

Supplementary Results, National Bowel Cancer Audit (NBOCA) State of the Nation Report 2025

Supplementary Table 1: Data source used for NBOCA performance indicators in England and Wales

Performance Indicator		Data Source	
		England	Wales
		Rapid Cancer Registration Dataset (RCRD)	Cancer Network Information System Cymru (CaNISC)
1	Seen by Clinical Nurse Specialist	Diagnosis between 01/2023 and 12/2023	Diagnosis between 01/2023 and 12/2023
2	Trust/MDT volume for rectal cancer surgery	Surgery between 01/2023 and 12/2023	Surgery between 01/2023 and 12/2023
3	Adjusted 90-day mortality		
4	30-day unplanned return to theatre		
5	30-day unplanned readmission after major resection		
7	Stage 3 colon cancer receiving adjuvant chemotherapy	Surgery between 04/2021 and 10/2023	Surgery between 04/2021 and 10/2023
8	Adjusted severe acute toxicity related to adjuvant chemotherapy for colon cancer		
9	People with rectal cancer receiving neo-adjuvant treatment	Surgery between 01/2023 and 12/2023	Surgery between 01/2023 and 12/2023
		National Cancer Registration Dataset (NCRD)	Cancer Network Information System Cymru (CaNISC)
6	Adjusted 18-month unclosed ileostomy after anterior resection	Surgery between 04/2018 and 03/2023	Surgery between 04/2018 and 03/2023
10	Adjusted 2-year survival rate after major resection	Surgery between 04/2021 and 03/2022	Surgery between 04/2021 and 03/2022

Supplementary Table 2: Description of the 37,730 people diagnosed with bowel cancer between 01 January 2023 and 31 December 2023 in England and Wales, by referral source

