NCIN
national cancer intelligence network
Using information to improve quality & choice

Quality and Completeness of Gynaecological Cancer Data in the National Cancer Data Repository 2010

Gynaecological SSCRG

Contents

Acknowledgements V

Abbreviations VI

Executive Summary 1

Introduction 3

Special Issues 6

Incidence 8

Ethnicity 12

Death Certificate Only (DCO) and Basis of Diagnosis 14

Cervical Cancer Screening Information 21

Staging Information 23

- Stage information - Ovarian Cancer 26
- Stage information - Uterine Cancer 31
- Stage information - Cervical Cancer 35
- Stage information - Vulval Cancer 45
- Stage information - Vaginal Cancer 50

Morphology 51

- Trends in morphology system 2000-2010 53
- Behaviour code – differences between the ONS and Registration service data item 53
- Morphology Information – Ovarian Cancer 55
- Morphology Information – Uterine Cancer 59
- Morphology Information – Cervical Cancer 62
- Morphology Information – Vulval Cancer 65
- Morphology Information – Vaginal Cancer 68

Treatment 71

- Radiotherapy 72
- Chemotherapy 74
- Surgery 76

Appendix 78

- Appendix A Stage – numbers by cancer registry, 2008-2010 78
- Appendix B Morphology 80
- Appendix C Surgical Treatment codes 84

List of Tables

Table 1: Data items included in the NCDR10 anonymised Celtic dataset. 5
Table 2: Number of cases with complete or no cancer registry supplying information (2008-2010). 6
Table 3: Number of cases, 2008-2010. 8
Table 4: Percentage difference between the numbers of ovarian cases sourced the NCDR09 and NCDR10, English NCRS regional offices only. 9
Table 5: Number of DCOs with no status (Null). 15
Table 6: Number of cases with a basis of diagnosis code 0 and Yes DCOs, 2008-2010. 17
Table 7: Basis of diagnosis by DCO, all NCDR cases by site, 2008-2010. 18
Table 8: Ovarian Cancer (C56-57) proportion by basis code and cancer registry. 18
Table 9: Eastern and Northern Ireland number and proportion of cases by TNM stage, 2008-2010. ... 41
Table 10: Cervical Cancer (C53) FIGO (only)–to-TNM conversion, all cancer registries except Eastern and Northern Ireland, 2008-2010. 42
Table 11: Behaviour code description. 51
Table 12: Number of mismatched type5 and regtype5 behaviour codes, 2000-2006 and 2007-2010. . 54
Table 13: Ovarian Cancer (C56-57) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010. 58
Table 14: Uterine Cancer (C54-55) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010. 61
Table 15: Cervical Cancer (C53) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010. 64
Table 16: Vulval Cancer (C51) number and proportion of all tumours with unusual morphology and invalid morphology, 2000-2006 and 2007-2010. 67
Table 17: Vaginal Cancer (C52) number and proportion of all tumours unusual morphology and invalid morphology, 2000-2006 and 2007-2010. 70

List of Figures

Figure 1: Incidence trends in gynaecological cancers, 1990-2010. 10
Figure 2: Ethnicity completion by English NCRS, 2008-2010. 13
Figure 3: Proportion of DCO cases by cancer registry, 2008-2010. 16
Figure 4: Screening status and screening breakdown. 21
Figure 5: Proportion of cases in each screening category by year, 1990-2010. 22
Figure 6: Proportion of cervical cases with screening status available by English NCRS regional office, 2008-2010. 22
Figure 7: Ovarian Cancer (C56-57) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010. 26
Figure 8: Ovarian Cancer (C56-57) proportion of all FIGO/TNM staged cases by stage and proportion of cases with no stage, 2008-2010. 28
Figure 9: Ovarian Cancer (C56-57) Tumour Extent proportion complete, 2008-2010. 29
Figure 10: Ovarian Cancer (C56-57) Nodal status proportion complete, 2008-2010. 29
Figure 11: Ovarian Cancer (C56-57) Metastatic information proportion complete, 2008-2010. 30
Figure 12: Uterine Cancer (C54-55) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010. 31
Figure 13: Uterine Cancer (C54-55) proportion of all FIGO/TNM staged cases by stage and proportion of cases with no stage, 2008-2010. 32
Figure 14: Uterine Cancer (C54-55) Tumour Extent proportion complete, 2008-2010. 33
Figure 15: Uterine Cancer (C54-55) Nodal status proportion complete, 2008-2010. 33
Figure 16: Uterine Cancer (C54-55) Metastatic information proportion complete, 2008-2010. 34
Figure 17: Cervical Cancer (C53) proportion complete a) FIGO stage and b) TNM stage, 1990-2010. 35
Figure 18: Cervical Cancer (C53) Tumour Extent proportion complete, 2008-2010. 36
Figure 19: Cervical Cancer (C53) Nodal status proportion complete, 2008-2010. 36
Figure 20: Cervical Cancer (C53) Metastatic information proportion complete, 2008-2010. 37
Figure 21: Cervical Cancer (C53) proportion of all TNM staged cases for Eastern only and for the remaining cancer registries, all FIGO staged cases by stage and proportion of cases with no stage, 2008-2010. 39
Figure 22: FIGO to TNM stage conversion 40
Figure 23: Cervical Cancer (C53) proportion of cases with node positive or negative, 2008-2010. 41
Figure 24: Cervical Cancer (C53) Proportion of Eastern TNM and other cancer registries' FIGO-to-TNM stage, 2008-2010. 44
Figure 25: Vulval Cancer (C51) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010. 46
Figure 26: Vulval Cancer (C51) proportion of all staged FIGO/TNM cases by stage and proportion of cases with no stage, 2008-2010. 47
Figure 27: Vulval Cancer (C51) Tumour Extent proportion complete, 2008-2010. 48
Figure 28: Vulval Cancer (C51) Nodal status proportion complete, 2008-2010. 49
Figure 29: Vulval Cancer (C51) Metastatic information proportion complete, 2008-2010. 49
Figure 30: Vaginal Cancer (C52) proportion complete a) FIGO stage and b) TNM stage, 1990-2010. 50

Figure 31: C51-57 Trends in ICD system, a) ICD-O-2 and b) ICD-O-3, 2000-2010. 53
Figure 32: Ovarian Cancer (C56-57) proportion of cases with behaviour codes, 2007-2010. 55
Figure 33: Ovarian Cancer (C56-57) morphology groupings by cancer registry, 2000-2006 and 2007-2010. 57
Figure 34: Uterine Cancer (C54-55) proportion of cases with behaviour codes, 2007-2010. 59
Figure 35: Uterine Cancer (C54-55) morphology groupings by cancer registry, 2000-2006 and 2007-2010. 60
Figure 36: Cervical Cancer (C53) proportion of cases with behaviour codes, 2007-2010. 62
Figure 37: Cervical Cancer (C53) morphology groupings by cancer registry, 2000-2006 and 2007-2010. 63
Figure 38: Vulval Cancer (C51) proportion of cases with behaviour codes, 2007-2010. 65
Figure 39: Vulval Cancer (C51) morphology groupings by cancer registry, 2000-2006 and 2007-2010. 66
Figure 40: Vaginal Cancer (C52) proportion of cases with behaviour codes, 2007-2010. 68
Figure 41: Vaginal Cancer (C52) morphology groupings by cancer registry, 2000-2006 and 2007-2010. 69
Figure 42: Proportion of cases that received radiotherapy (Yes), did not receive radiotherapy (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010..... 73
Figure 43: Proportion of cases that received chemotherapy (Yes), did not receive chemotherapy (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010.... 75
Figure 44: Proportion of cases that received surgery (Yes), did not receive surgery (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010. 77

Acknowledgements

This report has been produced by Jennifer Lai (Cancer Intelligence Analyst), Rebecca Elleray (Senior Cancer Intelligence Analyst) and Jason Poole (Head of Cancer Intelligence) of the Public Health England (PHE) East Midlands Knowledge and Intelligence Team (EM KIT), on behalf of the National Cancer Intelligence Networks (NCIN) Gynaecological Site Specific Clinical Reference Group (SSCRG). We would like to acknowledge the significant contributions of Lynn Hirshowitz (Consultant Pathologist, Royal College of Pathologists), Brian Rous (Director of Tumour Classification, National Cancer Registration Service (NCRS)) and Carolynn Gildea (Senior Cancer Intelligence Analyst, EM KIT) in writing this report. For their additional contributions we would also like to thank Andy Nordin (Chair, NCIN Gynaecological SSCRG), Matthew Barclay (Cancer Intelligence Analyst, EM KIT), Sue Wild (Information Output Officer, EM KIT), David Brewster (Director, Scottish Cancer Registry), Anna Gavin (Director, Northern Ireland Cancer Registry), Dyfed Wyn Huws (Director, Welsh Cancer Intelligence and Surveillance Unit, Public Health Wales), Janet Warlow (Cancer Information Framework Manager, Public Health Wales) and Sally Vernon (Head of Quality and Analysis, NCRS).

Abbreviations

Cancer registries

Eastern	National Cancer Registration Service (Eastern)
East Midlands	National Cancer Registration Service (East Midlands)
London	National Cancer Registration Service (London)
North West	National Cancer Registration Service (North West)
Northern & Yorkshire	National Cancer Registration Service (Northern & Yorkshire)
Oxford	National Cancer Registration Service (Oxford)
South West	National Cancer Registration Service (South West)
West Midlands	National Cancer Registration Service (West Midlands)
Wales (WCISU)	Welsh Cancer Intelligence and Surveillance Unit
Scotland	Scottish Cancer Registry
N Ireland	Northern Ireland Cancer Registry

Gynaecological Sites (ICD 10)

C56-57	Ovarian Cancer
C54-55	Uterine Cancer
C53	Cervical Cancer
C51	Vulval Cancer
C52	Vaginal Cancer

Other abbreviations

COSD	Cancer Outcomes and Services Dataset
DCO	Death Certificate Only
ENCORE	English National Cancer Online Registration Environment
FIGO	International Federation of Gynaecology and Obstetrics
ICD	International Classification of Diseases
NCDR	National Cancer Data Repository
NCDR10	National Cancer Data Repository 2010
NCDR09	National Cancer Data Repository 2009
NCRS	National Cancer Registration Service
ONS	Office of National Statistics
PHE	Public Health England
QARC	Quality Assurance Reference Centres
TNM	Tumour, Nodes, Metastases (TNM) Classification of Malignant Tumours
UKACR	United Kingdom Association of Cancer Registries
UKIACR	United Kingdom and Ireland Association of Cancer Registries

Executive Summary

1. There continues to be an important issue with the inconsistent recording of ICD-O-2 and ICD-O-3 morphology between Public Health England (PHE) National Cancer Registration Service (NCRS) registration teams, which particularly affects the coding of ovarian cancer. These inconsistencies were submitted to ONS. Inconsistencies were considerably larger in some areas than others.
   Recommendation: *PHE NCRS needs to correct these inconsistencies in current and historical data for future iterations of the National Cancer Data Repository (NCDR). Registration practice needs to be consistently implemented to prevent this issue occurring in future. A mapping of topography and morphology between both ICD-O systems may be useful in achieving this.*[1]

2. As a result of the late release of Hospital Episode Statistics (HES), full ethnicity data were not available when this report was compiled. Therefore, for England, up to a third of patient ethnicity information was missing for gynaecological cancers. The devolved nations submitted no ethnicity information.
   Recommendation*: The PHE NCRS, possibly in conjunction with PHE Knowledge & Intelligence Services, can greatly improve the completeness and consistency of patient ethnicity information by utilising (HES) data alongside registration data, as has been demonstrated. An agreed standard national methodology would be necessary for this, for example, the ethnic code that is assigned to each patient that is either the most common or most recent recorded code.*
   Recommendation: *The NCDR project team should approach the devolved nations to ask for the inclusion of ethnicity data in the NCDR to facilitate UK wide analyses.*

3. For all Death Certificate Only registrations (DCOs) the dates of diagnosis and death matched, but there were some inconsistencies with the basis of diagnosis code where those flagged as DCO did not have a basis of diagnosis = 0, and vice versa.
   Recommendation: *All inconsistencies should be checked and corrected by the all UK registries (PHE NCRS and the registries of Scotland, Northern Ireland and Wales) where appropriate.*

4. The completion of cervical screening status varied from 'no information submitted' for the devolved nations, 14% for cases recorded by London, to almost 100% for cases in the West Midlands. Screening data in 2010 were less complete compared to previous years, with unknown screening status accounting for 57% of cases. For England, this may reflect the lower priority of QARC data ascertainment during registration team migration to Encore.
   Recommendation*: The PHE NCRS should explore ways of improving the quality and completeness of cervical screening data by improving and standardising data flow methods with regional QARCs. Current good practice methodology should feed into this, for example that demonstrated in the*

[1] The NCRS was fortunate to have pre-release access to this report. Acting on this recommendation, they report that they have now corrected these inconsistencies, and there are validations in place on the national system to prevent the same error occurring in the future. The NCRS would like to thank the East Midlands Knowledge and Intelligence Team for highlighting this issue and helping them to resolve it.

West Midlands whereby information is regularly cross-checked between the regional office and the West Midlands Quality Assurance Reference Centre.

Recommendation: *The NCDR project team should approach the devolved nations to ask for the inclusion of screening data in the NCDR to facilitate UK wide analyses.*

5. Staging completion has improved across all cancer registries for most sites. Although FIGO staging is the agreed system to use for all gynaecological cancers, some cases had stage recorded according to TNM only. For cervical cancer, the incompatibility of TNM (generally pathologically defined) and FIGO (clinical defined) meant that it was more difficult to profile cervical stage according to one staging system. Converting TNM to FIGO or vice versa requires the nodal status and/or tumour information which is not always well recorded in the NCDR.

   Recommendation*: All UK registries should ensure that stage data submitted to the NCDR are FIGO where possible. It would also be useful for analytical purposes if nodal status can be recorded in addition.*

6. There were some important differences in the historical stage profile (proportion of tumours recorded by stage) between registration areas that could indicate systematic differences in recording practice. If this stage information is to be used in analyses in the next few years then all UK registries need to be confident of the quality and completeness of this both internally and in comparison with other countries.

   Recommendation*: All UK registries should advise PHE Knowledge & Intelligence Services of the quality and completeness of their current and historical stage data, and advise on any reasons for differences in stage profile compared to other countries where these exist. The United Kingdom and Ireland Associations of Cancer Registries (UKIACR) Performance Indicators may be useful for addressing this.*

7. Improvements in recording generally appear to have reduced the number of cases recorded with non-specific morphologies. However, there were some differences in the recorded behaviour type between the type5 and regtype5 data items. All registration teams assigned a primary malignant behaviour code 3 or 5 to 99% or more cases for most gynaecological sites. The proportion of cases with probable incorrectly coded, unusual or invalid morphologies was small, at less than 1% for most gynaecological sites.

   Recommendations: *All registries should review and correct tumour morphology where this is identified in this report as unusual, probably incorrect or invalid.*

8. There was variation across cancer registries in the proportion of cases flagged as receiving treatment. For example, Wales had no treatment information. This will, to some extent, reflect different processes between cancer registries in the coding of treatment rather than real differences in the treatment rates. Caution should therefore be exercised when analysing the treatment information in the NCDR.

Introduction

The Public Health England (PHE) Knowledge and Intelligence Team for the cancer registry (EM KIT), formerly part of Trent Cancer Registry and the East Midlands Public Health Observatory (EMPHO), lead on gynaecological cancer information and intelligence on behalf of the NCIN. The National Cancer Data Repository (NCDR) is the main data source used in the production of national and sub-national incidence, treatment, mortality and survival information for gynaecological cancers and its data are also used within the UK Cancer Information Service (UKCIS).

The previous versions of the NCDR were compiled using data from the eight English cancer registries. However, for the first time, the 2010 data version of the NCDR (NCDR10) was based on a list of tumours and patients diagnosed up to the end of 2010 in England as submitted to ONS and supplemented with further tumour and patient details from registries. Data from the Northern Ireland, Scotland and Wales cancer registries were not submitted to the ONS however, for the first time, were also included in the NCDR10.

The first gynaecological cancer quality and completeness report was produced using the 2008 version of the NCDR, however, as the current NCDR has been compiled differently, it is important to assess the quality of the most recent data items and identify changes over time. As with the first report, the aim of this report is to assess the quality of key gynaecological cancer patient and tumour data items available in the NCDR, to allow an understanding of how the data may be used at UK level. This will provide a useful reference to those wanting to understand the scope of the NCDR in relation to gynaecological cancer specific projects, whilst also influencing improvements in the collection of gynaecological data, not only in the compilation of the NCDR, but also at the registration process level.

The way in which cancer registration data are collected has recently changed. All English NCRS regional offices have now migrated to a single database system (ENCORE), which will improve the quality of the data collected as well as allowing all registries to collect the same data in a standardised way. It is hoped that this will improve the completeness of data items as well as the quality of the data. The introduction of the Cancer Outcomes and Services Dataset (COSD) should also improve the level of completeness and quality of cancer registrations. It replaces the National Cancer Dataset as a new national standard for reporting cancers in England, mandating the collection of key data items in the core dataset and site-specific stage items. This came into effect on the 1st of January 2013 so improvements should be seen for 2013 diagnoses and onwards. Future quality and completeness reports will aim to assess the effect of these changes on the data that are compiled in future iterations of the NCDR. There is also a national key performance target in place for the collection of stage data, namely 70% stage of disease for all cancer registrations. Therefore, in future iterations improvements should be made in the completion of stage data for the majority of tumour sites.

The report includes information on invasive gynaecological cancers (ICD 10 C51 to C57): cancers of the vulva, vagina, cervix, uterus, ovaries and other unspecified parts. Cancer of the placenta (C58) is extremely rare with only 237 cases in the whole database, and so this site was not considered in this report. In-situ gynaecological cancers were also not considered as the ascertainment of these, particularly for cervical cancers, is already known to be suboptimal across England and Wales.

For the majority of data items only the years 2008-2010 were analysed, these being the most relevant in reflecting current registration practice. Analysis was carried at UK level and comment is made if data were missing from particular geographies.

NCDR data items beginning with "reg" are those submitted by the cancer registries whilst data items that do not begin with "reg" are ONS derived. In defining the cancer sites, the ONS site4icd10recoded and type5 data items were used to reflect the same possible definitions in other publications based on ONS data. For all other information, cancer registry submitted data items were used. See Table 1 for details of which data items were used in this report (those that are **boldface type**).

For users of the NCDR, we use to the data item name to describe where a piece of information was derived. However, should a variable name be unclear to non-NCDR users, additional explanation is given in the relevant sections to describe what the data item contains.

Table 1: Data items included in the NCDR10 anonymised Celtic dataset.

ONS data items	Cancer registry data items	Derived data items
PATIENTIDENTIFIER	REGISTRATION SERVICEDATAAVAILABILITY	SOA1
ONSNUMBERANONYMISED	**REGETHNICITY**	SOA2
DOBMONTH	**REGDCOFLAG**	CPDCANREG
DOBYEAR	REGEXTRAREGIONAL	CANNET
DODMONTH	REGCOD1A	UKACRLA
DODYEAR	REGCOD1B	UKACRPCT
AGEATDEATHYEARS	REGCOD1C	UKACRCNET
AGEATDEATH5YEARGROUP	REGCOD2	UKACRSHA
EMBARKATIONDATEMONTH	REGPLACEOFDEATH	UKACRCREG
EMBARKATIONDATEYEAR	REGSITE4	UKACRGOR
MIND	**REGMORPHOLOGYSYSTEM**	UKACRCTY
SEX	**REGTYPE5**	QUINTILE2004
TRACEIND	REGDIAGDATEFLAG	QUINTILE2007
DIAGDATEMONTH	**REGBASISCODE**	QUINTILE2010
DIAGDATEYEAR	**REGSCREENINGSTATUS**	CELTICGEOGRAPHY
AGEATDIAGNOSISYEARS	**REGSCREENINGCATEGORY**	-
AGEATDIAGNOSIS5YEARGROUP	REGTUMOURSIZE	-
DIAGNOSISTODEATHDAYS	REGGRADE	-
SITE4	REGGRADEDESCRIPTION	-
SITE4ICD10RECODED	REGGLEASONGRADE	-
STAGE	REGLATERALITY	-
STATIND	**REGNODESEXAMINED**	-
TRTOTHER	**REGNODESPOSITIVEYN**	-
TYPE5	**REGNODESPOSITIVE**	-
-	**REGMETS**	-
-	REGDUKESTAGE	-
-	**REGFIGOSTAGE**	-
-	REGCLARKLEVEL	-
-	REGNPISCORE	-
-	REGBRESLOW	-
-	**REGTNMCLIN**	-
-	**REGTCLIN**	-
-	**REGNCLIN**	-
-	**REGMCLIN**	-
-	REGUICCVERSIONCLIN	-
-	REGNEOADJUVANTFLAGPATH	-
-	**REGTNMPATH**	-
-	**REGTPATH**	-
-	**REGNPATH**	-
-	**REGMPATH**	-
-	REGUICCVERSIONPATH	-
-	**REGTNMINT**	-
-	**REGTINT**	-
-	**REGNINT**	-
-	**REGMINT**	-
-	REGUICCVERSIONINT	-
-	REGCISSTAGE	-
-	**REGSURGERYTHERAPY**	-
-	**REGRT**	-
-	**REGCT**	-
-	REGHORMONETHERAPY	-
-	REGICDO3TOPOGRAPHY	-
-	REGICDO3MORPHOLOGY	-
-	REGEXCLUSIONFLAG	-
-	REGREGSITRYSUPPLYING	-

Special Issues

A number of general points or issues should be highlighted in relation to the NCDR10.

ONS and Cancer registry submitted cases

There were a number of cases in the ONS dataset that were not linked to cases submitted by the cancer registries. These cases have no information in the cancer registry supplied data items (Table 2). To keep the numbers of cases reported by the ONS and this report the same, these cases were included in the analyses.

Table 2: Number of cases with complete or no cancer registry supplying information (2008-2010).

Site	Cancer registry supplying complete	Count
Ovarian (C56-57)	Complete	20,841
	Null	128
Uterine (C54-55)	Complete	23,973
	Null	84
Cervical (C53)	Complete	9,179
	Null	61
Vulval (C51)	Complete	3,537
	Null	20
Vaginal (C52)	Complete	798
	Null	10

Data item defining cancer site

There were a number of data items that could be used to define cancer in the NCDR10. Topography (site) was defined using the ONS site4icd10recoded data item and the morphology (tumour type) was defined using the ONS type5 data item. The data item site4icd10recoded was chosen because cases coded under ICD-O-9 in the ONS data were re-coded to ICD10 for consistency. All submissions to ONS should be in ICD-O-2 version as not all cancer registries have been able to record in ICD-O-3. However, for English NCRS regional offices, this was found not to be the case and the practice affects ovarian cancer in particular, because ovarian cancers with a borderline morphology have been re-coded with topography D39 in ICD-O-3, which means that these have been coded as tumours with a malignant behaviour. The effect of this is considered in the Incidence section of this report.

Extra-regional Cases

In contrast to previous versions of the NCDR whereby extra-regional cases were identified with a 'Y' flag, a comparison with the NCDR09 and NCDR10 datasets showed that the majority of extra-regional cases (for the years that could be compared) were removed from the NCDR10. For the NCDR10, ONS data included only the cases submitted to ONS by each cancer registry for residents in their jurisdiction. Any extra-regional cases in the NCDR10 dataset were identified in the cancer registry that supplied the data item with entries ending with "XR". From 1990 to 2010, there were 18 extra-regional cases that were removed from all analyses referred to in this report.

Cancer registry definition

Cases were assigned to cancer registries using the cancer registry (data item regregsitrysupplying) that supplied the data item and, where missing, the UKACR cancer registry data item (for those cases in the ONS dataset that could not be linked to a case in the cancer registry data).

Cervical Cancer

A number of cases (n=87) coded as C53 (cervical cancer) were incorrectly classified as invasive cancers rather than in-situ. These were corrected in the cancer registry data but were still included in the ONS dataset. These were identified using an exclusion flag data item included in the NCDR10. These cases have been excluded from all analyses referred to in this report.

Devolved nations

In the NCDR10, cancer registration from the devolved nations has been included. However, the data are anonymised and cases from the devolved nations do not have full dates identifying the patients' date of birth and other potentially identifiable data. There are many differences between the UK countries in terms of data collection and policy driving data collection. In addition, there is no formal agreement between England and the devolved nations regarding the data submission to the NCDR. The extent of the data submitted by devolved nations is locally determined and as a result, any UK representation of this data may be inconsistent. This should be borne in mind when making comparisons across countries.

ENCORE Migration

The PHE National cancer registries have now migrated to a national central database, ENCORE (English National Cancer Online Registration Environment). The prioritisation of the migration to ENCORE may have an effect on the quality and completeness of a number of data items. For example, North West's transition to ENCORE may have affected the completion of ethnicity data in 2010.

Incidence

Table 3 displays the number of gynaecological cancer cases registered between 2008 and 2010.

Table 3: Number of cases, 2008-2010.

Cancer registry	Ovarian (C56-57)	Uterine (C54-55)	Cervical (C53)	Vulval (C51)	Vaginal (C52)
Eastern	2115	2307	734	324	53
East Midlands	1824	2161	845	365	107
London	3124	3955	1,307	498	130
North West	2276	2543	1,066	435	90
Northern & Yorkshire	2175	2534	1,193	388	87
Oxford	967	1014	351	133	28
South West	2825	3091	1,095	453	93
West Midlands	1977	2239	856	345	64
England	17,283	19,844	7,447	2,941	652
Scotland	1,941	2,062	972	345	74
Wales	1,235	1,474	487	196	51
N Ireland	510	677	334	75	31
UK	20,969	24,057	9,240	3,557	808

Table 4 compares the number of cases per year for England between the NCDR09 and NCDR10 dataset. For cervical and uterine cancers, trends for England were comparable between the two datasets. Between 2007 and 2009, there was a 1.9-2.7% difference in the number of ovarian cancers between the two datasets, with the NCDR10 extraction having fewer cases compared to the NCDR09. This difference specific to England arose from ovarian cases coded in ICD-O-3 in the ONS dataset, whereby a number of borderline ovarian cancers were not re-coded as invasive cancer under the "site4icd10recoded" data item. Consequently, these were not included from the analysis of the NCDR10.

By English NCRS regional office and year (1990-2010), differences in the numbers of ovarian cases from the NCDR09 and the NCDR10 ranged from 0% to 11.7% (Table 4). From 2007 to 2009, London had the greatest differences; in 2007, there were 4.4% fewer cases in the NCDR10 compared to the NCDR09, this difference increased to 11.7% in 2009. There were 5.8% fewer ovarian cases in the North West in 2007, this difference decreased to 2.3% in 2009. For Oxford, there were 3.8% fewer cases in the NCDR10 compared to the NCDR09 in 2009.

These cases could be re-coded locally to either ICD-O-3 or ICD-O-2, but the figures would not be comparable to those released by ONS. A recommendation would be to map both topography and morphology to both systems. The differences in the coding systems for the English NCRS regional offices have been resolved in Encore. However, further investigations are required to ensure that this is the case and tumours should be reviewed and resubmitted to the ONS if necessary. With the current data, there would be an effect on survival depending on which version was used, as the prognosis for borderline ovarian cases is better than for invasive tumour types. Regional differences in

the coding of borderline ovarian tumours may result in artificial variation in survival estimates. However, a comparison of survival estimates in the UKCIS showed this effect to be minimal.

Other differences between the NCDR09 and NCDR10 numbers included a 2.2% difference in the number of vulval cancers in 2009 (an additional 21 cases in NCDR09 compared to the NCDR10). There was slightly more variation in the number of vaginal cancers in the 1990s but differences between the two datasets did not exceed more than 10 cases.

The NCDR10 included no Northern Ireland registrations before 1993 as cancer registration was not implemented before this year.

Table 4: Percentage difference between the numbers of ovarian cases sourced the NCDR09 and NCDR10, English NCRS regional offices only.

