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National Report on Colorectal Staging Data Quality Report

Colorectal Malignancies
Site-Specific Clinical Reference Group

Knowledge and Intelligence Team (Northern and Yorkshire)
National Cancer Registration Service (Northern and Yorkshire)
Public Health England

Introduction

The Colorectal SSCRG wanted to establish the completeness of staging information held in the NCDR for colorectal cancers (ICD10 C18-C20).

The 2009 National Cancer Data Repository (NCDR) contains data from eight English cancer registries for cancers diagnosed between 1990 and 2009. This report explores the quality of the colorectal staging data in the NCDR and then the differences seen after applying an algorithm that corrects missing values to a valid stage. It reports on data from 1999-2009, although focusing on the most recent year (2009). The report looks at the completeness of each component and the overall stage.

The staging system used for colorectal cancers is Dukes; however, many registries also recorded using the TNM staging system which identifies the stage of the disease by tumour, nodal status and metastases. The recognised TNM version to use for colorectal cancer is TNM version five. Colorectal cancer is one of the sites for which the Northern and Yorkshire Cancer Registry and Information Service (NYCRIS) is the lead registry, and ensuring staging information is accurately recorded is a priority to enable registries to produce reliable statistics and information on incidence, mortality and survival by stage.

Methods

Data were extracted from the NCDR for all cases of colorectal cancer (ICD-10 C18-C20) diagnosed between 1999 and 2009. There were 325,943 colorectal cancers during this time period throughout England.

Staging fields submitted to the NCDR in English Registries

Cancer Registry	Clinical TNM	Pathological TNM	Integrated TNM	Dukes
ECRIC			X	X
NWCIS	X	X	X	X
NYCRIS	X	X	X	X
OCIU	X	X		X
SWCIS	X	X		X
ThCR				X
TrCR				X
WMCIU	X	X	X	X