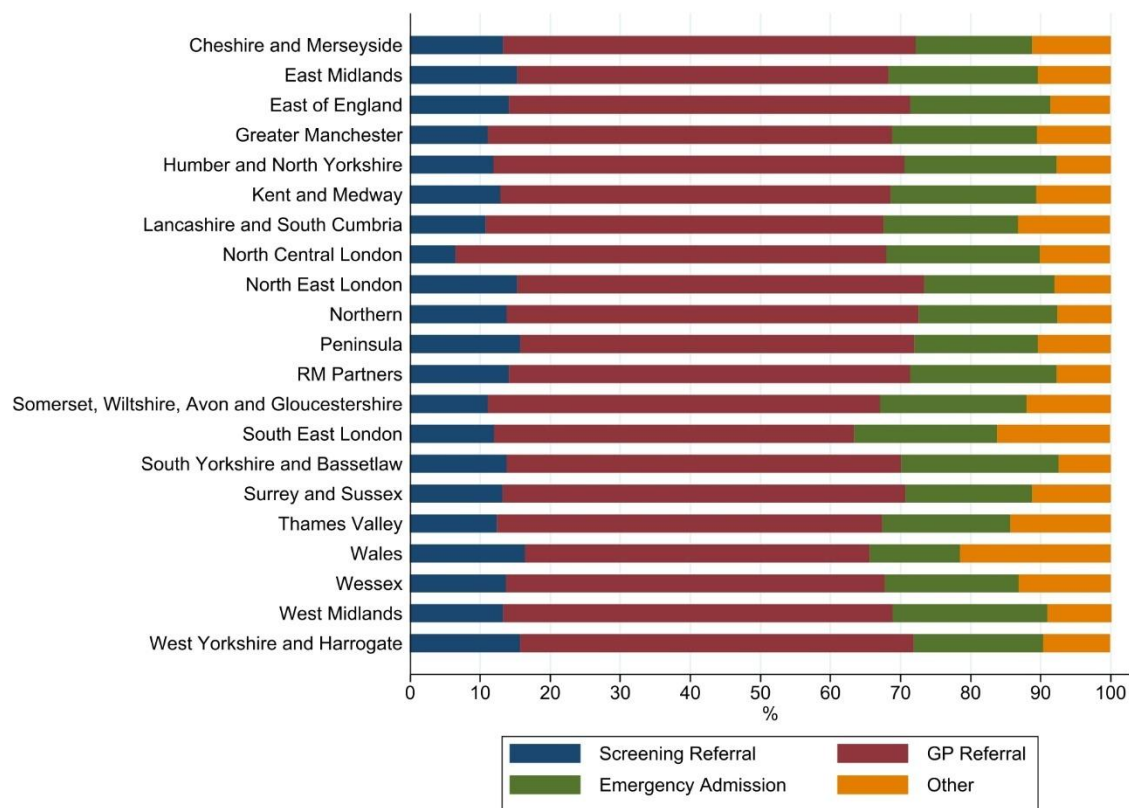
		Emergency Presentation		GP Referral		Screening Referral		Other/ Not Known	
		N	%	N	%	N	%	N	%
Total no. people		7,238		20,738		5,030		4,724	
Sex	Male	3,678	50.8	11,383	54.9	3,084	61.3	2,579	54.6
	Female	3,560	49.2	9,355	45.1	1,946	38.7	2,145	45.4
Age-group	<50 yrs	783	10.8	1,680	8.1	13	0.3	547	11.6
	50-59 yrs	804	11.1	2,798	13.5	909	18.1	703	14.9
	60-74 yrs	1,970	27.2	6,445	31.1	3,760	74.8	1,632	34.6
	75-79 yrs	1,127	15.6	3,834	18.5	236	4.7	749	15.9
	80-84 yrs	1,068	14.8	3,234	15.6	74	1.5	582	12.3
	85+ yrs	1,483	20.5	2,736	13.2	38	0.8	509	10.8
	Missing (% of total)	3(0.0)		11(0.1)		0(0.0)		2(0.1)	
Performance Status*	0	1,911	38.1	9,495	55.1	3,114	74.5	1,942	53.7
	1	1,355	27.0	5,003	29.0	870	20.8	1,045	28.9
	2	812	16.2	1,935	11.2	161	3.9	376	10.4
	3	684	13.6	696	4.0	<35	0.7	222	6.1
	4	250	5.0	99	0.6	<5	0.0	30	0.8
	Missing (% of total)	2,226 (30.8)		3,510 (16.9)		852 (16.9)		1,109 (23.5)	
Ethnicity**	White	5,945	92.2	17,181	92.7	4,063	93.4	3,699	91.2
	Mixed/Multi Ethnic	33	0.5	120	0.6	22	0.5	22	0.5
	Asian	187	2.9	534	2.9	131	3.0	144	3.5
	Black	155	2.4	397	2.1	78	1.8	108	2.7
	Other	125	1.9	292	1.6	57	1.3	84	2.1
	Missing/ Not Known (% of total)	793 (11.0)		2,214 (10.7)		679 (13.5)		667 (14.1)	
IMDQ (quintile)	1 (Most deprived)	1,379	19.1	3,220	15.6	745	14.9	766	16.3
	2	1,476	20.4	3,774	18.3	908	18.1	842	17.9
	3	1,496	20.7	4,388	21.2	1,085	21.6	945	20.1
	4	1,446	20.0	4,561	22.1	1,130	22.5	1,083	23.0
	5 (Least deprived)	1,428	19.8	4,733	22.9	1,145	22.8	1,070	22.7
	Missing (% of total)	13 (0.2)		62 (0.3)		17(0.3)		18 (0.4)	
Cancer Site	Colon	5,983	82.7	13,509	65.1	3,402	67.6	3,372	71.4
	Rectosigmoid	282	3.9	919	4.4	168	3.3	176	3.7
	Rectal	973	13.4	6,310	30.4	1,460	29.0	1,176	24.9
Cancer Stage	1	505	8.6	4,246	22.6	1,772	37.5	983	24.6
	2	1,438	24.5	4,628	24.7	1,135	24.0	883	22.1
	3	1,784	30.4	6,445	34.4	1,458	30.9	1,272	31.9
	4	2,139	36.5	3,440	18.3	356	7.5	851	21.3
	Missing (% of total)	1,372 (19.0)		1,979 (9.5)		309 (6.1)		735 (15.6)	

