA reports will utilise “gold standard” cancer registry data collected centrally by the National Disease Registration Service (NDRS) in England, and the Wales Cancer Network in Wales. The audit dataset will continue to be linked at patient level to additional datasets including Hospital Episode Statistics Admitted Patient Care (HES-APC), Patient Episode Database Wales (PEDW) and the Office of National Statistics (ONS) to obtain further information on patient care and follow-up.

NBOCA collects data on items which have been identified as good measures of clinical care. It compares variation between English NHS trusts or hospitals, and Welsh MDTs, as well as changes in care over time. A guide to the performance indicators measured in patients with bowel cancer is available [here](#). Risk adjustment is used for outcomes that are outlier reported. Details of the 16 trusts/hospitals/MDTs which could not have at least one outcome reported due to poor case submission or incomplete data are listed [here](#).

The outcomes of patients that were treated during the COVID-19 pandemic are not being outlier-reported. This is in recognition of the impact that the pandemic has had on making robust, valid, and fair comparisons of provider-level outcomes. The only outcome that is outlier-reported this year is adjusted 2-year mortality rate after major resection as it includes patients having surgery before the pandemic. In this report, 2-year mortality rate is reported for patients diagnosed between 1 April 2019 and 31 March 2020. Potential outliers are managed following the [NBOCA Outlier Policy](#).

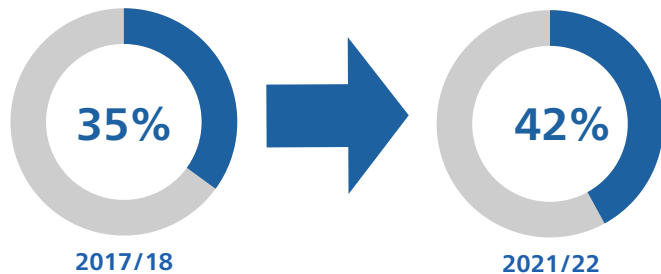
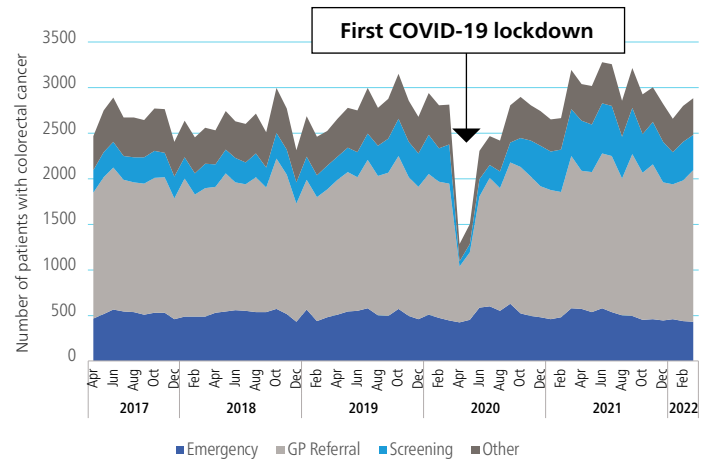
NBOCA has developed ten local [Quality Improvement \(QI\) metrics](#) covering the entire patient care pathway including diagnosis, peri-operative care, oncological management, stage IV disease and end of life care. Each QI metric has an associated local QI target. This report first describes the characteristics and numbers of patients diagnosed with bowel cancer in Chapter 1. In Chapter 2 it describes how well hospitals/trusts/MDTs are meeting the ten local QI targets. In the following chapters it describes change over time and variation between hospitals/trusts/MDTs according to each of the QI targets and accompanying contextualising measures.

Throughout this report, please click on/off the figures to view a full-size version.

CARE PATHWAYS

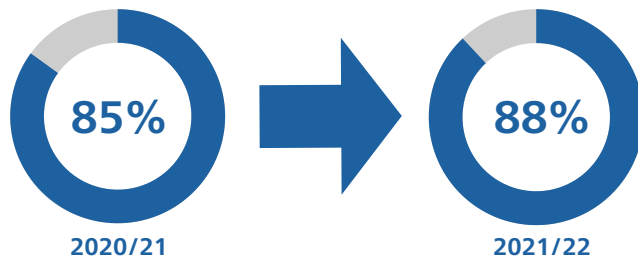
35,779 patients

were diagnosed with bowel cancer in England and Wales between 1 April 2021 and 31 March 2022.