Table 1 - Staging value submitted to the NCDR

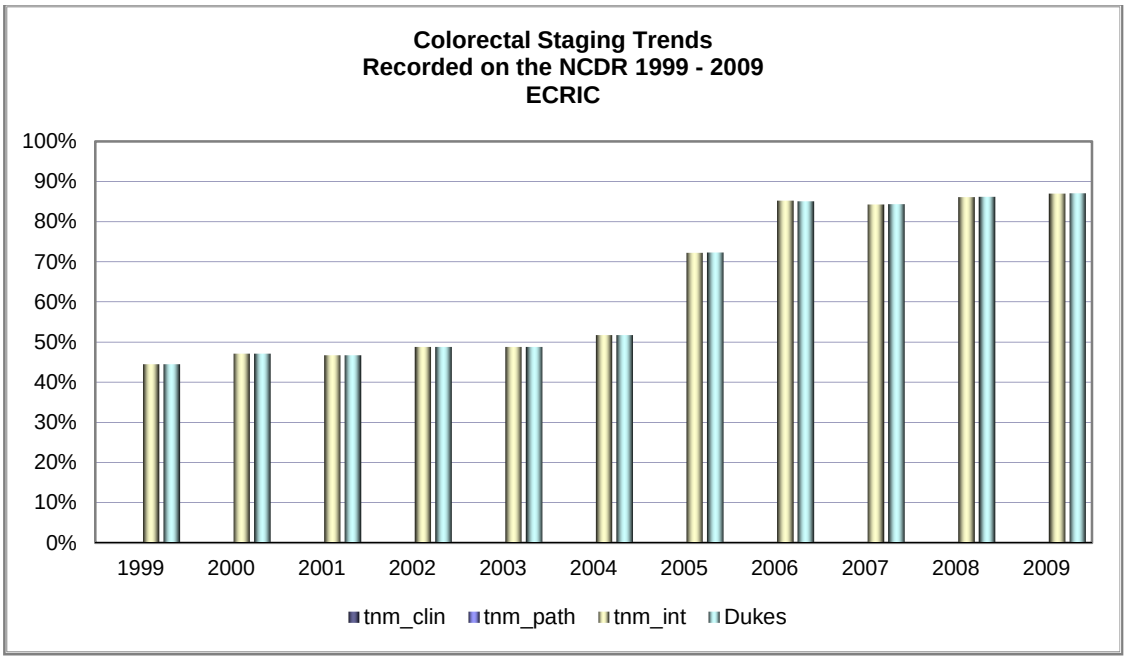

Figure 1 - Staging Trends - ECRIC

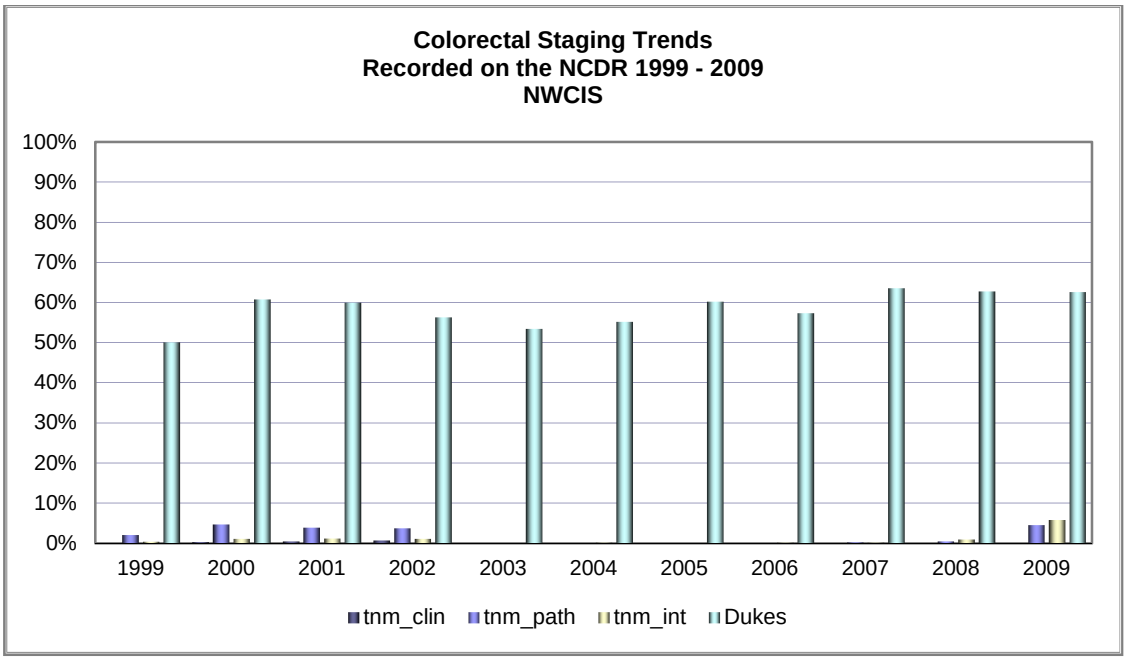

Figure 2 - Staging Trends – NWCIS

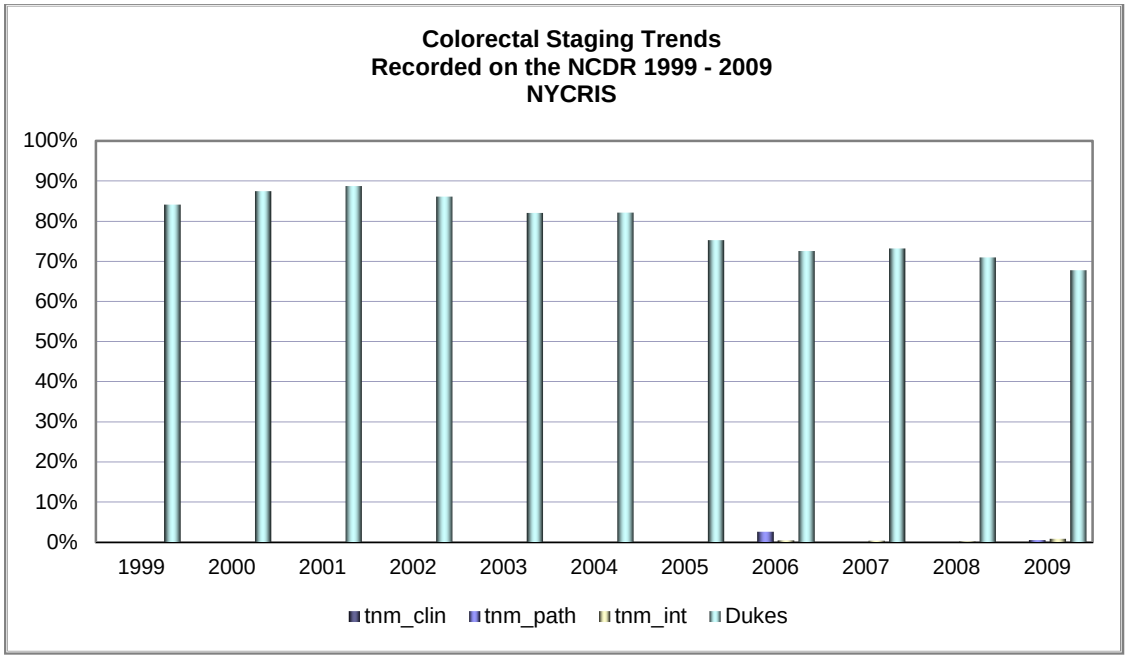

Figure 3 - Staging Trends - NYCRIS

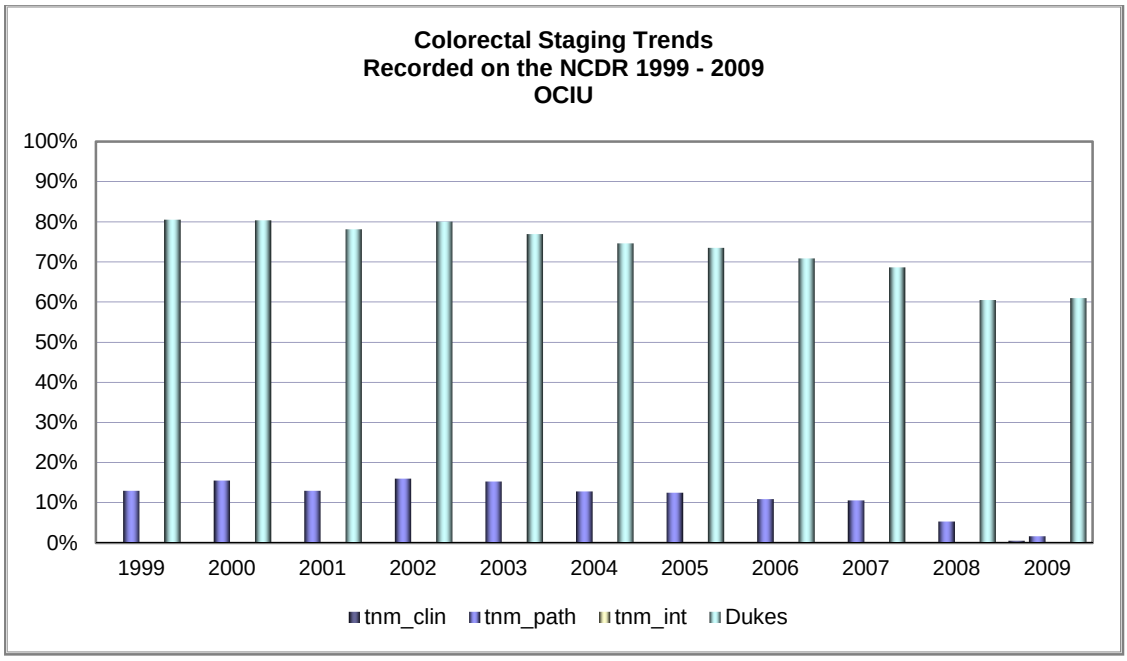

Figure 4 - Staging Trends - OCIU

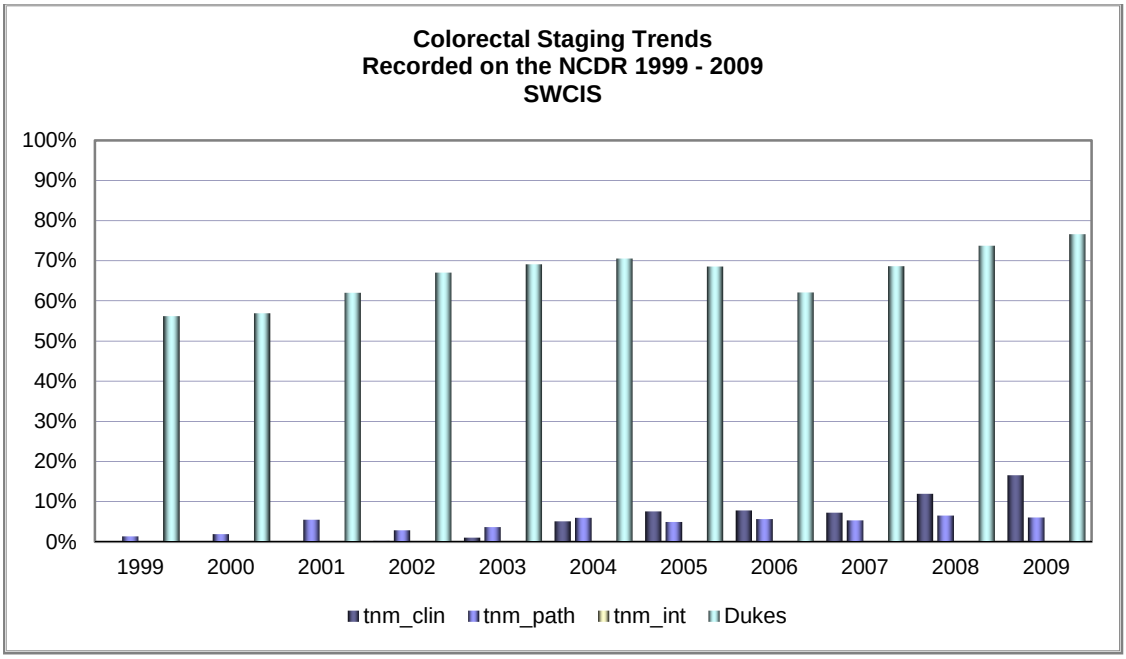

Figure 5 - Staging Trends - SWCIS

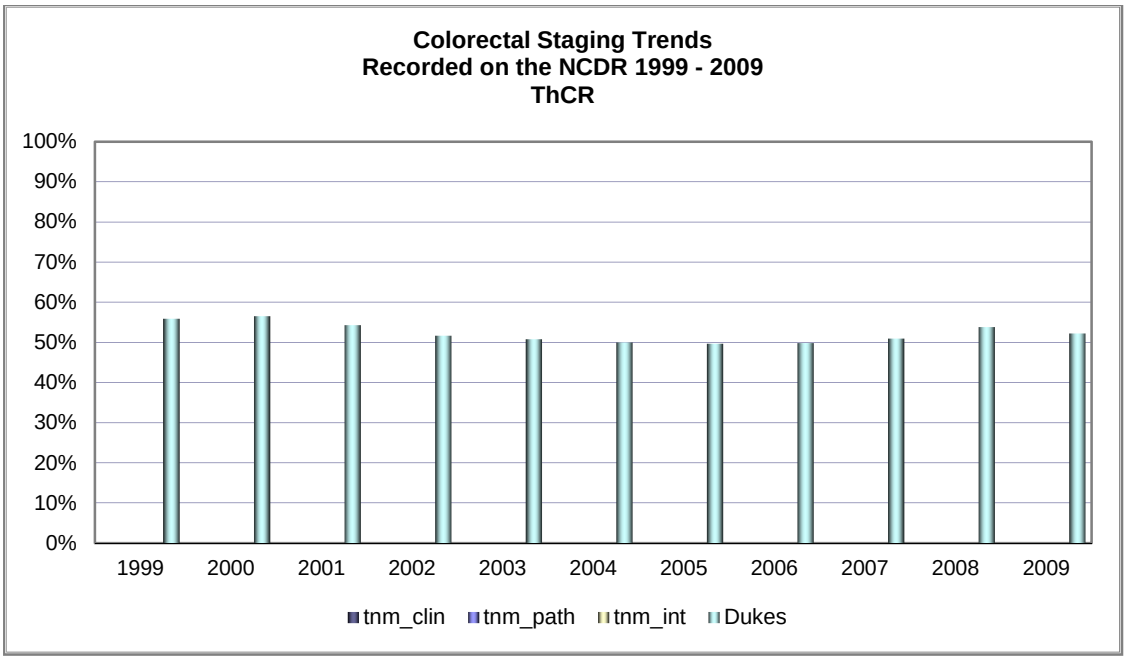

Figure 6 - Staging Trends - ThCR

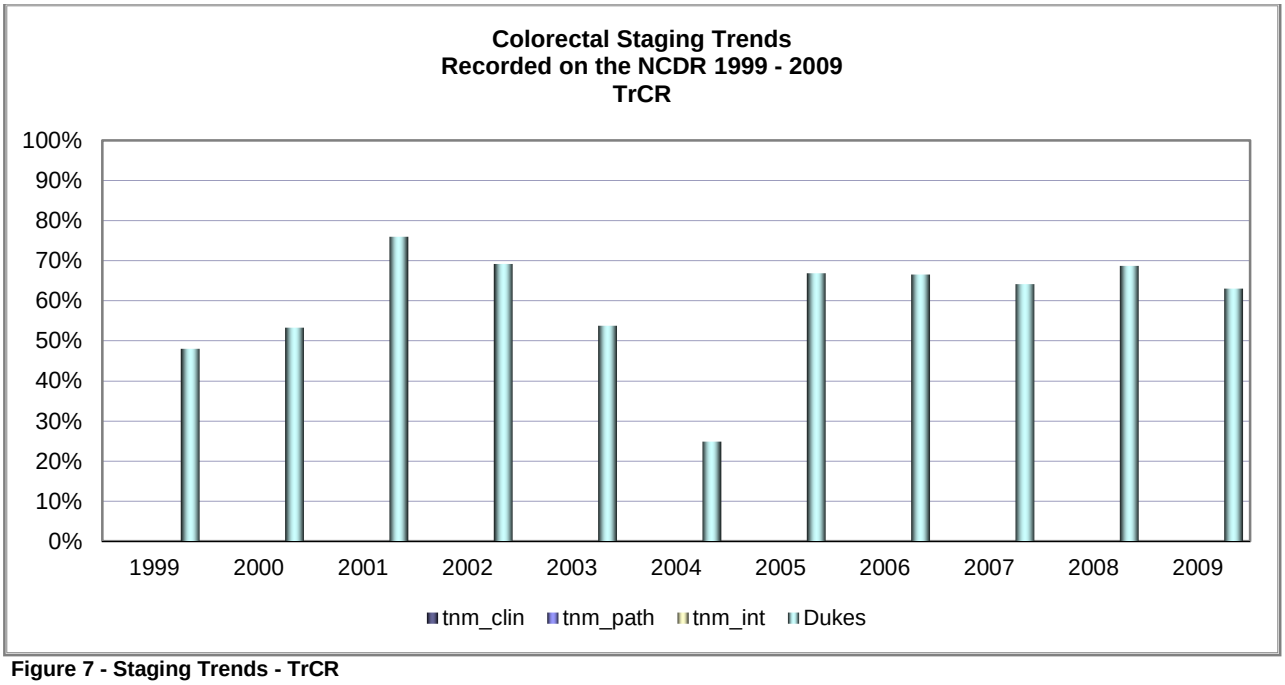

Figure 7 - Staging Trends - TrCR

Staging Values Submitted to the NCDR – 2009 Diagnosis

Cases and percentage of staging information for Colorectal Cancer (C18-C20) in English Cancer Registries, year of diagnosis 2009

Clinical T Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	29243	90.47%				x
T0	2	0.01%	x	x	x	x
T1	46	0.14%	x	x	x	x
T2	335	1.04%	x	x	x	x
T2c	1	0.00%				x
T3	1000	3.09%	x	x	x	x
T3a	28	0.09%				x
T3b	34	0.11%				x
T3c	27	0.08%				x
T3d	3	0.01%				x
T4	568	1.76%	x	x	x	x
T4a	3	0.01%			x	x
T4b	18	0.06%			x	x