		Emergency Presentation		GP Referral		Screening Referral		Other/ Not Known	
		N	%	N	%	N	%	N	%
Total no. people		7,238		20,738		5,030		4,724	
Surgical Treatment	Major Resection	3,008	41.6	12,140	58.5	3,842	76.4	2,400	50.8
	Local Excision	109	1.5	1,202	5.8	498	9.9	323	6.8
	Stoma	310	4.3	593	2.9	26	0.5	106	2.2
	Stent	126	1.7	163	0.8	<15	0.3	47	1.0
	Other	5	0.1	6	0.0	<5	0.0	6	0.1
	None Reported	3,680	50.8	6,634	32.0	648	12.9	1,842	39.0

* WHO Performance Status. 0 = Fully active, 1 = Some restriction but cares for self, 2 = Ambulatory >50% of time, occasional assistance needed, 3 = Ambulatory ≤50% of time, nursing care needed, 4 = Bedbound.

** Ethnicity obtained from NDRS rapid registration data for people with a rapid registration record and PEDW for people diagnosed in Wales

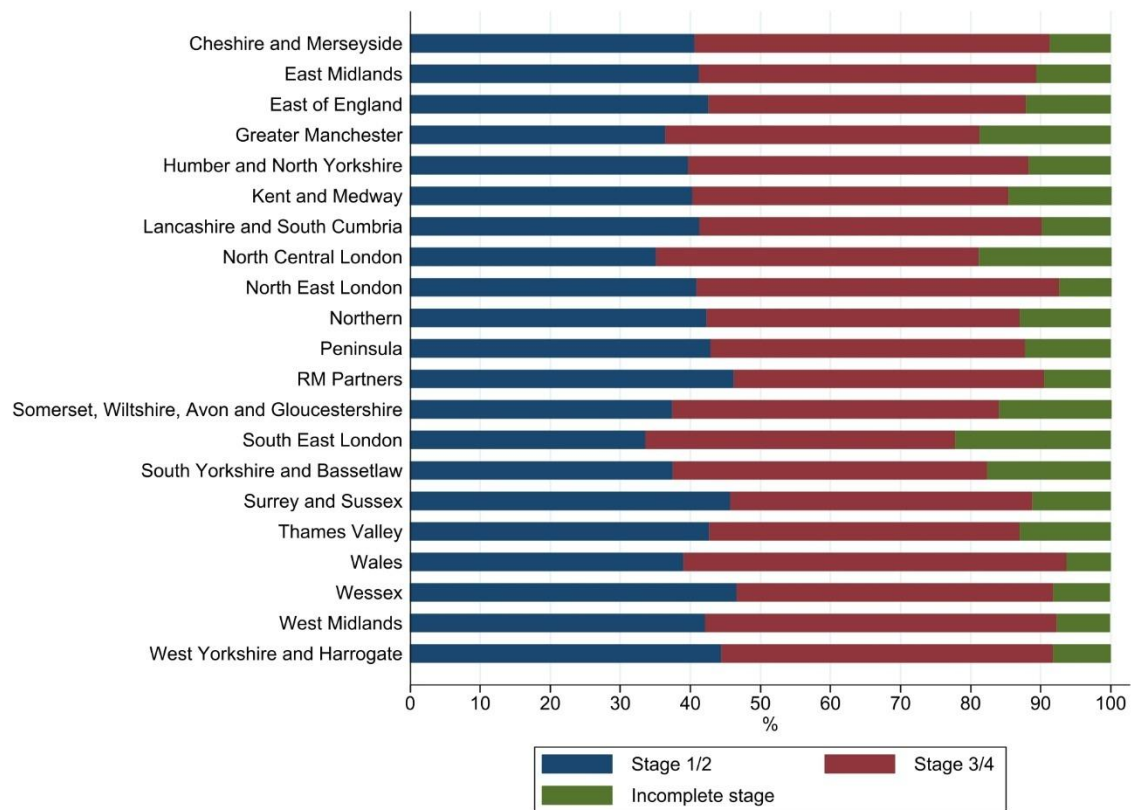
Supplementary Figure 1: Referral source of the 37,039* people diagnosed with bowel cancer between 01 January 2023 and 31 December 2023 by Cancer Alliance (England)/country (Wales)