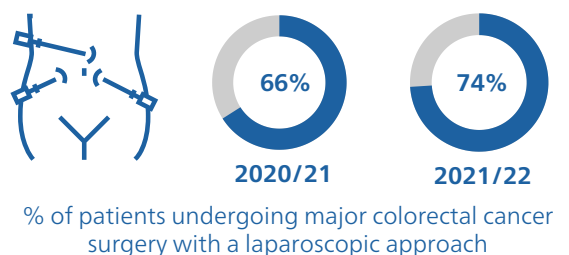
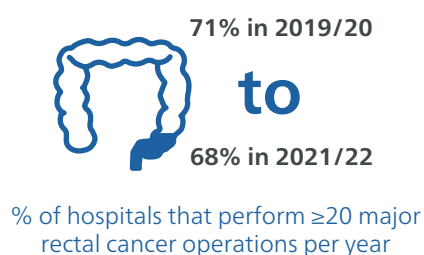
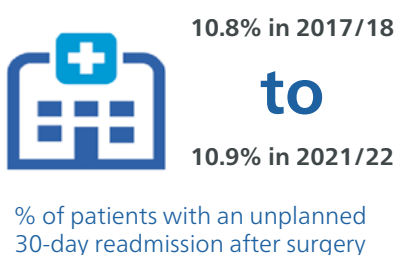
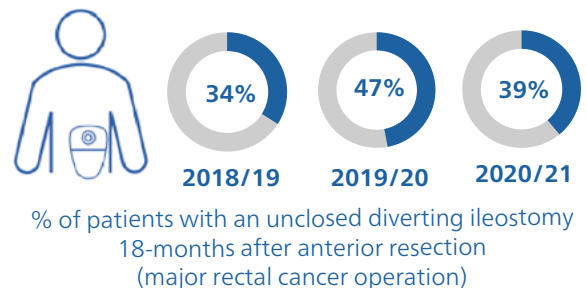
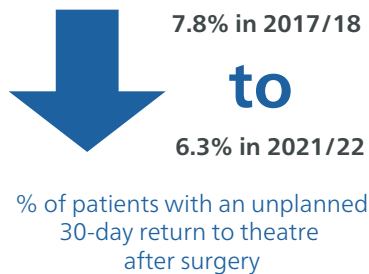
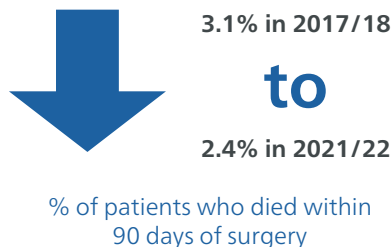
Increase in the proportion of patients presenting with stage I or II disease

Number of patients presenting with colorectal cancer returned to pre-pandemic levels

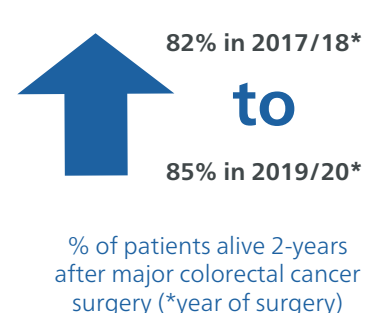
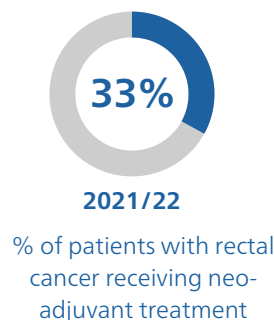
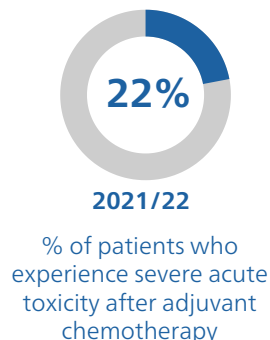
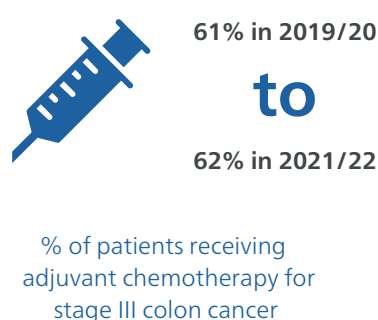