Year	Eastern	East Midlands	London	North West	Northern & Yorkshire	Oxford	South West	West Midlands	England
1990	-4.8	-8.5	-3.5	-3.4	-5.1	7.8	1.2	-2.4	-3.0
1991	-4.8	-2.6	-2.6	1.0	-7.9	3.8	0.1	-1.0	-2.3
1992	-4.2	1.8	-2.6	-0.6	-6.6	3.1	-	-2.2	-2.0
1993	-4.1	-0.8	-5.2	-4.7	-7.9	2.9	3.4	-1.9	-2.9
1994	-3.2	1.0	-3.1	-3.8	-8.4	0.4	1.7	-5.9	-3.0
1995	-3.0	-2.4	0.1	-3.5	-0.3	-	-4.8	0.3	-1.8
1996	-7.8	1.0	-7.9	-1.7	0.1	-0.3	-1.2	0.3	-2.8
1997	-4.2	0.9	-0.3	-2.7	0.5	-0.9	-2.5	-	-1.2
1998	-0.8	1.1	-	-4.8	-0.1	-1.0	-1.9	-0.3	-1.1
1999	-1.6	-0.7	0.1	-4.3	-0.1	-1.7	4.1	-	-0.3
2000	-0.9	0.5	-	-3.9	0.5	-0.6	-1.9	-	-0.8
2001	-0.6	0.5	-0.2	-5.6	-0.2	0.9	-1.2	-0.2	-1.0
2002	-1.6	0.2	-1.4	-4.7	-0.3	1.1	-3.6	-	-1.7
2003	-0.6	0.3	-0.4	-3.4	0.1	-	-3.1	-0.2	-1.1
2004	1.2	0.3	-0.7	-4.9	0.1	0.3	-1.8	0.1	-0.9
2005	-0.3	0.2	-1.8	-4.4	-0.5	-0.3	-3.9	0.6	-1.7
2006	-0.1	-0.2	-2.9	-3.8	-0.3	-0.9	-0.8	-0.3	-1.3
2007		-0.1	-4.4	-5.8	-	-	-2.1	0.3	-1.9
2008	-0.1	-1.0	-9.1	-5.3	0.3	1.8	-2.1	0.5	-2.7
2009	1.6	-0.8	-11.7	-2.3	0.6	-3.8	-0.1	0.4	-2.6

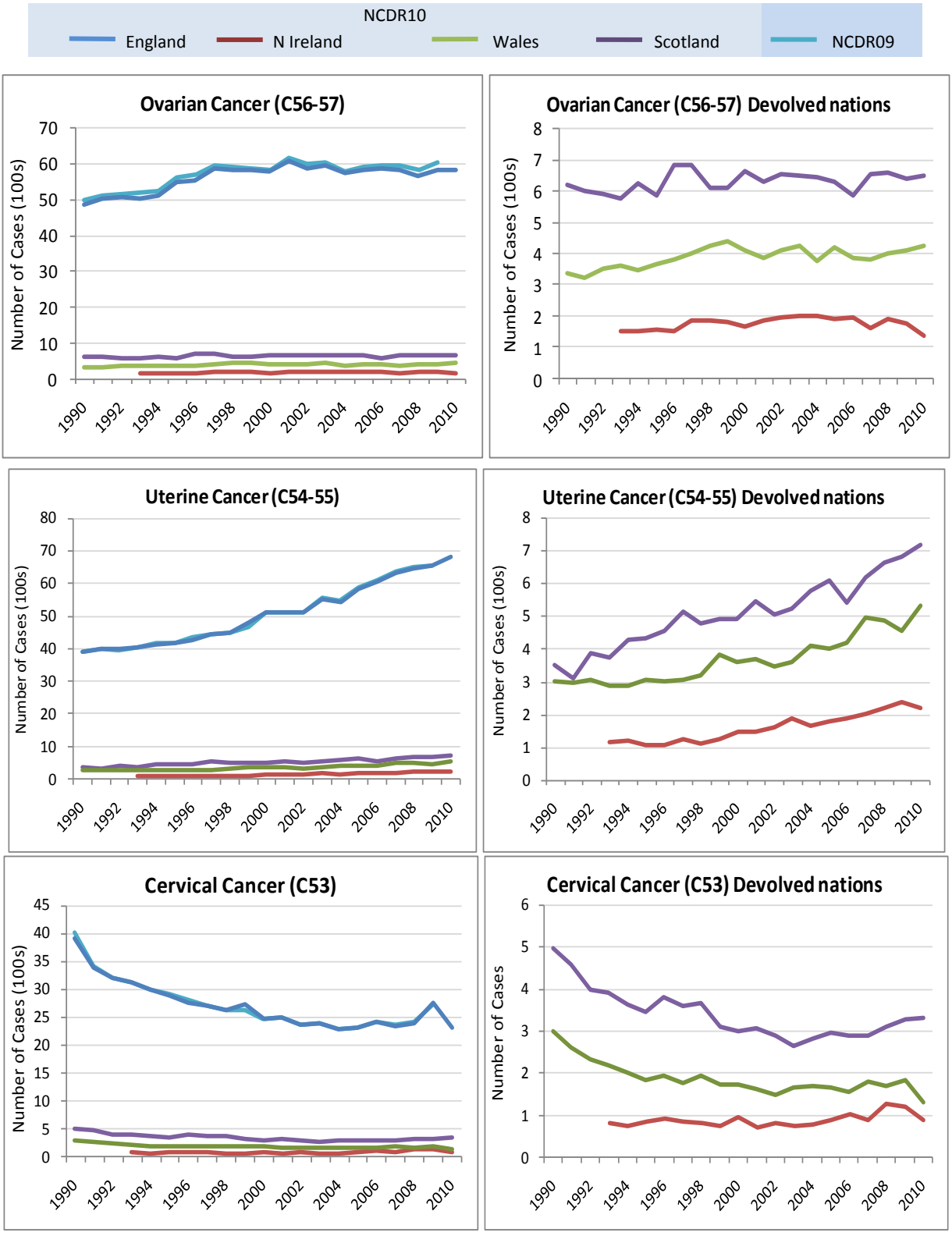

Figure 1: Incidence trends in gynaecological cancers, 1990-2010.

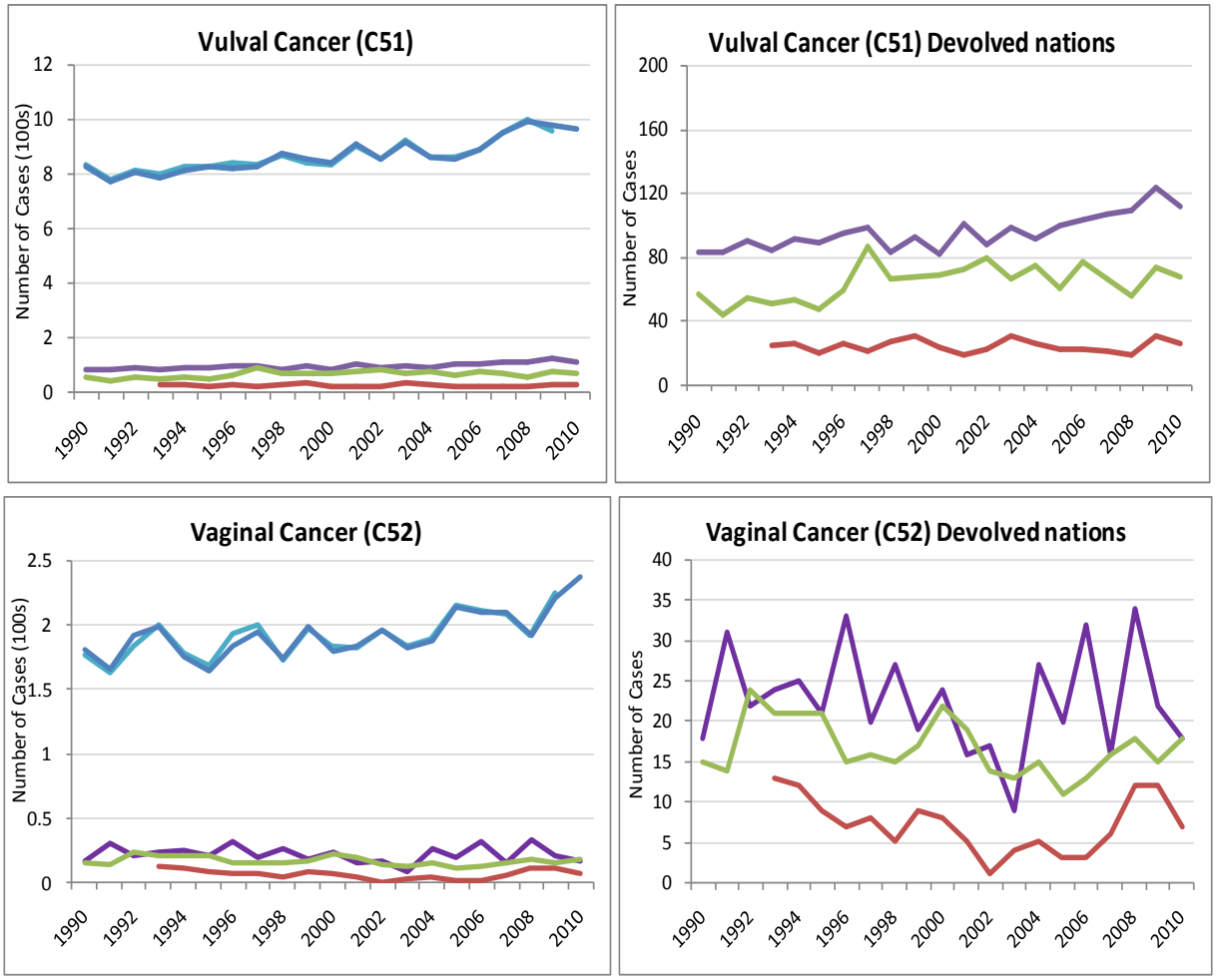

Figure 1 cont: Incidence trends in gynaecological cancers, 1990-2010.

Ethnicity

English NCRS regional offices largely obtain ethnicity information from outpatient HES data; however it may be taken from other data feeds such as PAS medical records. Figure 2 shows the proportion of cases in 2008-2010 that had a valid ethnicity code i.e. a code indicating anything other than 'not available', 'unknown' or 'not-stated'. Ethnicity data were not available for the devolved nations as they are not routinely collected; therefore, charts display the proportion of complete ethnicity data for English NCRS regional offices only and the England average.

For the previous quality and completeness report based on the NCDR 2008, missing ethnicity data were supplemented with HES data which improved ethnicity information. However, the late release of the HES data meant that full ethnicity data were not available when this report based on the NCDR 2010 was compiled. Consequently, proportions of ethnicity completeness were lower compared to those reported in the previous report. For England, a valid ethnicity code was complete for 68-75% of cases. Comparing the English NCRS regional offices, ethnicity completion was lowest for London (less than or equal to 55%) and highest for Oxford, South West, East and West Midlands (77% or higher). By year, North West and London had much higher proportions of cases with complete ethnicity data in 2008 compared to 2010 – for example, the proportion of complete ethnicity data for North West cervical cancer cases was 9% in 2010 compared to 88% in 2008. This may, in part, be due to the migration to ENCORE.

There are a number of ways in which the ethnicity data can be improved in the NCDR10 using the HES data. A simple way is to take the most recent, valid ethnicity code from the HES data, linked to the NCDR using unique identifiers. Another way is to take the most popular, valid ethnicity code in the HES data as several different ethnicity codes may be recorded in the HES data for one patient. As ethnicity is a mandated data item in the COSD there may be less reliance on HES data for this information in future iterations of the NCDR.

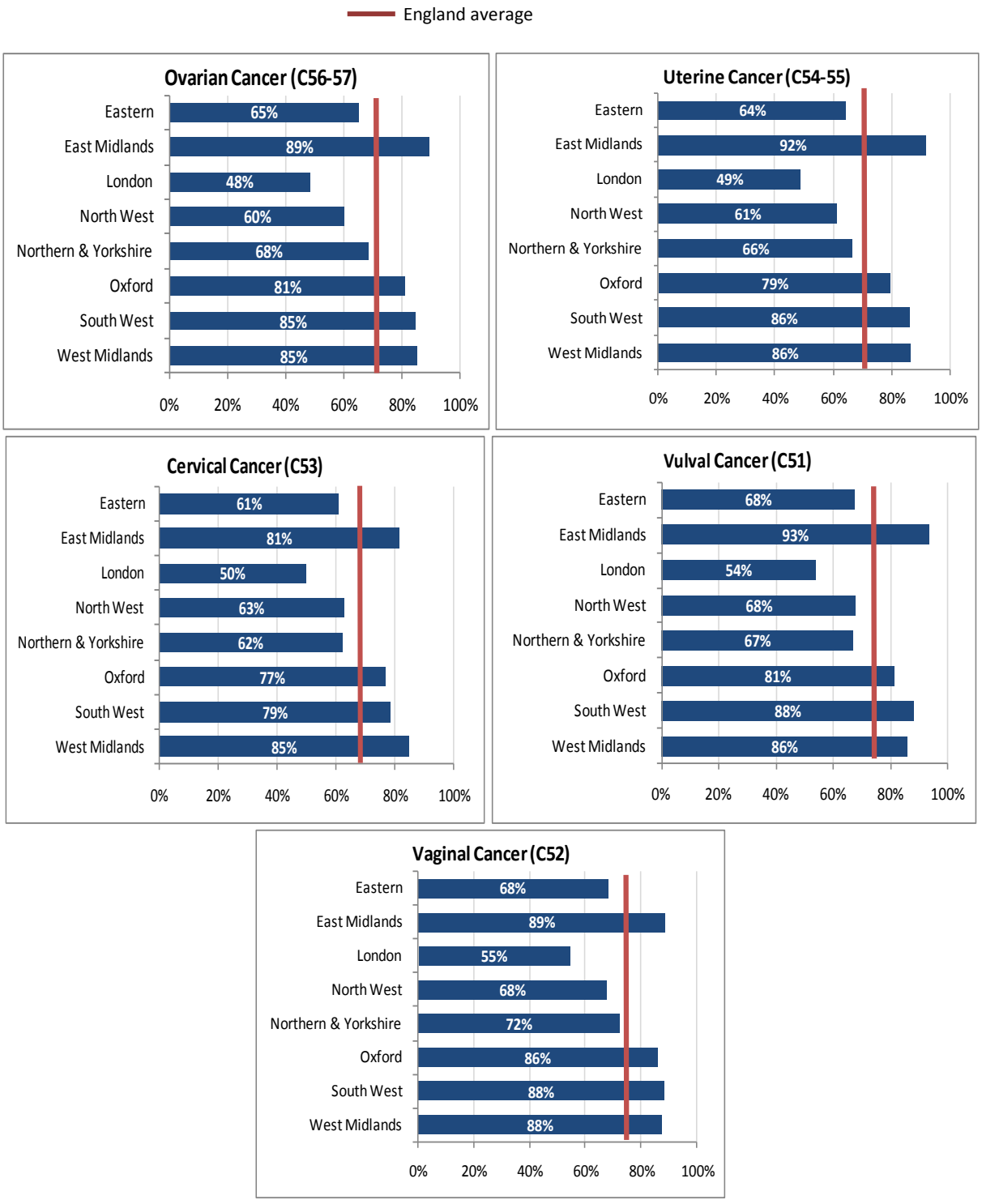

Figure 2: Ethnicity completion by English NCRS, 2008-2010.

Death Certificate Only (DCO) and Basis of Diagnosis

The way in which a cancer diagnosis is made is an important indication of the robustness of that diagnosis and the information relating to the patient. DCO registrations have only a death certificate indicating that a cancer diagnosis has been made and contain no detailed information about the tumour or treatment. Cancer registries follow up any DCOs in an attempt to gain further information regarding the diagnosis. The proportion of DCOs is a performance indicator: cancer registries aim to have no more than 2% of registrations as DCOs. The DCO data item is populated with 'Y' (Yes, the case is a DCO registration) or 'N' (No, the case is not a DCO registration). DCO cases can also be identified using the regbasiscode data item which records the basis of diagnosis as defined by the following in the NCDR (source: NCDR specification):

0 Death Certificate: The only information available is from a death certificate
1 Clinical: Diagnosis made before death but without the benefit of any of the following (2-7)
2 Clinical Investigation: Includes all diagnostic techniques (e.g. X-rays, endoscopy, imaging, ultrasound, exploratory surgery and autopsy) without a tissue diagnosis
4 Specific tumour markers: Includes biochemical and/or immunological markers which are specific for a tumour site
5 Cytology: Examination of cells whether from a primary or secondary site, including fluids aspirated using endoscopes or needles. Also including microscopic examination of peripheral blood films and trephine bone marrow aspirates
6 Histology of a metastases: Histological examination of tissues from a metastasis, including autopsy specimens
7 Histology of a primary tumour: Histological examination of tissue from the primary tumour, however obtained, including all cutting and bone marrow biopsies. Also includes autopsy specimens of a primary tumour
9 Unknown: No information on how the diagnosis has been made (e.g. PAS or HISS record only)

A DCO case should have matching diagnosis and death dates as well as a basis of diagnosis coded as 0 and DCO flag coded as 'Y'. However, there were some discrepancies between these data items.

There were a number of cases that had a missing DCO entry. Cases with missing DCO status have no basis of diagnosis as these were cases sourced from the ONS core dataset that have not matched with the cancer registry extract. The number of cases with a missing DCO entry (Table 5) matched the numbers reported in Table 2. Of these, a small proportion had matching diagnosis and death dates. These cases should be excluded for survival analysis as it is not certain whether these were true zero survivors or DCO. Zero survivors are patients who die on the same day as diagnosis but have a basis of diagnosis other than a death certificate only; for example, clinical diagnosis coded 1 as basis of diagnosis.

Table 5: Number of DCOs with no status (Null).

Site	Number of cases with missing DCO status	Number of cases with missing DCO status where diagnosis date and death date matched
Ovarian (C56-57)	128	23
Uterine (C54-55)	84	8
Cervical (C53)	61	4
Vulval (C51)	20	3
Vaginal (C52)	10	1

Figure 3 shows the proportion of DCO cases by cancer registry. Generally, the proportion of DCOs in 2008-2010 for each gynaecological site was 2% or less. With exception of one DCO case with ovarian cancer, Eastern had no DCO cases. However, for ovarian cancers, the proportion of DCOs was higher than 2% for 6 out of the 11 cancer registries and was particular high for the NCRS North West regional office (6.1%). In 2008, 9.9% of the North West's ovarian cases were DCO. For the other sites, the proportion of DCOs was highest for Oxford. With the exception of one ovarian case, all DCO cases had dates of diagnosis and death that matched; however, not all cases had a basis of diagnosis that corresponded to the DCO flag.

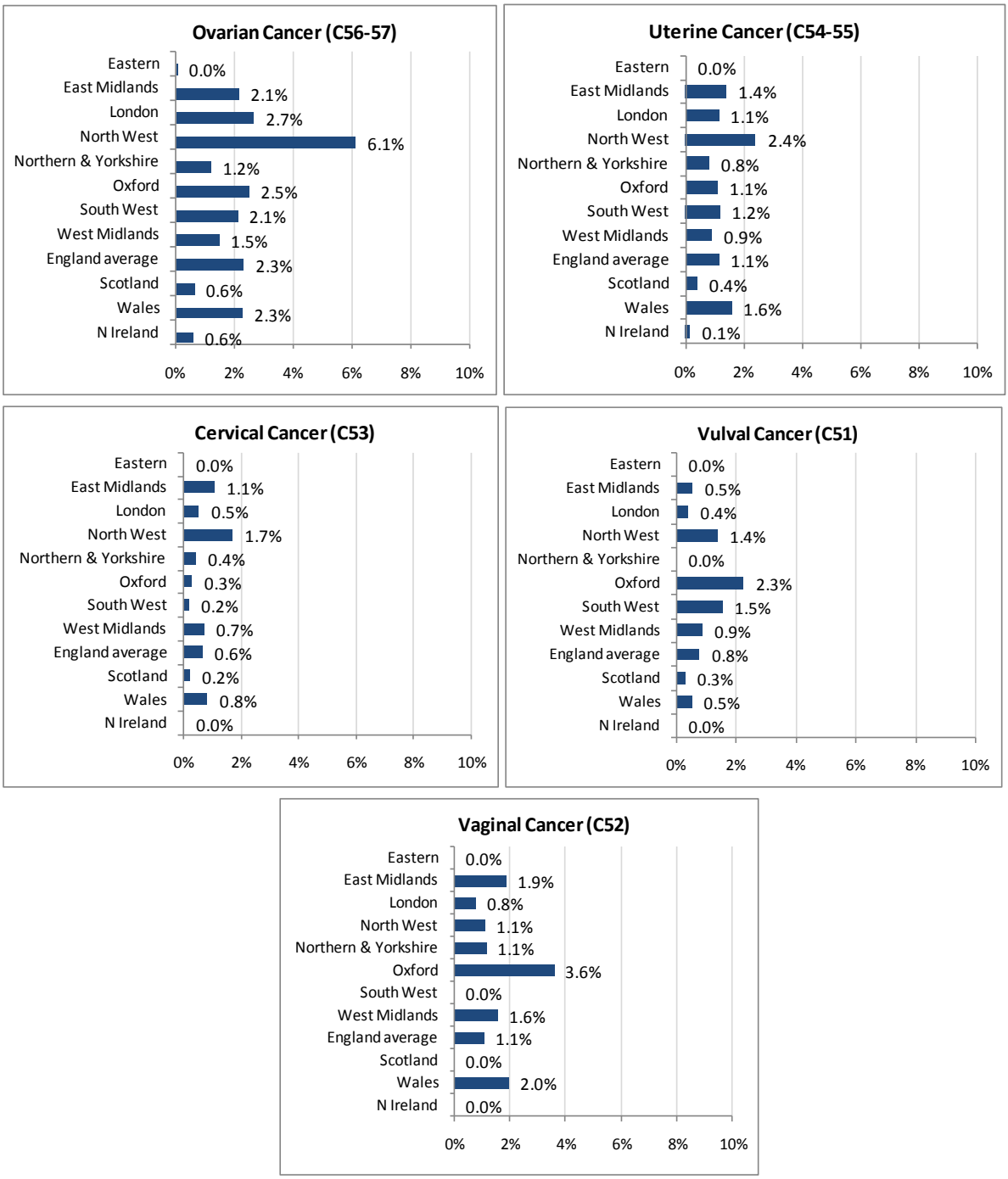

Figure 3: Proportion of DCO cases by cancer registry, 2008-2010.

A tabulation of the DCO and basis code categories (2008-2010) highlights some discrepancies (Table 6). Firstly, a small number of cases flagged as DCO did not have basis codes of 0. These cases were from the NCRS North West and Northern & Yorkshire regional offices and had matching diagnosis dates and death dates. Secondly, a small number of cases not coded as DCO had basis codes of 0. These cases were from London, South West, Oxford, Northern & Yorkshire and West Midlands. The majority of these cases (35/38) had matching diagnosis dates and death dates. Wales had an additional 7 cases with a DCO flag "N" and a basis code of 0, however, diagnosis and death date were not submitted to the NCDR and could not be checked.

Table 7 shows in more detail the basis of diagnosis coded for DCO and non-DCO by gynaecological site. It may be that some of the information for these cases has changed over time; this information may have been updated in certain data items but not others. DCO status for England is recorded at tumour level however; this may not be the case for the devolved nations. For Northern Ireland, DCO status is recorded at patient level, this means that for example, a patient may have two tumours, the earlier tumour recorded with a basis code other than 0 and the most recent tumour recorded with a basis code 0 indicating a Yes DCO status. However, in the DCO data item, both tumours will have a Yes DCO status with the earlier tumour being updated with the most recent information for that patient. This may contribute to some of the differences for this registry.

Depending on which data item is used to identify DCOs, a different number of non-DCO and DCO cases may be obtained from the data. It is recommended that the DCO flag be used where it is not null, as diagnosis and death dates match, and where the DCO flag is null, cases should be excluded on the basis that these dates match. Cases with a DCO of "N" but a basis of diagnosis code as "0" may need to be investigated further and either the DCO or basis of diagnosis data item may need to be recoded.

Table 6: Number of cases with a basis of diagnosis code 0 and Yes DCOs, 2008-2010.

	Ovarian (C56-57)		Uterine (C54-55)		Cervical (C53)		Vulval (C51)		Vaginal (C52)	
Cancer registry	Basis code 0	DCO	Basis code 0	DCO	Basis code 0	DCO	Basis code 0	DCO	Basis code 0	DCO
Eastern	1	1	-	-	-	-	-	-	-	-
East Midlands	39	39	30	30	9	9	2	2	2	2
London	95	83	50	44	10	7	2	2	1	1
North West	92	139	43	61	10	18	4	6	1	1
Northern & Yorkshire	12	26	7	20	1	5	-	-	-	1
Oxford	30	24	14	11	1	1	3	3	1	1
South West	63	59	37	36	3	2	7	7	-	-
West Midlands	30	29	20	20	6	6	3	3	1	1
England Total	362	400	201	222	40	48	21	23	6	7
Scotland	12	12	8	8	2	2	1	1	-	-
Wales	34	28	24	23	4	4	1	1	1	1
N Ireland	3	3	1	1	-	-	-	-	-	-

Table 7: Basis of diagnosis by DCO, all NCDR cases by site, 2008-2010.

Site	DCO	0	1	2	4	5	6	7	9	Null
Ovarian (C56-57)	Yes	381	39	16	-	-	1	6	-	-
	No	30	930	1,293	31	1,353	2,347	14,247	133	34
	Null	-	-	-	-	-	-	-	-	128
Uterine (C54-55)	Yes	223	13	13	-	-	-	5	-	-
	No	11	313	251	-	29	127	22,929	42	17
	Null	-	-	-	-	-	-	-	-	84
Cervical (C53)	Yes	42	5	3	-	-	-	4	-	-
	No	4	114	80	-	15	55	8,829	25	3
	Null	-	-	-	-	-	-	-	-	61
Vulval (C51)	Yes	23	-	-	-	-	-	2	-	-
	No	-	83	16	-	2	9	3,390	12	-
	Null	-	-	-	-	-	-	-	-	20
Vaginal (C52)	Yes	7	-	1	-	-	-	-	-	-
	No	-	21	4	-	1	13	746	5	-
	Null	-	-	-	-	-	-	-	-	10

Table 8 displays the proportion of cases by basis of diagnosis code and cancer registry for each site. Basis of diagnosis code 7, histology of primary tumour, is the most common but there is variation across cancer sites. For example, compared to other gynaecological cancers, ovarian cancers have a lower proportion with a basis code 7, ranging from 62.13% to 81.58% and a UK average of 67.97%. Proportions of basis code 7 for vulval, vaginal, cervical and uterine cancers ranged from 85.71% to 98.80% with an UK average of 92.33-95.60%. For ovarian cancers, the second most commonly coded basis of diagnosis was 6, histology of metastases, indicating that a significant proportion of cases were diagnosed in the later stages (11.20%). For ovarian cases basis codes 1, 2 and 5 were also more common in some cancer registries, compared to the other gynaecological sites. This reflects the later diagnosis of ovarian cancer compared to other gynaecological cancers.

Other notable differences were:

- Oxford, South West and North West generally had slightly higher proportions of cases with null basis of diagnosis.
- Wales tend often had higher proportions of cases with basis code of 9 compared to other cancer registries.

Table 8: Ovarian Cancer (C56-57) proportion by basis code and cancer registry.

Cancer registry	0	1	2	4	5	6	7	9	Null
Eastern	0.05	0.19	9.69	0.05	5.86	14.99	68.75	0.43	-
East Midlands	2.14	5.10	5.15	0.05	4.22	0.33	81.58	1.10	0.33
London	3.04	3.87	7.11	0.35	6.63	11.68	67.16	0.03	0.13
North West	4.04	10.19	1.63	-	6.11	10.90	63.80	1.10	2.24
Northern & Yorkshire	0.55	0.92	9.61	0.51	5.66	10.62	71.77	-	0.37
Oxford	3.10	12.00	1.34	-	6.83	7.96	65.25	-	3.52
South West	2.23	6.41	6.41	0.07	8.74	11.58	63.01	-	1.56
West Midlands	1.52	2.43	6.32	-	6.42	14.82	67.68	0.05	0.76
England Total	2.09	4.72	6.28	0.15	6.42	10.79	68.29	0.32	0.94
Scotland	0.62	0.82	10.36	0.26	9.33	15.77	62.13	0.72	-
Wales	2.75	8.18	0.57	-	2.91	9.88	70.61	5.10	-
N Ireland	0.59	7.25	2.94	-	5.10	10.98	73.14	-	-
UK average	1.96	4.62	6.24	0.15	6.45	11.20	67.97	0.63	0.77

Table 8 continued: Uterine Cancer (C54-55) proportion by basis code and cancer registry.

Cancer registry	0	1	2	4	5	6	7	9	Null
Eastern	-	0.48	2.43	-	0.13	0.26	96.49	0.13	0.09
East Midlands	1.39	0.69	0.83	-	0.19	0.05	96.11	0.37	0.37
London	1.26	1.19	0.99	-	0.10	0.68	95.52	0.08	0.18
North West	1.69	2.75	0.24	-	0.04	0.63	92.80	0.35	1.49
Northern & Yorkshire	0.28	0.47	1.58	-	0.08	0.43	96.80	-	0.36
Oxford	1.38	3.35	0.10	-	0.10	0.30	93.98	-	0.79
South West	1.20	1.75	0.71	-	0.06	0.94	94.53	-	0.81
West Midlands	0.89	1.07	1.03	-	0.13	0.36	96.29	0.04	0.18
England Total	1.01	1.35	1.03	-	0.10	0.51	95.37	0.12	0.51
Scotland	0.39	0.68	2.72	-	0.29	0.92	95.00	-	-
Wales	1.63	2.24		-	0.14	0.47	94.30	1.22	-
N Ireland	0.15	1.77	0.44	-	0.15	-	97.49	-	-
UK average	0.97	1.36	1.10	-	0.12	0.53	95.33	0.17	0.42

Table 8 continued: Cervical Cancer (C53) proportion by basis code and cancer registry.

Cancer registry	0	1	2	4	5	6	7	9	Null
Eastern	-	0.41	1.36	-	0.14	0.95	97.14	-	-
East Midlands	1.07	1.42	0.71	-	0.12	-	95.03	0.59	1.07
London	0.77	1.53	0.77	-	0.38	0.61	95.10	-	0.84
North West	0.94	3.85	0.56	-	0.09	1.41	89.31	1.78	2.06
Northern & Yorkshire	0.08	0.42	1.93	-	0.08	0.17	96.98	-	0.34
Oxford	0.28	1.99	-	-	0.57	0.28	95.16	-	1.71
South West	0.27	1.55	1.00	-	0.18	0.91	95.07	-	1.00
West Midlands	0.70	0.47	0.58	-	0.12	0.12	97.90	-	0.12
England Total	0.54	1.46	0.95	-	0.19	0.59	95.09	0.32	0.86
Scotland	0.21	0.21	0.93	-	-	0.62	98.05	-	-
Wales	0.82	1.03	0.62	-	0.21	0.82	96.30	0.21	-
N Ireland	-	0.90	-	-	-	0.30	98.80	-	-
UK average	0.50	1.29	0.90	-	0.16	0.60	95.60	0.27	0.69

Table 8 continued: Vulval Cancer (C51) proportion by basis code and cancer registry.

Cancer registry	0	1	2	4	5	6	7	9	Null
Eastern	-	1.85	1.54	-	-	-	96.60	-	-
East Midlands	0.55	1.64	0.27	-	-	-	96.44	0.27	0.82
London	0.40	3.41	-	-	-	-	95.98	-	0.20
North West	0.92	2.30	0.46	-	-	0.46	93.33	0.23	2.30
Northern & Yorkshire	-	0.77	1.03	-	-	0.26	97.42	-	0.52
Oxford	2.26	2.26	-	-	-	-	95.49	-	-
South West	1.55	3.31	-	-	0.44	0.44	93.82	-	0.44
West Midlands	0.87	4.06	-	-	-	-	94.49	-	0.58
England Total	0.71	2.52	0.41	-	0.07	0.17	95.38	0.07	0.68
Scotland	0.29	0.87	1.16	-	-	0.29	97.10	0.29	-
Wales	0.51	2.55	-	-	-	1.53	90.82	4.59	-
N Ireland	-	1.33	-	-	-	-	98.67	-	-
UK average	0.65	2.33	0.45	-	0.06	0.25	95.36	0.34	0.56

Table 8 continued: Vaginal Cancer (C52) proportion by basis code and cancer registry.