TX	1017	3.15%	x	x	x	x

Table 2 - Clinical T Stage Submitted to the NCDR

Clinical N Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	29495	91.25%				x
N0	820	2.54%	x	x	x	x
N1	719	2.22%	x	x	x	x
N2	395	1.22%	x	x	x	x
N3	6	0.02%				x
NX	890	2.75%	x	x	x	x

Table 3 - Clinical N Stage Submitted to the NCDR

Clinical M stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	29326	90.72%				x
M0	1100	3.40%	x	x	x	x
M1	1492	4.62%	x	x	x	x
MX	407	1.26%	x	x		x

Table 4 - Clinical M Stage Submitted to the NCDR

Combined clinical TNM

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	30829	95.37%				x
I	17	0.05%	x	x	x	x
II	7	0.02%	x		x	x
IIA	16	0.05%		x	x	x
IIB	11	0.03%		x	x	x
III	12	0.04%	x		x	x
IIIA	6	0.02%		x	x	x
IIIB	38	0.12%		x	x	x
IIIC	34	0.11%		x	x	x
IV	1354	4.19%	x	x	x	x
IVB	1	0.00%			x	x

Table 5 - Combined Clinical Stage Submitted to the NCDR

Inconsistent recording of clinical TNM and Dukes stage		
Volume	**TNM Value**	**Dukes Value**
3307	**Null**	**A**
7200	**Null**	**B**
7599	**Null**	**C***
2462	**Null**	**D**
5	**I**	**Null**
5	**I**	**B**
2	**I**	**C***