Increase in the proportion of patients seen by a clinical nurse specialist

PERI-OPERATIVE CARE



ONCOLOGICAL MANAGEMENT



Key messages and recommendations

Number	Key message and where in report	Recommendation	Related National Guidance
1	American Society of Anesthesiologists (ASA) grade and Tumour, Node and Metastasis (TNM) stage are predictors of mortality in patients with colorectal cancer and allow risk-adjustment for reporting of NBOCA Quality Improvement (QI) metrics. Although the proportion of patients with incomplete TNM stage has reduced from 20% in 2017/18 to 14% in 2021/22 and the proportion of patients with missing ASA grade has reduced from 6% in 2013/14 to 4% 2021/22, further work is required to improve data completeness. Full report, page 5	With future NBOCA reports utilising “gold standard” cancer registry data collected by the National Disease Registration Service (NDRS) in England, and the Wales Cancer Network in Wales, NDRS regional Data Liaison Managers should support hospitals/trusts/MDTs with coding, data entry, and quality assurance for the Cancer Outcomes and Services Data set (COSD). Data set items of focus include: • TNM Stage • ASA grade • Seen by Clinical Nurse Specialist (CNS) Intended audience: NHS England, NDRS and Public Health Wales	Nation Bowel Cancer Audit. Quality Improvement Plan (2021). ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management. Walker K, et al. Model for risk adjustment of postoperative mortality in patients with colorectal cancer. Br J Surg. 2015.
2	In 2021/22, the QI target met by the lowest number of hospitals/trusts/MDTs remains ‘Patients seen by clinical nurse specialist’, with only 37% of providers meeting this target. In 2020/21, 31% of hospitals/trusts/MDTs met this target. While this may represent a data completion issue (6% of patients with missing information), providers should review and take action to address this important component of patient care. Full report, page 7.	In keeping with the NHS Workforce Plan, NHS England, Welsh Health Boards and Cancer Alliances should ensure everyone with bowel cancer has access to a clinical nurse specialist (CNS). NHS England, Welsh Health Boards and Cancer Alliances should investigate and address factors preventing patients’ accessing a CNS. Intended audience: NHS England, Welsh Health Boards and Cancer Alliances	ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management. 2023 NHS Long Term Workforce Plan
3	For patients undergoing anterior resection with diverting ileostomy, in 2021/22 the proportion with an unclosed ileostomy has not seen a significant improvement, with 44% of providers not meeting the local target. Nationwide 39% of patients did not have their diverting ileostomy closed within 18 months of their anterior resection. With emerging evidence of the negative impact of unclosed ileostomy on patient quality of life and even potentially on long-term survival, this is a key focus area for future local and national quality improvement initiatives. Full report, page 10.	Cancer Alliances should participate and engage with the NBOCA/ Royal College of Surgeons of England quality improvement project to enable more timely reversal of ileostomy. Intended audience: Cancer Alliances	ACPGBI: Guidelines for the Management of Cancer of the Colon, Rectum and Anus (2017) – Surgical Management.
4	There is considerable variation between hospitals/trusts/MDTs in the use of adjuvant chemotherapy for stage III colon cancer, with 20 providers (14%) below the lower 95% funnel limit. Full report, page 11.	Cancer Alliances should monitor and investigate regional and institutional variation in rates of adjuvant chemotherapy following resection of stage III colon cancer and ensure evidence-based chemotherapy policies are in place. Intended audience: Cancer Alliances	NICE Guidelines: Colorectal Cancer (Updated 2021).
5	Nationwide, 22% of patients experience severe acute toxicity following adjuvant chemotherapy for stage III colon cancer. This varied between units from 0% to 38%. Full report, page 11.	Cancer Alliances should monitor and investigate regional and institutional variation in severe acute toxicity after adjuvant chemotherapy. Cancer Alliances should encourage the utilisation of appropriate risk stratification tools for severe acute toxicity including frailty scoring, and integration of geriatric expertise and rehabilitation into chemotherapy decision making. Intended audience: Cancer Alliances	Boyle JM, et al. Measuring variation in the quality of systemic anti-cancer therapy delivery across hospitals: A national population-based evaluation. Eur J Cancer. 2023.

Chapter 1. Patients

Prior to the COVID-19 pandemic, the number of patients diagnosed with colorectal cancer had been slowly increasing. At the start of the pandemic, there was a considerable reduction in the number of diagnoses via all referral pathways, except emergency presentations which remained relatively constant (Figure 1). By October 2020, monthly diagnoses had returned to pre-pandemic levels and from April 2021 the number of monthly diagnoses continued to rise. The total number of patients diagnosed with colorectal cancer during 2021/22 surpassed annual figures prior to the COVID-19 pandemic. This may reflect delayed presentations of colorectal cancer from the COVID-19 pandemic. Variation in diagnosis pathways by English Cancer Alliances and Wales are shown in [Supplementary Figure 1](#).

Characteristics of the 35,779 patients diagnosed with colorectal cancer during 2021/22 are outlined in Table 1. Further characteristics, including cancer site, can be found in [Supplementary Table 1](#).

Since 2015, the number of patients diagnosed via screening has increased, with a temporary reduction during the first wave of the COVID-19 pandemic when the NHS Bowel Cancer Screening Programme was locally paused for England (Figure 1). According to NBOCA, 5,637 people were diagnosed via screening in 2021/22 compared to 3,442 in 2020/21. Of note, the uptake of bowel cancer screening in England has improved from [63% in 2019/20](#) to [68% in 2021/22](#). These improvements may reflect the rollout of Faecal Immunochemical Testing, coupled with increasing awareness through bowel cancer charities and NHS public health campaigns.

A key ambition of the [NHS Long Term Plan](#) cancer strategy is that by 2028, 75% of patients with cancer will be diagnosed with stage I or II disease. The detection of earlier, more treatable cancer is also a focus of the [Quality Statement for Cancer](#) in Wales. The proportion of patients diagnosed with stage I or II colorectal cancer had improved from 35% in 2017/18 to 42% in 2021/22 (Figure 2). Variation by English Cancer Alliances and

Wales is shown in [Supplementary Figure 2](#). It is important to monitor trends in staging at diagnosis to identify stage migration due to delays in diagnosis during the COVID-19 pandemic. To reflect this, the accurate recording of pre-treatment staging is a metric within the [NBOCA Quality Improvement Plan](#). Since 2017/18, the proportion of patients with incomplete pre-treatment staging has reduced from 20% to 14%.