Cancer registry	0	1	2	4	5	6	7	9	Null
Eastern	-	-	1.89	-	-	1.89	96.23	-	-
East Midlands	1.87	0.93	-	-	-	-	95.33	-	1.87
London	0.77	1.54	-	-	0.77	-	96.15	-	0.77
North West	1.11	2.22	-	-	-	5.56	88.89	-	2.22
Northern & Yorkshire	-	-	1.15	-	-	1.15	96.55	-	1.15
Oxford	3.57	7.14	-	-	-	-	85.71	-	3.57
South West	0.00	6.45	-	-	-	1.08	89.25	-	3.23
West Midlands	1.56	4.69	1.56	-	0.00	1.56	90.63	-	0.00
England Total	0.92	2.45	0.46	-	0.15	1.38	93.10	-	1.53
Scotland	-	1.35	2.70	-	-	4.05	91.89	-	-
Wales	1.96	1.96	-	-	-	-	86.27	9.80	-
N Ireland	-	9.68	-	-	-	3.23	87.10	-	-
UK average	0.87	2.60	0.62	-	0.12	1.61	92.33	0.62	1.24

Cervical Cancer Screening Information

The screening status information in England is collected by the regional offices of the NCRS from the Quality Assurance Reference Centres (QARC). It indicates when, in relation to the patient's screening history, the diagnosis of cervical cancer was made. Screening status was not available in the NCDR for the devolved nations in some instances (Wales), the data are not held by the cancer registry. Therefore, screening status for the English regional offices only are displayed. The NCDR groups screening status into four broad categories: a cancer detected at screening; a cancer detected in between screening cycles (interval cancer); other cancers, which include those that developed in lapsed attendees, non-attendees, patients lost to follow-up or in those who were uninvited or under/over the screening age; and cancers in patients with an unknown screening status.

The screening category, "cancer in lapsed attender", was broken down into two categories; patients aged under 65 were grouped as "lapsed attenders" and patients aged 65 and over were grouped as "over-age". The screening category, "cancer in the uninvited", was broken down into two categories; prior 2004, patients aged under 20 were grouped as "under-age" and patients aged 20 and over were grouped as "never invited". For 2004 onwards, patients aged under 25 were grouped as "under-age" and patients aged 25 and over were grouped as "never invited". The year generally marks when the age at which women were called for screening increased from 20 to 25 years of age. However, a small number of women would have been called at the age of 24 as they were either already on the system or PCTs did not immediately implement the change in policy.

Screening status and screening category breakdown		
1. Screen detected		
2. Interval cancer		
3. Other cancer	4. Cancer in Non-attender	
	5. Cancer in lapsed attender	Lapsed attender
		Over-age
	6. Cancer in the Uninvited	Never invited
		Under-age (<20 pre 2004, <25 2004 onwards)
	7. Lost to follow up	
9. Unknown		

Figure 4: Screening status and screening breakdown.

Figure 5 shows the proportion of cervical cancers by screening status and category by year for England only. The proportion of cases with unknown screening status decreased from 1990 (88.4%) to 2009 (29.7%). The proportion of cases that were screen-detected increased from 1990 (4.7%) to 2009 (27.3%). The proportion of interval and lapsed attender cases also increased until 2009. Trends observed in previous years do not follow through into 2010: there were a larger proportion of unknown screening status cases (56.8%) and smaller proportions of screen-detected (13.4%), lapsed attender (10.8%) and interval (5.2%) cases compared to 2009.

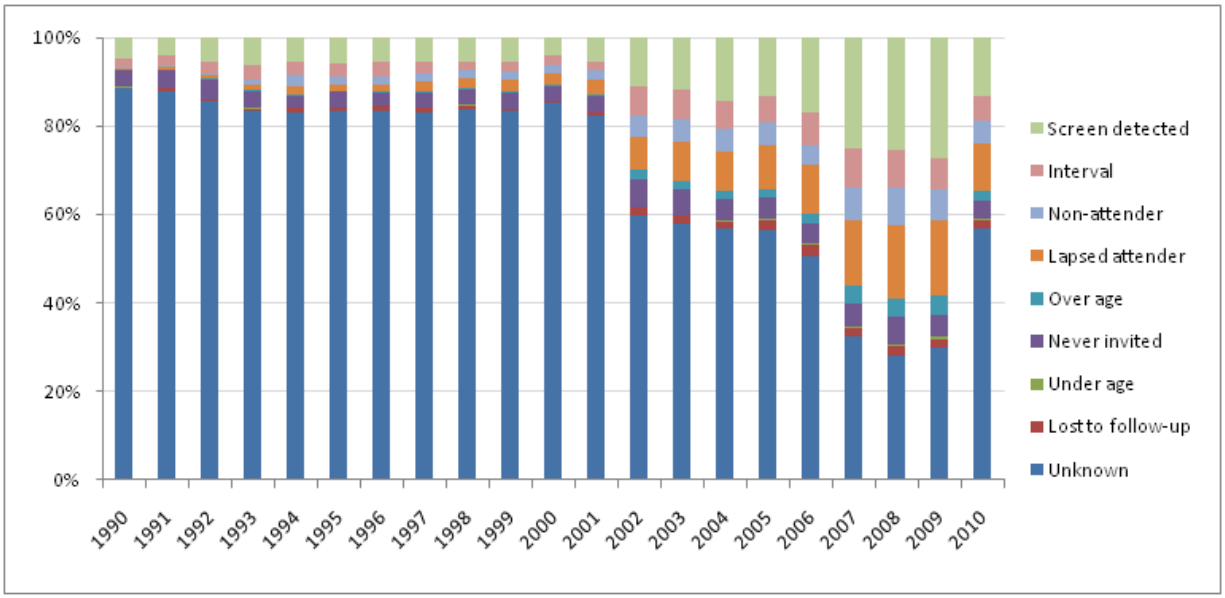

Figure 5: Proportion of cases in each screening category by year, 1990-2010.

Between 2008 and 2010, the completion of screening status varied across the English NCRS regional offices (Figure 6). The proportion of cervical cancers in the London regional office with a valid screening status improved compared to the previous quality and completeness report whereby no cases had a valid screening status. Almost all West Midlands cervical cancer cases had a screening status available (853/856). The figures are the proportion of all cases and not only those within screening age.

Poorer data completion in 2010 may reflect the struggle that some regional offices had to add QARC data due to ENCORE migration or poorer ascertainment of QARC data. Improvements in the processes involved in the collection of these data are being investigated by the registration community.

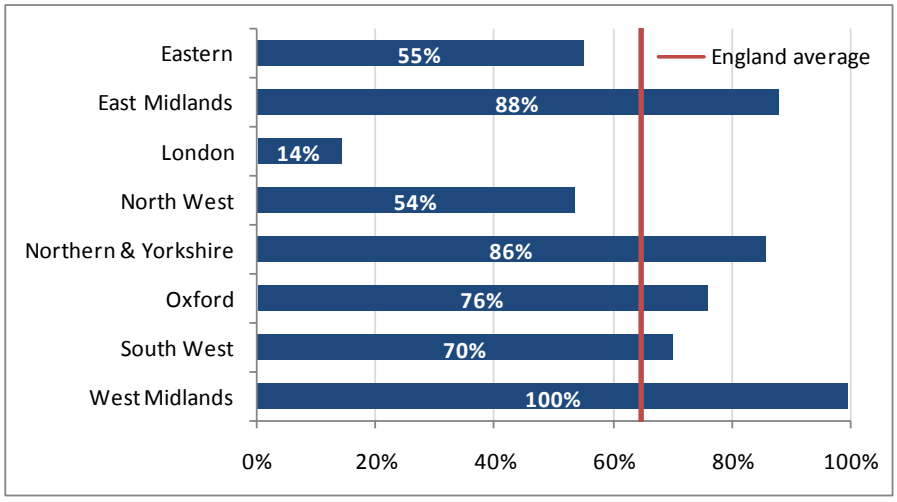

Figure 6: Proportion of cervical cases with screening status available by English NCRS regional office, 2008-2010.

Staging Information

Staging information was sourced from several data items. The following data items were investigated:

- FIGO and TNM stage
- TNM components
- Tumour size
- Nodal status
- Metastatic status

Apart from FIGO and TNM stage information which were combined for vulval, uterine and ovarian cancer, each data item was analysed separately in order to quantify the data that were available. Therefore, the analysis of the T, N and M component data items should not be interpreted as representing the proportion of cases that were, for example, localised disease or distant metastases. The overall FIGO and TNM stage were most useful for this as the completeness of these data items is much better. This is because for cancer registries, it is not compulsory to collect data on the T, N and M components but it is compulsory to collect for FIGO staging for cervical cancers only. In the COSD, nodal status is a required data item for surgically staged, early stage cervical cancer. This is because the clinical FIGO staging system does not incorporate a description of nodal status which is an important determinant of the prognosis and management of the disease. The ascertainment of this information may then improve for cervical cancer in future. For the purposes of this report, these items were analysed for all cancer registries to emphasise the availability of the data only, and should not be used to make judgements of the ability of cancer registries to record information that they have not been mandated to collect.

FIGO

FIGO stage is the most complete system of stage information available in the NCDR; this being the nationally recommended staging system for gynaecological cancers. However, some cancer registries submitted both FIGO and TNM stage or only TNM or FIGO.

TNM

In the NCDR there are various TNM data items which record stage: integrated TNM stage, pathological stage and clinical stage. Where stage data were available, the priority is given as follows:

1. Integrated component
2. If integrated was missing then the pathological component was used
3. If the previous two components were missing then the clinical component was used.

Tumour Extent

Tumour extent may be captured in several data items submitted to the NCDR. These are the three individual T components from clinical, pathological or integrated, and the tumour size data item, which records the size of the tumour in millimetres. Tumour size is relevant for the staging of vulval and cervical tumours only. However, tumour information may have been collected for other gynaecological sites and was investigated in the same manner in comparison to vulval and cervical cancers. Between 2008 and 2010, tumour size ranged from >0mm to 900mm. The number of tumours with an extremely large (and most likely incorrect) measurement recorded was negligible; there were only 6 tumours recorded as measuring ≥400mm in 2008-2010. There were 47 cases with a tumour size less than 1mm, the majority of which were FIGO stage IA or IA1 cervical carcinomas.

Tumour extent was categorised by the following rules:

1. Valid T component (defined using the rules stated for TNM completion. 1st integrated, 2nd pathological, 3rd clinical)
2. If T component is missing or invalid, tumour size data item complete
3. Otherwise, no tumour information available in any field.

Nodal Status

Nodal status may be captured in the component N data items, 'nodes positive' data item, which records the number of nodes that are found to be infiltrated by carcinoma and/or 'nodes positive - yes no' data item which record nodes as positive or negative. There is also an additional field which records the number of nodes examined.

For ovarian, uterine, cervical and vulval cancers, nodal status was categorised by the following rules:

1. Valid N component then 'valid N component' (defined using the rules applied for TNM completion. 1st integrated, 2nd pathological, 3rd clinical)
2. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' =>'0' then 'Invalid' or 'no N component, nodal status derived from other node data items'
3. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' was missing and 'nodes positive yes no'='N' or 'Y' then 'Invalid/no N component, nodal status derived from other node data items'
4. Otherwise, 'no nodal information'.

For cervical cancers, nodal status for the conversion from FIGO to TNM was further categorised by the following rules:

1. Any of the N components had a 0 then 'nodes negative' or 1 then 'nodes positive' (defined using the rules stated for TNM completion. 1st integrated, 2nd pathological, 3rd clinical)
2. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' ='0' then 'nodes negative'
3. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' >'0' then 'nodes positive'
4. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' was missing and 'nodes positive - yes no'='N' then 'nodes negative'
5. If N components were missing or had invalid values and 'nodes examined' >0 and 'nodes positive' was missing and 'nodes positive yes no'='Y' then 'nodes positive'

No nodal information (null or entries ending with X) was assumed to be nodes negative since cancer registries may not record nodal information unless positive, especially for very early stage cervical carcinomas.

Metastatic Status

Besides the overall FIGO and TNM stage data items, information about whether a cancer has metastasised to other parts of the body can be recorded in various data items in the NCDR; the M component data items or in the 'metastases status' data item which indicates either yes or no. Any cases where the metastatic value was 'X' were classed as having an unknown metastatic status. Metastatic information was defined by the following categories:

1. Valid M component (defined using the rules stated for TNM completion. 1st integrated, 2nd pathological, 3rd clinical)
2. If M component was missing or invalid, information was obtained from another metastases data item - 'Metastatic status'
3. Otherwise, no metastatic information available in any field.

Note: Wales only submitted pathological stage and site specific stage to the NCDR. Pre-2010, Wales was only required to collect stage for cervical cancers; hence stage completion rates for other gynaecological sites were comparably lower.

The issues related to the stage data for each gynaecological site are taken in turn below, including analysis of the relevant data items.

Stage information - Ovarian Cancer

The broad stage categories of TNM and FIGO stage are compatible for ovarian cancer.

Completeness of FIGO, TNM and all stage combined

Ovarian stage completion has generally increased over time (Figure 7). Northern Ireland cases had the highest stage completion. In 2010, 89.2% of ovarian cases from Northern Ireland had a FIGO and TNM stage.

England's FIGO stage completion was higher than TNM stage completion from 1997 onwards. In 2010, 37.9% of England's ovarian cases had FIGO stage, 19.1% of cases had TNM stage and 51.6% of cases had a FIGO and/or TNM stage.

There were no stage data available for Scotland prior to 2005. Scotland's FIGO stage completion increased from 49.6% in 2005 to 60.1% in 2010.

Generally, Wales' TNM stage completion was higher than FIGO completion. The proportion of cases with FIGO and/or TNM complete peaked in 2004 at 31.6%, decreasing to 16.4% in 2010.

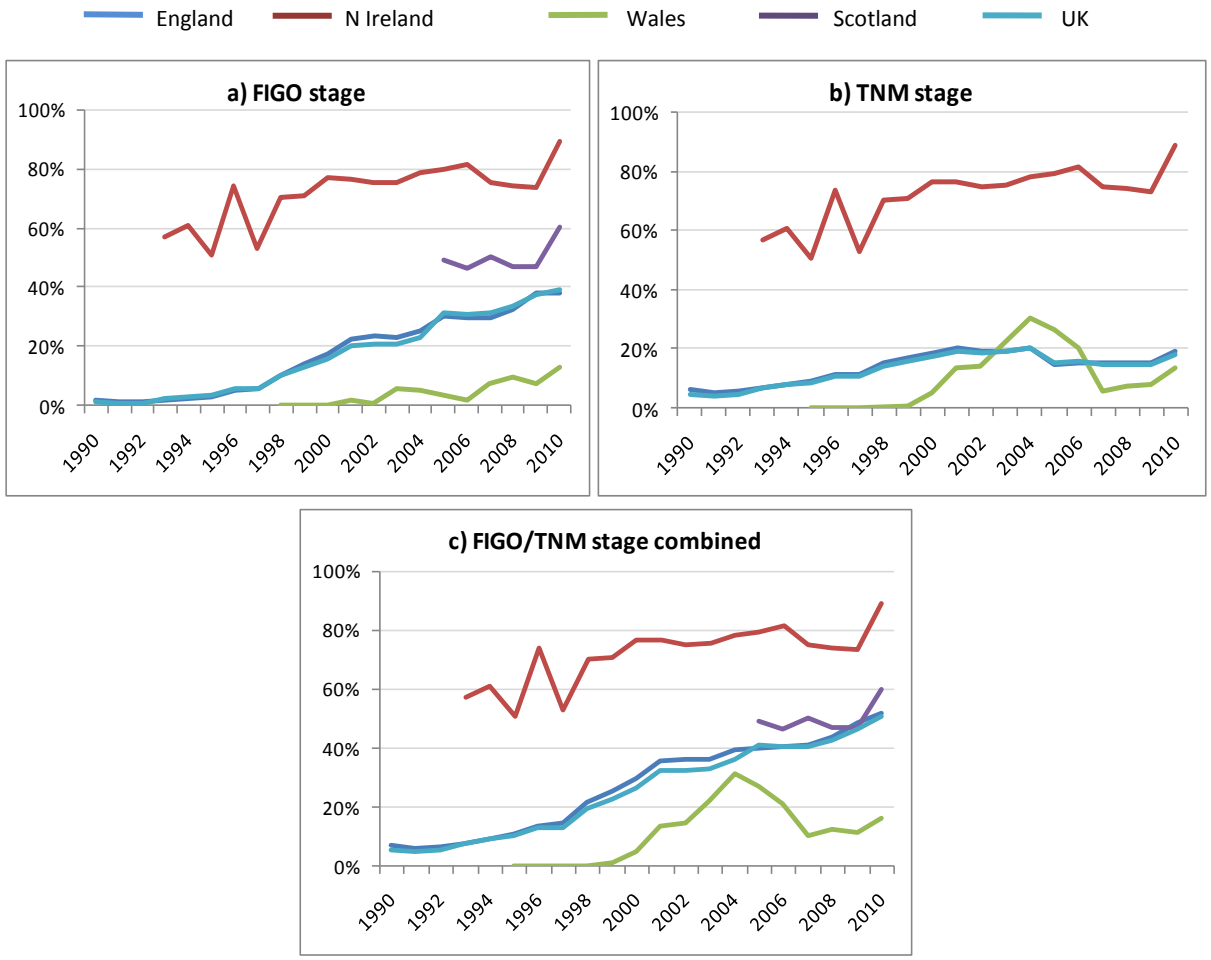

Figure 7: Ovarian Cancer (C56-57) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010.

Ovarian Cancer – stage profile for TNM/FIGO combined

In 2008-2010, the proportion of cases with a FIGO or TNM stage varied by cancer registry. Eastern (82%) had the highest proportion of cases with FIGO or TNM stage closely followed by Northern Ireland (78%), whilst Wales had the lowest proportion (14%) (Figure 8).

Stage I disease at diagnosis is less common for women presenting with ovarian cancer than women presenting with cervical and uterine cancer. Overall, 35% of staged cases were stage I. By cancer registry, Wales (81%) had the highest proportion of stage I indicating that the missing cases were likely to be later stage disease. London and West Midlands had the lowest proportions of stage I cases (25%). For all cancer registries, the proportion of stage II cancers was 10% or less. There were a number of cancer registries with high proportions of stage III and for London (highest % compared to all other cancer registries), Eastern, Northern & Yorkshire, West Midlands and Northern Ireland, proportions were higher than the proportion of stage I cases. Oxford (24%) had the highest proportion of stage IV cases whilst Wales (3%) had the lowest proportion. Any differences in stage profile maybe associated with systematic missing stage data.

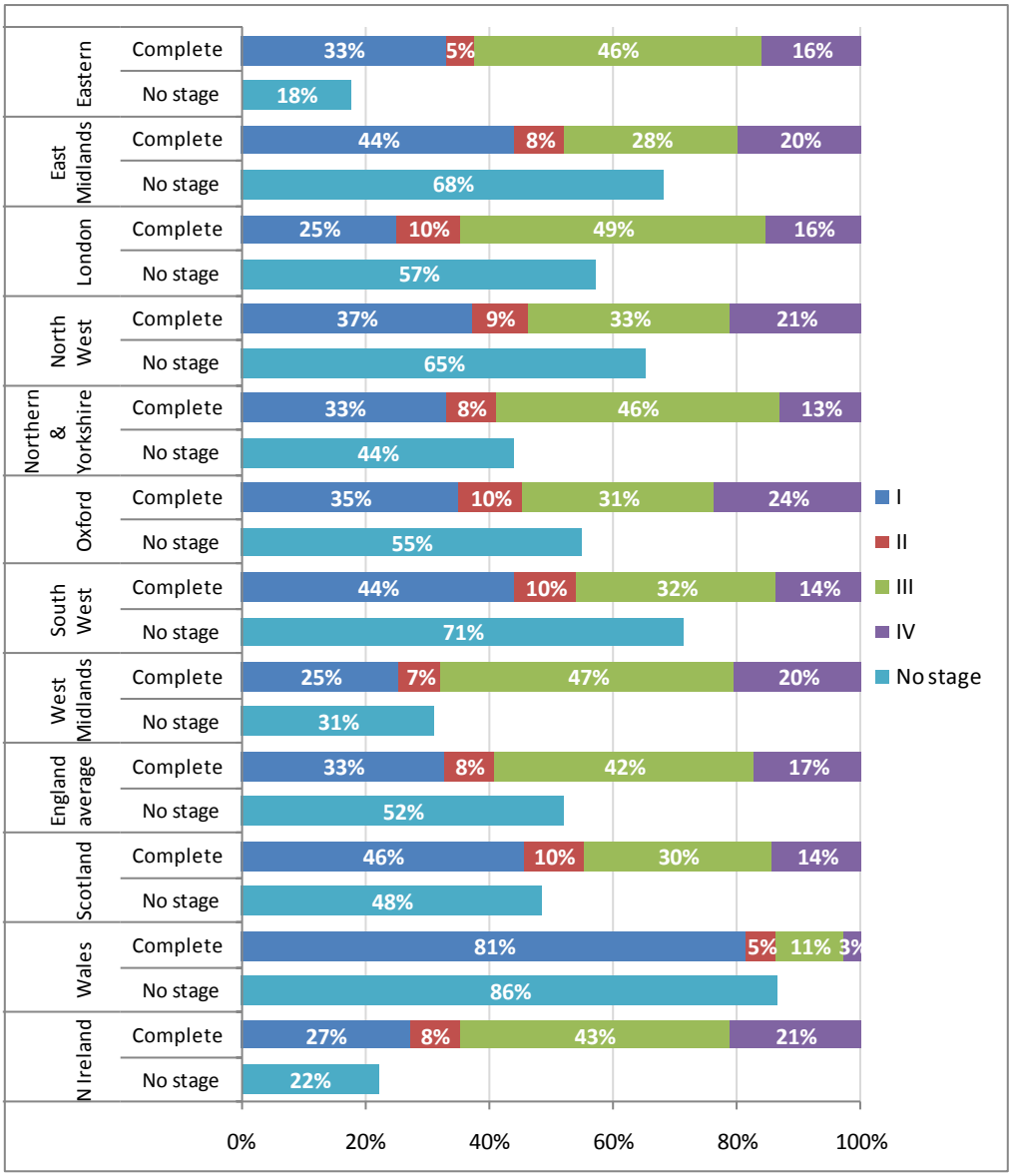

Figure 8: Ovarian Cancer (C56-57) proportion of all FIGO/TNM staged cases by stage and proportion of cases with no stage, 2008-2010.

Ovarian Cancer - Tumour, Nodal and Metastatic Information

The completion of tumour, nodal and metastatic information varied according to cancer registry.

Tumour Extent

Valid T component completion was highest for Northern Ireland (70.4%). Eastern, South West and West Midlands had a higher proportion (40% or more) of complete T component and/or tumour size information compared to the other cancer registries (Figure 9). For the remaining cancer registries, less than 20% of cases had T component and/or tumour size information. Scotland's cases had no tumour information.

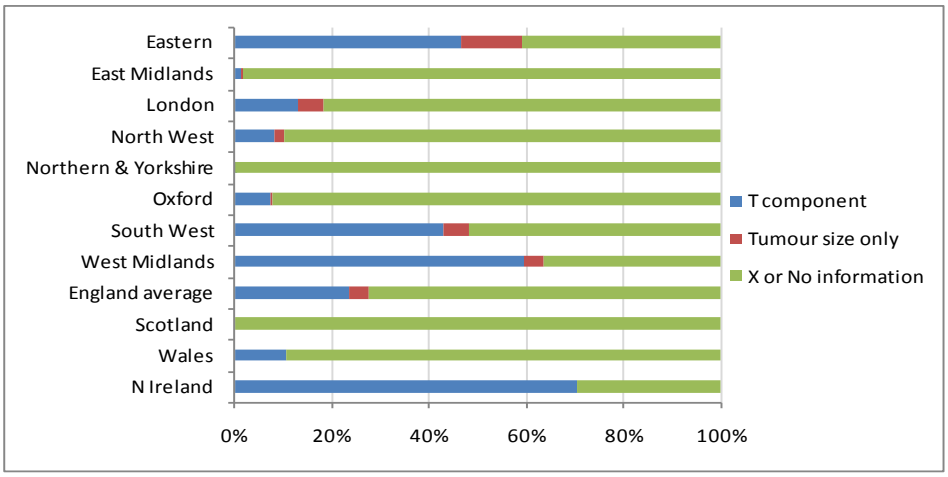

Figure 9: Ovarian Cancer (C56-57) Tumour Extent proportion complete, 2008-2010.

Nodal Status

Valid N component completion was highest for West Midlands (20.2%) and Northern Ireland (15.1%) (Figure 10). Northern Ireland's remaining cases and 56.5% of South West's cases were assigned a NX value with no other nodal information. London had the highest proportion of cases that had nodal status derived from data items other than the N components (12.5%). Scotland's cases had no nodal information.

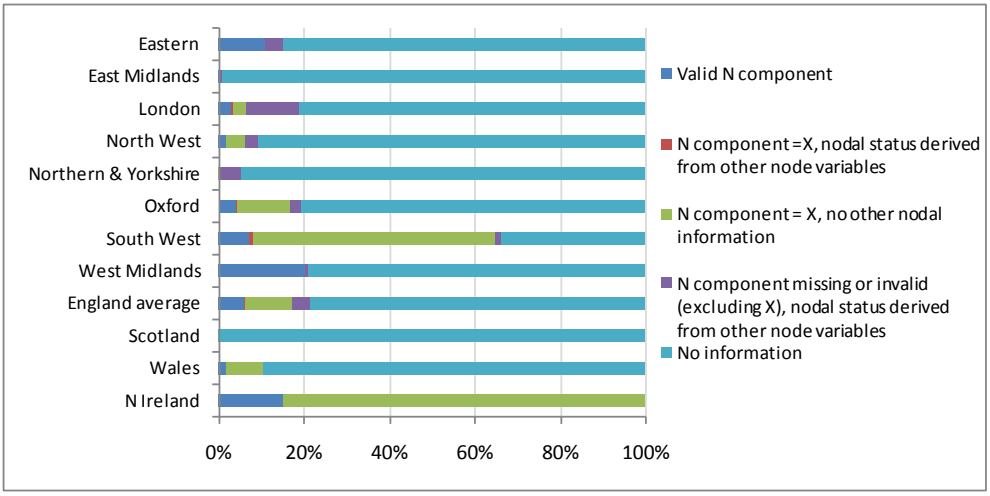

Figure 10: Ovarian Cancer (C56-57) Nodal status proportion complete, 2008-2010.

Metastatic Status

In contrast to other cancers where metastatic disease generally infers stage IV cancer, for ovarian cancer, this may not be the case; disease of the omentum, which is usually given an overall stage of FIGO/TNM III, may have an indication of metastasis in the metastatic status components. The metastatic status components should be cross-referenced with the overall FIGO/TNM stage and only those cases where the overall stage is IV should be categorised as metastatic disease.

Northern Ireland had the highest proportion of cases with metastatic information; 68.4% of cases had an M component and an additional 10.4% of cases had a metastatic status entry (Figure 11). Compared with other cancer registries that had relatively small proportions of cases with metastatic status only, London (71.5%) and Northern & Yorkshire (52.9%) had high proportions of cases with metastatic status only. For Eastern, North West, Oxford, East Midlands and Wales, less than 15% of cases had M component and/or metastatic status. Scotland's cases had no information about metastatic disease.

The most reliable indicator of metastatic disease in the NCDR is the overall TNM/FIGO values, where a stage IV has been recorded (see Figure 8).

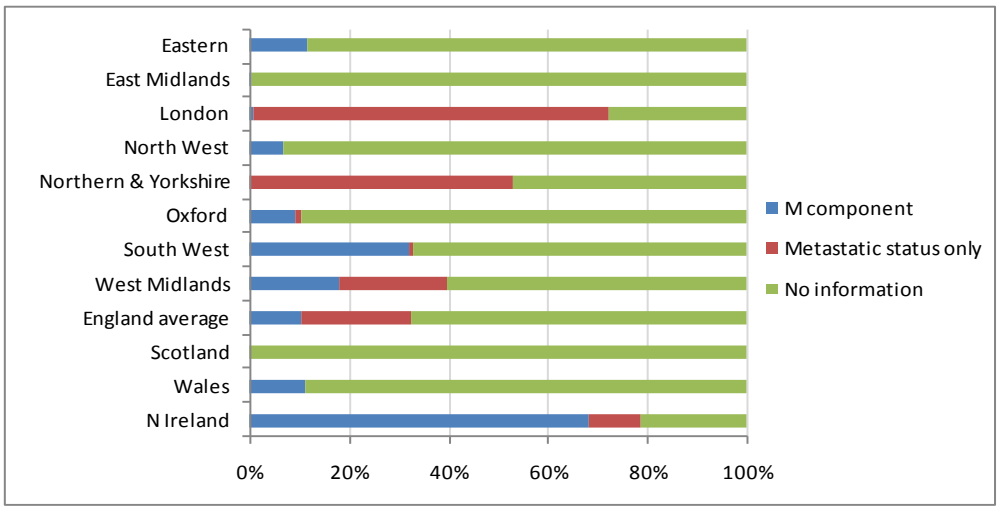

Figure 11: Ovarian Cancer (C56-57) Metastatic information proportion complete, 2008-2010.

Stage information - Uterine Cancer

The broad stage categories of TNM and FIGO stage are compatible for uterine cancer.

Completeness of FIGO, TNM and all stage combined

Stage completion was highest for Northern Ireland with 84.5% of cases in 2010 having both a FIGO and TNM stage.

England's FIGO stage completion increased over time whilst TNM stage completion decreased slightly from 2004 (Figure 12). England's FIGO stage completion was higher than TNM stage completion in the 2000s. In 2010, 65.3% of England's uterine cases had FIGO stage, 18.5% of cases had TNM stage and 77.1% of cases had a FIGO and/or TNM stage.

There were no stage data available for uterine cancers diagnosed in Scotland.

