



# *Harmonizing the European cancer-registry data: lessons learnt from 2015 call*

*Carmen Martos and Francesco Giusti*

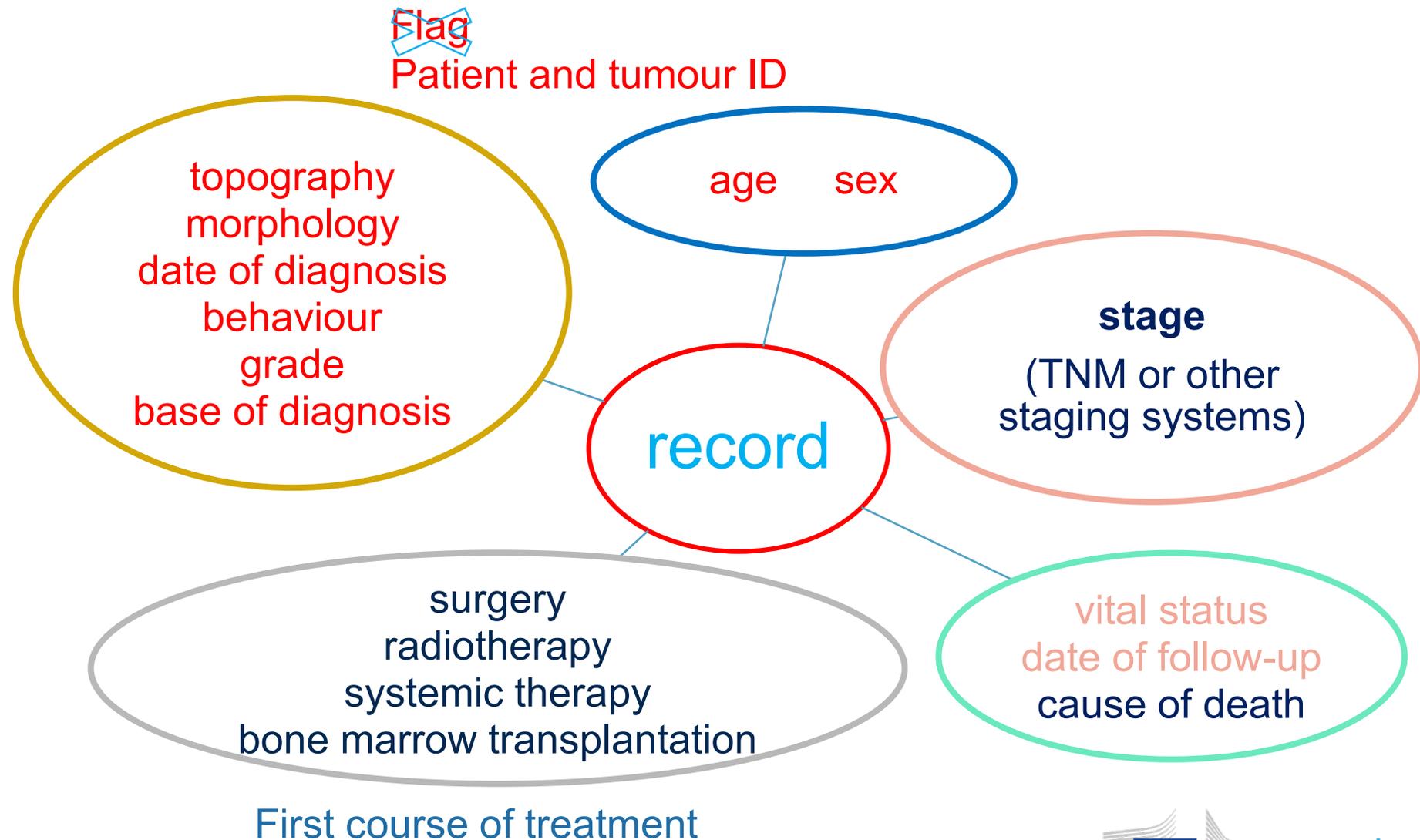
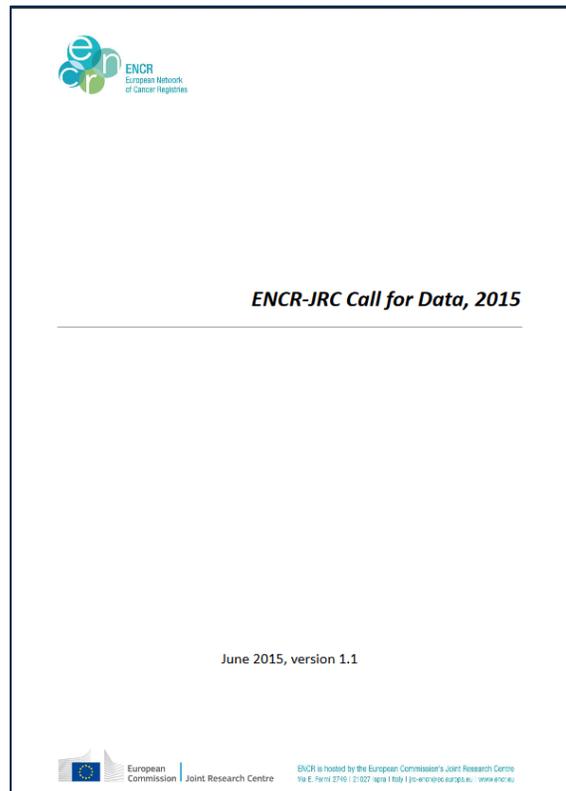
*European Commission, Joint Research Centre (JRCF)*

