Quality of data with emphasis on completeness and internal consistency using the JRC-ENCR QCS

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ENCR–JRC Training on Population-based Cancer Registration, 25-28 May 2021, online

Quality of data: completeness

"*the extent to which all of the incident cancers occurring in the population are included in the registry database*"

D M Parkin and F Bray, Eur J Cancer 2009

Quality of data: completeness

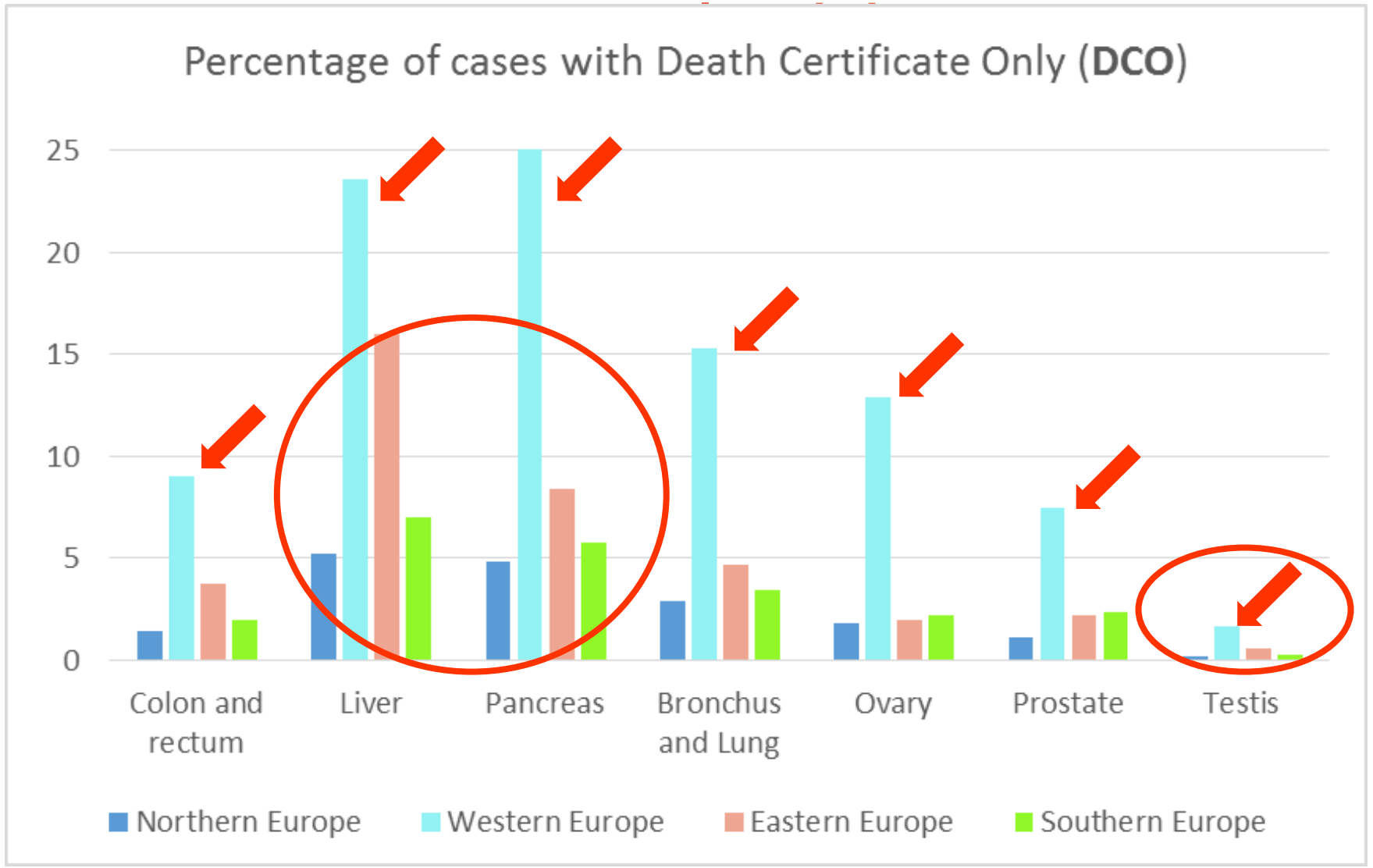
- Qualitative methods
  - experts' role
  - automated evaluation (software)
- Quantitative methods
  - analytical indicators derived from auxiliary variables