*671 people with recorded referral source "Not Known" excluded and 31 people not allocated a cancer alliance.

Data for England and Wales derived from different variables: England final route (RCRD) and Wales source of referral.

Supplementary Figure 2: Pre-treatment staging* of people diagnosed with bowel cancer between 01 January 2023 and 31 December 2023, by Cancer Alliance (England)/country (Wales)**



*England: Stage 1-4 as recorded in RCRD

Wales: Stage calculated as follows:

Stage I: T1/T2, N0, M0

Stage II: T3/T4, N0, M0

Stage III: any T, N1/N2, M0

Stage IV: any T, any N, M1 Incomplete stage: missing N or M-stage

** The proportion of people with missing pre-treatment staging varies from 6% to 22% making interpretation of geographical differences in pre-treatment staging problematic.

Supplementary Table 3: Number of people diagnosed with bowel cancer and their reported surgical procedure, by year of diagnosis

	2019		2020		2021		2022		2023	
	N	%	N	%	N	%	N	%	N	%
Total	35,107		37,291		33,150		40,104		38,604	
Major Resection	21,381	60.9	22,683	60.8	19,521	58.9	23,896	59.6	21,705	56.2
Local Excision	1,944	5.5	2,335	6.3	1,954	5.9	2,827	7.1	2,617	6.8
Non-resectional Surgery*	1,023	2.9	1,209	3.2	1,133	3.4	1,291	3.2	911	2.4
No Colorectal Surgery	10,759	30.7	11,064	29.7	10,542	31.8	12,090	30.2	13,371	34.6

* Stoma only or stent insertion

Supplementary Table 4: Management of people with rectal cancer as reported to NBOCA in England and Wales, by year of diagnosis

	2019		2020		2021		2022		2023	
	N	%	N	%	N	%	N	%	N	%
Total	9,813		8,457		10,493		9,968		9,920	
Major Resection	5,340	54.4	4,434	52.4	5,545	52.8	5,063	50.8	4,560	46.0
Local Excision	952	9.7	800	9.5	1,149	11.0	1,204	12.1	1,060	10.7
Non-resectional Surgery	582	5.9	558	6.6	669	6.4	632	6.3	541	5.5
No Surgery	2,939	30.0	2,665	31.5	3,130	29.8	3,069	30.8	3,759	37.9

Supplementary Table 5: Type of major resection performed for people with rectal cancer in England and Wales, by year of surgery

	2019		2020		2021		2022		2023	
	N	%	N	%	N	%	N	%	N	%
Total	5,024		5,198		4,430		5,508		4,798	
Anterior Resection	3,091	61.5	3,170	61.0	2,600	58.7	3,424	62.2	2,869	59.8
Abdomino-perineal excision of rectum (APER)	1,340	26.7	1,453	28.0	1,308	29.5	1,493	27.1	1,411	29.4
Hartmann's	424	8.4	396	7.6	408	9.2	434	7.9	396	8.3
Other	169	3.4	179	3.4	113	2.6	157	2.9	120	2.5

Supplementary Table 6: Stoma status within 30 days of surgery and 18 months post-surgery for people undergoing an anterior resection in England and Wales, by year of surgery