*Online ENCR-JRC course: Training on  
Population-based Cancer Registration*

*25 – 28 May 2021*



# Variables



# Data validation process



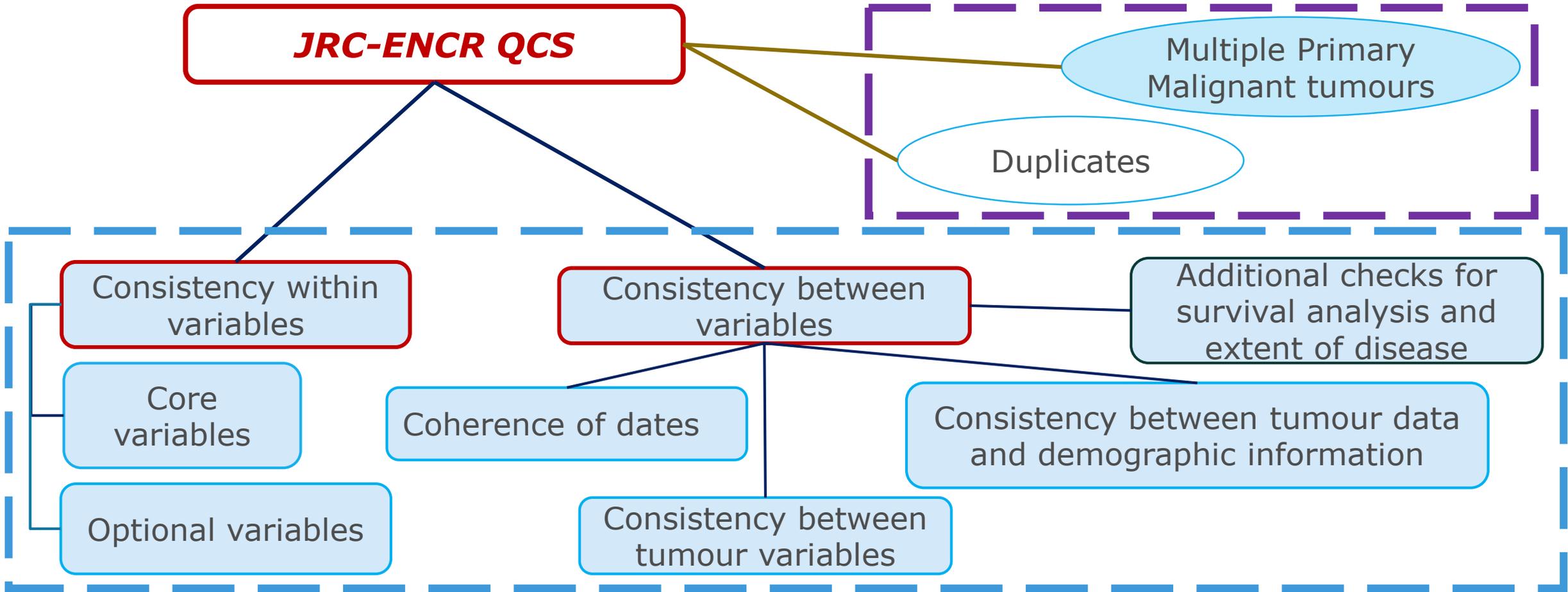
Output csv file with  
errors/warnings

Output csv file with  
warnings for MPMT

A total of 34,251,948 cases from 130 general cancer registries from 31 countries were checked

The **internal consistency** of the submitted data were validated using the JRC-ENCR Quality Check Software (QCS)

# Data validation process



## Consistency within variables: core variables

### Core variables:

1_Flag	2_Patient_ID	3_Tumour_ID	4_Day_DoB	5_Month_DoB	6_Year_DoB	7_Sex
8_Day_DoI	9_Month_DoI	10_Year_DoI	11_Age	12_BoD	13_Topo	14_Morpho
15_Beh	16_Grade	17_Autopsy	18_Vital_status	19_Day_FU	20_Month_FU	21_Year_FU
22_Survival						

### Error and warning codes in the QCS

- Variables values were checked according to the "2015 Call for Data protocol" (**E-OUTR**)
- Variables format were checked according to the "2015 Call for Data protocol" (**E-FORM**)
- Missing values for core variables were giving errors (**E-MISS**) by the JRC-ENCR QCS and unknown values as (**W-UNKN**)

**Note:** Missing and unknown values are allowed for the optional variables

# Consistency within variables: core variables (E-OUTR)

Variable	N	%
1_Flag	7,873	0.0
5_Month_DoB	6	0.0
6_Year_DoB	8,598	0.0
9_Month_DoI	1	0.0
12_BoD	171,416	0.5
13_Topo	1,911,553	5.6
14_Morpho	94,692	0.3
15_Beh	342,707	1.0
16_Grade	1,485	0.0
18_Vital_status	62,813	0.2
21_Year_FU	3	0.0

12_BoD	N	%
3	164,215	95.8
8	7,201	4.2

445,071 cases (23%) due to ICD-10 values and 1,110,168 cases (58%) due to use 3 digits instead of 4

37,747 cases (40%) due to 9999 code value and 43,208 cases (43%) due to use ICD-O-2 codes instead of ICD-O-3 codes

15_Beh	N	%
4	2	0
5	10,714	3.13
6	186,804	54.51
7	2	0
9	145,185	42.36

# Consistency within variables: core variables (E-FORM)

Variable	N	%
3_Tumour_ID	1	0.0
4_Day_DoB	4,659,600	13.6
5_Month_DoB	1	0.0
6_Year_DoB	1	0.0
8_Day_DoI	4,659,599	13.6
11_Age	1,210,328	3.5
14_Morpho	82,587	0.2
16_Grade	2,354,127	6.9
17_Autopsy	4,659,599	13.6
18_Vital_status	4,656,031	13.6
19_Day_FU	4,660,666	13.6
1_Flag	312	0.0
20_Month_FU	1,520,271	4.4
21_Year_FU	1,067	0.0
22_Survival	678,930	2.0

99.9% of cases due to missing values coded as DD instead of 99

99.9% of cases due to missing values (any value)

Variable	.	A	D	L	N	X	Y
16_Grade	22	0	0	0	0	2,354,105	0
17_Autopsy	0	0	0	0	4,517,897	0	141,702
18_Vital_status	0	1,526,960	3,030,310	98,761	0	0	0

## Consistency within variables: core variables (E-MISS and W\_UNKN)

Variable	E-MISS	W-UNKN	Total	
			N	%
1_Flag	257,990	0	257,990	0.75
3_Tumour_ID	22	0	22	0.00
11_Age	2,918	0	2,918	0.01
5_Month_DoB	0	647,261	647,261	1.89
6_Year_DoB	51	24,744	24,795	0.07
7_Sex	146	1,187	1,333	0.00
9_Month_DoI	0	83,094	83,094	0.24
12_BoD	6	1,190,887	1,190,893	3.48
13_Topo	26	0	26	0.00
14_Morpho	337	0	337	0.00
15_Beh	82,511	0	82,511	0.24
16_Grade	71,792	0	71,792	0.21
17_Autopsy	149,226	10,438,690	10,587,916	30.91
18_Vital_status	53,207	338,229	391,436	1.14
20_Month_FU	0	3,348,185	3,348,185	9.78
21_Year_FU	1,568,842	3,140,215	4,709,057	13.75
22_Survival	1,856,009	0	1,856,009	5.42

## Consistency between variables

- ❑ Coherence of dates:
  - Consistency between date of birth and date of incidence (**E-CoDA**)
  - Consistency between date of last known vital status and date of incidence (**E-CoDV**)
- ❑ Consistency between tumour data and demographic information
  - Consistency between sex and topography (**E-SETO**) / morphology (**W-SEMO**)
  - Consistency between age and morphology/topography (**W-AGMT**)
- ❑ Consistency between tumour variables
  - Consistency between morphology and topography (**W-MOTO**)
  - Consistency between morphology and behaviour (**E-MOBE**)
  - Consistency between basis of diagnosis and morphology/behaviour (**W-BDMU**)
  - Consistency between basis of diagnosis and morphology (**W-BDMO**) and (**W\_BDMS**)
  - Consistency between morphology and grade (**W-MOGR**)