Wales' stage completion generally increased. In 2010, 49% of Wales' uterine cases had FIGO stage, 38.1% of cases had a TNM stage and 54.2% of cases had either or both FIGO and TNM stage.

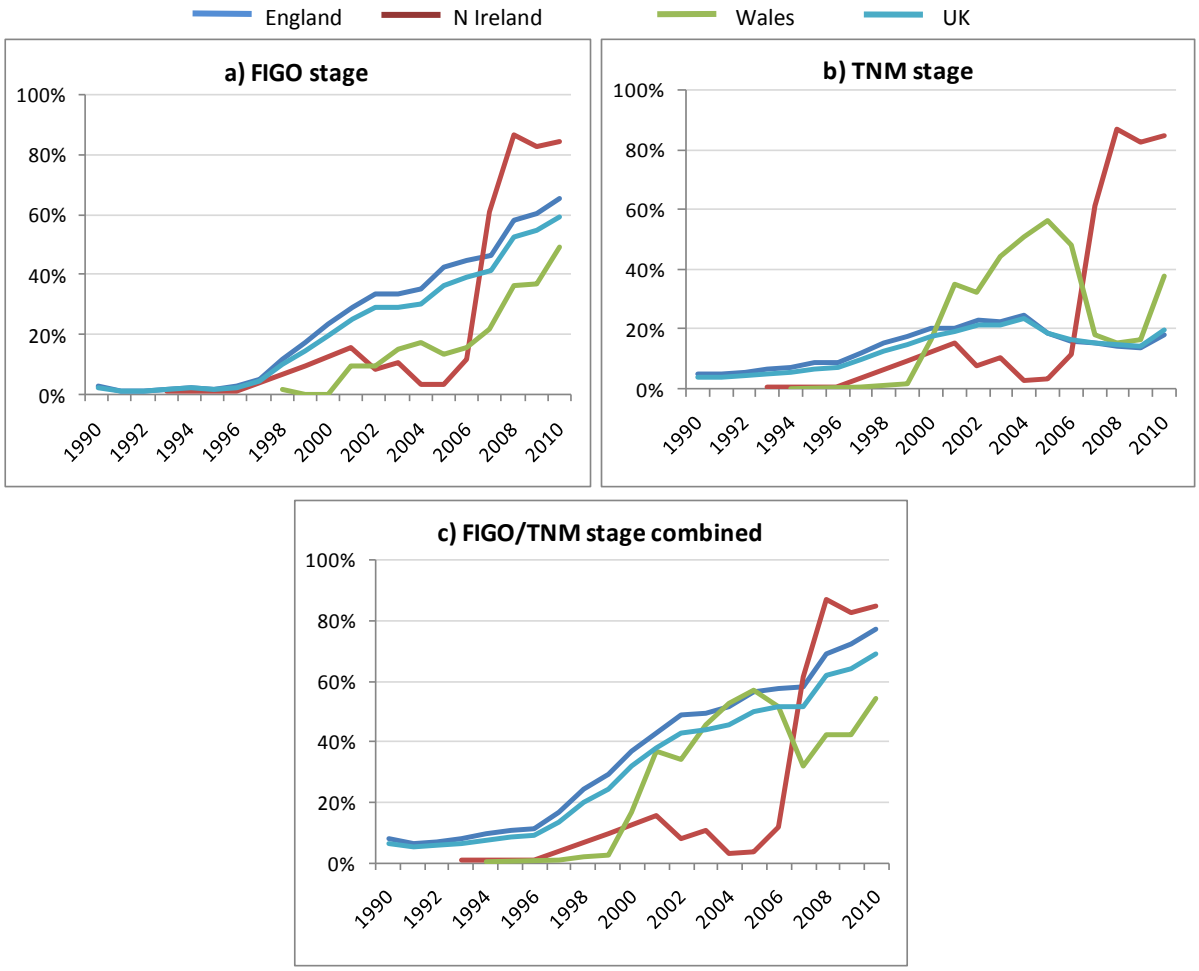

Figure 12: Uterine Cancer (C54-55) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010.

Uterine Cancer – stage profile for TNM/FIGO combined

The proportion of cases with a FIGO and/or TNM stage varied according to cancer registry (Figure 13). Eastern (89%) had the highest proportion of cases with FIGO or TNM stage, followed by West Midlands (86%) and Northern Ireland (85%), whilst Scotland had no cases with FIGO and/or TNM stage.

Over 71% of all staged cases were stage I, the proportion was highest for Wales (97%) and lowest for London (62%). London (18%, 17%), had the highest proportion of stage II and III cases, and Oxford (13%) the highest proportion of stage IV cases. Wales (2% or less) had the lowest proportions of stage II, III or IV cases. Any differences in stage profile across cancer registries may be due to systematic missing stage information.

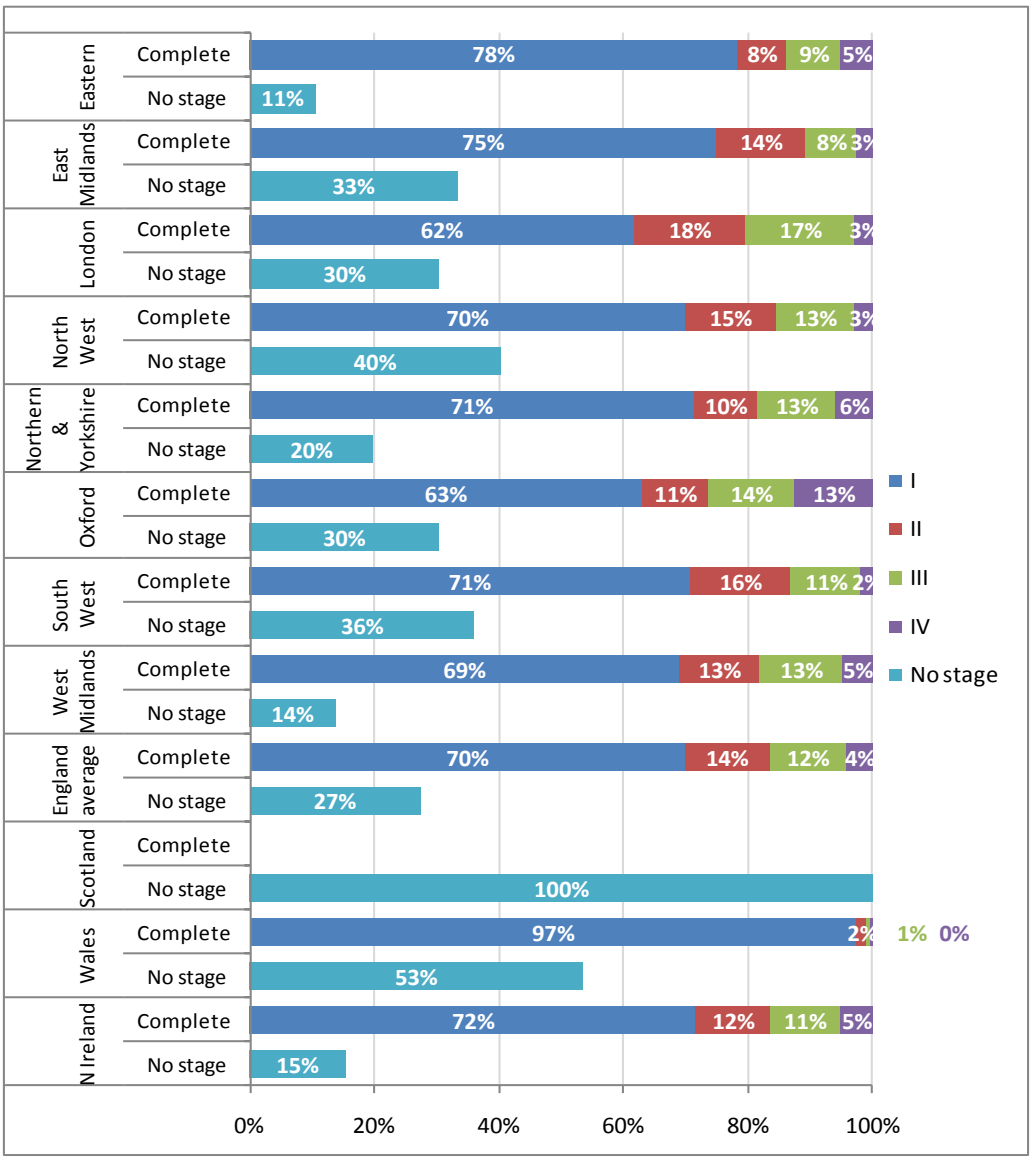

Figure 13: Uterine Cancer (C54-55) proportion of all FIGO/TNM staged cases by stage and proportion of cases with no stage, 2008-2010.

Uterine Cancer - Tumour, Nodal and Metastatic Information

The completion of tumour, nodal and metastatic information varied according to cancer registry. Tumour size is not relevant for uterine cancers however, it is still recorded for these cases therefore we have reported it in the same way in comparison to other sites.

Tumour Extent

West Midlands had the highest proportion of cases (79.7%) with complete T-component and/or tumour size information (Figure 14), followed by Northern Ireland (70.6%). Eastern and South West had higher proportions (55% or more) of complete T component and/or tumour size information compared to the remaining cancer registries. For Northern & Yorkshire, East Midlands and Oxford, less than 15% of cases had T component and/or tumour size information. Scotland's cases had no tumour information.

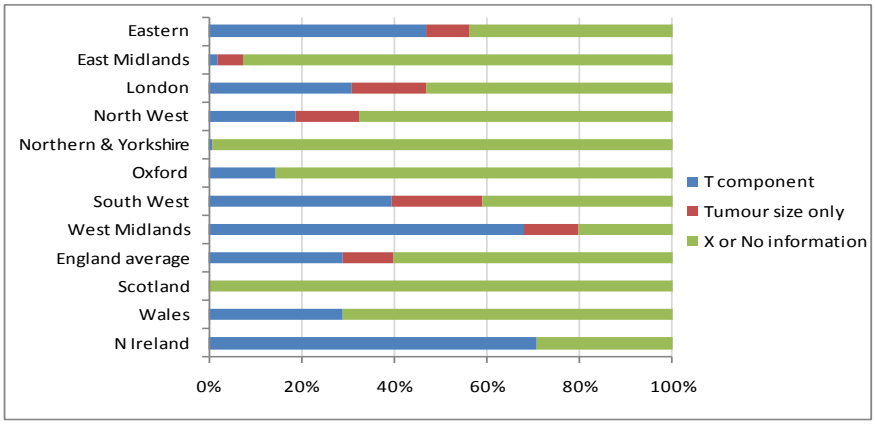

Figure 14: Uterine Cancer (C54-55) Tumour Extent proportion complete, 2008-2010.

Nodal Status

Valid N component completion was highest for Northern Ireland (79.2%) and West Midlands (24.5%) (Figure 15). Northern Ireland's remaining cases and 38.1% of South West's cases were assigned a NX value with no other nodal information. London had the highest proportion of cases that had nodal status derived from data items other than the N components (16.6%). Scotland's cases had no nodal information.

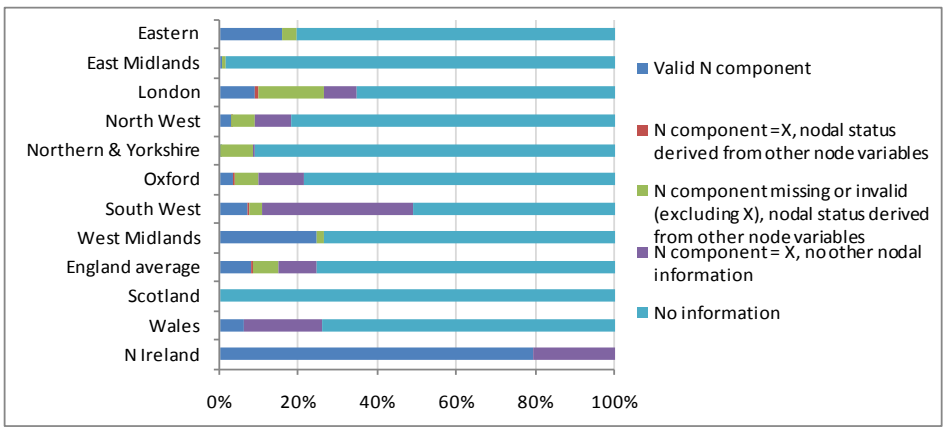

Figure 15: Uterine Cancer (C54-55) Nodal status proportion complete, 2008-2010.

Metastatic Status

Northern Ireland had the highest proportion of cases with information about metastatic disease; 80.1% of cases had an M component and an additional 5% of cases had metastatic status (Figure 16). Compared with other cancer registries that had relatively small proportions of cases with metastatic status only, London (68.4%) had a high proportion of cases with metastatic status only. For the remaining cancer registries, less than 15% of cases had M component and/or metastatic status. East Midlands had 0.3% of cases with information about metastatic disease. Scotland's cases have no information about metastatic disease.

The most reliable indicator of metastatic disease in the NCDR is the overall TNM/FIGO values, where a stage IV has been recorded (see Figure 13).

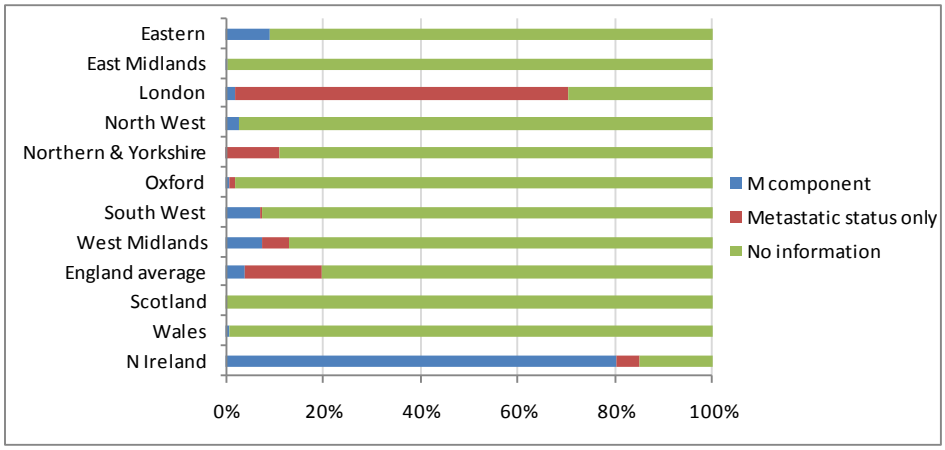

Figure 16: Uterine Cancer (C54-55) Metastatic information proportion complete, 2008-2010.

Stage information - Cervical Cancer

TNM and FIGO stage are not comparable for cervical cancer as TNM is generally pathologically derived whereas FIGO is a clinically derived and does not include nodal status.

Completeness of FIGO and TNM stage

UK trends show substantial increases with FIGO stage completion and smaller increases in TNM completion (Figure 17). From 1990 to 2010, FIGO completion increased from 19.1% to 66.5% and TNM completion increased from 7.8% to 25.6%.

Stage completion were highest for Northern Ireland with in excess of 80% of cases recorded with TNM and FIGO stage from 2000 onwards, this increased to 97.7% in 2010.

Wales' completion levels were also higher than England's in recent years. In 2010, the proportion of Welsh cases with FIGO and/or TNM stage was 93.2% and 47.7% respectively.

England's trends in FIGO completion increased substantially (22.9% in 1990 to 65.7% in 2010). England's TNM completion increased from 9.4% in 1990 to 25.2% in 2010, 11.5% of this increase occurred in 2009-2010.

According to the NCDR, Scotland recorded FIGO stage only from 1997 onwards, yet the level of completion decreased with time; in 2010, 53.5% of Scottish cases had FIGO stage. From 2005 onwards, Scotland began collecting pre- and post-surgical stage and only submitted post-surgical stage to the NCDR which may have resulted in the declining levels of cervical stage completeness.

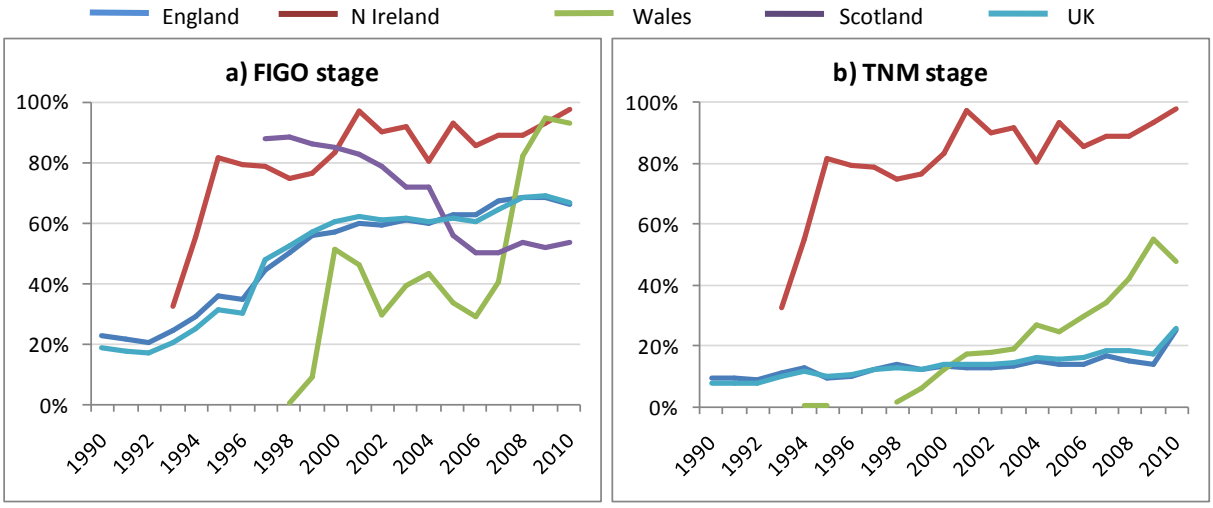

Figure 17: Cervical Cancer (C53) proportion complete a) FIGO stage and b) TNM stage, 1990-2010.

Cervical Cancer - Tumour, Nodal and Metastatic Information

The completion of tumour, nodal and metastatic information varied according to cancer registry.

Tumour Extent

Northern Ireland had the highest proportion of cases with tumour information, 93.1% cases had a valid T component (Figure 18). Eastern, South West and West Midlands had higher proportion (60% or more) of complete T component and/or tumour size information compared to the other English NCRS regional offices. The Welsh registry had 48.9% of cases recorded with a valid T component. For Northern & Yorkshire, Oxford and East Midlands, less than 12% of cases had T component and/or tumour size information. 0.6% of Northern and Yorkshire's cases had tumour information. All Scottish cases had no tumour information.

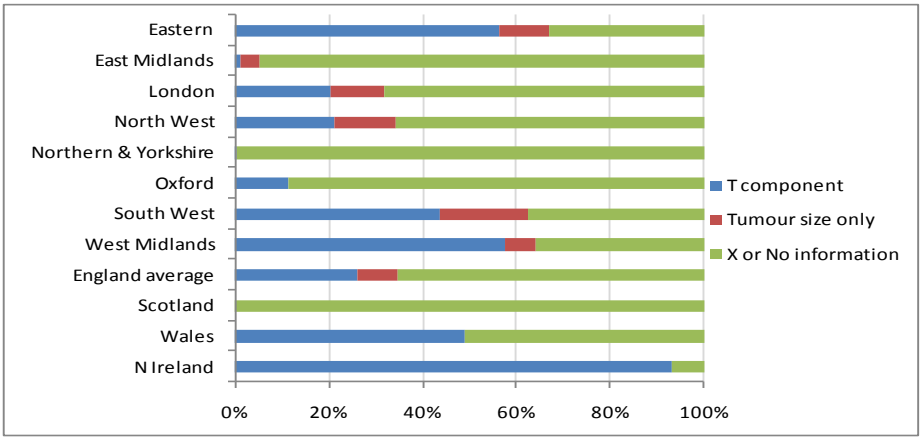

Figure 18: Cervical Cancer (C53) Tumour Extent proportion complete, 2008-2010.

Nodal Status

Northern Ireland had the highest proportion of cases with a valid N-component (77.2%) (Figure 19). However, for other cancer registries, the proportions of cases with valid N-components were less than 35%. East Midlands, Scotland and Northern & Yorkshire had no or small proportions of cases with valid N components and had very little additional nodal information from other data items.

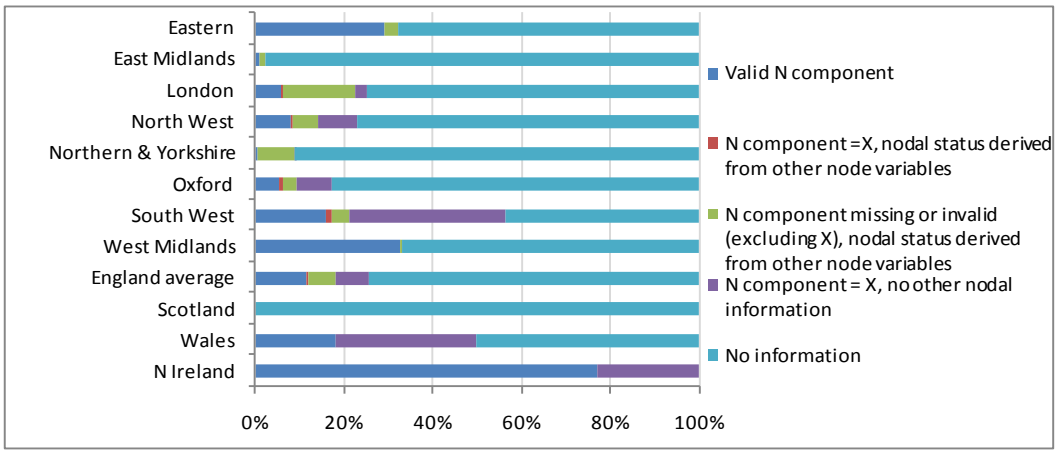

Figure 19: Cervical Cancer (C53) Nodal status proportion complete, 2008-2010.

Metastatic Status

Northern Ireland had the highest proportion of cases with metastatic information; 89.2% of cases have M component and an additional 6% of cases have metastatic status (Figure 20). London had the highest proportion of cases with metastatic information only (63.7%). For the remaining cancer registries, less than 15% of cases had M component and/or metastatic status. Scotland's cases had no information about metastatic disease.

The most reliable indicator of metastatic disease in the NCDR is the overall TNM/FIGO values, where a stage IV has been recorded (see Figure 21).

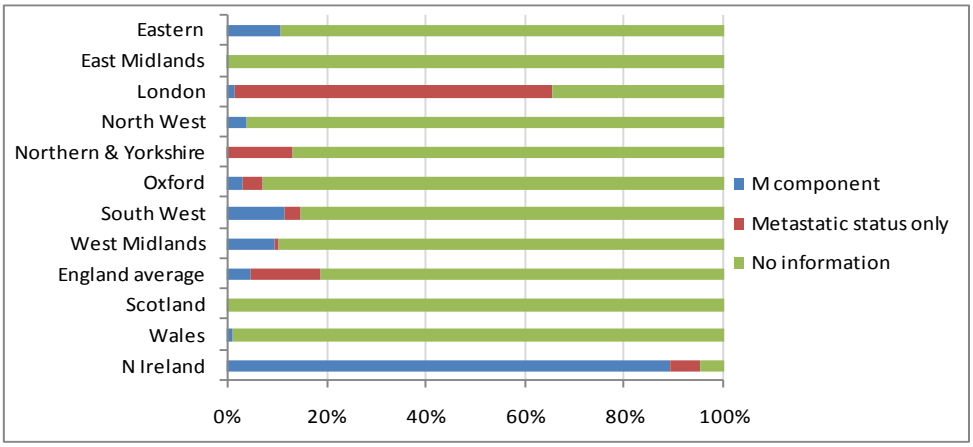

Figure 20: Cervical Cancer (C53) Metastatic information proportion complete, 2008-2010.

Cervical Cancer – stage profile for TNM or FIGO

Stage between FIGO and TNM are not compatible for cervical cancer. The incompatibility of the staging systems and the fact that registries have used either/both systems makes comparisons between geographies difficult. If one system were to be chosen over another then this means that not all stage information is being utilised. This prompts the issue of how we should most appropriately deal with stage information for cervical cancer.

To illustrate the stage available in the NCDR simply, a stage profile of TNM (Eastern) or FIGO is illustrated. In an attempt to use all the stage information provided from both systems but aligned this information to one staging system only, a profile of TNM only stage is also shown whereby FIGO staged cases are converted to TNM using nodal information.

Stage profile of TNM (NCRS Eastern regional office only) or FIGO

Eastern only staged cervical cancers according to TNM. Northern Ireland staged cervical cancers using FIGO and TNM. For the remaining registries, the majority of cervical cancers were staged according to FIGO and only a small number of cases were staged according to TNM. Figure 21 shows a TNM stage profile for Eastern and FIGO stage profiles for the remaining cancer registries. With such small numbers (n=73 or <0.5% of cervical cancers diagnosed in 2008-2010), additional TNM only information (FIGO stage not present) will add no value to the analysis and will not be illustrated.

The proportion of all staged cases with stage I cancer was highest for Wales (100%) and lowest for London and the West Midlands (59%). London (24%) had the highest proportion of stage II, Northern Ireland (18%) had the highest proportion of stage III and Oxford (15%) had the highest proportion of stage IV cases. Eastern and Northern Ireland had only 7% of cases with no stage information. Of the registries that staged the majority of their tumours accorded to FIGO, the proportion of all cases with no stage information (including TNM stage) was highest for North West (49%), Scotland (47%) and London (40%).

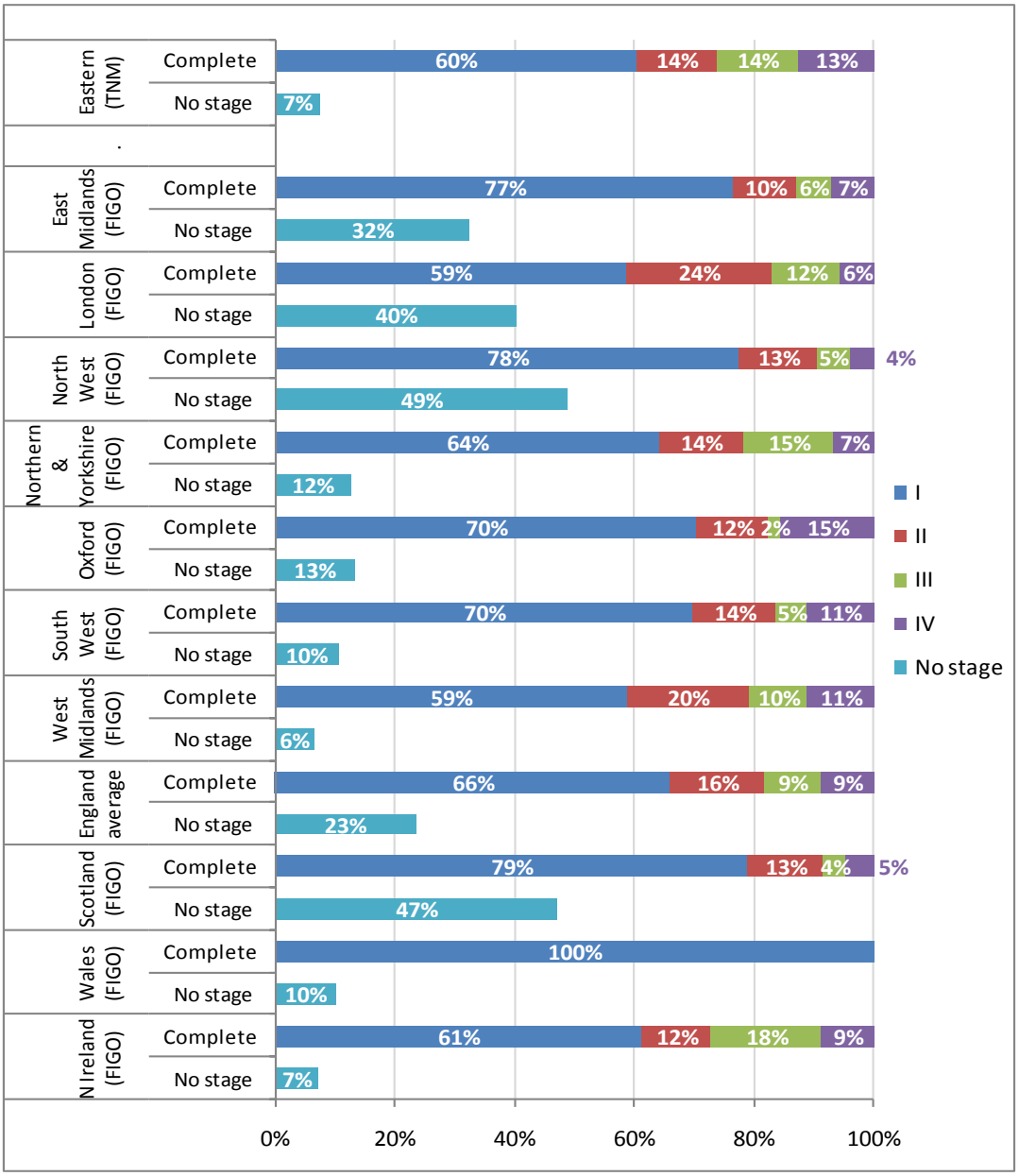

Figure 21: Cervical Cancer (C53) proportion of all TNM staged cases for Eastern only and for the remaining cancer registries, all FIGO staged cases by stage and proportion of cases with no stage, 2008-2010.

FIGO-to-TNM conversion

Using the rules assigning node positive or node negative status, FIGO-to-TNM stage was defined by the following rules:

- FIGO I + nodes negative (or no nodal information) ⇒ TNM I
- FIGO II + nodes negative (or no nodal information) ⇒TNM II
- FIGO III + nodes negative (or no nodal information) ⇒ TNM III
- FIGO I,II or III + nodes positive ⇒ TNM III
- FIGO IV ⇒ TNM IV

Figure 22 illustrates the conversion from FIGO to TNM.