		2018-19		2019-20		2020-21		2021-22		2022-23	
		N	%	N	%	N	%	N	%	N	%
Total		3,091		3,170		2,600		3,424		2,869	
Stoma status within 30d of surgery	No stoma	772	25.0	818	25.8	619	23.8	876	25.6	773	26.9
	Ileostomy	1,848	59.8	1,851	58.4	1,448	55.7	1,951	57.0	1,576	54.9
	Colostomy	471	15.2	501	15.8	533	20.5	597	17.4	520	18.1
	Ileostomy at 18 months in people with ileostomy at surgery	603	32.6	883	47.7	563	38.9	755	38.7	620	39.3

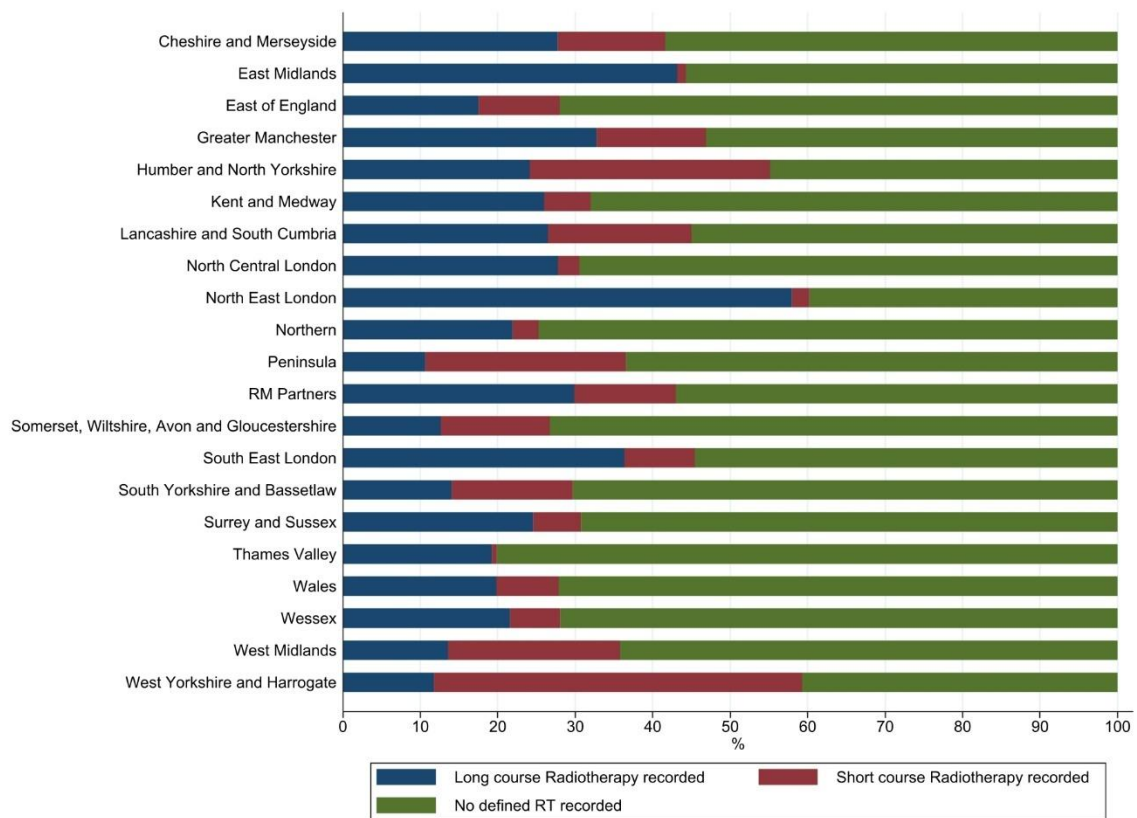
Supplementary Table 7: Characteristics by cancer stage for the 9,915 people diagnosed with rectal cancer in England between 01 January 2023 and 31 December 2023