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## Consistency between variables: coherence of dates

4\_Day\_DoB      5\_Month\_DoB      6\_Year\_DoB

8\_Day\_Dol      9\_Month\_Dol      10\_Year\_Dol

11\_Age

In the **selection of case for childhood cancer**, the number of cases selected depended on the variables used for calculating the age

Example: CR with a total of **361,121** cases, the number of cases for the age group **0-19** resulting in:

- **1654** cases if age was calculated using only year of birth and year of incidence
- **1724** cases when age was calculated using year and month of birth and year and month of incidence
- **1731** cases if age was calculated using the full date of birth and the full date of incidence

8\_Day\_Dol      9\_Month\_Dol      10\_Year\_Dol

19\_Day\_FU      20\_Month\_FU      21\_Year\_FU

22\_Survival

## Consistency between variables: coherence of dates

- ❑ Consistency between date of birth and date of incidence (**E-CoDA**): 16 cases (4 CRs)
- ❑ Consistency between date of last known vital status and date of incidence (**E-CoDV**): 1,590 cases (16 CRs)

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# Consistency between tumour data and demographic information: sex and topography/morphology

Consistency between sex and topography (**E-SETO**):

24 cases (6 CRs)

Table 5. Unlikely sex and morphology combinations.

Sex = 1 (male)	Sex = 2 (female)
8313/3 Clear cell adenocarcinofibroma	9061/3 Seminoma, NOS
8380/3 Endometrioid adenocarcinoma, NOS	9062/3 Seminoma, anaplastic
8381/3 Endometrioid adenofibroma, malignant	9063/3 Spermatocytic seminoma
8382/3 Endometrioid adenocarcinoma, secretory variant	
8383/3 Endometrioid adenocarcinoma, ciliated cell variant	
8384/3 Adenocarcinoma, endocervical type	
8441/3 Serous cystadenocarcinoma, NOS	
8460/3 Papillary serous cystadenocarcinoma	
8471/3 Papillary mucinous cystadenocarcinoma	
8482/3 Mucinous adenocarcinoma, endocervical type	
8600/3 Thecoma, malignant	
8670/3 Steroid tumour, malignant	
8930/3 Endometrial stromal sarcoma, NOS	
8931/3 Endometrial stromal sarcoma, low grade	
8934/3 Carcinofibroma	
8950/3 Mullerian mixed tumour	
8951/3 Mesodermal mixed tumour	
9000/3 Brenner tumour, malignant	
9014/3 Serous adenocarcinofibroma	
9015/3 Mucinous adenocarcinofibroma	
9090/3 Struma ovary, malignant	

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Table 4. Invalid sex and topography combinations.

Sex= 1 (male)	Sex= 2 (female)
C51 Vulva	C60 Penis
C52 Vagina	C61 Prostate gland
C53 Cervix uteri	C62 Testis
C54 Corpus uteri	C63 Other and unspecified male genital organs
C55 Uterus, NOS	
C56 Ovary	
C57 Other and unspecified female genital organs	
C58 Placenta	

Consistency between sex and morphology

(**W-SEMO**): 355 cases (59 CRs)

349 cases → warning for morphology and topography combinations

Topography:  
5 cases → C809  
1 cases → C383

# Consistency between tumour data and demographic information: age and topography/morphology

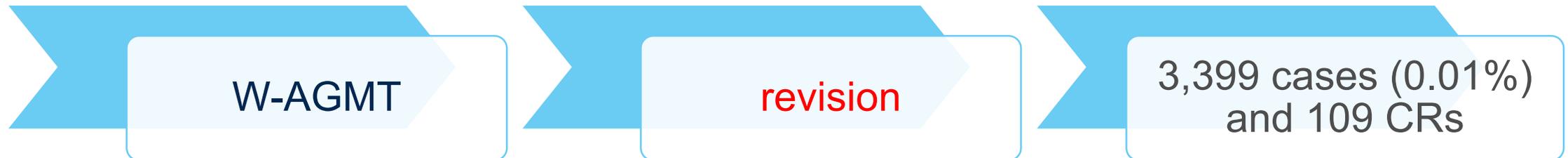
**W-AGMT:** 32,073 (0.09%) cases and 127 CRs

Table 3. Unlikely and rare combinations of age and tumour type.

Age group [years]	Morphology	Topography
0-2	Hodgkin lymphoma: 9650-9667	-
> 9	Neuroblastoma and ganglioneuroblastoma: 9490, 9500	-
> 5	Retinoblastoma: 9510-9514	-

> 14	8910, 8960, 8970, 8981, 8991, 9072, 9470, 951_, 9687	Any	12,750 cases	} 77% of W-AGMT
> 7	Malignant extra-cranial and extra-gonadal germ cell: 9060-9065, 9070-9072, 9080-9085, 9100-9105	C00-C55, C57-C61, C63-C69, C73-C750	6,745 cases	
< 20	Any	C15, C19, C20, 21, C23, C24, C384, C50-C55	4,760 cases	