The annual number of major surgical resections performed has returned to pre-pandemic levels ([Supplementary Table 2](#)) suggesting a recovery in colorectal cancer surgical activity.

Table 1 Characteristics of the 35,779 patients diagnosed with bowel cancer between 1 April 2021 and 31 March 2022 in England and Wales.			
		Number	%
Total number of patients		35,779	
Sex	Male	19,991	56.0
	Female	15,721	44.0
	Missing (% of total)	67 (0.2)	
Age-group	<50 years	2,307	6.4
	50-59 years	4,058	11.3
	60-74 years	15,137	42.3
	75-79 years	5,488	15.3
	80-84 years	4,649	13.0
	85+ years	4,140	11.6
Ethnicity	White	27,208	94.5
	Mixed/Multi Ethnic	141	0.5
	Asian	706	2.5
	Black	463	1.6
	Other	260	0.9
	Missing/ Not Known (% of total)	7,001 (19.6)	
Index of Multiple Deprivation (Quintile)	1 (Most deprived)	5,575	15.6
	2	6,532	18.3
	3	7,644	21.4
	4	8,074	22.6
	5 (Least deprived)	7,906	22.1
	Missing (% of total)	48 (0.1)	

Chapter 2. Quality Improvement

In 2021, NBOCA launched its [Quality Improvement \(QI\) Plan](#). The aim is to involve all members of the MDTs managing patients with colorectal cancer, covering the entire patient care pathway. QI metrics have been selected to cover two broad aspects of care: “Improving Patient Experience” and “Improving Cancer Outcomes”. Each metric has a local target.

NBOCA has developed ten local [Quality Improvement \(QI\)](#) metrics covering diagnosis, peri-operative care, oncological management, stage IV disease and end of life care. The ten local QI metrics, their local target and the proportion of providers meeting each target are reported in Table 2. Table 2 highlights that the proportion of providers meeting the adjusted 18-month unclosed ileostomy target has reduced dramatically since 2019/20. This should be an area of focus for QI initiatives.

NBOCA provides hospitals/trusts/MDTs with their local metrics to [facilitate local quality improvement](#) strategies in areas where they have poor or lower than average performance. NBOCA runs annual in-person QI workshops at the ACPGBI Meeting to showcase successful local QI initiatives.

To better understand the care and outcomes of patients with colorectal cancer, over time NBOCA will continue to develop new quality improvement metrics with input from patients and clinicians. For example, [methodological work](#) has enabled the capture of severe acute toxicity after adjuvant chemotherapy, which is a new QI metric. In this audit period, of the hospitals/trusts/MDTs with information for the 7 QI targets that have been measured over all 3 years, 9% met all 7 targets, 48% met 6 or more targets and 84% met 5 or more targets ([Supplementary Table 3](#)).

During the COVID-19 pandemic in 2020/21, the proportion of providers meeting the local QI target for adjusted 18-month unclosed ileostomy rate after anterior resection and rectal cancer surgery volume reduced significantly. Although the proportion of providers performing at least 20 rectal resections per year has almost returned to pre-pandemic levels, the unclosed ileostomy rate has not seen a significant improvement, with almost half of providers not meeting the local target.

Table 2
NBOCA local and national QI metrics

QI Metric	Local QI Target	National average % of patients in this report (2021/22)	% hospitals/trusts/MDTs meeting local target by audit reporting period		
			2019/20	2020/21	2021/22
1. Seen by Clinical Nurse Specialist	>95%	88%	38.5	30.6	36.6
2. Trust/MDT volume for rectal cancer surgery	≥20 per year	N/A*	71.1	56.4	68.2
3. Adjusted 90-day mortality after major resection	<6%	2.4%	89.4	96.4	97.0
4. Adjusted 30-day unplanned return to theatre after major resection	<10%	6.3%	75.0	77.5	89.5
5. Adjusted 30-day unplanned readmission after major resection	<15%	10.9%	87.1	76.8	83.5
6. Adjusted 18-month unclosed ileostomy after anterior resection	<35%	39%	72.4 ^a	55.1 ^b	56.2 ^c
7. Stage III colon cancer receiving adjuvant chemotherapy**	>50%	62%			
8. Severe acute toxicity after adjuvant chemotherapy for colon cancer**	<33%	22%			
9. Rectal cancer patients receiving neo-adjuvant treatment**	10-60%	33%			
10. Adjusted 2-year survival rate after major resection	>70%	85%	96.6 ^d	97.9 ^e	98.6 ^f

*Number of rectal cancer resections cannot be reported as national average % of patients. **QI metrics utilised for the first time in NBOCA so % hospitals/trusts/MDTs meeting metric not available in previous reports. ^aPatients undergoing anterior resection 01 April 2014 to 31 September 2018. ^bPatients undergoing anterior resection 1 April 2015 to 31 March 2020. ^cPatients undergoing anterior resection 1 April 2016 to 31 March 2021. ^dPatients undergoing major resection 2017/18. ^ePatients undergoing major resection 2018/19. ^fPatients undergoing major resection 2019/20.