11	**II***	**Null**
2	**II***	**A**
3	**II***	**C**
18	**III***	**Null**
10	**III***	**A**
13	**III***	**B**
2	**III***	**D**
Total:- 20639		

Table 6 - Clinical TNM compared to Dukes Stage

None of the clinical TNM values in the above table correspond to the Dukes stage recorded in the 2009 NCDR for 2009 diagnosed Colorectal Cancers.

Pathological T Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	21837	67.55%				x
pT0	30	0.09%	x	x	x	x
pT1	874	2.70%	x	x	x	x
pT1a	3	0.01%				x
pT1a2	1	0.00%				x
pT1b	1	0.00%				x
pT1c	1	0.00%				x
pT2	1375	4.25%	x	x	x	x
pT3	5107	15.80%	x	x	x	x
pT3a	32	0.10%				x
pT3b	42	0.13%				x
pT3c	32	0.10%				x
pT4	2128	6.58%	x	x	x	x
pT4a	81	0.25%			x	x
pT4b	517	1.60%			x	x
pTis	1	0.00%		x	x	x
pTX	263	0.81%		x	x	x

Table 7 -Pathological T Stage Submitted to the NCDR

Pathological N Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	22131	68.46%				x
pN0	5436	16.82%	x	x	x	x
pN1	2568	7.94%	x	x	x	x
pN1a	17	0.05%			x	x
pN1b	1	0.00%			x	x
pN2	1716	5.31%	x	x	x	x
pN2a	13	0.04%			x	x
pN2b	2	0.01%			x	x
pN3	5	0.02%				x
pNX	436	1.35%	x	x	x	x