To take out some topographies

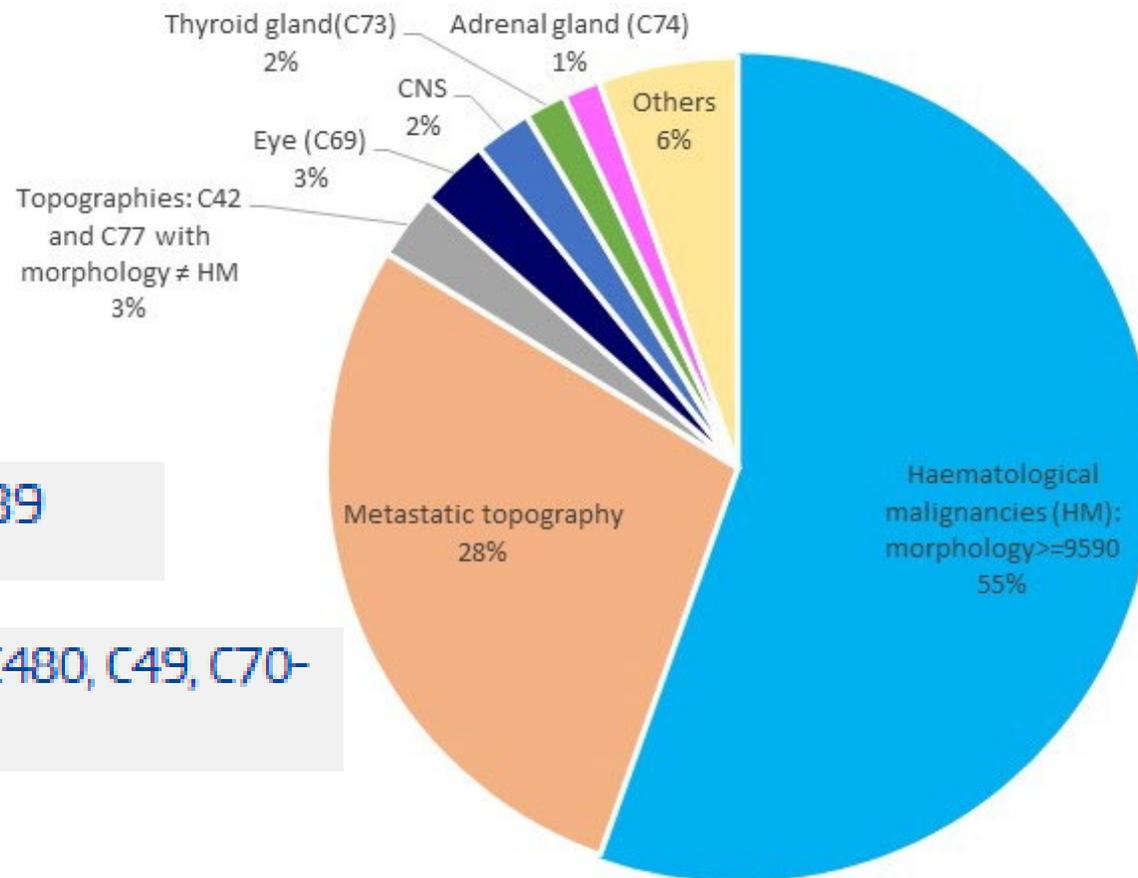


## Consistency between variables

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# Consistency between tumour variables: morphology and topography

**W-MOTO: 321,772 (0.94%) cases and all CRs (0.1%-4.0%)**



8010-8589

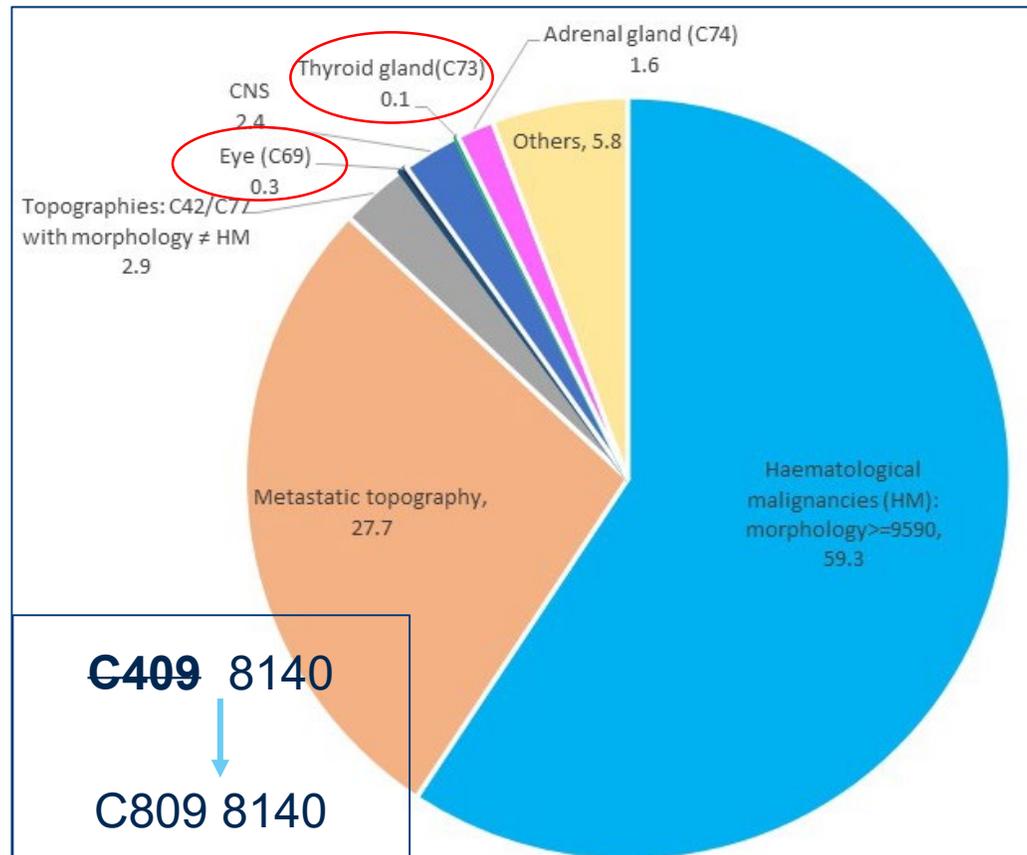
C38, C40-C42, C47, C480, C49, C70-C72, C77

Table 8. Morphology codes and allowed/refused topography codes.

Morphology codes	Allowed topography codes	Not allowed topography codes
8000-8005		C420, C421, C77
8010-8589		C38, C40-C42, C47, C480, C49, C70-C72, C77
8015	C53	
8077	C00-C15, C21, C30-C32, C44, C51-C53, C60	
8080	C51, C60	
8081	C00, C300, C44, C51, C60, C632, C690, C691	
8082	C00-C14, C16, C30-C34, C44, C53, C65-C68, C80	
8090-8095, 8097, 8100-8103, 8110	C300, C44, C51, C60, C632	
8098	C53	
8120, 8122, 8130, 8131	C56, C65-C68, C80	
8121	C300, C31, C65-C68	
8124	C212	
8142	C16	
8144	C15-C26, C30, C31, C52, C53, C56, C67, C80	
8145	C15-C20, C80	
8147	C00-C14, C30-C32, C50, C61	
8148	C15-C25, C61	
8150-8152, 8154, 8155	C25	
8153	C16, C170, C25, C80	
8156	C170, C25, C80	
8160, 8161	C221, C239, C240	
8162	C240	
8163	C22-C25	

# Consistency between tumour variables: morphology and topography

W-MOTO: 300,823 (0.88%) cases



Leukaemia: C421 8000

↓  
C421 9800

Multiple myeloma:

~~C809 9732~~

↓  
C421 9732

Waldenstrom  
macroglobulinemia:

~~C809 9761~~

↓  
C420 9761

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8077	C00-C15, C21, C30-C32, C44, C51-C53, C60	
8080	C51, C60	
8081	C00, C300, C44, C51, C60, C632, C690, C691	
8082	C00-C14, C16, C30-C34, C44, C53, C65-C68, C80	
8090-8095, 8097, 8100-8103, 8110	C300, C44, C51, C60, C632	
8098	C53	
8120, 8122, 8130, 8131	C56, C65, C66, C80	
8121	C51, C61, C65-C68	
8124	C212	
8142	C16	
8144	C15-C26, C30, C31, C52, C53, C56, C67, C80	
8145	C15-C20, C80	
8147	C00-C14, C30-C32, C50, C61	
8148	C15-C25, C61	
8150-8152, 8154, 8155	C25	
8153	C16, C170, C25, C80	
8156	C170, C25, C80	
8160, 8161	C221, C239, C240	
8162	C240	
8163	C22-C25	

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# Consistency between tumour variables: morphology and behaviour