Chapter 3. Diagnosis

Contextual Measures

- Case ascertainment >80%
- Data completeness of seven items for risk-adjustment for surgical patients >70%

Overall, 84% of hospitals/trusts/MDTs achieved over 80% case ascertainment compared to 85% last year. Data completeness is essential to allow risk-adjustment of patient outcomes. The proportion of hospitals/trusts/MDTs which achieved the data completeness target reduced from 87% in 2020/21 to 82% in 2021/22. Detailed information on how these metrics are measured can be found in the [Methodology Supplement](#).

Local QI Target 1

Seen by Clinical Nurse Specialist >95%

In 2021/22, the QI target met by the lowest number of hospitals/trusts/MDTs remains 'Patients seen by clinical nurse specialist', with only 37% of providers meeting this target. While this may represent a data completion issue, the target is important in emphasising the vital role of specialist colorectal nurses. It is important to note that nationwide of all patients who had the data item completed, 88% were seen by a CNS in 2021/22 compared to 85% in 2020/21. Figure 3 demonstrates the proportion of patients seen by a CNS, including patients with missing data.

Current NICE guidelines recommend that all patients diagnosed with colorectal cancer should undergo genetic testing (including mismatch repair (MMR) status) to identify those patients who may have cancer due to Lynch syndrome.

Completion of MMR or microsatellite instability (MSI) status for all patients within NBOCA was 27% in 2021/22, compared to 14% in 2018/19 ([Supplementary Table 4](#)). Reporting of genomics continues to be highest in those who underwent a major resection.

In addition, NICE guidelines recommend that all patients with metastatic colorectal cancer suitable for Systemic Anti-Cancer Therapy (SACT) are tested for RAS and BRAF mutations to guide clinical recommendations for palliative systemic treatment. This is a key area of focus in the [NBOCA QI plan](#).

Of those who underwent a major resection, younger patients were more likely to have a record of MMR or MSI testing with 38% in the youngest age group compared to 31% in the oldest age group ([Supplementary Table 5](#)). This may partly be explained by differences in treatment intent between young and elderly patients meaning that younger patients were more likely to have an assessment of their genomics to inform SACT treatment.

There also remains marked variation between regions and hospitals/trusts/MDTs in the completion of MMR/MSI status within NBOCA ([Supplementary Figure 3](#)). Overall, approximately half of the English Cancer Alliances have improved their MMR completion rate. But nationwide there remains room for improvement in MMR/MSI testing as recording of this important prognostic factor aids clinical and oncological decision-making. The [2022 Organisational Survey](#) provides information about which hospitals/trusts/MDTs offer the different types of genomic testing.

There may also be barriers to accessing these specialist results for members of the healthcare team entering NBOCA data. This may have been further exacerbated by the COVID-19 pandemic. This is the final report that utilises data on MMR/MSI testing from the NBOCA dataset. Moving forward, linkage to genomics data from the National Disease Registration Service (NDRS) should improve data completeness and quality in future reports.

Chapter 4. Peri-operative Care

Local QI Target 2

Trust/hospital/MDT volume for rectal cancer surgery
≥20

4.1 Improving Cancer Outcomes

[NICE guidelines](#) recommend that providers should be performing a minimum of 10 rectal cancer resections per year. According to data submitted for major resections dated between 1 April 2021 and 31 March 2022, 11% of hospitals/trusts/MDTs performed less than 10 rectal cancer resections and 32% of hospitals/trusts/MDTs performed fewer than 20 rectal cancer resections. This compares to 29% of hospitals/trusts/MDTs performing less than 20 rectal cancer resections in 2019/20.

Local QI Target 3

<6% adjusted 90-day mortality after major resection

For all patients with colorectal cancer undergoing major resection, there has been a reduction in overall 90-day post-operative mortality from 3.1% in 2017/18 to 2.4% in 2021/22 (Figure 4).

Focusing only on patients undergoing emergency surgery, 90-day post-operative mortality increased from 8.9% in 2019/20 to 11.2% during the COVID-19 pandemic in 2020/21. In 2021/22, 90-day mortality following emergency surgery reduced somewhat to 9.9%. Across all categories of urgency of surgical operation, 90-day post-operative mortality rates are lower than that in 2018/19 ([Supplementary Table 6](#)).

Figure 5 shows risk-adjusted 90-day post-operative mortality for all patients by English trusts/hospitals and Welsh MDTs. There were seven English hospitals/trusts above the 95% limit, none of which was above the 99.8% limit. In the last audit period (2020/21), there were two English trusts/hospitals above the 95% limit, one of which was above the 99.8% limit.