Table 8 - Pathological N Stage Submitted to the NCDR

Pathological M Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	24774	76.64%				x
pM0	505	1.56%	x	x	x	x
pM1	721	2.23%	x	x	x	x
pM1a	1	0.00%			x	x
pMX	6324	19.56%	x	x		x

Table 9 - Pathological M Stage Submitted to the NCDR

Combined Pathological TNM Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	31363	97.02%				x
I	41	0.13%	x	x	x	x
II	55	0.17%	x		x	x
IIA	38	0.12%		x	x	x
IIB	17	0.05%		x	x	x
IIC	1	0.00%			x	x
III	106	0.33%	x		x	x
IIIA	6	0.02%		x	x	x
IIIB	45	0.14%		x	x	x
IIIC	21	0.06%		x	x	x
IV	632	1.96%	x	x	x	x

Table 10 - Combined Pathological Stage Submitted to the NCDR

Inconsistent recording of pathological TNM and Dukes stage		
Volume	**TNM Value**	**Dukes Value**
3297	**Null**	**A**
7161	**Null**	**B**
7589	**Null**	**C***
2963	**Null**	**D**
4	**I**	**Null**
2	**I**	**B**
4	**II***	**Null**
1	**II**	**A**
3	**II**	**C**
8	**III***	**Null**
6	**III**	**B**
7	**IV**	**Null**
22	**IV**	**B**
125	**IV**	**C***
Total:- 21192		

Table 11 - Pathological TNM compared to Dukes Stage

None of the pathological TNM values in the above table correspond to the Dukes stage recorded in the 2009 NCDR for 2009 diagnosed Colorectal Cancers.

Integrated T Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	26569	82.19%				x
T0	25	0.08%				x
T1	568	1.76%				x
T1b	1	0.00%				x
T2	814	2.52%				x
T2c	1	0.00%				x
T3	2734	8.46%				x
T3a	9	0.03%				x
T3b	7	0.02%				x
T3c	14	0.04%				x
T4	1146	3.55%				x
T4a	73	0.23%				x
T4b	355	1.10%				x
Tis	1	0.00%				x
TX	8	0.02%				x

Table 12 - Integrated T Stage Submitted to the NCDR

Integrated N Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	29674	91.80%				x
N0	1432	4.43%				x
N1	719	2.22%				x
N2	490	1.52%				x
N3	1	0.00%				x
NX	9	0.03%				x

Table 13 - Integrated N Stage Submitted to the NCDR

Integrated M Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	30883	95.54%				x
M0	639	1.98%				x
M1	708	2.19%				x
MX	95	0.29%				x

Table 14 - Integrated M Stage Submitted to the NCDR

Integrated TNM Stage

Value Supplied	n	%	Valid entry in			
			TNM5	TNM6	TNM7	NCDR specification
Missing	27685	85.65%				x
0	3	0.01%				x
I	745	2.30%				x
II	1087	3.36%				x
IIA	117	0.36%				x
IIB	42	0.13%				x
IIC	1	0.00%				x
III	1081	3.34%				x
IIIA	15	0.05%				x
IIIB	108	0.33%				x
IIIC	75	0.23%				x
IV	1366	4.23%				x

Table 15 - Combined Integrated Stage Submitted to the NCDR

Inconsistent recording of integrated TNM and Dukes stage		
Volume	**TNM Value**	**Dukes Value**
2593	**Null**	**A**
6009	**Null**	**B**
6380	**Null**	**C***
2374	**Null**	**D**
5	**I**	**Null**
10	**I**	**B**
1	**I**	**C***
14	**II***	**Null**
4	**II***	**A**
2	**II***	**C***
20	**III***	**Null**
5	**III***	**A**
6	**III***	**B**
2	**III***	**D**
5	**IV**	**Null**
2	**IV**	**A**
42	**IV**	**B**
252	**IV**	**C***
Total:-17726		

Table 16 - Integrated TNM compared to Dukes Stage

None of the integrated TNM values in the above table correspond to the Dukes stage recorded in the 2009 NCDR for 2009 diagnosed Colorectal Cancers.

Dukes Stage Submitted to the NCDR by Registry

Cancer Registry	Dukes Stage						
	A	**B**	**C**	**C1**	**C2**	**D**	**Unknown**
ECRIC	645	1047	288	647	157	526	490
NWCIS	418	898	318	641	148	308	1631
NYCRIS	391	854	63	641	147	914	1430
OCIU	132	409	19	314	106	37	648
SWCIS	540	1211	137	914	204	906	1188
ThCR	452	1270	297	876	239	12	2875
TrCR	394	710	776	0	0	260	1253
WMCIU	361	895	40	763	146	478	861
Total	**3333**	**7294**	**1938**	**4796**	**1147**	**3441**	**10376**

Table 17 - Dukes Stage Submitted to NCDR by Registry - Diagnosis year 2009

Cancer Registry	Dukes Stage						
	A	**B**	**C**	**C1**	**C2**	**D**	**Unknown**
ECRIC	17%	28%	8%	17%	4%	14%	13%
NWCIS	10%	21%	7%	15%	3%	7%	37%
NYCRIS	9%	19%	1%	14%	3%	21%	32%
OCIU	8%	25%	1%	19%	6%	2%	39%
SWCIS	11%	24%	3%	18%	4%	18%	23%
ThCR	8%	21%	5%	15%	4%	0%	48%
TrCR	12%	21%	23%	0%	0%	8%	37%
WMCIU	10%	25%	1%	22%	4%	13%	24%
Total	**10%**	**23%**	**6%**	**15%**	**4%**	**11%**	**32%**