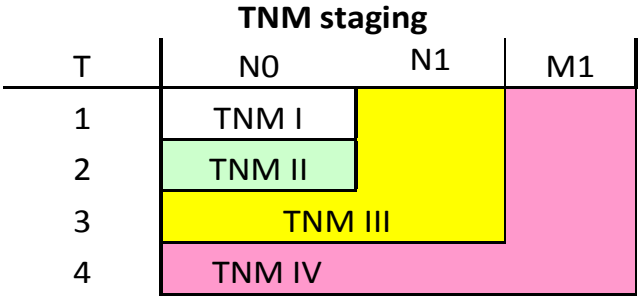

Figure 22: FIGO to TNM stage conversion.

The TNM stage profile between Eastern and Northern Ireland were similar. For the NCRS Eastern regional office, 60.3% of cervical cases were stage I, 13.5% of cases were stage II, 13.5% of cases were stage III, 12.7% of cases were stage IV and 7.4% had no stage information (Table 9). For Northern Ireland, 61.3% of cervical cases were stage I, 11.6% of cases were stage II, 18.4% of cases were stage III, 8.7% of cases were stage IV and 7.2% had no stage information. Similar proportions may be expected if it was possible to convert all other cancer registries' FIGO stage to TNM (assuming that profile for Eastern and Northern Ireland staged patients applies to the rest of the UK). For this conversion, the completion of nodal status, particularly nodes positive, is required. However, Figure 23 shows that generally, the proportion of cases where positive or negative nodal status was recorded was low.

With exception to Northern Ireland, all registries had different TNM and FIGO stage profiles reflecting slightly different stage definitions. Northern Ireland uses FIGO stage for all gynaecological malignancies to allow comparison of outcomes with all nations but in addition collects an integrated TNM stage combining clinical, radiological and pathological data which is used for oncological treatment planning only. It is accepted that the clinical FIGO stage should not be changed in light of other information (Ranaghan L and Gavin A. 2013. "Care of ovarian and cervical cancer patients diagnosed in Northern Ireland 2010", http://www.qub.ac.uk/research-centres/nicr/FileStore/PDF/Incidence/Filetoupload,382844,en.pdf).

Table 9: Eastern and Northern Ireland number and proportion of cases by TNM stage, 2008-2010.

Cancer registry	TNM	Count	Percentage
Eastern	I	410	60.3
	II	92	13.5
	III	92	13.5
	IV	87	12.7
	Null	54	7.4
N Ireland	I	190	61.3
	II	36	11.6
	III	57	18.4
	IV	27	8.7
	Null	24	7.2

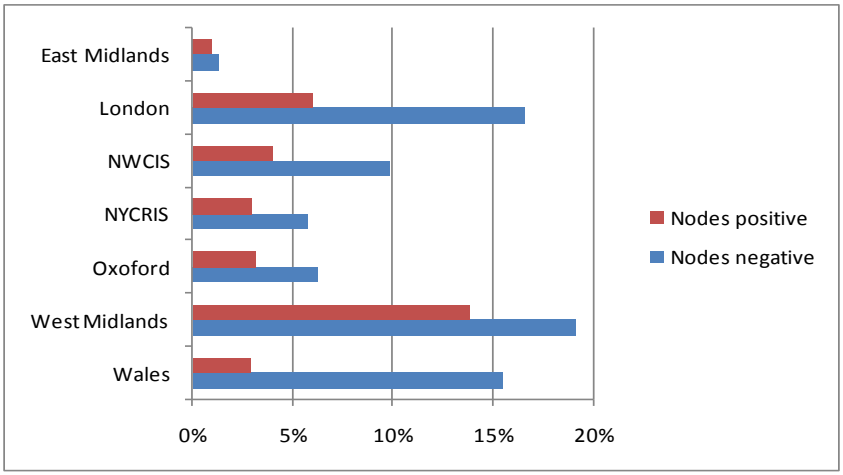

Figure 23: Cervical Cancer (C53) proportion of cases with node positive or negative, 2008-2010.

Table 10 illustrates the following information:

- Number of cases with recorded TNM stage
- Number and proportion of FIGO stage only cases (not TNM information) (proportion of FIGO staged cases by stage and proportion of cases with no stage)
- Number of FIGO stage only cases, with negative nodes and no nodal information or positive nodes
- Number of FIGO stage only cases converted to TNM using nodal status. FIGO-to-TNM III includes the FIGO I and II with positive nodes.
- Number and proportion of TNM and FIGO-to-TNM cases (proportion of staged cases by stage and proportion of cases with no stage).

There were two cases with a FIGO stage only and an invalid nodal entry (pN2, N2) and no other information in the nodes positive data items, one case was FIGO stage I, this case was not converted into a TNM stage. The second case was a FIGO stage IV; this was converted to a TNM IV because the conversion between FIGO and TNM stage IV does not require nodal information.

West Midlands (94%) had the highest proportion of TNM and converted FIGO-TNM stage whilst Scotland (52.9%) had the lowest proportion. Scotland had no cases recorded with nodal involvement.

Table 10: Cervical Cancer (C53) FIGO (only)–to-TNM conversion, all cancer registries except Eastern and Northern Ireland, 2008-2010.

Cancer registry	Stage	TNM stage	FIGO stage only	Negative nodes/no information	Positive nodes	FIGO only-to-TNM converted	TNM + FIGO only –to-TNM converted	
							Number	%
East Midlands	I	144	304	304	-	304	448	76.8
	II	22	38	38	-	38	60	10.3
	III	4	30	29	1	30	34	5.8
	IV	12	29	28	1	29	41	7.0
	Null	663	262	-	-	-	262	31.0
London	I	-	457	432	26	431	432	55.3
	II	-	190	171	19	171	171	21.9
	III	-	90	79	11	135	134	17.3
	IV	-	43	38	5	43	43	5.5
	Null	1307	527	-	-	-	527	40.3
North West	I	84	367	353	14	353	437	73.4
	II	9	57	51	6	51	60	10.1
	III	16	21	21	-	41	57	9.6
	IV	30	11	11	-	11	41	6.9
	Null	927	471	-	-	-	471	44.2
Northern & Yorkshire	I	7	667	659	8	659	666	63.5
	II	1	145	143	2	143	144	13.7
	III	1	160	139	21	170	171	16.3
	IV	-	68	66	2	68	68	6.5
	Null	1184	144	-	-	-	144	12.1
Oxford	I	-	215	211	4	211	211	69.2
	II	-	36	34	2	34	34	11.1
	III	-	7	7	-	13	13	4.3
	IV	-	47	46	1	47	47	15.4
	Null	351	46	-	-	-	46	13.1
South West	I	-	686	654	32	654	654	66.6
	II	-	136	127	9	127	127	12.9
	III	-	50	44	8	91	91	9.3
	IV	-	110	103	8	110	110	11.2
	Null	1095	113	-	6	-	113	10.3
West Midlands	I	108	367	351	16	351	459	57.0
	II	91	67	52	15	52	143	17.8
	III	48	34	28	6	65	113	14.0
	IV	65	25	24	1	25	90	11.2
	Null	544	51	-	-	-	51	6.0
Scotland	I	-	406	406	-	406	406	79.0
	II	-	65	65	-	65	65	12.6
	III	-	19	19	-	19	19	3.7
	IV	-	24	24	-	24	24	4.7
	Null	972	458	-	-	-	458	47.1
Wales	I	213	205	204	1	204	417	94.3
	II	9	-	-	-	-	9	2.0
	III	11	-		-	1	12	2.7
	IV	4	-	-	-	-	4	0.9
	Null	250	45	-	-	-	45	9.2

If there was sufficient ‘node positive’ information, the proportion of FIGO-to-TNM stage from other cancer registries should be similar to the proportion of TNM stage from the Eastern and Northern Ireland cancer registries. Figure 24 shows the variation in stage profile and percentage of cases with missing stage.

There were some differences between the cancer registries once FIGO stage had been converted to TNM using nodal information; this was most likely due to missing stage data. For example, the proportion of stage I disease ranged from 55% in London to 94% in Wales.

The proportion of stage III cases was low in Oxford, East Midlands and Scotland indicating that perhaps not all cases staged with FIGO I and II could be converted to stage III.

Differences in stage profiles between Eastern and Northern Ireland and other cancer registries may indicate that there was insufficient ‘node positive’ information to assert that all possible FIGO I and II cases could be converted to TNM III. Difference may also arise from non-random missing stage data. However, differences may also be due to the possibility that Eastern and Northern Ireland do not have a similar stage profile compared to the rest of the UK.

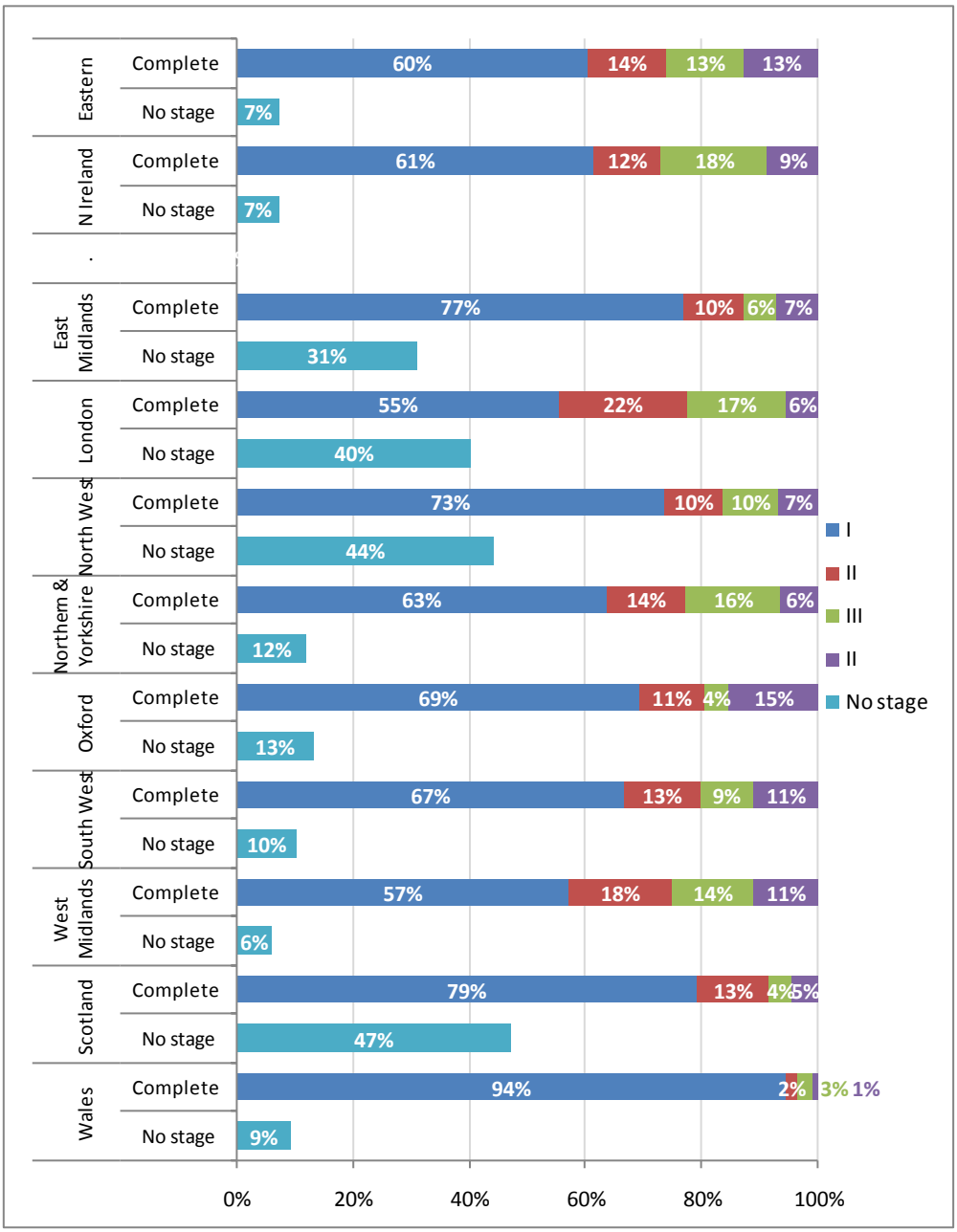

Figure 24: Cervical Cancer (C53) Proportion of Eastern TNM and other cancer registries' FIGO-to-TNM stage, 2008-2010.

Stage information - Vulval Cancer

The broad stage categories of TNM and FIGO stage are compatible for vulval cancer.

Completeness of FIGO, TNM and all stage combined

Vulval stage completion was generally poorer compared to ovarian, uterine and cervical cancers (Figure 25). England's FIGO stage completion increased over time whilst TNM stage completion decreased slightly from 2004. England's FIGO stage completion was proportionally higher than TNM stage completion in the 2000s. In 2010, 39.2% of England's cases had FIGO stage, 16.8% of cases had TNM stage and 51.6% of cases had a FIGO and/or TNM stage.

No stage data were available for cases diagnosed in Wales prior to 2000. FIGO stage completion was low until 2010 where 17.0% of cases had FIGO stage. TNM stage peaked in 2004, decreased and then increased towards 2010 when 22.6% of cases had a TNM stage. 22.6% of cases had a FIGO and/or TNM stage.

No stage data were available for cases diagnosed in Northern Ireland prior to 2000. Northern Ireland's FIGO completion decreased overall, and in 2010, FIGO stage completion was 13.6%. The proportion of TNM stage completion increased until 2002, decreased until 2006 and increased to 90.5% in 2010 - this proportion represented all the cases that had stage information thus, the 13.6% of cases that had FIGO stage also had TNM. No stage data were available for 2008.

No stage data were available for vulval cancers diagnosed in Scotland.

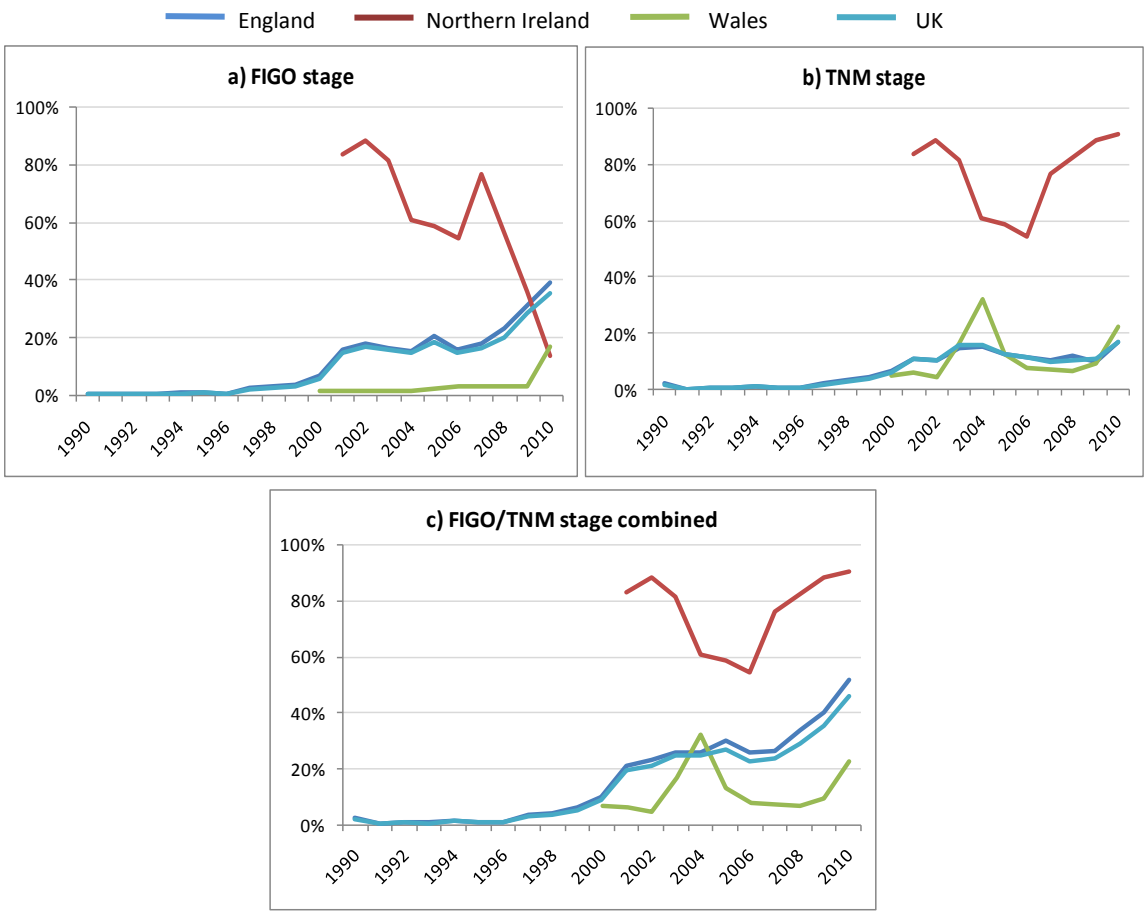

Figure 25: Vulval Cancer (C51) proportion complete a) FIGO stage, b) TNM stage and c) FIGO and TNM combined stage, 1990-2010.

Vulval Cancer – stage profile for TNM/FIGO combined

The proportion of cases with a FIGO and/or TNM stage varied according to cancer registry (Figure 26). Eastern (88%) had the highest proportion of cases with FIGO and/or TNM stage. Scotland had no cases with FIGO and/or TNM stage.

For vulval cancers, overall, 59% of all staged cases were stage I, the proportion was highest for Wales (76%) and lowest for Oxford (47%). Compared with other cancer registries, South West (23%) had the highest proportions of cases with stage II and Northern Ireland (7%) had the lowest proportion. Eastern (22%) and Oxford (38%) had the highest proportion of cases with stage III and IV cases respectively.

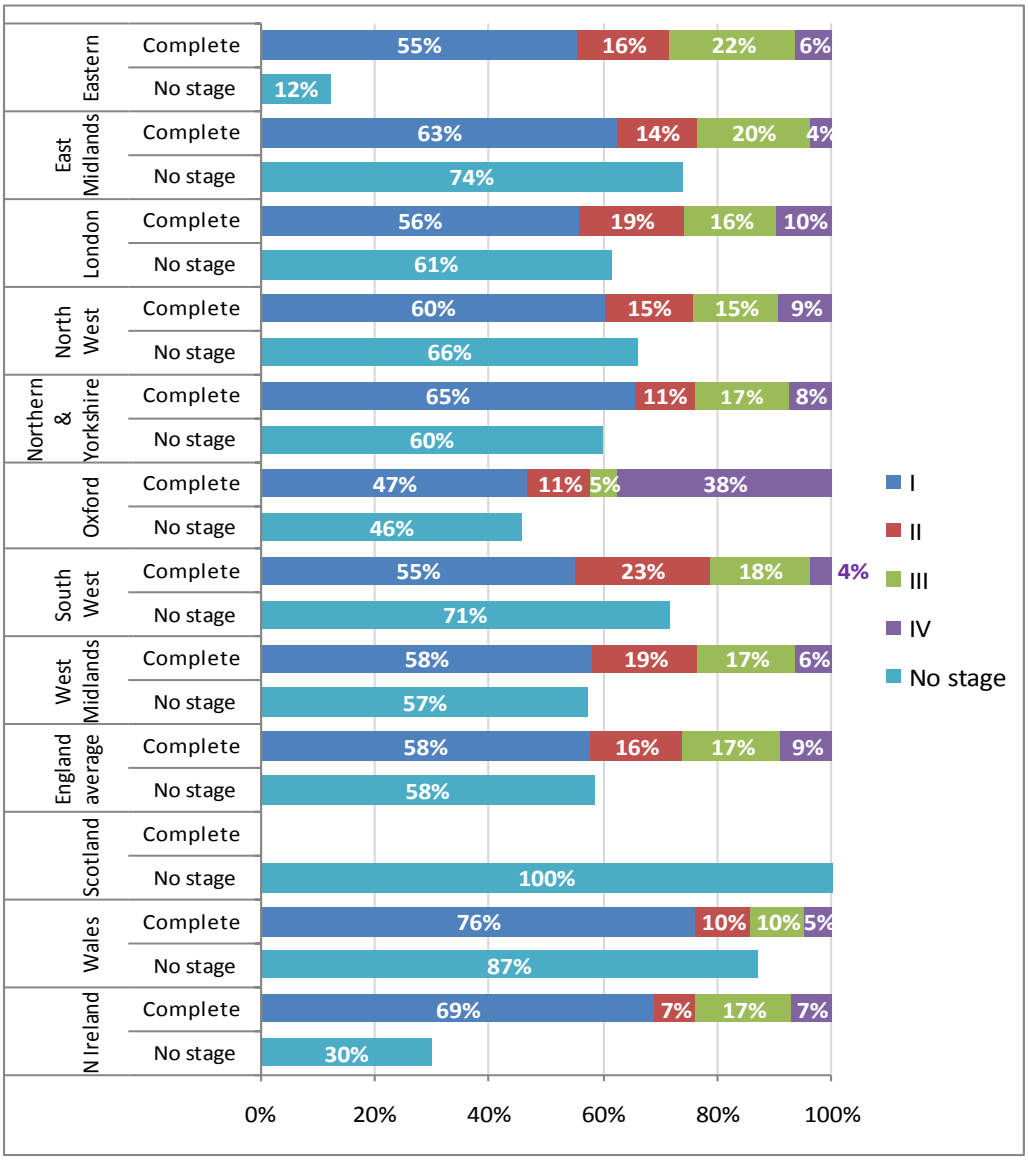

Figure 26: Vulval Cancer (C51) proportion of all staged FIGO/TNM cases by stage and proportion of cases with no stage, 2008-2010.

Vulval Cancer - Tumour, Nodal and Metastatic Information

The completion of tumour, nodal and metastatic information varied according to cancer registry.

Tumour Extent

Eastern had the highest proportion of cases (80.2%) with complete T component and/or tumour size information (Figure 27). Just over 73.3% of Northern Ireland's cases had a valid T component. West Midlands and South West also had higher proportion (60% or more) of complete T component and/or tumour size information compared to the remaining cancer registries. For Northern & Yorkshire, East Midlands, Oxford and Wales, fewer than 17% of cases had T component and/or tumour size information. Scotland's cases had no tumour information.

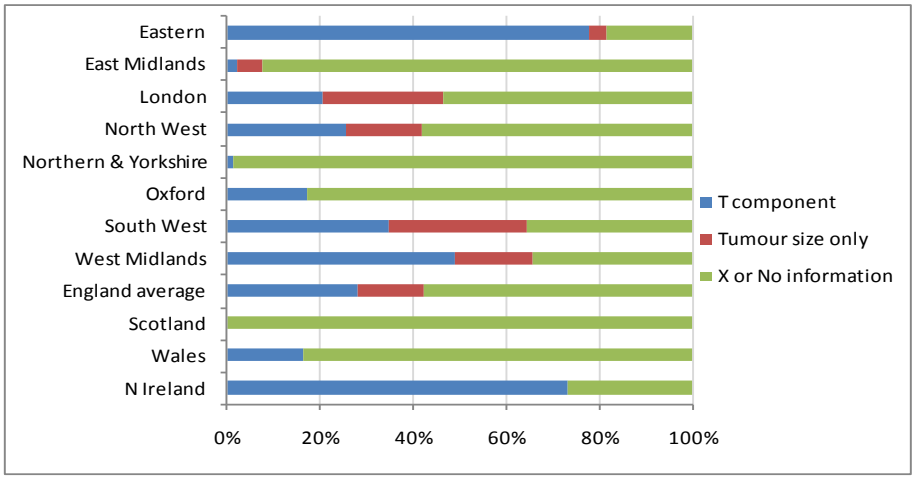

Figure 27: Vulval Cancer (C51) Tumour Extent proportion complete, 2008-2010.

Nodal Status

Valid N component completion was highest for Northern Ireland (46.7%) and Eastern (49.2%) (Figure 28). The majority of Northern Ireland's remaining cases were assigned an NX value with no other nodal information. London had the highest proportion of cases that had nodal status derived from data items other than the N components (25.0%). Scotland's cases had no nodal information.

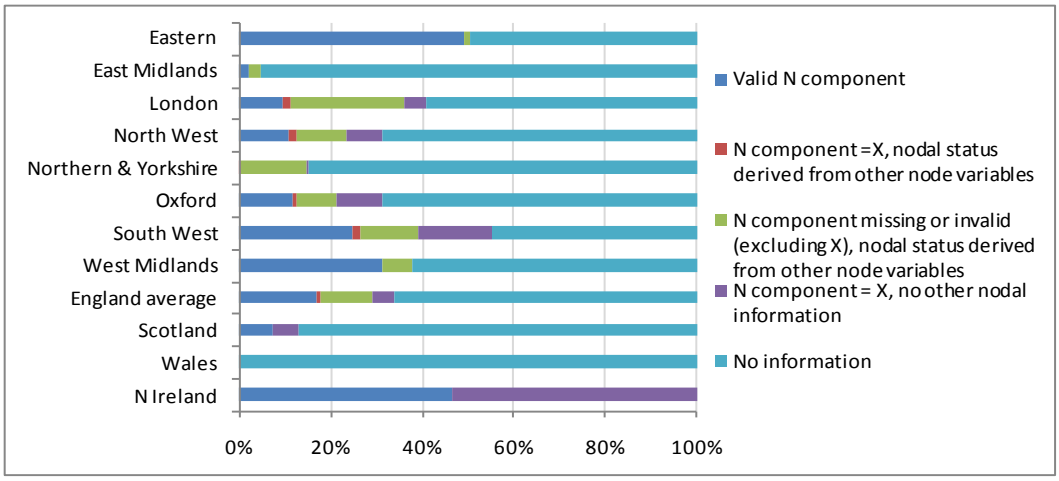

Figure 28: Vulval Cancer (C51) Nodal status proportion complete, 2008-2010.

Metastatic Status

Northern Ireland had the highest proportion of cases with information about metastatic disease; 33.3% of cases had an M component and an additional 36.7% of cases included metastatic status (Figure 29). Compared with other cancer registries that had relatively small proportions of cases with metastatic status only, London (66.4%) had a high proportion of cases with metastatic status only. For the remaining cancer registries, fewer than 6% of cases had an M component and/or metastatic status. 0.3% of East Midlands's cases had information about metastatic disease. None of Scotland's cases had information about metastatic disease.

The most reliable indicator of metastatic disease in the NCDR is the overall TNM/FIGO values, where a stage IV has been recorded (see Figure 26).

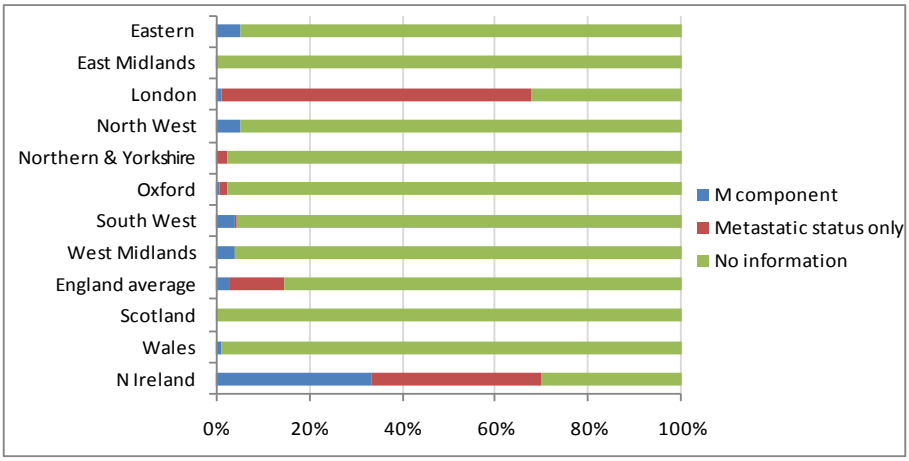

Figure 29: Vulval Cancer (C51) Metastatic information proportion complete, 2008-2010.

Stage information - Vaginal Cancer

TNM and FIGO stage are not compatible for vaginal cancer.

Completeness of FIGO and TNM stage

For vaginal cancers, UK trends for FIGO and TNM completion increased, in 2010, 12.1% and 5% of all cases were staged according to FIGO or TNM respectively (Figure 30). England trends in the proportion of FIGO stage completion increased slightly whilst the completion of TNM decreased from 2001. In 2010, 13.0% and 3.8% of England's vaginal cases were staged using FIGO and TNM respectively. Northern Ireland was the only Celtic country to complete stage information for vaginal cancers for more than one year. Wales reported one case with a FIGO stage in 2000 and two cases with TNM stage in 2010.

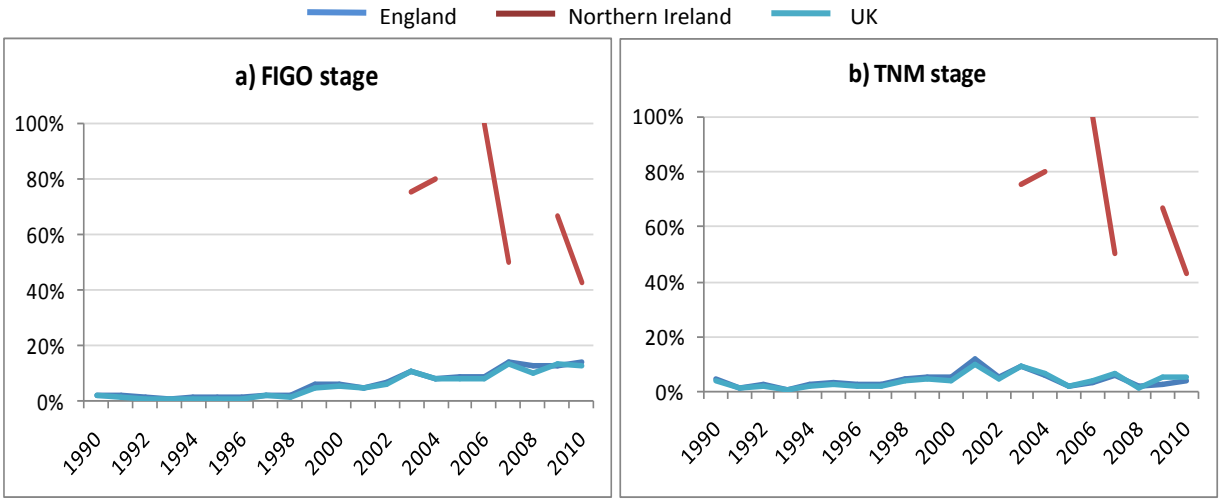

Figure 30: Vaginal Cancer (C52) proportion complete a) FIGO stage and b) TNM stage, 1990-2010.