Local QI Target 4

<10% adjusted 30-day unplanned return to theatre after major resection

The proportion of patients with an [unplanned return to theatre](#) (URTT) following a major resection has reduced over time (Figure 6). Overall, there did not appear to be any substantial effect on URTT during the COVID-19 pandemic. The proportion of patients with an URTT in 2021/22 was 6.3% compared to 7.8% in 2017/18.

Figure 7 shows risk-adjusted proportions of URTT at hospital/trust/MDT level. There were eight English hospitals/trusts above the 95% funnel limit, with one of these above the 99.8% limit. In the 2020/21 audit period there were also eight English hospitals/trusts above the 95% funnel limit, with four of these above the 99.8% funnel limit. Two English hospitals/trusts were above the 95% limit in consecutive audit periods.

4.2 Improving Patient Experience

Contextual Measure

Laparoscopic surgery attempted in >50% of major resections

The proportion of providers meeting the laparoscopic surgery QI metric increased from 81.7% in 2020/21 to 87.8% in 2021/22. The proportion of patients undergoing laparoscopic surgery varied by English Cancer Alliance/ Wales from 60% to 84%. In addition, the proportion of patients having robotic procedures varied from 0% in Wales to 15% in East of England (North) ([Supplementary Figure 4](#)). The NBOCA team plan to amend the next iteration of the [NBOCA QI plan](#) to combine robotic and laparoscopic approaches to indicate a minimally invasive surgical approach.

During the COVID-19 pandemic there was a temporary increase in the proportion of patients undergoing open surgery (Figure 8). This reflects initial guidelines advocating the use of open surgery due to concerns about the transmission of COVID-19 via insufflation gases used during laparoscopic procedures. The upward trend in open surgery has subsequently reversed (18% in 2021/22 compared to 28% in 2020/21). In 2021/22, 74% underwent laparoscopic surgery for major resection in England and Wales compared to 66% in 2020/21.

Following major resection, the median length of inpatient stay (LOS) for this audit period was 6 days (IQR 4-10 days), similar to 6 days (IQR 4-9 days) in 2020/21. Patients undergoing an elective or scheduled procedure had a LOS of 6 days (IQR 4-9 days) compared to a LOS of 9 days (IQR 6-15 days) for those having an emergency or urgent procedure.

Over time, LOS for urgent and emergency procedures has remained stable ([Supplementary Figure 5](#)). In comparison, LOS following elective/scheduled procedures has steadily reduced over time ([Supplementary Figure 6](#)). The proportion of patients staying in hospital for 5 days or less after elective/scheduled surgery has increased from 39% in 2017/18 to 45% in 2021/22. Possible explanations for the improvements include Enhanced Recovery After Surgery (ERAS) programmes, drives for [preoptimisation](#), and the increased uptake and experience of minimally invasive surgery.

Local QI Target 5

<15% adjusted 30-day unplanned readmission after major resection

Nationwide, the proportion of patients with a 30-day unplanned readmission after major resection remained stable in 2021/22, at 10.9% (Figure 9). The proportion of providers meeting the unplanned readmission QI metric increased from 76.8% in 2020/21 to 83.5%. Coupled with the reduced LOS, it is reassuring that there has not been an increase in 30-day unplanned readmissions.

Following risk-adjustment, seven English hospitals/trusts were above the 95% funnel limit and three of these were above the 99.8% limit for adjusted 30-day unplanned readmission (Figure 10). In 2020/21, there were six English hospitals/trusts above the 95% limit and three of these were above the 99.8% limit; two of whom are still above the 99.8% limit.

18-months compared to 47% of patients undergoing surgery in 2019/20 and 39% of patients undergoing surgery in 2020/21 ([Supplementary Figure 7](#)). This likely reflects the impact of the pandemic on waiting lists. With emerging evidence of the negative impact of unclosed ileostomy on patient quality of life and long-term survival, this will be a key focus in local and national NBOCA QI initiatives.

After risk-adjustment, there were 23 hospitals/trusts/MDTs above the 95% funnel limit, of these four were above the 99.8% funnel limit. In comparison to the last audit period, this represents increased between-unit variation (Figure 11). Possible explanations include differential rates of post-operative complications, toxicity from adjuvant chemotherapy, or disease progression. Additionally, there are often no set pathways or protocols for stoma closure. It is likely that considerable differences exist in administrative factors such as waiting list volumes for other urgent procedures which may affect the prioritisation of stoma reversal. As expected, these factors appear to have been exacerbated by the COVID-19 pandemic.

In recent years, the proportion of patients with rectal cancer undergoing major resection has decreased from 53% in 2017/18 to 44% in 2021/22 ([Supplementary Table 7](#)), despite an increase in the proportion of rectal cancer patients presenting with early tumours (T1/2, N0, M0). This may reflect changes in rectal cancer management advocating organ preservation where feasible with a variety of multidisciplinary techniques.