Table 18 - % of Dukes Stage Submitted to NCDR by Registry - Diagnosis year 2009

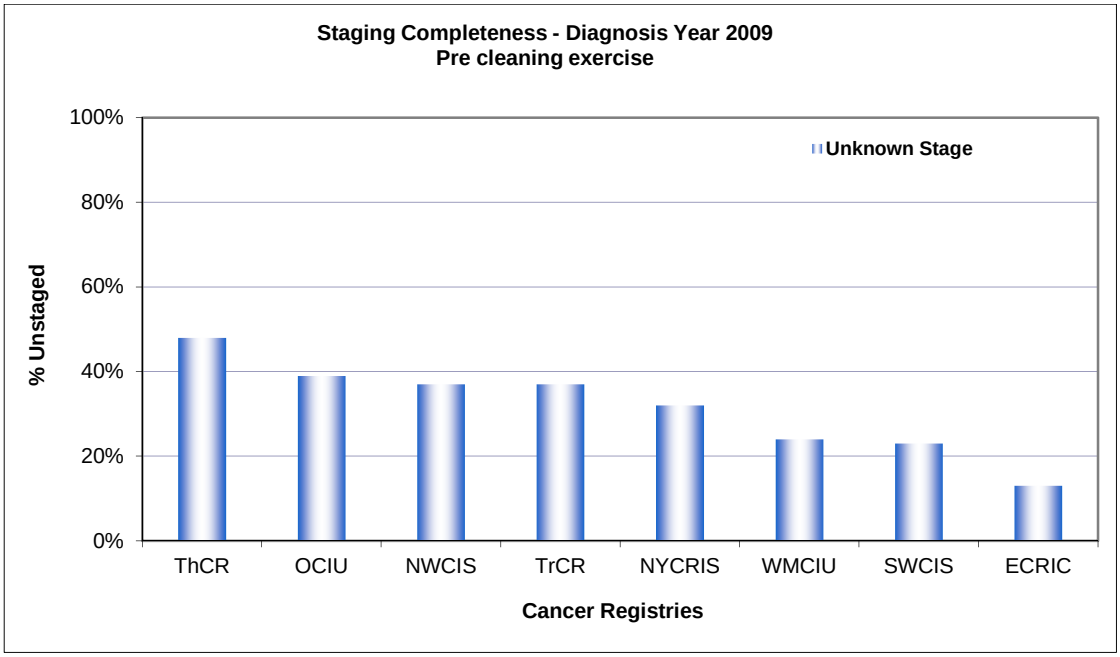

Figure 8 - % of Unknown Dukes Stage Submitted to NCDR by Registry

Rules used to derive stage across multiple staging fields in the NCDR

The information provided in each of the staging variables was checked and cleaned to ensure the overall stage represented the individual clinical, pathological and integrated TNM components, the components were then combined to form a TNM stage of 1 to 4. If there was any confliction between the combined TNM and the individual components the highest overall stage was retained.

The TNM staging categories were then converted to Dukes stage, if both a Dukes and a pathological or integrated TNM were provided for an individual but the information conflicted then the highest stage was taken.

If no Dukes stage or pathological/integrated stage was available for an individual but a clinical TNM stage was provided then the clinical stage was used.
If the presence of positive nodes was recorded in the dataset then empty or lower stages were upgraded to Dukes C.

If the presence of metastases was recorded in the dataset then empty or lower stages were upgraded to a Dukes D.

Clinical TNM Conversion

Stage 1 would be assigned using the following method (clinical t = 1 or 2) and (clinical n = 0 or null) and (clinical m = 0 or null)
Stage 2 would be assigned using the following method (clinical t = 3 or 4) and (clinical n = 0 or null) and (clinical m = 0 or null)
Stage 3 would be assigned using the following method (clinical n = 1) and (clinical m = 0 or null)
Stage 4 would be assigned using the following method (clinical m = 1)

Pathological TNM Conversion

Stage 1 would be assigned using the following method (pathological t = 1 or 2) and (pathological n = 0 or null) and (pathological m = 0 or null)
Stage 2 would be assigned using the following method (pathological t = 3 or 4) and (pathological n = 0 or null) and (pathological m = 0 or null)

Stage 3 would be assigned using the following method (pathological n = 1) and (pathological m = 0 or null)
Stage 4 would be assigned using the following method (pathological m = 1)

Integrated TNM Conversion

Stage 1 would be assigned using the following method (integrated t = 1 or 2) and (integrated n = 0 or null) and (integrated m = 0 or null)
Stage 2 would be assigned using the following method (integrated t = 3 or 4) and (integrated n = 0 or null) and (integrated m = 0 or null)
Stage 3 would be assigned using the following method (integrated n = 1) and (integrated m = 0 or null)
Stage 4 would be assigned using the following method (integrated m = 1)

Dukes Conversion
Dukes A = 1
Dukes B = 2
Dukes C* = 3 (* Indicates more than one C category)
Dukes D = 4

Staging completeness after data cleaning exercise

Cancer Registry	Stage Year of diagnosis 2009				
	1	**2**	**3**	**4**	**Unknown**
ECRIC	647	1071	1105	526	451
NWCIS	416	889	1125	313	1619
NYCRIS	400	869	895	948	1328
OCIU	158	417	443	61	586
SWCIS	698	1293	1272	1205	632
ThCR	504	1351	1378	1438	1350
TrCR	394	706	788	260	1245
WMCIU	479	915	864	663	623
Total	**3696**	**7511**	**7870**	**5414**	**7834**

Table 19 - Staging Values Assigned After Cleaning Exercise by Registry

Cancer Registry	Stage Year of diagnosis 2009				
	1	**2**	**3**	**4**	**Unknown**
ECRIC	17%	28%	29%	14%	12%
NWCIS	10%	20%	26%	7%	37%
NYCRIS	9%	20%	20%	21%	30%
OCIU	9%	25%	27%	4%	35%
SWCIS	14%	25%	25%	24%	12%
ThCR	8%	22%	23%	24%	22%
TrCR	12%	21%	23%	8%	37%
WMCIU	14%	26%	24%	19%	18%
Total	**11%**	**23%**	**24%**	**17%**	**24%**