		Stage 1		Stage 2/3		Stage 4		Missing stage	
		N	%	N	%	N	%	N	%
Total No People diagnosed with rectal cancer		2,503		4,995		1,507		910	
Sex	Male	1,558	62.2	3,172	63.5	965	64.0	523	57.5
	Female	945	37.8	1,823	36.5	542	36.0	387	42.5
Age-group	<50 yrs	188	7.5	450	9.0	155	10.3	81	8.9
	50-59 yrs	379	15.1	874	17.5	294	19.5	123	13.5
	60-74 yrs	1,143	45.7	2,039	40.8	545	36.2	326	35.8
	75-84 yrs	353	14.1	711	14.2	203	13.5	112	12.3
	85+ yrs	187	7.5	421	8.4	146	9.7	157	17.3
	Missing	0 (0.0)		0 (0.0)		1 (0.1)		0 (0.0)	
Performance Status	0 (fully active)	1,413	66.7	2,802	63.4	666	51.5	236	50.1
	1	496	23.4	1,067	24.2	363	28.1	107	22.7
	2	154	7.3	379	8.6	143	11.1	62	13.2
	3	46	2.2	152	3.4	102	7.9	52	11.0
	4 (bedbound)	10	0.5	18	0.4	19	1.5	14	3.0
	Missing (% of total)	384 (15.3)		577 (11.6)		214 (14.2)		439 (48.2)	
Referral Method	Emergency Admission	113	4.5	383	7.7	286	19.0	191	21.0
	GP Referral	1,499	59.9	3,370	67.5	942	62.5	497	54.6
	Screening Referral	559	22.3	725	14.5	99	6.6	77	8.5
	Other	298	11.9	429	8.6	142	9.4	120	13.2
	Unknown	34	1.4	88	1.8	38	2.5	25	2.7
	Missing (% of total)	0 (0.0)		0 (0.0)		0 (0.0)		0 (0.0)	
IMDQ (quintile)	1 (Most deprived)	332	13.5	794	17.3	233	17.5	227	15.2
	2	449	18.2	879	19.2	271	20.4	287	19.2
	3	533	21.6	980	21.4	267	20.1	335	22.5
	4	557	22.6	966	21.1	286	21.5	309	20.7
	5 (Least deprived)	593	24.1	963	21.0	271	20.4	333	22.3
Surgical Procedure	Anterior Resection	336	13.5	840	16.9	285	19.0	149	16.4
	APER/Pelvic Exenteration	454	18.2	979	19.7	327	21.8	163	18.0
	Hartmann's	519	20.8	1,050	21.1	287	19.1	207	22.8
	Local Excision	560	22.4	1,046	21.0	326	21.7	189	20.8
	Other Resection	628	25.2	1,066	21.4	276	18.4	199	21.9
	Stent/Stoma	7	0.3	255	5.1	245	16.3	29	3.2
	None	634	25.3	1,564	31.3	946	62.8	615	67.7
Neo-adjuvant Radiotherapy (RT)	None**	2,038	81.4	2,511	50.3	1,047	69.5	744	81.8
	Long Course (LCRT)	269	10.7	1,481	29.6	161	10.7	99	10.9
	Short Course (SCRT)	196	7.8	1,003	20.1	299	19.8	67	7.4

Stage 1:	T1/2, N0, M0
Stage 2/3:	any T, N1/N2, M0 or T3/4, N0, M0
Stage 4:	any T, any N, M1
Missing stage:	any other staging that includes missing data that prevents classification

** Includes people with radiotherapy records that cannot be classified into long or short-course regimens

Supplementary Figure 3: Treatment pathways for people diagnosed with rectal cancer between 01 January 2023 and 31 December 2023 who underwent major resection, by Cancer Alliance (England)/country (Wales)* performing surgery



* Radiotherapy data for England and Wales comes from different sources: Welsh data submitted by the WCN from a variety of data sources; data for England from RTDS.

Supplementary Figure 4: Adjusted cancer-specific 2-year survival rate for people who underwent a major resection between 01 April 2021 and 31 March 2022, by English NHS trusts/Welsh MDTs with more than ten people