Local QI Target 6

<35% adjusted 18-month unclosed diverting ileostomy after anterior resection

For patients with rectal cancer undergoing major resection, there has been an increase in the proportion of patients undergoing abdominoperineal resections and a decrease in the proportion of anterior resections ([Supplementary Table 8](#)). The proportion of patients receiving a diverting ileostomy at the time of their anterior resection remained relatively stable at approximately 60% ([Supplementary Table 9](#)). There has been a substantial increase in the proportion of patients who do not have their ileostomy reversed by 18 months, with approximately 55% of providers meeting the local QI target in the last two audit periods compared to 72% in 2019/20. Nationwide, for patients undergoing anterior resection with diverting ileostomy in 2018/19, 34% did not have their diverting ileostomy closed at

Chapter 5. Oncological Management and Stage IV Disease

Local QI Target 7

>50% patients with resected Stage III colon cancer receiving adjuvant chemotherapy

Nationwide, during the first wave of the COVID-19 pandemic, use of adjuvant chemotherapy following major resection for stage III colon cancer fell to 57% in 2020/21 (Figure 12). Uptake has subsequently recovered to pre-pandemic levels with 62% receiving adjuvant chemotherapy in 2021/22 compared to 61% in 2019/20.

Local QI Target 8

<33% severe acute toxicity after adjuvant chemotherapy for stage III colon cancer

Methodological work by NBOCA has enabled the development of a comprehensive coding framework which captures severe acute toxicity within hospital administrative data. This is toxicity necessitating an overnight hospital admission and corresponds to at least a Grade 3 toxicity in the Common Terminology Criteria for Adverse Event (CTCAE) classification. Overall, 22% of patients receiving adjuvant chemotherapy for pathological stage III colorectal cancer had severe acute toxicity. This varied between trusts/hospitals/MDTs from 0% to 38%. There were seven English NHS trusts/hospitals outside the 95% funnel limit. (Figure 14).

Considerable between-unit variation exists in the use of adjuvant chemotherapy for stage III colon cancer with 20 providers (14%) below the lower 95% funnel limit (Figure 13).

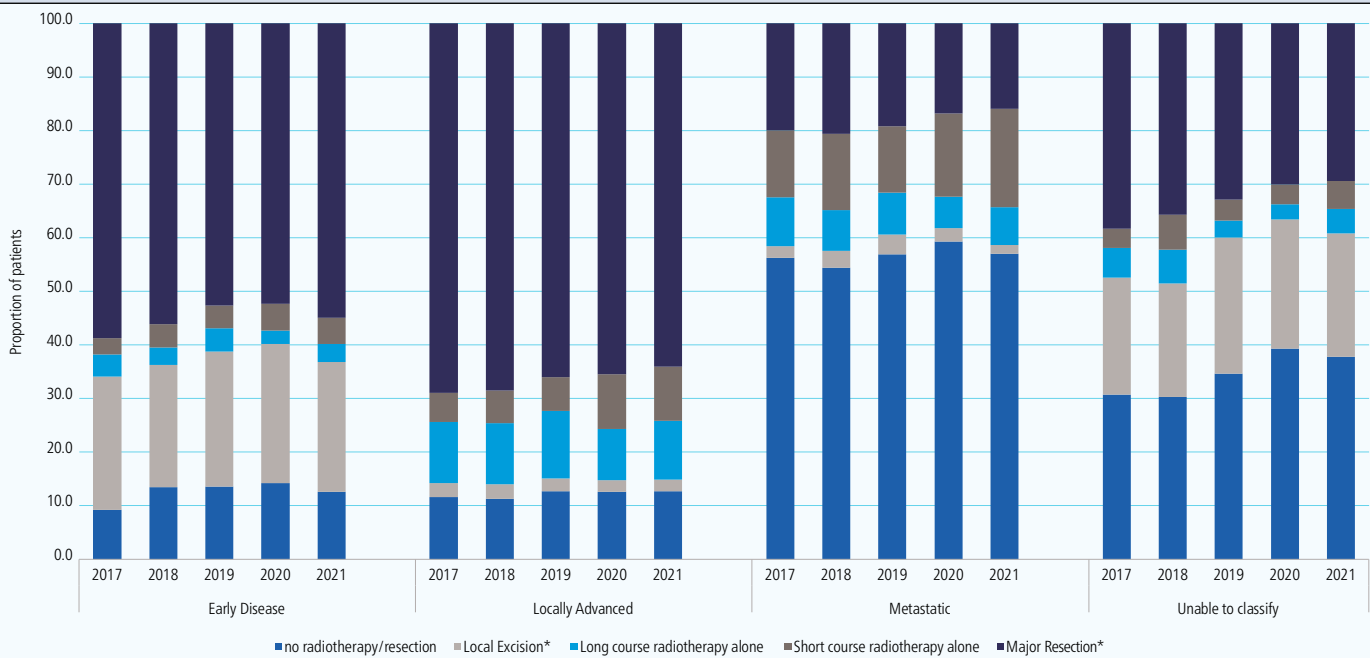
Local QI Target 9

10-60% of rectal cancer patients receiving neo-adjuvant treatment

Figure 15 and [Supplementary Table 10](#) show the change in rectal cancer management over time for three clinical groups: patients with early rectal cancer; locally advanced disease; and metastatic disease. For early rectal cancers, there has been a reduction in the proportion of patients undergoing major resection (59% in 2017 compared to 55% in 2021). This has been associated with increased use of local excision and radiotherapy. For locally advanced rectal cancers, there has also been a reduction in the proportion of patients