Table 20 - % of Staging Values Assigned After Cleaning Exercise by Registry

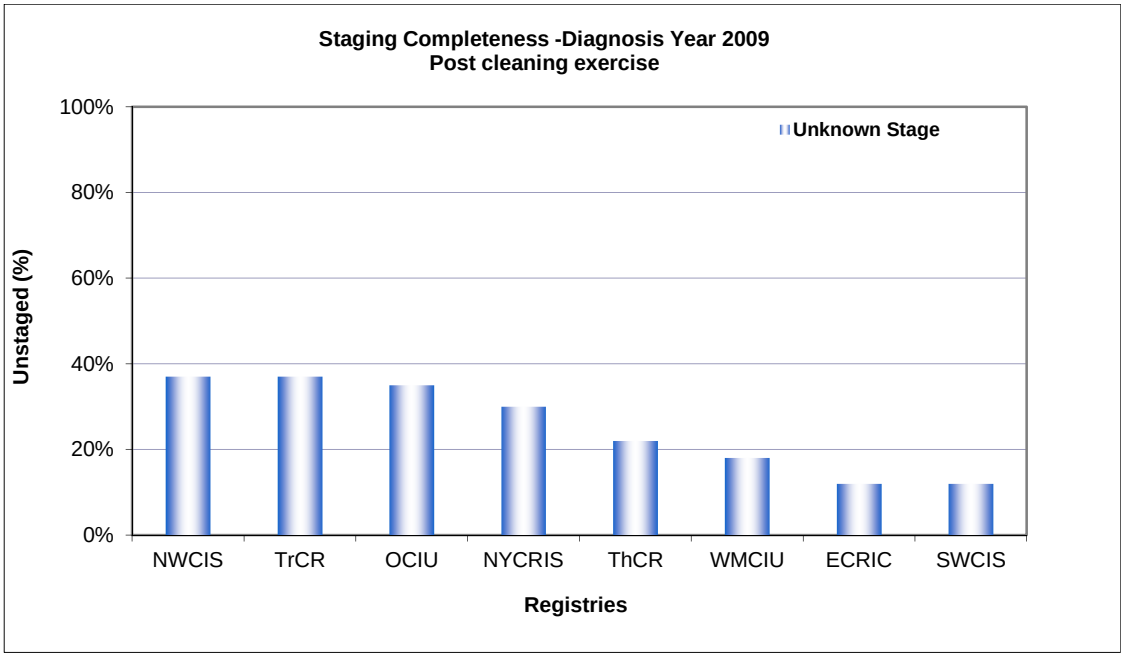

Figure 9 - % of Unknown Staging Values after Cleaning Exercise by Registry

Stage Cleaning Exercise Results

The cleaning exercise had made a significant difference on the staging completeness for Thames, Trent and South West cancer registries with Thames and South West having half of their unknowns recorded with a valid stage.

Staging System Data Quality Issues Submitted to the NCDR

The majority of cases have been coded as either TNM or Dukes or both, however, some colorectal cancer cases were submitted to the NCDR with an incorrect staging system. In 2006 and 2008 some cases were recorded using the Figo staging system.

Nottingham prognostic index (NPI) staging system has also been recorded against colorectal cancers; although there are no reported cases after 2006, the NCDR showed that the following registries have recorded NPI.

Cancer Registry		
Diagnosis Year	**OCIU**	**SWCIS**
2000		1
2001		4
2002		7
2003		17
2004	1	176
2005		322
2006		159
Total	**1**	**686**

Table 21 - NPI Staging System Used For Colorectal Cancers

South West has a total of 686 records between the years 2000 and 2006 with an NPI score recorded.

Metastases Data Quality Issues Submitted to the NCDR

In the NCDR for 2009 diagnosed colorectal cancers some registries have shown to record metastases alongside a Dukes stage of A, B or C. These inconsistencies are demonstrated in table 22.

Cancer Registry	A	B	C	Total
OCIU	0	1	1	2
SWCIS	8	41	15	64
ThCR	26	96	72	194
WMCIU	2	32	8	42
Total	**36**	**170**	**96**	**302**

Table 22 - Metastases Recorded Against Dukes A, B and C

Comparisons between Recorded Integrated M and Dukes Stage

Cancer Registry	Dukes D and corresponding M value			
	Missing	MX	M0	M1
ECRIC	526	0	0	0
NWCIS	246	0	1	61
NYCRIS	909	4	0	1
OCIU	37	0	0	0
SWCIS	906	0	0	0
ThCR	12	0	0	0
TrCR	260	0	0	0
WMCIU	1	0	0	477
Total	**2897**	**4**	**1**	**539**

Table 23 - Dukes Stage D Compared to Integrated M Value – 2009 Diagnosis

Dukes D means the cancer has spread to another part of the body and would correspond to M1, only one registry has a Dukes D recorded against an M0 which is no metastases; however it is very important that registries make sure the values they record correspond with each other. All cases with a missing M value and a Dukes D recorded should be M1.

There are also data quality issues with WMCIU recording M1 against Dukes A, B and C staging values, totalling 37 incorrectly recorded cases in 2009.

Recorded Integrated TNM Stage Compared to Dukes Stage

This exercise looks the data quality issues between the TNM integrated values recorded when compared to the Dukes stage recorded for 2009 diagnosed cases.

Dukes Stage - ECRIC							
TNM int	**A**	**B**	**C**	**C1**	**C2**	**D**	**Total**
I	636	**4**	0	0	0	0	640
II	**2**	1,023	0	**2**	0	0	1,027
III	**5**	**4**	279	576	117	0	981
IV	**1**	**14**	**8**	**67**	**39**	526	655
Total	**644**	**1,045**	**287**	**645**	**156**	**526**	**3,303**

Table 24 - Dukes Stage Compared to Integrated TNM Stage - ECRIC

The integrated TNM stage does not completely correspond to the Dukes stage recorded, ECRIC Cancer Registry have a total of 146 cases recorded with an incorrect corresponding TNM and Dukes stage, incorrect values highlighted in red. ECRIC have a total of 3,303 records with both a TNM and Dukes stage recorded. However, TNM IV has quite a few records that do not correspond to Dukes D with the majority being associated with Dukes C, C1 and C2 which are TNM III.