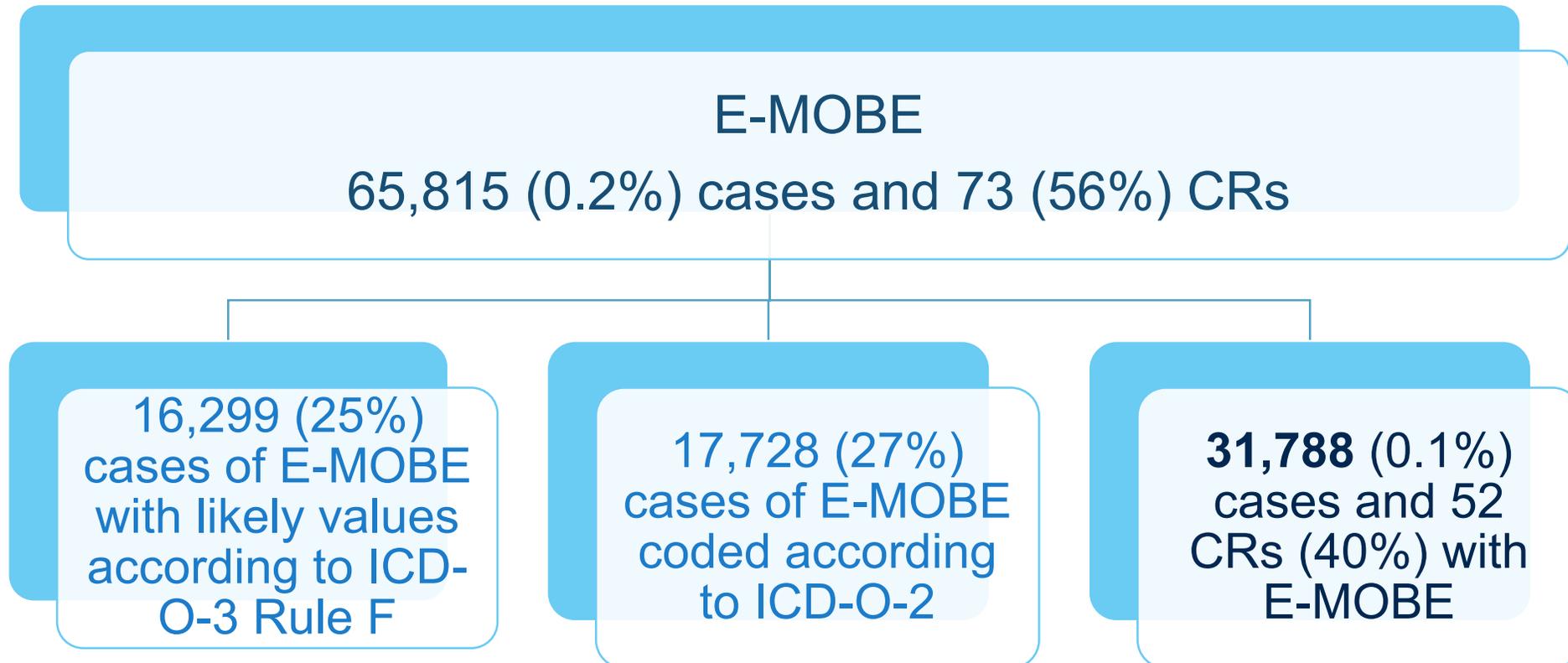
Table 1. (cont.)

Variable description	Format	Mandatory	Missing/unknown values	Allowed values
ICD-O-3 morphology	F4	Y	Not allowed	Valid code in ICD-O-3 and updated in 2011
ICD-O-3 behaviour	F1	Y	Not allowed	Accepted value: 0-3

Morphology and behaviour combinations which are not listed in the ICD-O-3 are considered **ERRORS** (these combinations are given by the JRC-ENCR QCS as **E-MOBE**)

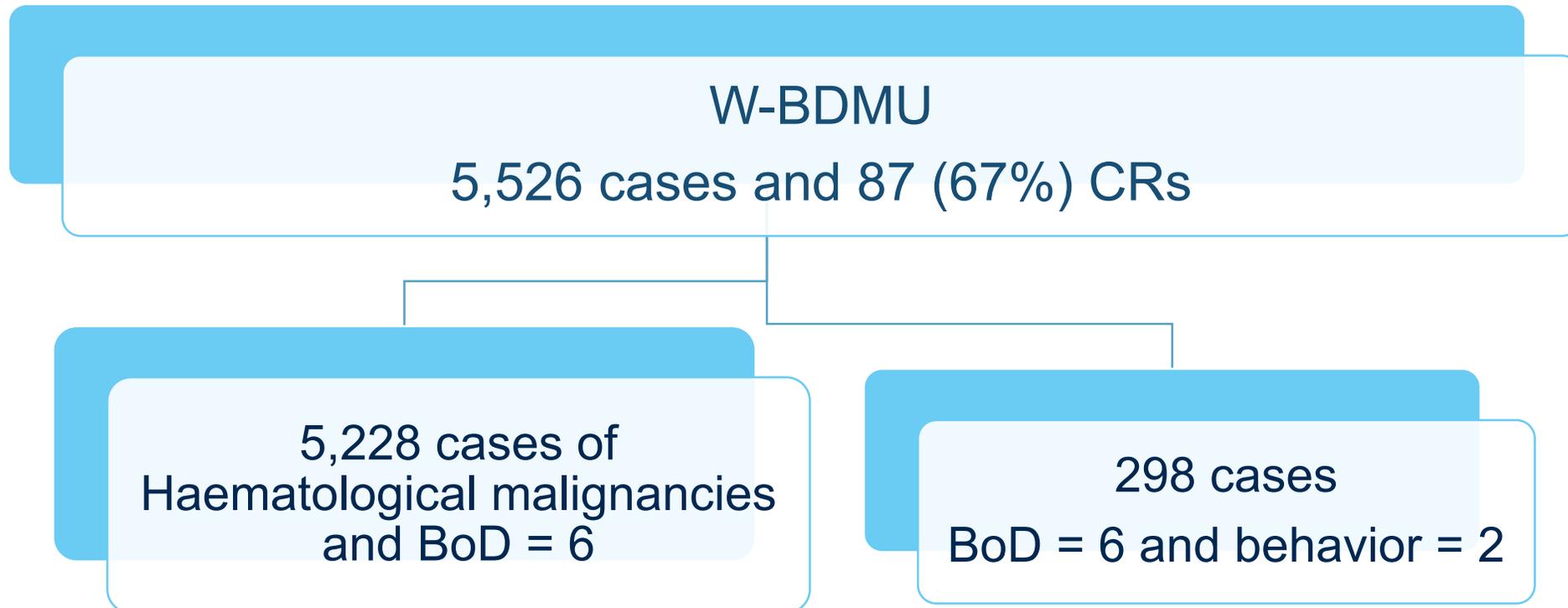
Although according to the Rule F of the ICD-O-3 it is exceptionally possible to have morphology and behaviour combinations not listed in the ICD-O-3, the version 2.0 of the data quality check report will consider them as **WARNINGS**, except for some more frequent and possible combinations found in the data submitted by the CRs.