Morphology

The cancer morphology is recorded as a five digit code, where the first four digits refer to the histological subtype and the fifth digit refers to the tumour behaviour code. Morphology is recorded under the ONS type5 data item in the NCDR.

For any gynaecological cancer, analysis by morphological grouping is relevant, both clinically, for treatment modality, and epidemiologically, for analyses of risk factors and patient outcomes. In general, pathologists do not rigorously apply WHO-listed tumour morphology codes for each specific gynaecological cancer site. The reasons for this largely reflect out-dated laboratory information and SNOMED coding systems. In consequence, the tumour types have been grouped to reflect similarities in the clinical or epidemiological characteristics.

The objective of this section is to describe the morphological characteristics of gynaecological cancers using the type5 data item in the NCDR. This section examines gynaecological cancers in terms of tumour behaviour type and morphology group, and also shows potential inconsistencies in morphological coding. These characteristics were considered for two periods: 2000-2006 and 2007-2010.

Trends in the morphological systems used and a comparison between the ONS and cancer registry morphology data items were investigated for all gynaecological cancers.

For each type of gynaecological cancer, the following were investigated:

1. For the period 2007-2010, the proportion of cases by behaviour code

Table 11: Behaviour code description.

5th digit behaviour	Description
0	Benign
1	Uncertain whether benign or malignant - borderline malignancy, low malignant potential, uncertain malignant potential
2	Carcinoma in situ - intraepithelial, non-infiltrating, non-invasive
3	Malignant, primary site
5	Malignant, microinvasive
6	Malignant, metastatic site – malignant, secondary site
9	Malignant, uncertain whether primary or metastatic site

For the periods 2000-2006 and 2007-2010

2. The proportion of cases by morphology group (morphology groups defined in Appendix B).
3. Number and proportion of cases with:
    a. Probable incorrectly coded morphology - unlikely to be correct and more likely to be an error in coding
    b. Unusual morphology - codes that are uncommon at the given anatomical site
    c. Invalid morphology – no morphology provided or recorded without a primary malignant behaviour (i.e. with codes 0, 1, 2, 6 or 9, rather than the primary malignant 3 or 5 codes)

Cases with probable incorrectly coded and unusual morphologies were included in one of the morphology groups. However, cases with invalid morphology were grouped separately. Lists of the codes classed as probable incorrectly coded and unusual morphologies are given in Appendix B.

For all cases highlighted with a probable incorrectly coded or unusual morphology, and particularly when a cancer registry has a high percentage of such cases, cancer registries should consider whether these cases have been correctly coded and whether corrections are required. The coding that has been provided might be correct and reflect an uncommon or unusual tumour at a specific gynaecological site. This information is presented to highlight potential coding issues that may require further investigation.

Throughout this section, the terms “unclassified” or “unspecified” are defined as:

- *Unclassified* - not classified according to any specific WHO classification for the anatomical site
- *Unspecified* - malignant but unknown tumour type or histogenesis

Trends in morphology system 2000-2010

Although the NCRS English regional offices were required to submit morphology data to ONS according to ICD-O-2, cancer registry data highlights what system they used originally (prior to ONS submission) to code morphology of the tumour. As trends are similar for each type of gynaecological cancer, Figure 31 shows the trend in the ICD-O system used for all gynaecological cancers from 2000 to 2010. Note that the recorded ICD-O system does not always reflect the morphology codes recorded (example see Morphology Information – Ovarian Cancer section).

For England, ICD-O-2 was used for up to 89% of cases up until 2008. From 2008, the number of cases defined using ICD-O-3 increased and almost half of all gynaecological cases in England were defined using ICD-O-3 in 2010. The devolved nations do not submit any data to the ONS and therefore were not required to submit all morphology codes according to ICD-O-2. For Northern Ireland, the majority of cases were defined according to ICD-O-2, only 29 cases were defined using ICD-O-3. For Scotland, cases were defined according to ICD-O-2 for the years 2000 to 2005 then ICD-O-3 from 2006 onwards. For Wales, there was no ICD-O system allocated to any cases, probably because Wales did not provide this information when submitting data for the NCDR. Overall, no ICD-O system was completed in fewer than 7% of cases.

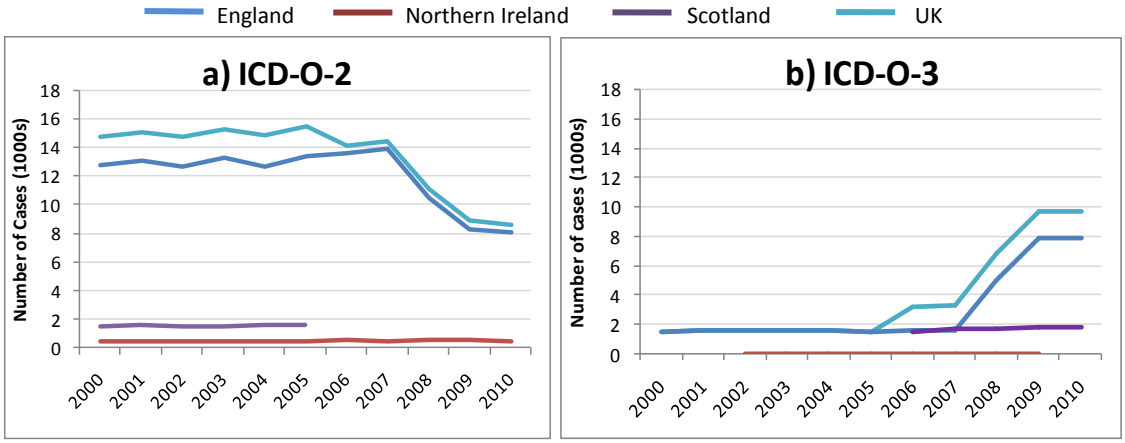

Figure 31: C51-57 Trends in ICD system, a) ICD-O-2 and b) ICD-O-3, 2000-2010.

Behaviour code – differences between the ONS and Registration service data item

As already mentioned, morphology is recorded under the ONS type5 data item in the NCDR. Morphology is also recorded under the registry derived data item regtype5. For NCRS English regional offices there were number of cases recorded with different behaviour codes under type5 and regtype5.

Table 12 illustrates different codes between type5 and regtype5 (not including cases with null entry in either data item). This indicates that numbers will be different depending on which data item is used to define behaviour. Some differences are plausible; for example, cases with a type5 behaviour code 3 and regtype5 behaviour code 1 could arise from ICD-O-3 to ICD-O-2 conversion, as ovarian borderline

cancers may have been allocated a behaviour code 1 (according to ICD-O-3) but converted to a behaviour code 3 for the ONS data (according to ICD-O-2).

However, some differences should be raised as a concern. In particular, in 2000-2006, West Midlands had 541 cases with type5 behaviour code 3 (malignant primary site) and regtype5 behaviour code 6 (malignant secondary site). The number of cases decreased substantially in 2007-2010. South West had 67 cases with type5 behaviour code 6 and regtype5 behaviour code 3.

Table 12: Number of mismatched type5 and regtype5 behaviour codes, 2000-2006 and 2007-2010.

Cancer Registry	Behaviour codes defined by		Number of cases with mismatch behaviour	
	type5	regtype5	2000-2006	2007-2010
Eastern	3	1	16	316
	3	2	1	-
	6	3	2	-
	3	5	9	3
East Midlands	3	1	1	4
	5	2	1	-
	3	5	-	1
	3	6	-	1
	5	3	-	3
London	3	1	94	144
	3	2	1	-
	3	6	-	1
	5	3	247	187
North West	1	5	9	-
	3	1	4	186
	3	2	8	2
	3	5	5	-
	3	6	1	1
	3	9	1	-
	5	1	-	1
	5	3	3	1
	6	3	4	-
	9	1	1	-
	9	3	49	30
	9	6	3	3
Northern & Yorkshire	3	1	1	357
	3	2	-	1
	3	5	-	1
	3	6	-	2
Oxford	5	3	-	1
	3	5	-	1
	3	6	-	1
South West	3	1	2	3
	3	2	2	1
	6	3	67	-
	3	5	2	14
	3	6	1	-
West Midlands	3	1	-	251
	3	5	1	-
	3	6	541	49
	3	9	1	-

Morphology Information – Ovarian Cancer

Figure 32 shows that for all cancer registries, the majority of cases had a behaviour code 3 (malignant primary site). Compared to other cancer registries, Scotland had a high percentage of cases with behaviour code 1 (uncertain benign or malignant, 16%). The most likely explanation is their use of ICD-O-3, according to which borderline morphologies were coded with a behaviour code 1. For comparative analyses of ovarian cancer, all borderline morphologies should be treated as if they have a behaviour code 3.

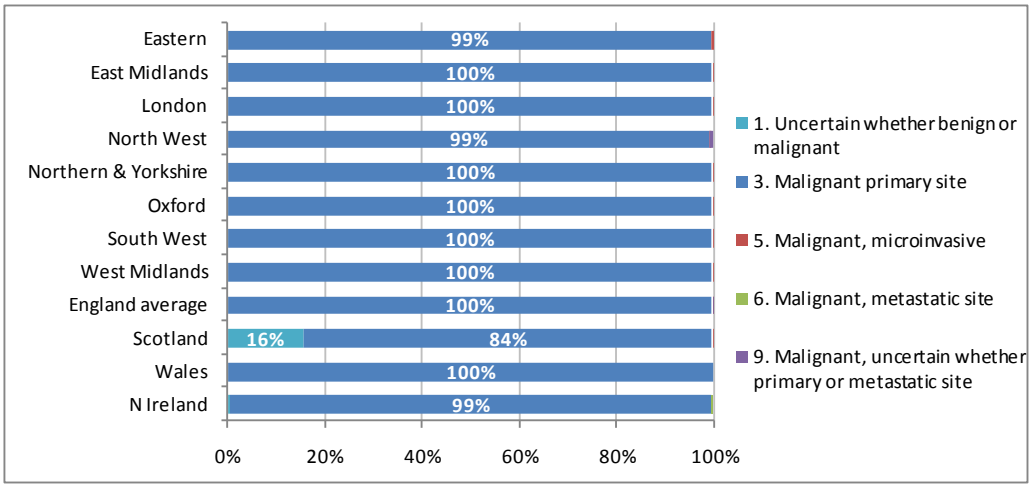

Figure 32: Ovarian Cancer (C56-57) proportion of cases with behaviour codes, 2007-2010.

Figure 33 shows the proportion of cases by morphology group. In 2000-2006, the most common morphology for ovarian cancer was unclassified epithelial; overall this group accounted for 34.7% of ovarian cases. London (48.9%) had the highest proportion of unclassified epithelial tumours whilst Northern Ireland (17.7%) had the lowest proportion. Serous carcinoma was the second most common morphology; overall this group accounted for 24.9% of ovarian cases. Northern Ireland (32.0%) had the highest proportion of serous carcinoma whilst North West (20.1%) had the lowest.

In 2007-2010, serous carcinoma became the most common morphology for ovarian cancer; overall this group accounted for 31.0% of ovarian cases. As in the first period, Northern Ireland (49.0%) had the highest proportion of serous carcinoma and North West (23.2%) had the lowest proportion. Unclassified epithelial tumours were the second most common morphology in 2007-2010; North West (37.3%) had the highest proportion and Northern Ireland (9.4%) had the lowest.

The third most common morphology group in both periods was the borderline group, which accounted for 10.7% of cases in 2000-2006 and 12.3% of cases in 2007-2010. East Midlands (2000-2006: 15.5%, 2007-2010: 18.3%) had the highest proportion of borderline cases whilst London (2000-2006: 4.9%, 2007-2010: 3.6%) and Northern Ireland (2007-2010: 3.6%) had the lowest.

Overall, between 2000-2006 and 2007-2010, there was an 8.3% decrease in unclassified epithelial cases and correspondingly, there was a 6.2% increase in serous carcinoma cases. By cancer registry, the biggest differences observed were for:

- London: There was a 16.1% decrease in unclassified epithelial tumours (2000-2006: 48.9%, 2007-2010: 32.8%) and a 12.9% increase in serous carcinomas (2000-2006: 23.5%, 2007-2010: 36.4%).
- Northern Ireland: There was a 17.0% increase in serous carcinomas (2000-2006: 32.0%, 2007-2010: 49.0%).
- West Midlands: There was a 10.2% decrease in unclassified epithelial tumours (2000-2006: 33.0%, 2007-2010: 22.8%) and an 8.2% increase in serous carcinomas (2000-2006: 24.2%, 2007-2010: 32.4%).
- Oxford: There was a 12.7% increase in miscellaneous and unspecified morphologies (2000-2006: 1.1%, 2007-2010: 13.8%). Cases recorded as a Malignant neoplasm NOS contribute to 87% of the miscellaneous group. This may reflect decreasing quality of the coding and/or pathological recording of the data, with 150 more cases recorded with unspecified morphologies in 2007-2010.
- Eastern: There was an 8.1% increase in borderline tumours (2000-2006: 9.0%, 2007-2010: 17.1%).

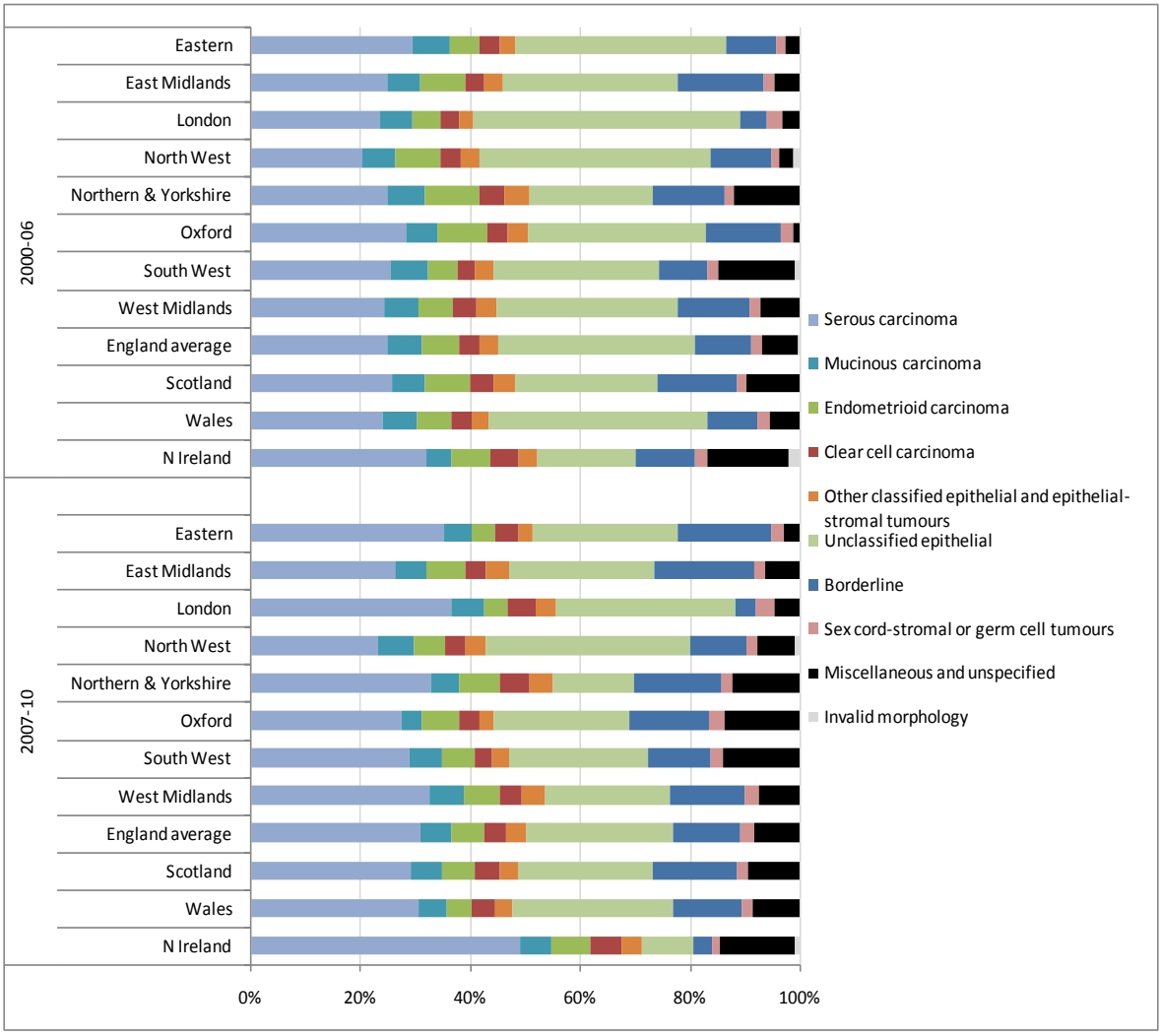

Figure 33: Ovarian Cancer (C56-57) morphology groupings by cancer registry, 2000-2006 and 2007-2010.

Table 13 shows the number and proportion of cases with probable incorrectly coded, unusual and invalid morphologies. Very few cases had probable incorrect codes; these contributed to 0.01% of overall cases in both periods. Northern Ireland (2000-2006: 0.22%, 2007-2010: 0.15%) had the highest proportions.

Overall, 0.18% (2000-2006) and 0.12% (2007-2010) of cases had unusual morphologies. In 2000-2006, West Midlands (0.26%) had the highest proportion of cases with unusual morphologies whilst the London (0.10%) had the lowest proportion. In 2007-2010, Oxford (0.24%) had the highest proportion of cases with unusual morphologies while Eastern and Northern Ireland had no cases with unusual morphologies.

Several cancer registries had a small number of cases with invalid morphologies, with Northern Ireland (2000-2006: 2.01%, 2007-2010: 0.89%) having the highest proportions out of all the cancer registries.

Table 13: Ovarian Cancer (C56-57) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010.

		2000-2006		2007-2010	
	Cancer registry	**N**	**% of cases**	**N**	**% of cases**
Probable incorrectly coded morphology	Eastern	2	0.04	-	-
	South West	-	-	1	0.03
	West Midlands		-	1	0.04
	England total	2	0.01	2	0.01
	Scotland	2	0.05	-	-
	Wales	-	-	1	0.06
	N Ireland	3	0.22	1	0.15
Unusual morphology	Eastern	10	0.22	-	-
	East Midlands	8	0.19	4	0.16
	London	8	0.10	9	0.21
	North West	9	0.17	5	0.17
	Northern & Yorkshire	7	0.13	4	0.14
	Oxford	4	0.18	3	0.24
	South West	13	0.19	3	0.08
	West Midlands	12	0.26	3	0.11
	England total	71	0.17	31	0.13
	Scotland	9	0.20	1	0.04
	Wales	5	0.18	1	0.06
	N Ireland	3	0.22	-	-
Invalid morphology	Eastern	2	0.04	-	-
	East Midlands	1	0.02	-	-
	London	3	0.04	1	0.02
	North West	60	1.14	25	0.84
	South West	65	0.94	-	-
	England total	131	0.32	26	0.11
	Scotland	-	-	2	0.08
	N Ireland	27	2.01	6	0.89

Morphology Information – Uterine Cancer

Figure 34 shows that for all cancer registries, almost 100% of cases had behaviour code 3 (malignant primary site). Five cases had behaviour code 5 (malignant, microinvasive), six cases had behaviour code 6 (malignant, metastatic site) and three cases have behaviour code 9 (malignant, uncertain whether primary or metastatic site).

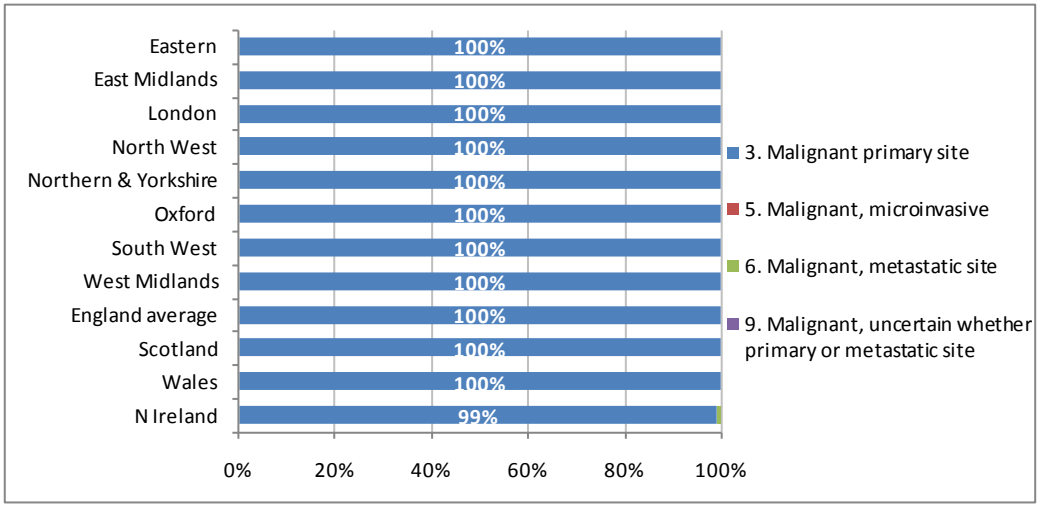

Figure 34: Uterine Cancer (C54-55) proportion of cases with behaviour codes, 2007-2010.

Figure 35 shows the proportion of uterine cancers by morphology group. The most common morphology for uterine cancers was endometrioid adenocarcinoma, this group accounted for almost 78% in both periods. In 2000-2006, Eastern (81.0%) had the highest proportion of cases with endometrioid adenocarcinoma and London (73.1%) had the lowest. In 2007-2010, Northern Ireland (81.4%) had the highest proportion of cases with endometrioid adenocarcinoma and Oxford (72.9%) had the lowest.

In 2000-2006, mixed epithelial and mesenchymal tumours were the second most common morphology; this group accounted for almost 5.8% of uterine cases. Between cancer registries, the proportion of mixed epithelial and mesenchymal tumours ranged from 5% to 7%. In 2007-2010, clear cell and papillary serous carcinomas were the second most common morphology; this group accounted for 7.4% of cases; Scotland (9.3%) had the highest proportion and London (6.1%) the lowest.

Comparing the two periods, overall differences in proportions were small. Most notably, between 2000-2006 and 2007-2010, there was a 2.8% increase in clear cell and papillary serous tumours and a 2.5% decrease in other classified and unclassified carcinoma which may be due to improvements in coding. By cancer registry, slightly larger differences were found for:

- Northern Ireland: There was a 5.9% increase in endometrioid adenocarcinomas (2000-2006: 75.5%, 2007-2010: 81.4%).
- Oxford: There was a 6.3% decrease in endometrioid adenocarcinomas (2000-2006: 79.2%, 2007-2010: 72.9%).
- London: There was a 5.7% decrease in other classified and unclassified carcinomas (2000-2006: 9.1%, 2007-2010: 3.4%).

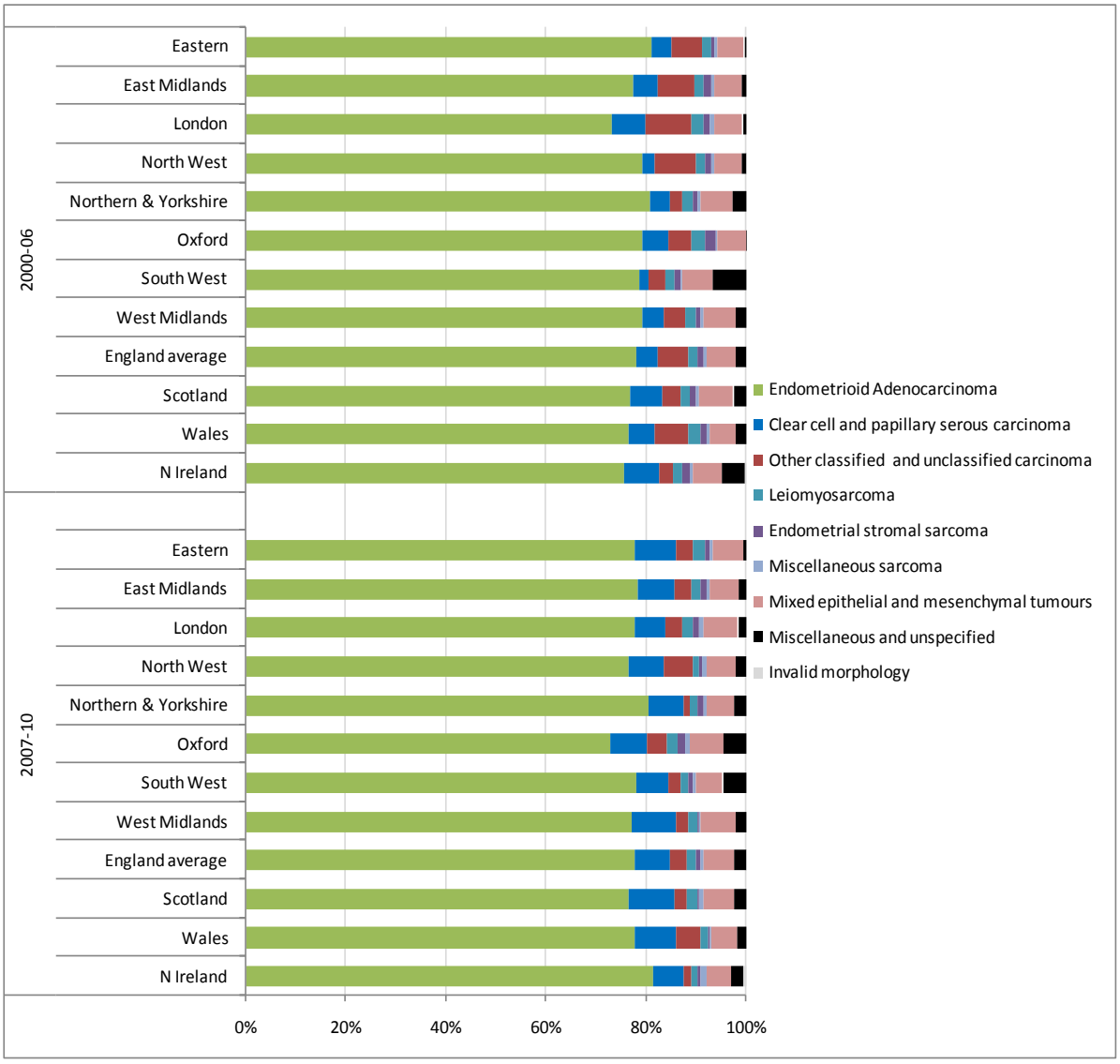

Figure 35: Uterine Cancer (C54-55) morphology groupings by cancer registry, 2000-2006 and 2007-2010.

Table 14 shows the number and proportion of cases with probable incorrectly coded, unusual and invalid morphologies. Two cancer registries (Wales and Northern Ireland) had a total of three cases with probable incorrect codes, all in 2000-2006.

Overall, 0.01% (2000-2006) and 0.02% (2007-2010) of cases had unusual morphologies. Five of the eleven cancer registries did not have cases with unusual morphologies. The proportion of cases with unusual morphologies was highest for South West and London (0.03%) in 2000-2006 and Oxford (0.15%) in 2007-2010.

Two cancer registries had cases with invalid morphology with Northern Ireland (2000-2006: 0.34%, 2007-2010: 0.68%) having the highest proportions.

Table 14: Uterine Cancer (C54-55) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010.

		2000-2006		2007-2010	
	Cancer registry	**N**	**% of cases**	**N**	**% of cases**
Probable incorrectly coded morphology	Wales	1	0.04	-	-
	N Ireland	2	0.17	-	-
Unusual morphology	East Midlands	-	-	2	0.07
	London	2	0.03	-	-
	Oxford			2	0.15
	South West	2	0.03	2	0.05
	England total	4	0.01	6	0.02
	Scotland	-	-	1	0.04
	Wales	1	0.01	-	-
Invalid morphology	North West	7	0.15	3	0.09
	England total	7	0.02	3	0.01
	N Ireland	4	0.34	6	0.68

Morphology Information – Cervical Cancer

Figure 36 shows that for all cancer registries, the majority of cases had behaviour code 3 (malignant primary site), with proportions varying from 79% (Oxford) to 100% (Northern Ireland and Wales). Compared with other gynaecological sites, where proportions of cases with behaviour code 5 (malignant, microinvasive) were 5% or lower, for cervical cancer, a number of cancer registries had higher proportions of cases with behaviour code 5, with Oxford having the highest proportion (21%). One case had a behaviour code 6 and two cases had behaviour code 9.

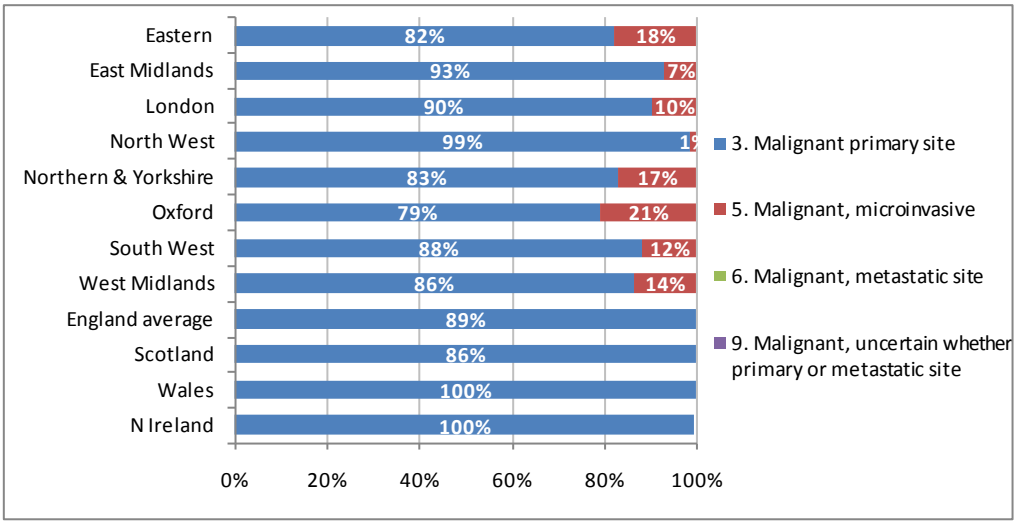

Figure 36: Cervical Cancer (C53) proportion of cases with behaviour codes, 2007-2010.