Dukes Stage - NWCIS							
TNM int	**A**	**B**	**C**	**C1**	**C2**	**D**	**Total**
I	41	**4**	0	**1**	0	0	46
II	0	52	0	0	0	0	52
III	0	**2**	25	49	16	**1**	93
IV	0	0	0	**1**	0	61	62
Total	**41**	**58**	**25**	**51**	**16**	**62**	**253**

Table 25 - Dukes Stage Compared to Integrated TNM Stage – NWCIS

NWCIS have 9 records with an incorrect corresponding TNM and Dukes stage.

Dukes Stage - NYCRIS						
TNM int	**A**	**B**	**C1**	**C2**	**D**	**Total**
I	6	0	0	0	0	6
II	**1**	2	0	0	0	3
IIA	0	6	0	0	0	6
IIB	0	1	0	0	0	1
IIC	0	1	0	0	0	1
III	0	0	1	0	0	1
IIIA	0	0	2	0	0	2
IIIB	0	0	5	1	0	6
IIIC	0	0	1	0	**1**	2
IV	0	0	0	0	1	1
Total	**7**	**10**	**9**	**1**	**2**	**29**

Table 26 - Dukes Stage Compared to Integrated TNM Stage – NYCRIS

NYCRIS have in total 2 records with an incorrect corresponding TNM and Dukes stage but do not have many records with both values recorded.

Dukes Stage - WMCIU							
TNM int	**A**	**B**	**C**	**C1**	**C2**	**D**	**Total**
I	46	**2**	0	0	0	0	48
II	0	2	0	0	0	0	2
IIA	0	104	0	0	0	0	104
IIB	**1**	36	0	0	0	0	37
III	0	0	1	3	1	0	5
IIIA	0	0	0	12	1	0	13
IIIB	0	0	2	89	1	0	92
IIIC	0	0	2	48	14	0	64
IV	**1**	**28**	**8**	**91**	**38**	477	643
Total	**48**	**172**	**13**	**243**	**55**	**477**	**1,008**

Table 27 - Dukes Stage Compared to Integrated TNM Stage – WMCIU

West midlands Cancer Registry have 169 records with an incorrect corresponding TNM and Dukes stage. Stage IV has a corresponding Dukes value of D; in that the cancer has spread to other parts of the body such as the liver or lungs, quite a few stage IV cases have an associated Dukes stage of C.

Oxford Cancer Registry has no records where both integrated TNM stage and Dukes stage are recorded, only Dukes is used.

South West Cancer Registry has no records where both integrated TNM stage and Dukes stage are recorded, only Dukes is used.

Thames Cancer Registry has no records where both integrated TNM stage and Dukes stage are recorded, only Dukes is used.

Trent Cancer Registry has no records where both integrated TNM stage and Dukes stage are recorded, only Dukes is used.

Staging data from the NCDR for Colorectal Cancer show that ECRIC and WMCIU have a larger proportion of cases recorded with both an integrated TNM stage and a Dukes stage compared to other registries.

Not all registries have the same method of recording TNM and Dukes. There may be genuine reasons why the TNM value and Dukes value do not correlate, one reason would be that a specimen may show no signs of a patient having metastases and then 4 months later the patient has developed metastases, and as such the Dukes value could have been changed from a C to a D but the TNM value may have remained the same.

Positive Nodes Recorded Against Dukes A and B

There have been positive nodes recorded against Dukes A and B which would be associated with Dukes C and D for colorectal cancers diagnosed in 2009.

Cancer Registry	Dukes A	Dukes B	Positive Nodes
ECRIC	1	6	Y
NWCIS	3	2	Y
NYCRIS	1	1	Y
OCIU	2	2	Y
SWCIS	5	11	Y
ThCR	6	8	Y
TrCR	0	4	Y
WMCIS	2	5	Y
Total	**20**	**39**	

Table 28 - Positive Nodes Recorded Against Dukes A and B by Registry

NBOCAP Comparisons

The Association of Coloproctology of Great Britain and Ireland (ACPGBI) stated that any surgeon managing elective colorectal cancer cases must be a member of the colorectal cancer MDT, have performed at least 20 resections with curative intent and results submitted to the National Bowel Cancer Audit (NBOCAP) which they and the Healthcare Quality Improvements Partnership (HQIP) commissioned.

In 2000 around 30% of trusts submitted data to NBOCAP, whereas the 2010 audit shows that 98% of Trusts now submit data. The 2011 audit shows that 85% of all Colorectal Cancers have been recorded on NBOCAP.

For NYCRIS diagnosed cases only, staging completeness by stage was analysed and comparisons were made between the stage that was recorded at NYCRIS and the stage recorded on NBOCAP between the years 2006 and 2008. The majority of cases matched perfectly. NYCRIS cases that did not match those recorded on NBOCAP (a total of 429) have been checked and flagged as to which was correct. In 332 cases (77%) NYCRIS had a correct stage, NBOCAP were correct in 58 cases (14%) and in 39 cases (9%) it was unclear who was correct.

Discussion

This report highlights the variation and inconsistencies that exist in the colorectal staging data between 1999 and 2009. Registries have been working towards collection and quality assurance of more comprehensive staging data and from 2013 data onwards, this should be provided to a greater extent via the cancer outcomes and services dataset (COSD). The NCRS is implementing a standardised training programme to ensure kills and knowledge are available within the NCRS team.

List of Tables

List of Figures

The NCIN is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research.

Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.

The National Cancer Intelligence Unit will be hosted by Public Health England from 1st April 2013

Our aims and objectives cover five core areas to improve the quality and availability of cancer data from its collection to use:

- **Promoting efficient and effective data collection throughout the cancer journey**
- **Providing a common national repository for cancer datasets**
- **Producing expert analyses, to monitor patterns of cancer care**
- **Exploiting information to drive improvements in cancer care and clinical outcomes**
- **Enabling use of cancer information to support audit and research programmes**