## Consistency between tumour variables: morphology and behaviour



**E-MOBE:** errors due to morphology and behaviour combinations

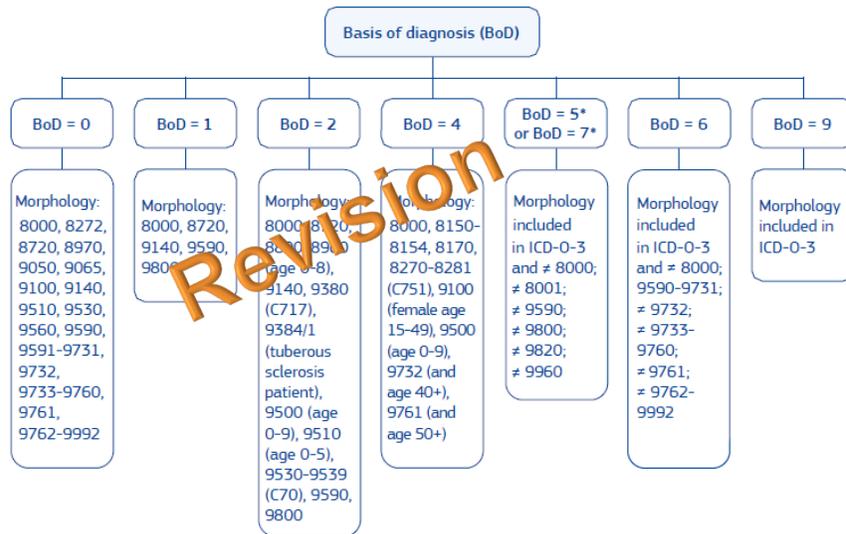
# Consistency between tumour variables : basis of diagnosis and morphology/behaviour



**W-BDMU:** warnings due to basis of diagnosis and morphology/behaviour combinations

# Consistency between tumour variables: basis of diagnosis and morphology

Figure 2. Valid combinations for basis of diagnosis and morphology.



**W-BDMO:** morphology too specific according to the BoD  
 1,354,775 (4.0%) cases and 126 CRs (97%)

**W-BDMS:** morphology not specific enough according to the BoD  
 528,808 (1.5%) cases and 124 CRs (95%)

19,272 cases with BoD=7 and topography=C809

Morphology	Basis of diagnosis		Total
	5	7	
8000	122,810	188,182	310,992
8001	101,860	19,899	121,759
9590	7,512	59,434	66,946
9800	3,739	4,142	7,881
9820	3,072	4,567	7,639
9960	3,585	10,006	13,591
<b>Total</b>	<b>242,578</b>	<b>286,230</b>	<b>528,808</b>

# Consistency between tumour variables: morphology and grade

Table 6. Valid combinations for morphology and grade.

Grade →	5	6	8
Morphology	9700-9702, 9705, 9708, 9709, 9714, 9716, 9717, 9718, 9719, 9721, 9722, 9725, 9726, 9728, 9730, 9731, 9732, 9733, 9734, 9737, 9738, 9762, 9800, 9801, 9805-9808, 9811, 9812-9818, 9820, 9823, 9826, 9833, 9836, 9940	9581, 9585, 9597, 9670, 9671, 9673, 9678-9680, 9684, 9687-9691, 9695, 9698, 9699, 9712, 9728, 9731, 9732, 9734, 9737, 9738, 9762, 9800, 9801, 9805-9808, 9811, 9812-9818, 9820, 9823, 9826, 9833, 9836, 9940	9719, 9727, 9831, 9948

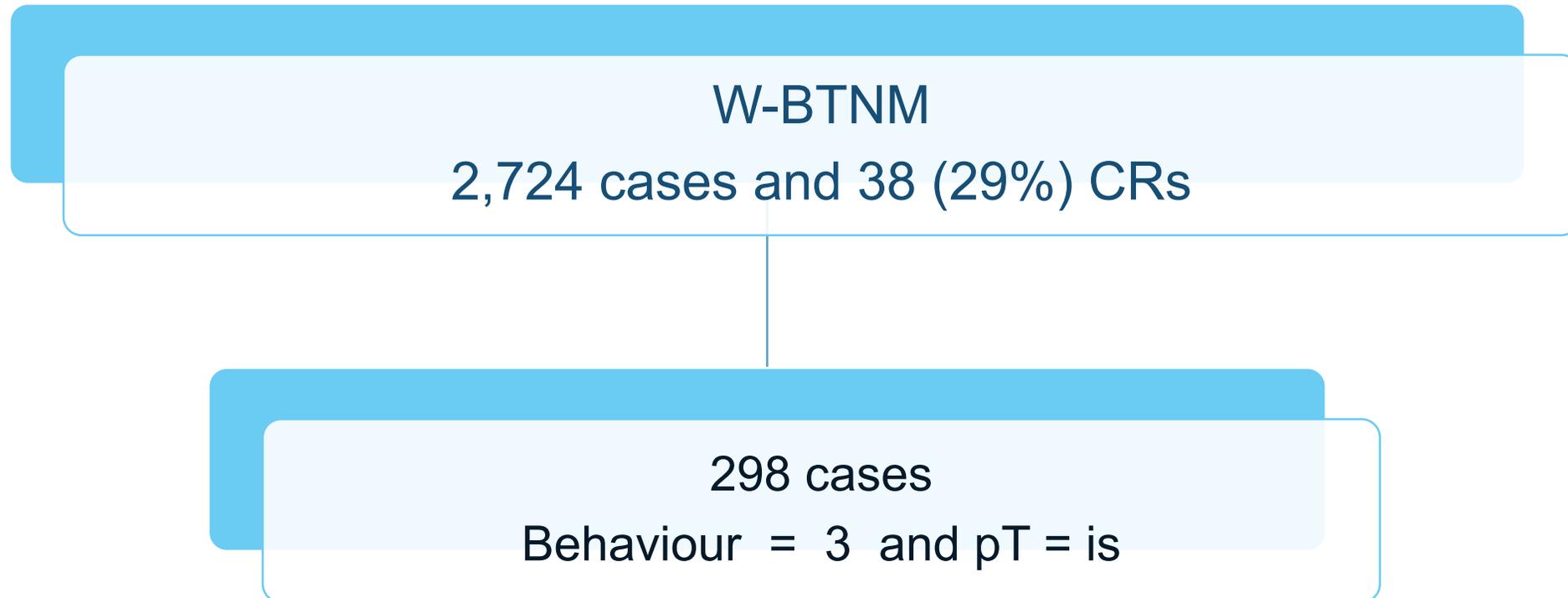
Table 7. Morphology code and description, and correct associated grade for ICD-O-3 terms with implied statement of grade.