Figure 37 shows the proportion of cervical cases by morphology group. The most common morphology in cervical cancer was squamous carcinoma, overall accounting for 67.7% (2000-2006) to 69.1% (2007-2010) of cases. Scotland had the highest proportion of squamous carcinomas (2000-2006: 74.5%, 2007-2010: 75.0%), whilst East Midlands (63.9%) had the lowest proportions in 2000-2006 and North West (65.3%) had the lowest proportion in 2007-2010.

The second most common morphology was adenocarcinoma, this group accounted for 18.8% (2000-2006) to 19.7% (2007-2010) of all cervical cases. Eastern (2000-2006: 22.7%, 2007-2010: 24.9%) had the highest proportion of cases with adenocarcinomas, whilst Northern & Yorkshire (2000-2006: 15.3%, 2007-2010: 16.1%) had the lowest proportions. The remaining morphologies accounted for less than 15% of cervical cases.

Overall the proportions of cases by morphology were similar between 2000-2006 and 2007-2010 with differences no greater than 2.1%. By NCRS regional office, there were a number of slightly larger differences, for:

- London and West Midlands: The proportion of cases with squamous carcinoma increased by 4.7% (2006-2006: 64.0%, 2007-2010: 68.7%) and 4.4% (2006-2006: 66.8%, 2007-2010: 71.2%) respectively.
- London and East Midlands: The proportion of cases with unclassified epithelial tumours decreased by 5.5% (2006-2006: 9.8%, 2007-2010: 4.3%) and 4.3% (2006-2006: 7.2%, 2007-2010: 2.9%) respectively.

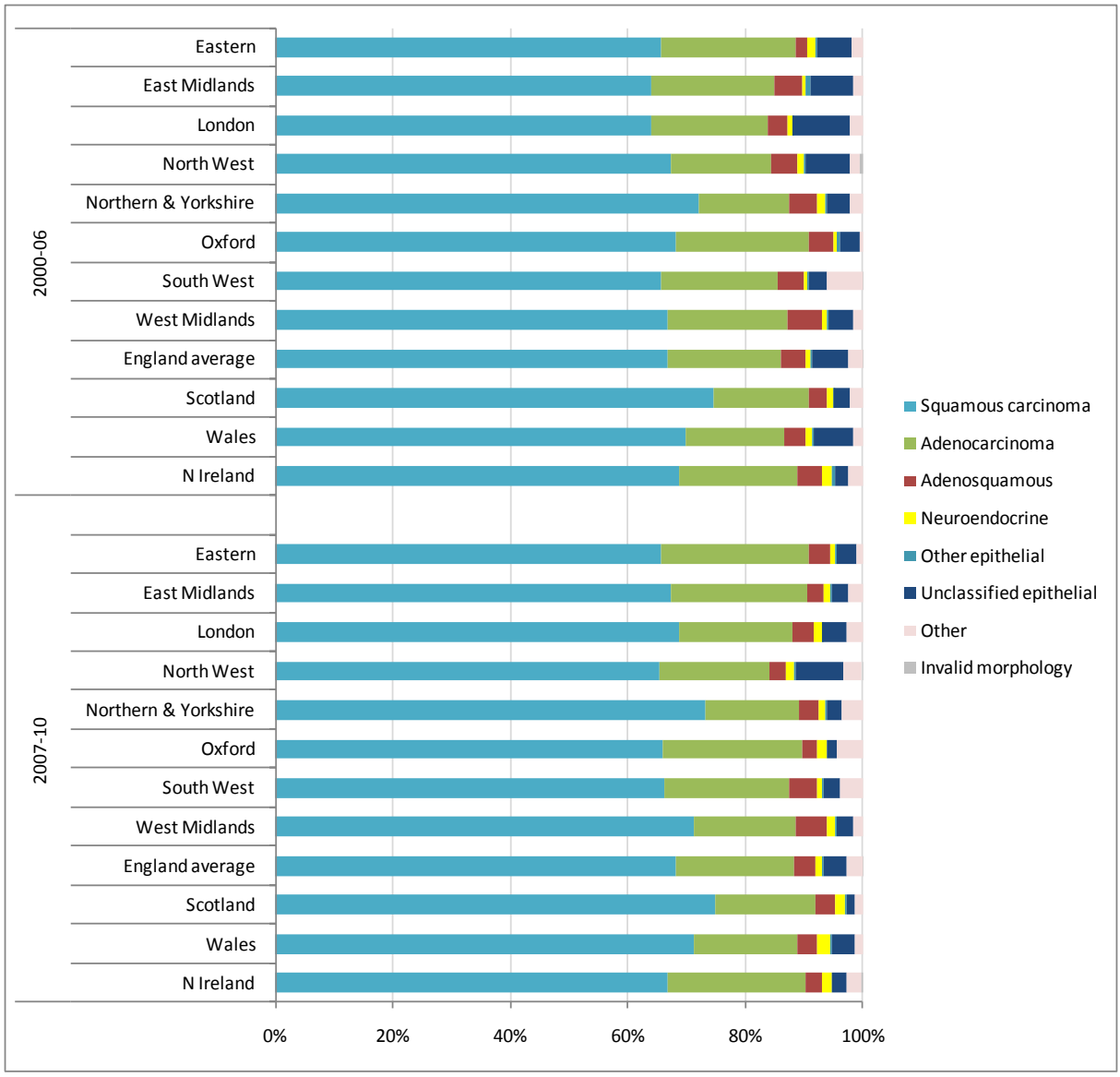

Figure 37: Cervical Cancer (C53) morphology groupings by cancer registry, 2000-2006 and 2007-2010.

Table 15 shows the number and proportion of cases with probable incorrectly coded, unusual and invalid morphologies. Four NCRS regional offices have one case each coded with probable incorrect codes in 2007-2010.

Overall, around 0.7% of cases had unusual morphologies. Wales had the highest proportion with unusual morphologies in 2000-2006 accounting for 0.96% of cases and Northern Ireland had the highest proportion in 2007-2010 accounting for 1.42% of cases.

North West, South West and Northern Ireland had a small proportion of cases with invalid morphology.

Table 15: Cervical Cancer (C53) number and proportion of all tumours, with probable incorrectly coded morphology, unusual morphology and invalid morphology, 2000-2006 and 2007-2010.

		2000-2006		2007-2010	
	Cancer registry	**N**	**% of cases**	**N**	**% of cases**
Probable incorrectly coded morphology	East Midlands	-	-	1	0.09
	North West	-	-	1	0.07
	Northern & Yorkshire	-	-	1	0.06
	South West	-	-	1	0.07
	England total	-	-	4	0.04
Unusual morphology	Eastern	11	0.79	6	0.63
	London	18	0.57	17	0.97
	East Midlands	15	0.81	8	0.71
	North West	18	0.73	11	0.79
	Northern & Yorkshire	16	0.58	11	0.70
	Oxford	3	0.40	2	0.43
	South West	17	0.71	8	0.56
	West Midlands	16	0.85	10	0.90
	England total	114	0.68	73	0.75
	Scotland	10	0.49	3	0.24
	Wales	11	0.96	7	1.05
	N Ireland	2	0.34	6	1.42
Invalid morphology	North West	14	0.57	2	0.14
	South West	1	0.04	-	-
	England total	15	0.09	2	0.02
	N Ireland	-	-	1	0.24

Morphology Information – Vulval Cancer

Figure 38 shows that for all cancer registries, the majority of cases had a behaviour code 3 (malignant primary site). With exception to Northern Ireland and Wales, the remaining cancer registries had a small percentage of cases with a behaviour code or 5 (malignant, microinvasive). Two cases from North West had a behaviour code 9 (malignant, uncertain whether primary or metastatic site).

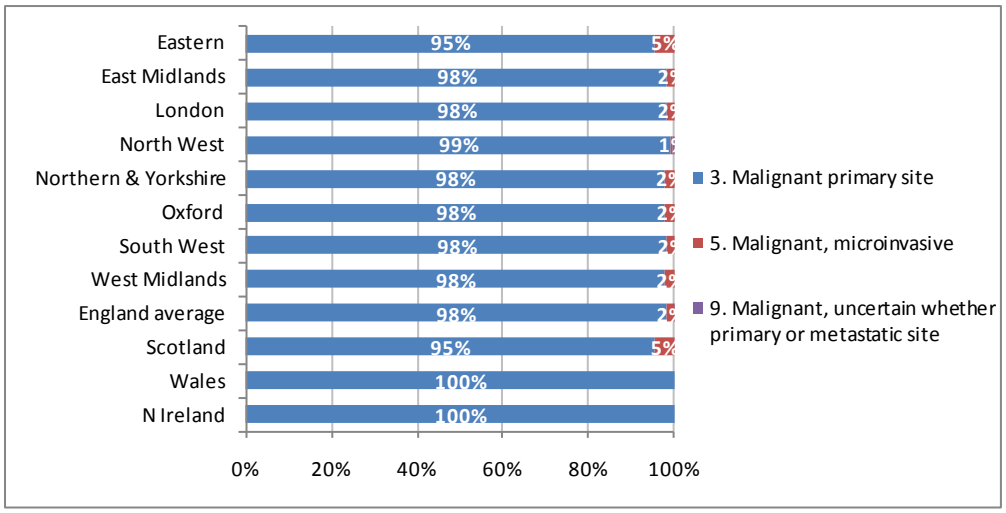

Figure 38: Vulval Cancer (C51) proportion of cases with behaviour codes, 2007-2010.

Figure 39 show the proportion of cases by morphology group. Comparisons between 2000-2006 and 2007-2010 (morphology groups) and by cancer registry were based on small numbers.

Squamous carcinoma was the most common morphology for vulval cancers; this group accounted for 81.3% (2000-2006) to 83.1% (2007-2010) of cases. In 2000-2006, Northern Ireland (87.3%) had the highest proportion of squamous carcinomas, whilst South West (76.9%) had the lowest proportion. In 2007-2010, North West (86.7%) had the highest proportion of squamous carcinomas, whilst South West (76.2%) had the lowest.

Melanocytic tumours and adenocarcinomas were the next most common morphologies, both these groups accounted for approximately 5% of vulval cancers. In 2007-2010, London and South West (6.5%) had the highest proportions of adenocarcinomas and Northern Ireland (2.1%) had the lowest proportion. In the same period, Northern Ireland (8.3%) had the highest proportion of melanocytic cases and Oxford (1.6%) had the lowest.

Overall, differences in proportions between 2000-2006 and 2007-2010 were small (2.5% or less). Other epithelial tumours contributed to 5.2% of all cases in 2000-2006 however, this decreased to 2.7% in 2007-2010. By cancer registry, the most notable differences were observed for:

- London: There was a 6.9% decrease in other classified and unclassified epithelial cases (2000-2006: 9.7%, 2007-2010: 2.8%).
- Scotland: There was a 5.3% increase in squamous carcinomas (2000-2006: 80.1%, 2007-2010: 85.4%).
- Northern Ireland: There was a 4.7% increase in melanocytic cases (2000-2006: 3.6%, 2007-2010: 8.3%).

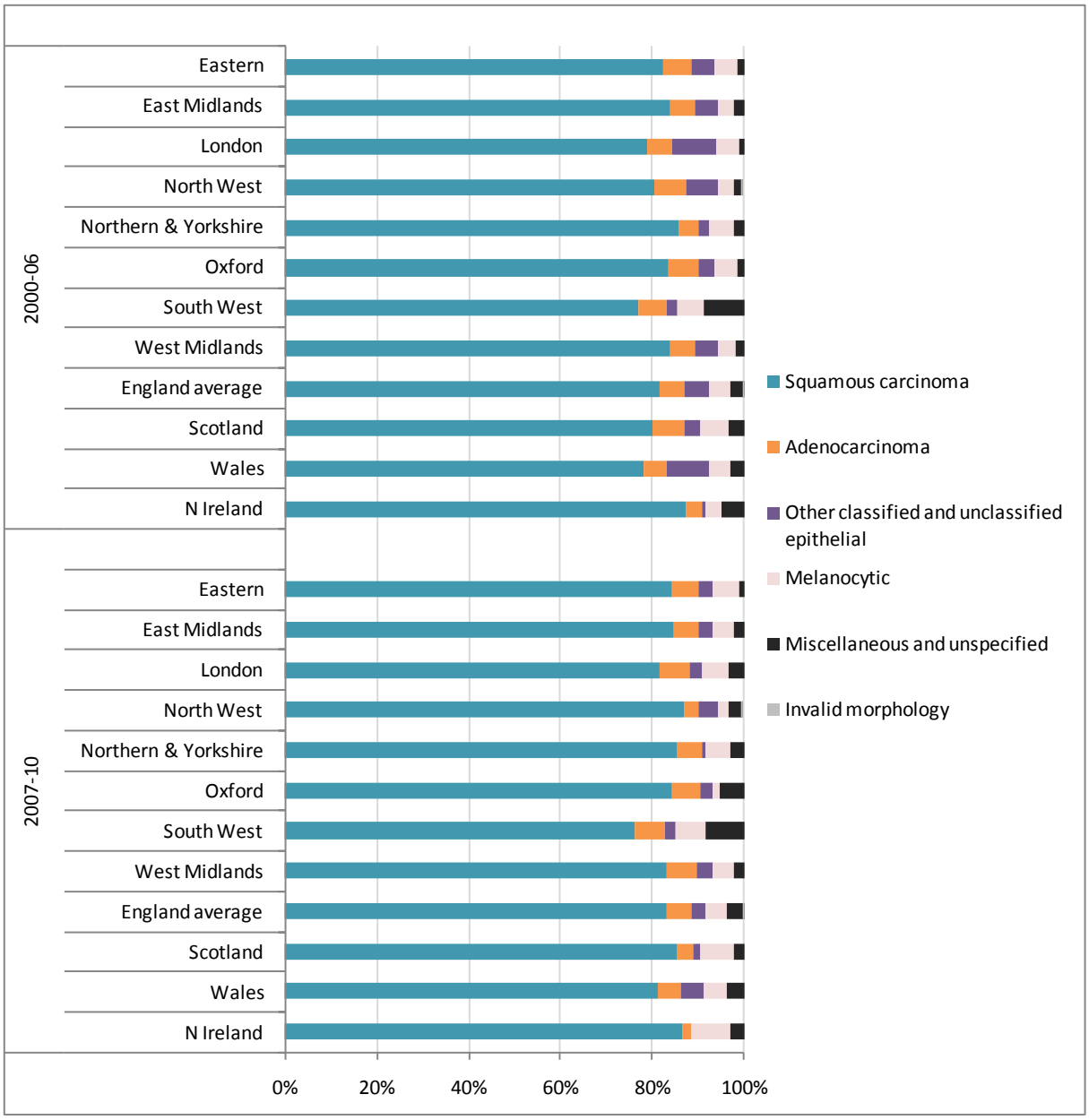

Figure 39: Vulval Cancer (C51) morphology groupings by cancer registry, 2000-2006 and 2007-2010.

Table 16 shows the number and proportion of cases with unusual and invalid morphologies. Overall, in 2000-2006 and 2007-2010, 0.13% and 0.08% of cases respectively had unusual morphologies. East Midlands (0.43%) and Oxford (0.54%) had the highest proportions in 2000-2006 and 2007-2010 respectively.

Three cases in 2000-2006 and two cases in 2007-2010 had invalid morphologies, all from North West.

Table 16: Vulval Cancer (C51) number and proportion of all tumours with unusual morphology and invalid morphology, 2000-2006 and 2007-2010.

		2000-06		2007-10	
	Cancer registry	**N**	**% of cases**	**N**	**% of cases**
Unusual morphology	Eastern	1	0.17	-	-
	East Midlands	3	0.43	1	0.21
	London	-	-	1	0.15
	Northern & Yorkshire	-	-	1	0.20
	Oxford	1	0.35	1	0.54
	South West	4	0.39	-	-
	England total	9	0.15	4	0.10
	Scotland	1	0.15	-	-
Invalid morphology	North West	3	0.37	2	0.35
	England total	3	0.05	2	0.05

Morphology Information – Vaginal Cancer

Figure 40 shows that for all cancer registries, the majority of cases had a behaviour code 3 (malignant primary site). Compared to other cancer registries, North West had a high percentage of cases with behaviour code 9 (malignant, uncertain whether primary or metastatic site), with seven such cases (6%). Three cases had a behaviour code 5 (malignant, microinvasive).

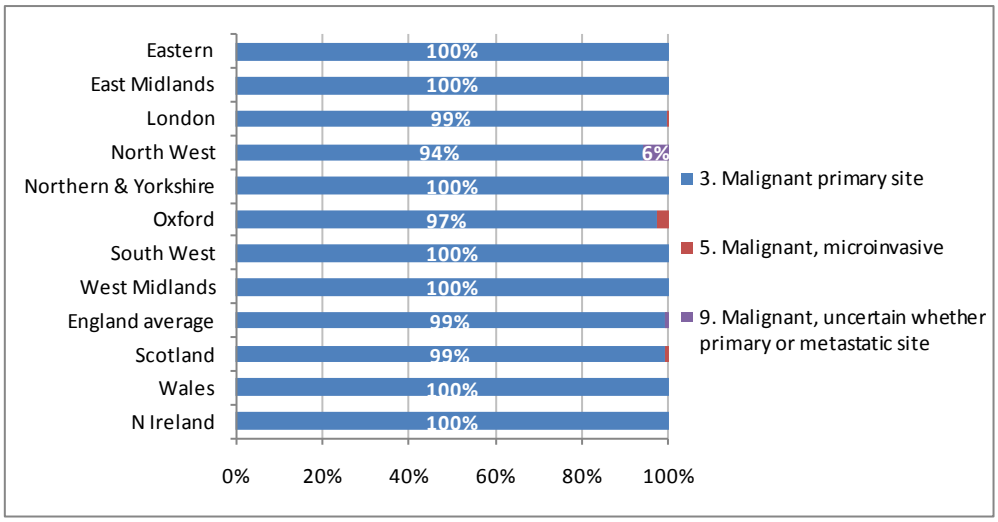

Figure 40: Vaginal Cancer (C52) proportion of cases with behaviour codes, 2007-2010.

Figure 41 shows the proportion of cases by morphology group. Comparisons between 2000-2006 and 2007-2010 (morphology groups) and by cancer registry were based on small numbers.

Squamous carcinoma was the most common morphology for vaginal cancers, this group accounted for 62.7% (2000-2006) to 61.7% (2007-2010) of cases. Scotland (2000-2006: 73.8%, 2007-2010: 75.6%) had the highest proportion of squamous carcinomas, whilst Wales (2000-2006: 55.1%) and East Midlands (2007-2010: 51.9%) had the lowest.

Adenocarcinomas were the second most common morphology; this group accounted for 13.0% (2000-2006) to 15.2% (2007-2010) of vaginal cancers. East Midlands (2000-2006: 18.4%, 2007-2010: 27.4%) had the highest proportion and Scotland (2000-2006: 4.8%, 2007-2010: 6.7%) had the lowest.

Overall differences in proportions between 2000-2006 and 2007-2010 were small (3.6% or less). By cancer registry, the most notably difference were found for:

- West Midlands: There was a 10.4% decrease in squamous carcinomas (2000-2006: 65.5%, 2007-2010: 55.1%).
- East Midlands and Northern Ireland: There was a 9.0% and 9.3% increase in adenocarcinomas respectively (East Midlands – 2000-2006: 18.4%, 2007-2010: 27.4%; Northern Ireland - 2000-2006: 6.9%, 2007-2010: 16.2%).
- South West and Northern Ireland: There was a 5.6% and 6.4% decrease in other and unclassified epithelial tumours respectively (South West – 2000-2006: 9.5%, 2007-2010: 3.8%; Northern Ireland - 2000-2006: 17.2%, 2007-2010: 10.8%).
- South West: There was a 6.3% decrease in miscellaneous and unspecified tumours (2000-2006: 14.7%, 2007-2010: 8.5%).

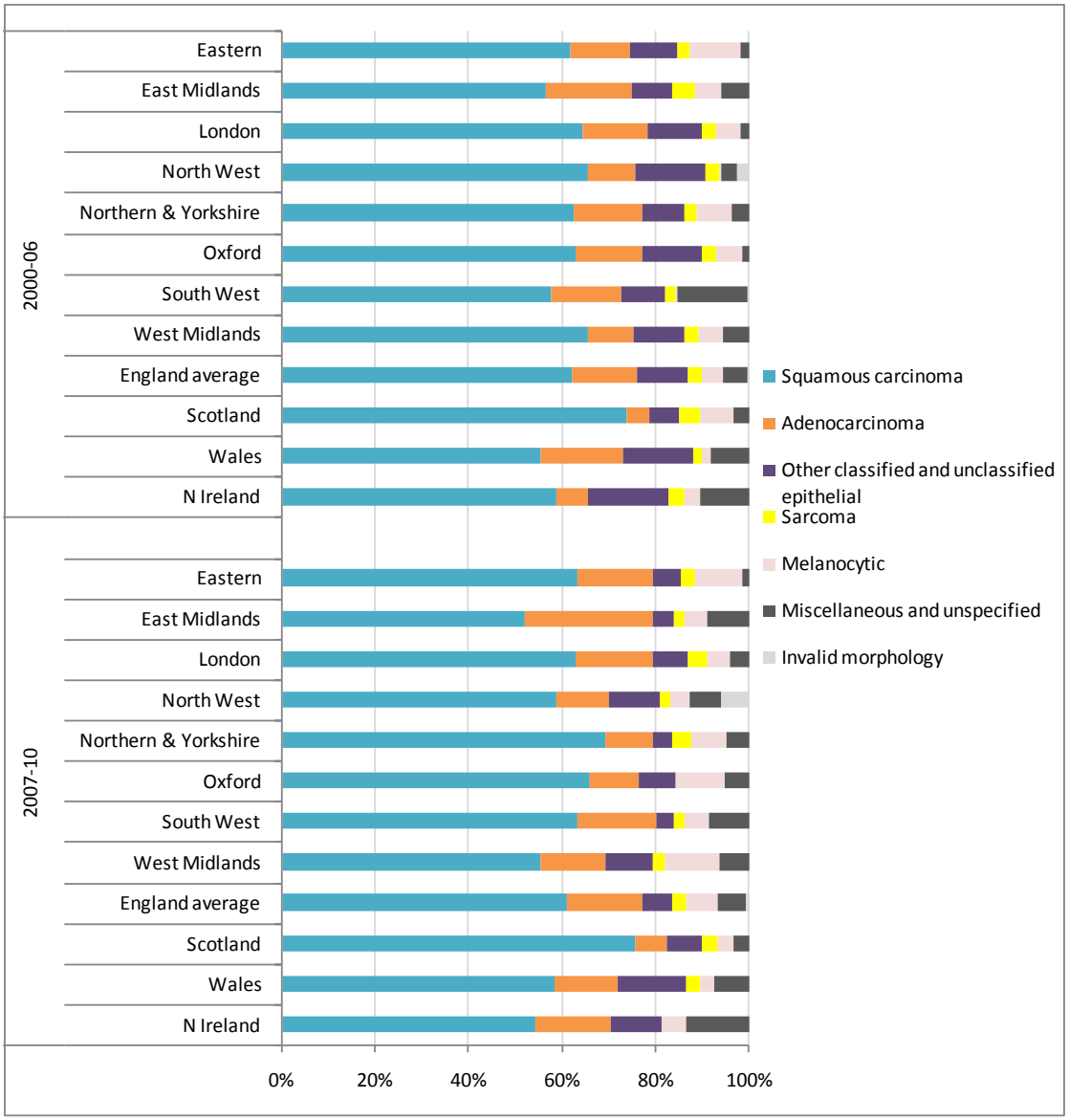

Figure 41: Vaginal Cancer (C52) morphology groupings by cancer registry, 2000-2006 and 2007-2010.

Table 17 shows the number and proportion of cases with unusual and invalid morphologies. Overall, 2.14% of cases in 2000-2006 and 3.22% of cases in 2007-2010 had unusual morphologies. Northern Ireland (10.34%) and East Midlands (8.15%) had the highest proportions in 2000-2006 and 2007-2010 respectively. Although, these percentages are based on a small number of cases and so should be viewed with caution.

North West and South West had small proportions of cases with invalid morphologies.

Table 17: Vaginal Cancer (C52) number and proportion of all tumours unusual morphology and invalid morphology, 2000-2006 and 2007-2010.

		2000-06		2007-10	
	Cancer registry	**N**	**% of cases**	**N**	**% of cases**
Unusual morphology	Eastern	1	0.92	1	1.47
	London	5	1.82	5	2.87
	East Midlands	5	3.07	11	8.15
	North West	2	0.93	3	2.52
	Northern & Yorkshire	5	2.65	2	1.67
	Oxford	1	1.43	-	-
	South West	5	2.63	3	2.31
	West Midlands	5	3.45	4	5.13
	England total	29	2.14	29	3.36
	Scotland	2	1.38	1	1.11
	Wales	1	0.93	2	2.99
	N Ireland	3	10.34	2	5.41
Invalid morphology	North West	6	2.80	7	5.88
	South West	1	0.53	-	-
	England total	7	0.52	7	0.81

Treatment

The 2010 iteration of the NCDR has four flags which indicate whether a person has received hormone therapy, chemotherapy, radiotherapy or surgery. The first of these flags was not examined here as there were very few cases where hormone therapy was indicated; 1% of all gynaecological cases in the NCDR were recorded as having received this type of treatment.

Variation between cancer registries may occur due a number of reasons. Different cancer registries complete treatment data items in different ways. If there was no evidence that a patient received any form of treatment then Eastern, North West and East Midlands left the flag blank rather than assuming that the lack of information implied that no treatment was received. Wales supplied no treatment information and is therefore not reported in the charts. However, WCISU do collect treatment data and is available if requested. The other cancer registries indicate either 'Yes', 'No' or 'null' (no information entered). Variation in the proportion of cases recorded as having surgery may be the result of different sources of information or the way in which relevant surgery has been defined.

For all treatment flags, there should only be a 'Yes' flag if the treatment was received within six months of the diagnosis date. However, caution must be exercised when using the flag as it may underestimate the true treatment rates. For example, it is known that East Midlands decided not to actively collect radiotherapy treatment data locally as this information was to be provided centrally, via the Radiotherapy Episode Statistics (RES). Radiotherapy treatment rates for East Midlands derived from the NCDR flag are therefore underestimates of the true rate. Between cancer registries there may be other inconsistencies in the recording of treatment in the NCDR because of:

- differences in the source of information
- recording of all treatment information or only treatment with a curative intent
- the set of OPCS 41 codes used to define relevant treatment may differ between cancer registries.

The dates of treatment are not available in the NCDR, however, it is possible to supplement this information by linking to the HES data, for surgery or possible chemotherapy. As well as the radiotherapy dataset, in future there will also be a linked chemotherapy dataset available. In the COSD, treatment details such as intended treatment modality and intent of surgery are to become mandatory data items which may be incorporated into the specification for the NCDR.

Radiotherapy

Figure 42 shows the proportion of cases in 2008-2010 indicated as having received radiotherapy varied by cancer registry for each cancer. East Midlands reported the lowest proportion of patients identified as having received radiotherapy for all gynaecological sites (however, see the previous comment for East Midlands' treatment data). In total, around 42.6%, 34.8%, 20.6% and 15.3% of vaginal, cervical, uterine and vulval cancer patients received radiotherapy respectively. For East Midlands, the proportions of patients that had received radiotherapy were 14.0%, 13.4%, 6.5% and 5.2% for vaginal, cervical, uterine and vulval cancers respectively. Proportions from the devolved nations were comparable with proportions from the English NCRS regional offices (except East Midlands). As this kind of treatment is rarely administered for ovarian cancers, the proportion of patients that received radiotherapy was around 1-2% for patients with ovarian cancer. The variation between cancer registries in the proportion of patients receiving radiotherapy was most likely due to variation in the availability of data rather than differences in the way patients were treated (see the introduction in the treatment section).

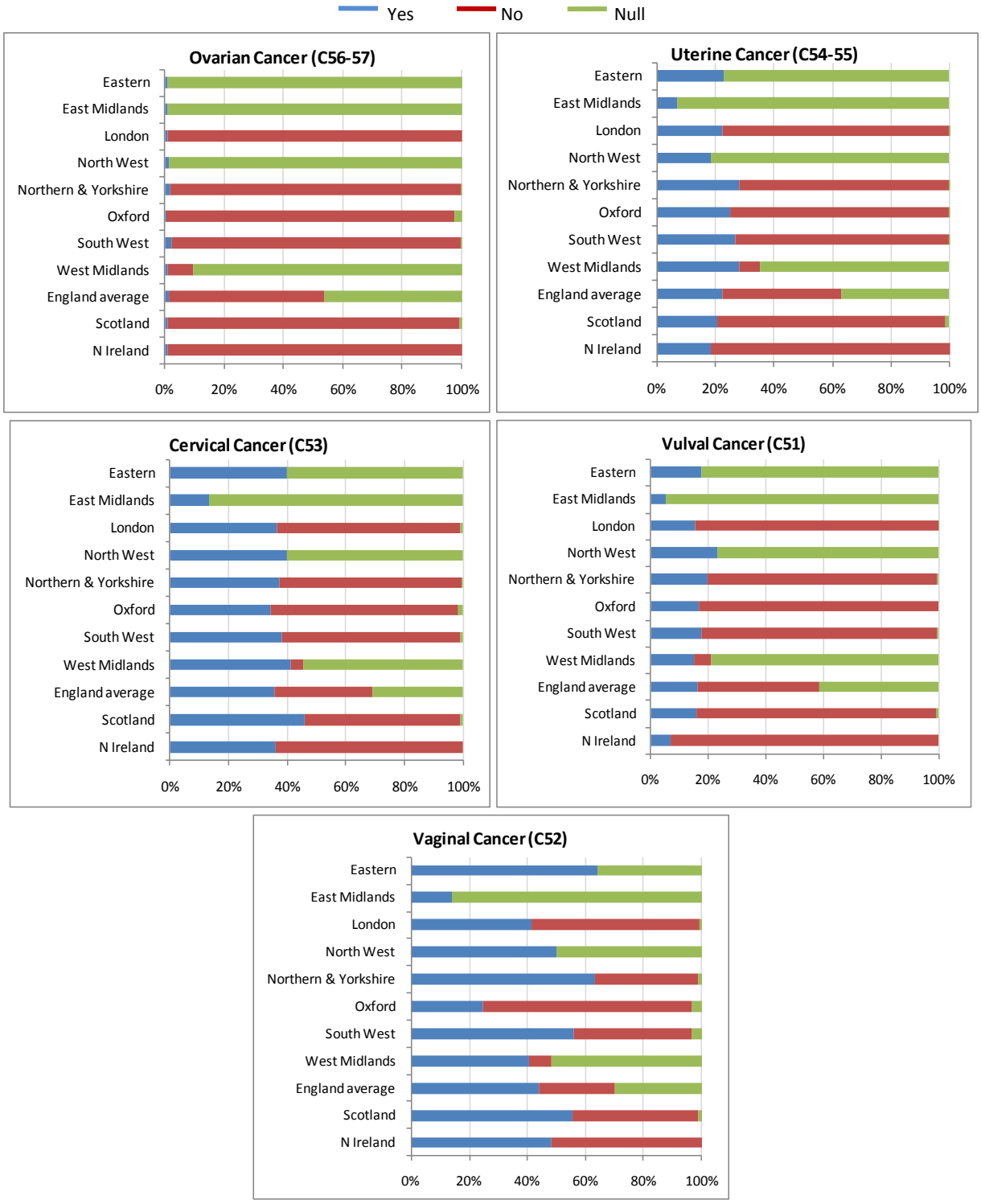

Figure 42: Proportion of cases that received radiotherapy (Yes), did not receive radiotherapy (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010.