having a major resection, associated with an increase in radiotherapy usage. These trends likely reflect the uptake of enhanced surveillance and organ preservation where feasible following complete clinical response from neo-adjuvant therapy ([OnCoRe](#)). In patients with metastatic rectal cancer, there has been an increase in the proportion receiving short course radiotherapy (SCRT). This may reflect, utilisation of total-neoadjuvant therapy in patients with potentially operable rectal cancer and metastatic disease as well as utilisation of SCRT in patients with significant rectal symptoms for symptom relief prior to chemotherapy. Also, in this group the proportion who do not have a record of radiotherapy or major resection has reduced to previous levels after a rise in 2020/21 (59% in 2020/21 to 57% in 2021/22).

Figure 15 Changes in rectal cancer management over time by clinical group.



Early Disease: T1/2, N0, M0

Locally Advanced: any T, N1/N2, M0 or T3/4, N0, M0

Metastatic: any T, any N, M1

*Represents the last treatment recorded

During the first wave of the COVID-19 pandemic, there was a reduction across all clinical groups in the use of neo-adjuvant long-course radiotherapy (LCRT), and an increase in the use of SCRT. This trend had not fully reversed by late 2020/21, indicating increased utilisation of SCRT (Figure 16).

Nationwide for patients having a major resection for rectal cancer, 33% received neo-adjuvant therapy in 2021/22. There was considerable variation between hospitals/trusts/MDTs in the use of neo-adjuvant radiotherapy from 19% to 57%.

For patients that received neo-adjuvant treatment, the proportion receiving LCRT varied from 10% to 53%, and the proportion receiving SCRT varied from 0% to 41% ([Supplementary Figure 8](#)). This represents an increase in variation compared to 2020/21.

It is anticipated that the use of total neo-adjuvant therapy (TNT) will further impact the post-pandemic management of rectal cancer. NBOCA is developing methodology to evaluate TNT, including how its use varies between regions and trusts/hospitals/MDTs.

Local QI Target 10

>70% adjusted 2-year survival rate after major resection

For all patients, 2-year all-cause mortality rate slightly improved from 32.9% in 2017/18 to 30.9% in 2019/20 ([Supplementary Table 11](#)). For patients undergoing major resection, 2-year all-cause mortality rate improved from 17.7% to 15.6%. This is likely to reflect a number of factors within the patient pathway. It is notable that the proportion of patients with a positive circumferential resection margin (a key determinant of poor prognosis) reduced from 10.5% in 2017/18 to 6.9% in 2019/20 ([Supplementary Table 12](#)). For patients not undergoing surgical resection, 2-year mortality rate improved from 71.8% to 67.7%.

Following risk-adjustment for 2-year all-cause mortality rate after major resection between 1 April 2019 and 31 March 2020, there were eleven providers above the 95% funnel limit. This compares to eight providers in the previous year. One provider above the 95% limit was the same across both audit periods (Figure 17).

[Supplementary Figure 9](#) demonstrates variation in adjusted 2-year cancer-specific mortality rate for patients undergoing major resection. Overall, there was less between-unit variation for cancer-specific mortality compared to all-cause mortality.

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Click [here](#) to access your individual Trust/hospital/MDT results.

Individual outlier responses can be found [here](#).

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**Royal College
of Surgeons
of England**

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. The Project Team based in the Clinical Effectiveness Unit (CEU) at the RCS carried out the analysis of the data for the NBOCA State of the Nation report.



NHS England provides national leadership for the NHS. Through the NHS Long Term Plan, NHS England promotes high quality health and care for all, and supports NHS organisations to work in partnership to deliver better outcomes for its patients and communities, at the best possible value for taxpayers and to continuously improve the NHS. The National Bowel Cancer Audit (NBOCA) is funded by NHS England and the Welsh Government.



HQIP

Healthcare Quality
Improvement Partnership

The National Bowel Cancer Audit is commissioned by the Healthcare Quality Improvement Partnership (HQIP) as part of the National Clinical Audit and Patient Outcomes Programme (NCAPOP). HQIP is led by a consortium of the Academy of Medical Royal Colleges, the Royal College of Nursing, and National Voices. Its aim is to promote quality improvement in patient outcomes, and in particular, to increase the impact that clinical audit, outcome review programmes and registries have on healthcare quality in England and Wales. HQIP holds the contract to commission, manage, and develop the National Clinical Audit and Patient Outcomes Programme (NCAPOP), comprising around 40 projects covering care provided to people with a wide range of medical, surgical and mental health conditions. The programme is funded by NHS England, the Welsh Government and, with some individual projects, other devolved administrations and crown dependencies <https://www.hqip.org.uk/national-programmes/>.