Morphology code	Morphology description	Grade
8020/3	Carcinoma, undifferentiated, NOS	4
8021/3	Carcinoma, anaplastic, NOS	4
8240/3	Neuroendocrine carcinoma, well-differentiated	1
8249/3	Neuroendocrine carcinoma, moderately differentiated	2
8331/3	Follicular adenocarcinoma, well-differentiated	1
8332/3	Follicular adenocarcinoma, moderately differentiated	2
8585/3	Well-differentiated lymphoma	1
8631/3	Polysplenic tumour, poorly differentiated	3
8634/3	Polysplenic cell tumour, poorly differentiated, with heterologous elements	3
8805/3	Undifferentiated sarcoma	4
8851/3	Liposarcoma, well-differentiated	1
9062/3	Tumour, anaplastic	4
9082/3	Malignant teratoma, undifferentiated	4
9362/3	Pineal parenchymal tumour of intermediate differentiation	2, 3
9382/3	Anaplastic oligoastrocytoma	3
9390/3	Choroid plexus papilloma, anaplastic	3
9401/3	Astrocytoma, anaplastic	3
9440/3	Glioblastoma	4
9451/3	Oligodendroglioma, anaplastic	3
9511/3	Retinoblastoma, differentiated	1
9512/3	Retinoblastoma, undifferentiated	4

grade	Haematological Malignancies	solid tumours	Total
1	0	2,051	2,051
2	0	6,599	6,599
3	0	19,229	19,229
4	0	5,908	5,908
5	5,207	959	6,166
6	609	637	1,246
7	0	1,394	1,394
8	146	201	347
9	0	276,007	276,007
Total	5,962	312,985	318,947

grade	behaviour				Total
	0	1	2	3	
1	0	0	0	2,051	2,051
2	0	0	0	6,599	6,599
3	0	0	0	19,229	19,229
4	0	0	0	5,908	5,908
5	16	10	66	6,074	6,166
6	0	55	2	1,189	1,246
7	1	0	20	1,373	1,394
8	0	0	1	346	347
9	0	0	0	276,007	276,007
Total	17	65	89	318,776	318,947

# Consistency between tumour variables : behaviour and pT



**W-BTNM:** warnings due to behaviour and pT combinations

## Optional variables

### Optional variables:

<del>23_Laterality</del>	<del>24_Day_DoR</del>	<del>25_Month_DoR</del>	<del>26_Year_DoR</del>	27_Cause_death
28_ICD_edition	29_TNM_prefix	30_pT	31_pN	32_pM
33_cT	34_cN	35_cM	36_Stage	37_TNM_edition
38_Cond_T	39_Cond_N	40_Cond_M	41_Dukes	42_FIGO
43_Aarbor	44_Gleason	45_Breslow	46_EoD	47_Tsize
48_N_exam_nodes	49_N_met_nodes	50_Sent_nodes	51_Met_sent_nodes	52_Gfactor
53_Surgery	54_Systemic_th	55_Radiotherapy	56_BMtransp	

# Optional variables

## Laterality

Variable name	Variable description	Format	Maximum length	Core	Missing /unknown values	Coding
23_Laterality	Laterality of paired organs	F	1	N	9	0→Not applicable 1→Right 2→Left 3→Unilateral NOS 4→Bilateral

List of paired organs for which it is suggested to collect laterality:

C07	Parotid gland	
C09	Tonsil	
C300	Nasal cavity	
C340, C341, C343, C348, C349	Lung	C570
C384	Pleura	C62
C400	Long bones of upper limb and scapula	C630
C401	Short bones of upper limb	C649
C402	Long bones of lower limb	C659
C403	Short bones of lower limb	C66
C413	Rib and clavicle	C69
C414	Pelvic bones (excluding sacrum, coccyx, and symphysis pubis)	C74
C441	Skin of eyelid	
C442	Skin of external ear	
C446	Skin of arm and shoulder	
C447	Skin of leg and hip	
C50	Breast	
C56	Ovary	
C570	Fallopian tube	
C62	Testis	
C630	Epididymis	
C649	Kidney	

## 2015 data call

This variable is very important for MPMT (paired organ registration) because of the differences between reporting and registration criteria.

Nevertheless, the definition of "paired" organs is very different among CRs.

# Optional variables

## Date of registration

Variable name	Variable description	Format	Maximum length	Core	Missing /unknown values	Coding
24_Day_DoR	Day of case registration	F	2	N	99	Range of allowed values: From 1 to 31
25_Month_DoR	Month of case registration	F	2	N	99	Range of allowed values: From 1 to 12
26_Year_DoR	Year of case registration	F	4	N	9999	Range of allowed values: > 1941 and ≤ the current year

	Missing values	Note
Year	74% of cases	63 CRs provided this information
Month	74% of cases	60 CRs provided this information
Day	81% of cases	54 CRs provided this information

## Optional variables

### Condensed TNM

Condensed TNM	Missing values	Note
T	96% of cases	13 CRs provided this information
N	96% of cases	13 CRs provided this information
M	97% of cases	13 CRs provided this information

**Dukes: Missing values:** 88% of the cases. Only 13 CRs reported this information

**Ann Arbor: Missing values:** 84% of the cases. Only 9 CRs reported this information

**FIGO: Missing values:** 98% of the cases. Only 13 CRs reported this information

**Gleason: Missing values:** 85% of the cases. Only 17 CRs reported this information

**Breslow: Missing values:** 99.6% of the cases. Only 3 CRs reported this information

**Summary extent of disease: Missing values:** 92% of the cases. Only 20 CRs reported this information

## Optional variables

### Other variables related to the extent of the disease

	Missing values	Note
Tumour size	96% of cases	27 CRs provided this information
Number examined nodes	96% of cases	25 CRs provided this information
Number metastatic nodes	98% of cases	23 CRs provided this information
Sentinel nodes	99% of cases	13 CRs provided this information
Metastatic in sentinel nodes	99% of cases	7 CRs provided this information

**Cfactor: Missing values:** 98% of the cases. Only 4 CRs provided this information

# Optional variables

Variable name	Variable description	Format	Maximum length	Core	Missing /unknown values	Coding
29_TNM_prefix	Additional descriptor for TNM	A	1	N	Blank 9	Prefix modifiers will be considered: y: stage assessed after neo-adjuvant therapy; a: stage determined at autopsy

## TNM staging

	Missing values	Note
TNM_prefix	99.9% of cases	16% of values were wrong

	Missing values	Note
pT	77% of cases	52 CRs provided this information
pN	83% of cases	52 CRs provided this information
pM	91% of cases	50 CRs provided this information

	Missing values	Note
cT	74% of cases	45 CRs provided this information
cN	76% of cases	45 CRs provided this information
cM	76% of cases	48 CRs provided this information
Stage	72% of cases	28 CRs provided this information