Chemotherapy

Figure 43 shows the proportion of cases in 2008-2010 indicated as receiving chemotherapy varied between cancer registries. The proportions of vulval cancer patients that received chemotherapy were lower compared to the other four sites; proportions ranged from 2.7% (East Midlands) to 11.9% (Scotland). For vaginal cancers, 21.4-47.3% of patients received chemotherapy. For cervical cancer, around 21.3-46.7% of patients received chemotherapy, for uterine cancer patients around 7.9-22.4%, and for ovarian cancer patients around 39.5-56.7%. With the exception of vaginal cancers, East Midlands had the lowest proportion of cases that received chemotherapy. Except for ovarian cancer, Scotland had the highest proportions of patients that received chemotherapy. This variation may reflect differences in the availability and source of chemotherapy data rather as well as differences in the way patients were treated.

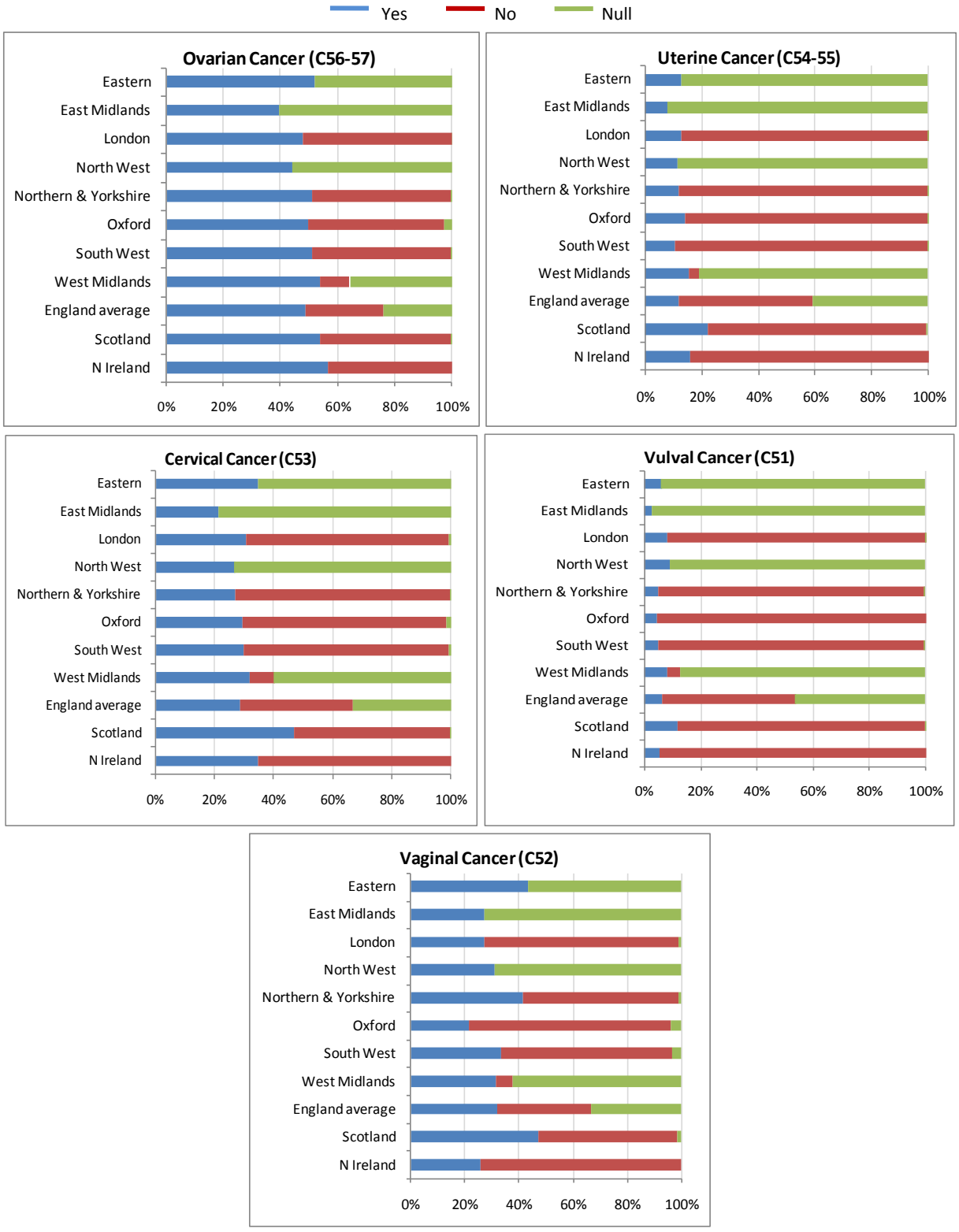

Figure 43: Proportion of cases that received chemotherapy (Yes), did not receive chemotherapy (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010.

Surgery

Figure 44 show the proportion of cases in 2008-2010 indicated as receiving surgery varied between cancer registries. The proportion of cases that underwent surgery was higher compared to those who were treated with radiotherapy or chemotherapy. In total, around 73.0%, 80.0%, 58.7% and 58.4% of vulval, uterine, cervical and ovarian cancers received surgery respectively. East Midlands had the lowest proportion of vulval and uterine cases reported as having surgery. The proportion of vaginal cancer patients that received surgery varied considerably from 10.8% (Scotland) to 76.9% (London). The proportion of cervical cancer patients that received surgery also varied considerably from 29.9% (Scotland) to 88.6% (London). For cervical cancer, Scotland classifies some procedures for example, loop excision as other therapy rather than surgery which may explain their lower surgery rate compared to other registries. Whilst these data may reflect some differences in how patients were treated, the variation between cancer registries might also be the result of differences in the sources of information or the way in which relevant surgery has been defined (please see the introduction in the treatment section).

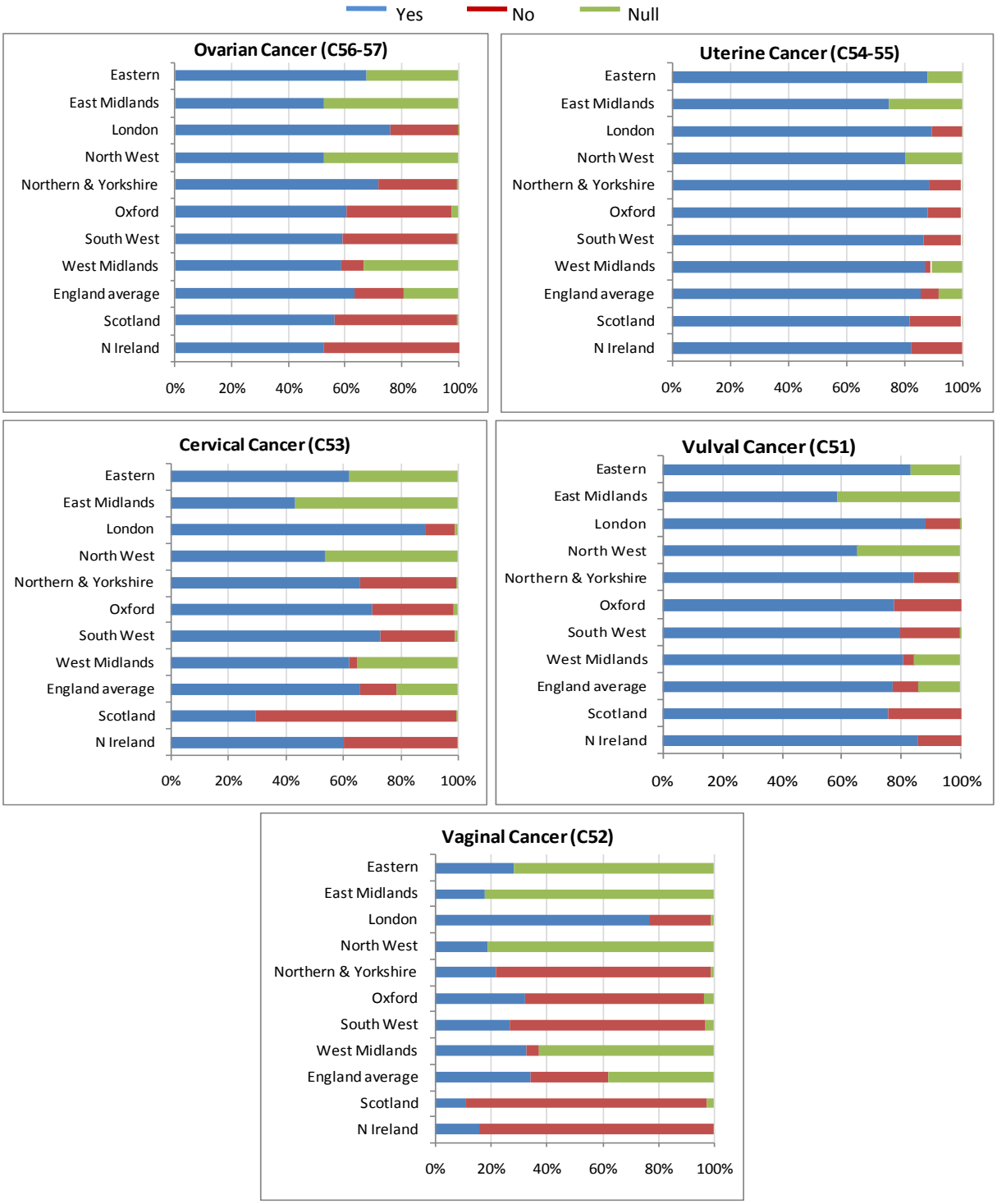

Figure 44: Proportion of cases that received surgery (Yes), did not receive surgery (No) and have no information regarding this treatment (Null) within 6 months of diagnosis, 2008-2010.

Appendix

Appendix A Stage – numbers by cancer registry, 2008-2010

Table A. 1. Ovarian, Uterine and Vulval Cancers, FIGO and if FIGO null, TNM stage – numbers by cancer registry, 2008-2010.

Site	Cancer registry	I	II	III	IV	Null
C56-57	Eastern	573	79	810	281	372
	East Midlands	257	47	163	116	1241
	London	335	138	660	208	1783
	North West	294	72	259	167	1484
	Northern & Yorkshire	405	95	560	161	954
	Oxford	153	45	135	104	530
	South West	357	82	261	112	2013
	West Midlands	347	92	646	279	613
	Scotland	456	96	305	144	940
	Wales	136	8	18	5	1068
	N Ireland	108	32	173	85	112
C54-55	Eastern	1615	164	179	106	243
	East Midlands	1080	206	118	37	720
	London	1695	497	480	79	1204
	North West	1062	223	192	44	1022
	Northern & Yorkshire	1448	208	254	121	503
	Oxford	445	76	97	89	307
	South West	1395	323	219	39	1115
	West Midlands	1330	251	255	94	309
	Scotland	-	-	-	-	2062
	Wales	669	12	4	2	787
	N Ireland	411	67	65	30	104
C51 (exc. BCC and melanoma, Paget disease)	Eastern	133	39	53	15	34
	East Midlands	50	11	16	3	224
	London	93	31	27	16	265
	North West	79	20	20	12	254
	Northern & Yorkshire	87	14	22	10	198
	Oxford	30	7	3	24	54
	South West	59	25	19	4	267
	West Midlands	72	23	21	8	167
	Scotland	-	-	-	-	294
	Wales	16	2	2	1	139
	N Ireland	29	3	7	3	18

Table A. 2: Cervical and Vaginal Cancers, FIGO stage – numbers by cancer registry, 2008-2010.

Site	Cancer registry	I	II	III	IV	Null
C53	Eastern	-	-	-	-	734
	East Midlands	438	59	33	41	274
	London	457	190	90	43	527
	North West	424	70	30	22	520
	Northern & Yorkshire	670	146	160	68	149
	Oxford	215	36	7	47	46
	South West	686	136	50	110	113
	West Midlands	471	164	79	88	54
	Scotland	406	65	19	24	458
	Wales	438	-	-	-	49
	N Ireland	190	36	57	27	24
C52	Eastern	-	-	-	-	53
	East Midlands	3	1	-	-	103
	London	-	8	10	5	107
	North West	3	2	3	5	77
	Northern & Yorkshire	4	5	8	4	66
	Oxford	2	1	-	3	22
	South West	1	2	-	2	88
	West Midlands	1	3	5	3	52
	Scotland	-	-	-	-	74
	Wales	-	-	-	-	51
	N Ireland	1	4	3	3	20

Table A. 3: Cervical and Vaginal Cancers, TNM stage – numbers by cancer registry, 2008-2010.

Site	Cancer registry	I	II	III	IV	Null
C53	Eastern	410	92	92	86	54
	East Midlands	144	22	4	12	663
	London	-	-	-	-	1307
	North West	84	9	16	30	927
	Northern & Yorkshire	7	1	1	-	1184
	Oxford	-	-	-	-	351
	South West	-	-	-	-	1095
	West Midlands	108	91	48	65	544
	Scotland	-	-	-	-	972
	Wales	213	9	11	4	250
	N Ireland	190	36	57	27	24
C52	Eastern	-	-	-	-	53
	East Midlands	1	-	-	-	106
	London	-	-	-	-	130
	North West	3	1	-	2	84
	Northern & Yorkshire	-	1	-	1	85
	Oxford	-	-	-	-	28
	South West	-	-	-	-	93
	West Midlands	-	3	2	3	56
	Scotland	-	-	-	-	74
	Wales	-	1	1	-	49
	N Ireland	1	4	3	3	20

Appendix B Morphology

Morphology code groupings

WHO site-specific codes sourced from
Tavassoli FA, Devilee P. Pathology and genetics, tumours of the breast and female genital organs, World Health Organization; 2003.

Table A. 4: Ovarian Cancer (C56-57) morphology groupings, 2000-2010.

Report Group	WHO Site-specific Codes	Other ICD-O WHO Codes
Serous carcinoma	8441, 8460, 8461	
Mucinous carcinoma	8470, 8480	8144, 8471, 8481, 8482, 8490
Endometrioid carcinoma	8380	8382, 8560, 8570
Clear cell carcinoma	8310	
Other classified epithelial and epithelial-stromal tumour	8020, 8070, 8120, 8313, 8323, 8381, 8931, 8933, 8950, 9000, 9014, 9015	8021, 8050-52, 8071-74, 8082, 8940, 8951, 8980, 9013
Unclassified epithelial	8140	8010, 8012, 8022, 8031-33, 8040, 8046, 8141, 8146, 8201, 8211, 8230, 8246, 8260, 8262, 8290, 8320, 8360, 8401, 8440, 8542, 8550, 8562, 8572, 8574
Borderline	8442, 8462, 8463, 8472	8473, 8451
Sex cord-stromal or germ cell tumours	8240, 8243, 8590, 8600, 8620, 8622, 8623, 8631, 8640, 8650, 8670, 8810, 9060, 9070, 9071, 9073, 9080, 9084, 9085, 9090, 9091, 9100, 9110, 9473	8241, 8244, 8330, 8340, 8621, 8630, 9064, 9081, 9101
Miscellaneous and unspecified	8013, 8041, 8090, 8200, 8450, 8840, 8890	8000-04, 8045, 8771, 8800-04, 8830, 8850, 8852, 8854, 8858, 8891, 8895, 8896, 8900, 8902, 8920, 8930, 8963, 9220, 9364, 9540, 9580

Table A. 5: Uterine Cancer (C54-55) morphology groupings, 2000-2010.

Report Group	WHO Site-specific Codes	Other ICD-O WHO Codes
Endometrioid Adenocarcinoma	8262, 8323, 8380, 8382, 8480, 8570	8022, 8050, 8140, 8141, 8200, 8201, 8210, 8211, 8230, 8260, 8261, 8263, 8440, 8461, 8481, 8482, 8490, 8550, 8560, 8574, 9110
Clear cell and papillary serous carcinoma	8310, 8441	8460
Other classified and unclassified carcinoma	8020, 8041, 8070	8010, 8012, 8021, 8031, 8032, 8046, 8052, 8071, 8072, 8074-76, 8143, 8221, 8240, 8245, 8246, 8350, 8500
Leiomyosarcoma	8890, 8891, 8893, 8895	8896
Endometrial stromal sarcoma	8930, 8931	8935
Miscellaneous sarcoma		8800-05, 8810, 8840, 8850, 8854, 8900, 8901, 8910, 8920, 8963, 8990, 8991, 9120
Mixed epithelial and mesenchymal tumours	8980, 8933	8033, 8381, 8940, 8950, 8951, 8981, 9014
Miscellaneous and unspecified	9100, 9105	8000, 8001, 8442, 8472, 8473, 8730, 8860, 8880, 9071, 9080, 9364, 9473

Table A. 6: Cervical Cancer (C53) morphology groupings, 2000-2010.

Report Group	WHO Site-specific Codes	Other ICD-O WHO Codes
Squamous carcinoma	8051, 8052, 8070-72, 8076, 8077, 8082, 8083, 8120	8050, 8073-75, 8084, 8123, 8130
Adenocarcinoma	8140, 8144, 8262, 8310, 8380, 8441, 8480, 8482, 8490, 9110	8141, 8201, 8210, 8260, 8261, 8263, 8323, 8384, 8440, 8460, 8461, 8470, 8481, 8570, 8574
Adenosquamous	8015, 8560	
Neuroendocrine	8013, 8041, 8240	8246
Other epithelial	8020, 8200	8021, 8230, 8472
Unclassified epithelial		8010, 8012, 8022, 8032, 8040, 8046, 8090, 8092, 8094, 8124, 8143, 8147, 8320, 8430, 8550
Other	8720, 8890, 8910, 8933, 8980, 9120, 9540, 9581	8000-02, 8033, 8800, 8801, 8803, 8804, 8810, 8891, 8896, 8900, 8901, 8930, 8950, 8951, 8963, 8990, 9364, 9473

Table A. 7: Vulval Cancer (C51) morphology groupings, 2000-2010.

Report Group	WHO Site-specific Codes	Other ICD-O WHO Codes
Squamous carcinoma	8051, 8052, 8070-72, 8083, 8090	8032, 8073-76, 8091-94, 8097, 8123, 8231
Adenocarcinoma	8041, 8140, 8200, 8400, 8402, 8407, 8410, 8542, 8940	8211, 8260, 8310, 8390, 8401, 8408, 8480
Other classified and unclassified epithelial		8010, 8011, 8012, 8020, 8246, 8320
Melanocytic	8720	8721, 8723, 8730, 8742-46, 8770-72, 8560
Miscellaneous and unspecified	8247, 8804, 8832, 8841, 8850, 8890	8000-02, 8800, 8801, 8803, 8833, 8851, 8854, 8858, 8860, 8891, 8900, 8920, 8950, 8963, 8980, 9120, 9231

Table A. 8: Vaginal Cancer (C52) morphology groupings, 2000-2010.

Report Group	WHO Site-specific Codes	Other ICD-O WHO Codes
Squamous carcinoma	8051, 8052, 8070-72	8032, 8073, 8074, 8076, 8094, 8123
Adenocarcinoma	8140, 8263, 8310, 8380, 8480, 9110	8144, 8260, 8262, 8441, 8450, 8460, 8481, 8490
Other classified and unclassified epithelial	8020, 8041, 8200, 8560	8010, 8012, 8021, 8046, 8050, 8143, 8230, 8246, 8542
Sarcoma	8890, 8910	8800, 8801, 8803, 8891, 8900, 8930, 9120
Melanocytic	8720	8721, 8730, 8744, 8770-72
Miscellaneous and unspecified	8933, 8980, 9071	8000, 8001, 8004, 8033, 8950, 8951, 9100

List of probable incorrectly coded, unusual and invalid morphologies

All the codes included here are included in a morphology group. However, we additionally and separately highlight them as “probable incorrectly coded” or “unusual”.

Table A. 9: Probable incorrectly coded morphologies, 2000-2010.

Site	Code	ICD-O Description
Ovarian (C56-57)	8040	Tumourlet (description for 8040/1 but case coded as 8040/3)
	8045	Small cell-large cell carcinoma
	8090	Basal cell carcinoma, NOS (C44.*)
	8146	Monomorphic adenoma (description for 8146/0 but case coded as 8146/3)
	8401	Apocrine adenocarcinoma
	8542	Paget's Disease, extramammary
	8562	Epithelial-myoepithelial carcinoma
	9220	Chondrosarcoma, NOS (C40.*, C41.*)
Uterine (C54-55)	8245	Adenocarcinoid tumour
	8350	Nonencapsulated sclerosing carcinoma (C73.9)
	8500	Infiltrating duct carcinoma, NOS (C50.*)
Cervical (C53)	8040	Tumourlet (description for 8040/1 but case coded as 8040/3)
	8141	Scirrhous adenocarcinoma
	8147	Basal cell adenocarcinoma
	8472	Mucinous cystic tumour of borderline malignancy (C56.9) (description for 8472/0 but case coded as 8472/3)
	8550	Acinar cell carcinoma

Table A. 10: Unusual morphologies, 2000-2010.

Site	Code	ICD-O Description
Ovarian (C56-57)	8890	Leiomyosarcoma NOS
	8891	Epithelioid leiomyosarcoma
Uterine (C54-55)	8076	Squamous cell carcinoma, micro-invasive
	8200	Adenoid cystic carcinoma
	8860	Angiomyolipoma (description for 8860/0 but case coded as 8860/3)
	8880	Hibernoma (description for 8880/0 but case coded as 8880/3)
	8895	Myosarcoma
	9071	Yolk sac tumour
Cervical (C53)	8720	Malignant melanoma, NOS
	8890	Leiomyosarcoma NOS
	8930	Endometrial stromal sarcoma (C54.1)
	8933	Adenosarcoma
	8950	Mullerian mixed tumour (C54.*)
	8980	Carcinosarcoma NOS
Vulval (C51)	8246	Neuroendocrine carcinoma, NOS
	8841	Angiomyxoma (description for 8841/1 but case coded as 8841/3)
	8860	Angiomyolipoma (description for 8860/0 but case coded as 8860/3)
	8950	Mullerian mixed tumour (C54.*)
	8980	Carcinosarcoma NOS
Vaginal (C52)	8933	Adenosarcoma
	8950	Mullerian mixed tumour (C54.*)
	8951	Mesodermal mixed tumour
	8980	Carcinosarcoma NOS
	9071	Yolk sac tumour
	9100	Choriocarcinoma, NOS

Appendix C Surgical Treatment codes

Table A. 11: Gynaecological Surgery Codes (ST).

OPCS4 code	Description
P011	Clitoridectomy
P018	Other specified operations on clitoris
P019	Unspecified operations on clitoris
P031	Excision of Bartholin gland
P033	Excision of lesion of Bartholin gland
P035	Operations on Bartholin duct
P051	Total excision of vulva, simple / radical vulvectomy
P052	Partial excision of vulva
P054	Excision of lesion of vulva NEC
P058	Excision of vulva, other specified
P059	Excision of vulva, unspecified , Vulvectomy NEC
P061	Laser destruction of lesion of vulva
P062	Cryosurgery to lesion of vulva
P063	Cauterisation of lesion of vulva, diathermy
P068	Removal of lesion of vulva, Other specified
P069	Removal of lesion of vulva, Unspecified
P111	Excision of lesion of female perineum
P112	Laser destruction of lesion of female perineum
P113	Cauterisation of lesion of perineum, diathermy
P114	Destruction of lesion of female perineum NEC
P118	Other specified extirpation of lesion of female perineum
P119	Unspecified extirpation of lesion of female perineum
P136	Operations on female periurethral tissue NEC
P137	Excision of sweat gland bearing skin of female perineum
P171	Total colpectomy, total excision of vagina
P172	Partial colpectomy, partiel excision of vagina
P178	Excision of vagina, Other specified
P179	Excision of vagina, Unspecified
P201	Excision of lesion of vagina
P202	Laser destruction of lesion of vagina
P203	Cauterisation of lesion of vagina
P204	Cryotherapy to lesion of vagina
P208	Removal of lesion of vagina, Other specified
P209	Removal of lesion of vagina, Unspecified
Q011	Amputation of Cervix, Radical Trachelectomy
Q012	Wedge excision of cervix uteri and suture HFQ
Q013	Excision of lesion of cervix ,excision of polyp
Q014	Loop cone, Loop Diathermy, Loop Excision, (large loop excision of transformation zone), DLE, Hot Loop, DETZ, LLETZ, LEEP
Q018	Other specified excision of cervix uteri
Q019	Excision of lesion , Unspecified
Q021	Avulsion of lesion of cervix uteri
Q022	Laser destruction of lesion of cervix uteri
Q023	Cauterisation of lesion of cervix uteri
Q024	Cryotherapy to lesion of cervix uteri
Q028	Other specified destruction of lesion of cervix uteri
Q029	Unspecified destruction of lesion of cervix uteri
Q031	Knife cone biopsy of cervix uteri, Cold knife cone
Q032	Laser cone biopsy of cervix uteri
Q033	Cone biopsy of cervix uteri NEC
Q071	Radical Hysterectomy (removes uterus + cervix + vagina). Wertheims hysterectomy
Q072	Abdominal Hysterectomy and excision of periuterine tissue NEC.Radical Hysterectomy
Q073	Abdominal hysterocolpectomy NEC, Hysterocolpectomy NEC
Q074	TAH, Panhysterectomy, hysterectomy NEC (removes uterus + cervix). Total abdominal hysterectomy NEC

Table A. 11 continued: Gynaecological Surgery Codes (ST).

OPCS4 code	Description
Q075	Subtotal abdominal Hysterectomy (does not remove cervix)
Q078	Other specified abdominal excision of uterus
Q079	Unspecified abdominal excision of uterus
Q081	Vaginal hysterocolpectomy and excision of periuterine tissue
Q082	Vaginal hysterectomy and excision of periuterine tissue NEC
Q083	Vaginal hysterocolpectomy NEC
Q088	Other specified vaginal excision of uterus
Q089	Unspecified vaginal excision of uterus
Q091	Open removal of products of conception from uterus
Q092	Open myomectomy
Q093	Open excision of lesion of uterus NEC
Q102	Curettage of products of conception from uterus NEC
Q103	Dilation of cervix uteri and curettage of uterus NEC
Q108	Other specified curettage of uterus
Q109	Unspecified curettage of uterus
Q113	Evacuation of products of conception from uterus NEC
Q161	Vaginal excision of lesion of uterus
Q162	Balloon ablation of endometrium
Q163	Microwave ablation of endometrium NEC
Q171	Endoscopic resection of lesion of uterus
Q172	Endoscopic cauterisation of lesion of uterus, diathermy
Q173	Endoscopic cryotherapy to lesion of uterus
Q174	Endoscopic destruction of lesion of uterus NEC
Q176	Endoscopic microwave ablation of endometrium
Q221	Bilateral salpingoophorectomy
Q222	Bilateral salpingectomy NEC
Q223	Bilateral oophorectomy, excision of gonads
Q228	Other specified bilateral excision of adnexa of uterus
Q229	Bilateral Excision of adnexa of uterus unspoecified
Q231	Unilateral salpingoophorectomy NEC
Q232	Salpingoophorectomy of remaining solitary fallopian tube and ovary
Q233	Unilateral salpingectomy NEC
Q234	Salpingectomy of remaining solitary fallopian tube NEC
Q235	Unilateral oophorectomy NEC
Q236	Oophorectomy of remaining solitary ovary NEC
Q238	Other specified unilateral excision of adnexa of uterus
Q239	Unspecified unilateral excision of adnexa of uterus
Q241	Salpingoophorectomy NEC
Q242	Salpingectomy NEC
Q243	Oophorectomy NEC
Q248	Other specified other excision of adnexa of uterus
Q249	Unspecified other excision of adnexa of uterus
Q251	Excision of lesion of fallopian tube
Q258	Partial excision of fallopian tube, other specified
Q259	Partial excision of fallopian tube, unspecified
Q431	Excision of wedge of ovary
Q432	Excision of lesion of ovary - cystectomy
Q438	Other specified partial excision of ovary
Q439	Unspecified partial excision of ovary
Q441	Open cauterisation of lesion of ovary
Q448	Other specified open destruction of lesion of ovary
Q449	Unspecified open destruction of lesion of ovary
Q491	Endoscopic extirpation of lesion of ovary NEC
Q521	Excision of lesion of broad ligament of uterus
Q522	Destruction of lesion of broad ligament of uterus

About the National Cancer Intelligence Network

The National Cancer Intelligence Network (NCIN) is a UK-wide partnership operated by Public Health England. The NCIN coordinates and develops analysis and intelligence to drive improvements in prevention, standards of cancer care and clinical outcomes for cancer patients.