# Optional variables

	1,106,485	26.35	26.35
	152,141	3.62	29.98
	16,790	0.40	30.38
0	3,799	0.09	30.47
0	71	0.00	30.47
1	130,345	3.10	33.57
1	13,962	0.33	33.91
1A	7,279	0.17	34.08
1B	27,169	0.65	34.73
1C	74,840	1.78	36.51
1M	967	0.02	36.53
1MI	10	0.00	36.53
1a	29,236	0.70	37.23
1a	8	0.00	37.23
1a	449	0.01	37.24
1a1	1	0.00	37.24
1a1	2	0.00	37.24
1a2	4	0.00	37.24
1am	147	0.00	37.24
1b	99,321	2.37	39.61
1b	15	0.00	39.61

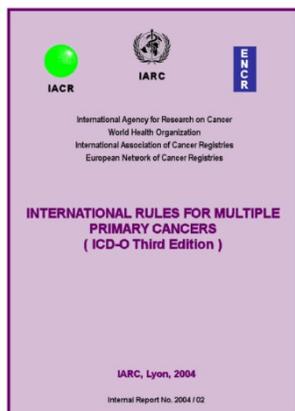
## TNM staging

52% of the CRs submitted stage or related variables

### Female breast tumour

- 30% of breast sarcomas were staging using TNM and 30% of tumours with unspecified morphologies were also staging according to TNM staging.
- Some cases of malignant carcinomas (behaviour 3) were coded as stage 0 and some in-situ tumours were coded as stage I, II, III even IV.

# Multiple Primary Malignant tumours



**Table 1. Groups of topography codes considered a single site in the definition of multiple cancers**

ICD-O-2/3 site code	Label	If diagnosed at different times, code first diagnosis. If diagnosed at the same time use codes given below.
C01	Base of tongue	
C02	Other and unspecified parts of tongue	C02.9
C00	Lip	
C03	Gum	
C04	Floor of mouth	
C05	Palate	
C06	Other and unspecified parts of mouth	C06.9
C09	Tonsil	
C10	Oropharynx	

## Topography

**Table 9. Groups of topography codes considered as a single site for solid tumours**

Topography code	Definition
C00	Lip
C03	Gum
C04	Floor of mouth
C05	Palate
C06	Other and unspecified parts of mouth
C760	Head, face or neck, NOS
C01	Base of tongue
C02	Other and unspecified parts of tongue
C760	Head, face or neck, NOS
C07	Parotid gland
C760	Head, face or neck, NOS
C08	Other and unspecified major salivary glands
C760	Head, face or neck, NOS

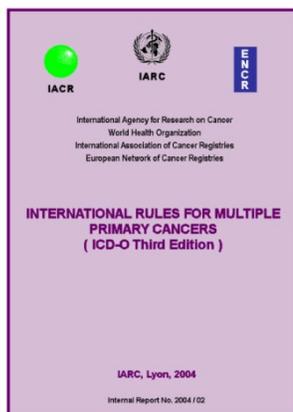
**Note:** topography codes C80 and C768 are considered as a single site in combination with any other topography.

## Multiple Primary Malignant tumours

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**Table 2.** Groups of malignant neoplasms considered to be histologically 'different' for the purpose of defining multiple tumours (adapted from Berg JW. Morphologic classification of human cancer. In: Schottenfeld D & Fraumeni JF Jr. *Cancer Epidemiology and Prevention*, 2<sup>nd</sup> edition, Chapter 3 of Section 1: Basic Concepts. Oxford, New York, Oxford University Press, pp. 28-44, 1996).

**Group**

**Carcinomas**

1. Squamous and transitional cell carcinoma	8051-8084, 8120-8131
2. Basal cell carcinomas	8090-8110
3. Adenocarcinomas	8140-8149, 8160-8162, 8190-8221, 8260-8337, 8350-8551, 8570-8576, 8940-8941
4. Other specific carcinomas	8030-8046, 8150-8157, 8170-8180, 8230-8255, 8340-8347, 8560-8562, 8580-8671
(5) Unspecified carcinomas (NOS)	8010-8015, 8020-8022, 8050
6. <i>Sarcomas</i> and soft tissue tumours	8680-8713, 8800-8921, 8990-8991, 9040-9044, 9120-9125, 9130-9136, 9141-9252, 9370-9373, 9540-9582

### Morphology

**Table 10.** Groups of morphology codes considered as a single entity

Morphology code	Definition
8051-8084, 8120-8131 8010-8015, 8020-8022, 8050	Squamous and transitional cell carcinoma Unspecified carcinomas (NOS)
8090-8110 8010-8015, 8020-8022, 8050	Basal cell carcinomas Unspecified carcinomas (NOS)
8140-8149, 8160-8163, 8190-8221, 8260-8337, 8350-8552, 8570-8576, 8940-8941 8010-8015, 8020-8022, 8050	Adenocarcinomas Unspecified carcinomas (NOS)
8030-8046, 8150-8157, 8170-8180, 8230-8255, 8340-8347, 8560-8562, 8580-8671 8010-8015, 8020-8022, 8050	Other specific carcinomas Unspecified carcinomas (NOS)

**Note:** morphology codes 8000-8005 (unspecified types of cancer) are considered as a single group in combination with any other morphology.

# Multiple Primary Malignant tumours

<b>Before applying the JRC-ENCR QCS</b>					
		Eastern Europe	Northern Europe	Southern Europe	Western Europe
% Patients with MPMT		9.1	9.9	9.2	7.8
<b>Malignant tumours</b>					
Rate (x100,000)	Patients with MPMT	41.4	43.1	47.2	33.4
ASR (e) (x100,000)		31.5 (31.4-31.7)	34.1 (34.6-34.9)	33.3 (33.1-33.4)	27.0 (26.9-27.1)
<b>Malignant tumours excluded non-melanoma skin</b>					
Rate (x100,000)	Patients with MPMT	20.1	34.0	31.0	29.2
ASR (e) (x100,000)		16.4 (16.3-16.6)	29.6 (29.4-29.7)	24.6 (24.4-24.7)	25.4 (25.2-25.5)

<b>After applying the QCS</b>					
		Eastern Europe	Northern Europe	Southern Europe	Western Europe
% Patients with MPMT		6.4	8.1	9.0	7.5
<b>Malignant tumours</b>					
Rate (x100,000)	Patients with MPMT	27.9	34.7	46.2	32.2
ASR (e) (x100,000)		20.9 (20.8-21.0)	27.6 (24.4-27.7)	32.6 (32.4-32.7)	26.0 (25.8-26.1)
<b>Malignant tumours excluded non-melanoma skin</b>					
Rate (x100,000)	Patients with MPMT	17.1	27.4	30.2	28.0
ASR (e) (x100,000)		13.9 (13.8-14.0)	23.8 (23.6-23.9)	24 (23.8-24.1)	24.3 (24.2-24.5)

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# Thank you



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