D M Parkin and F Bray, Eur J Cancer 2009

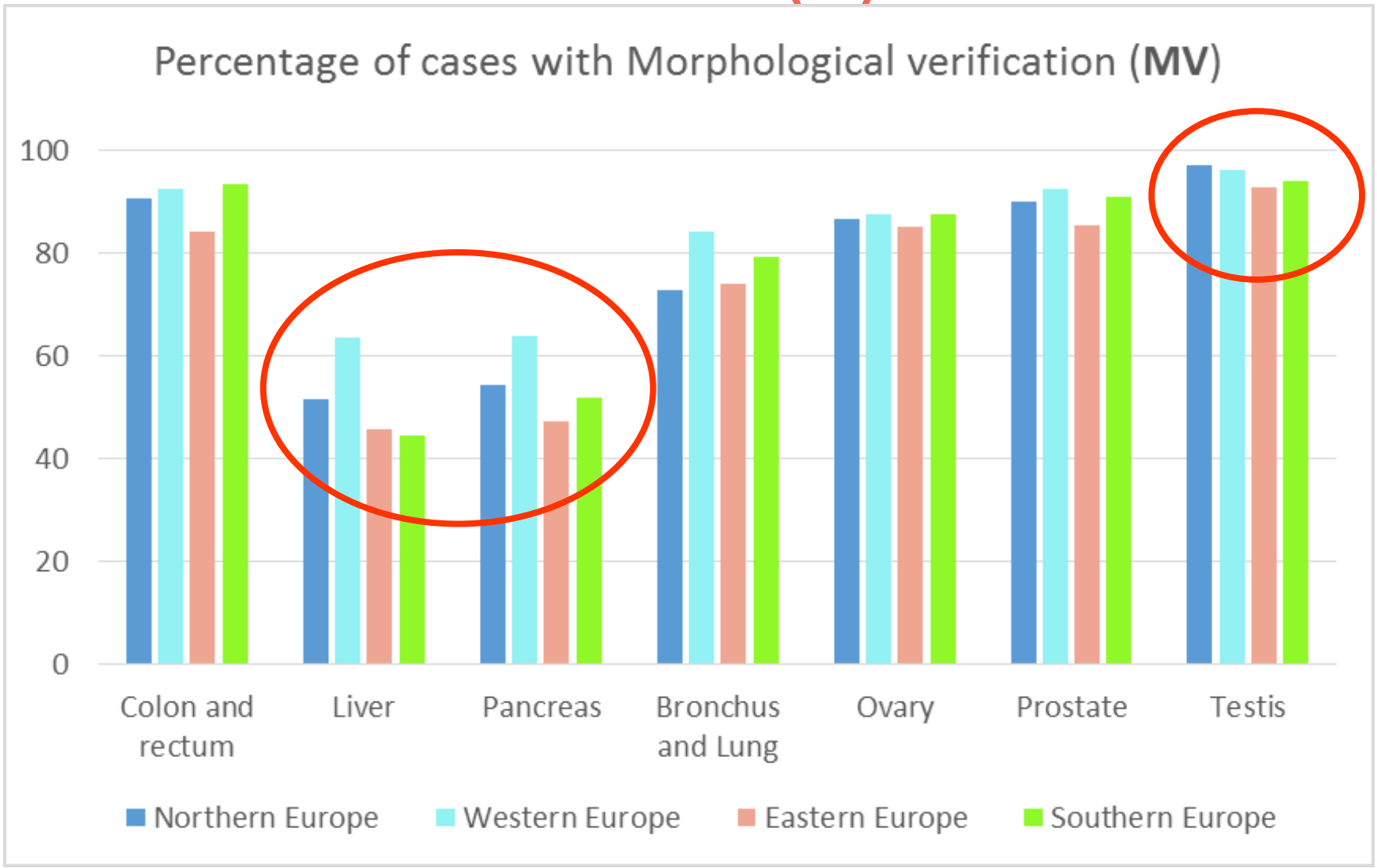
- **DCO** (Death Certificate only): patients for whom the death certificate provides the only notification to the registry. → **completeness/validity**

- **Morphological verification**: cases for which the diagnosis is based on histology or cytology → **completeness/validity**

- **Mortality-to-incidence ratio**: comparison of the number of deaths from an independent source and the number of new cases of a specific cancer registered in the same time period → **completeness**



Results (2)



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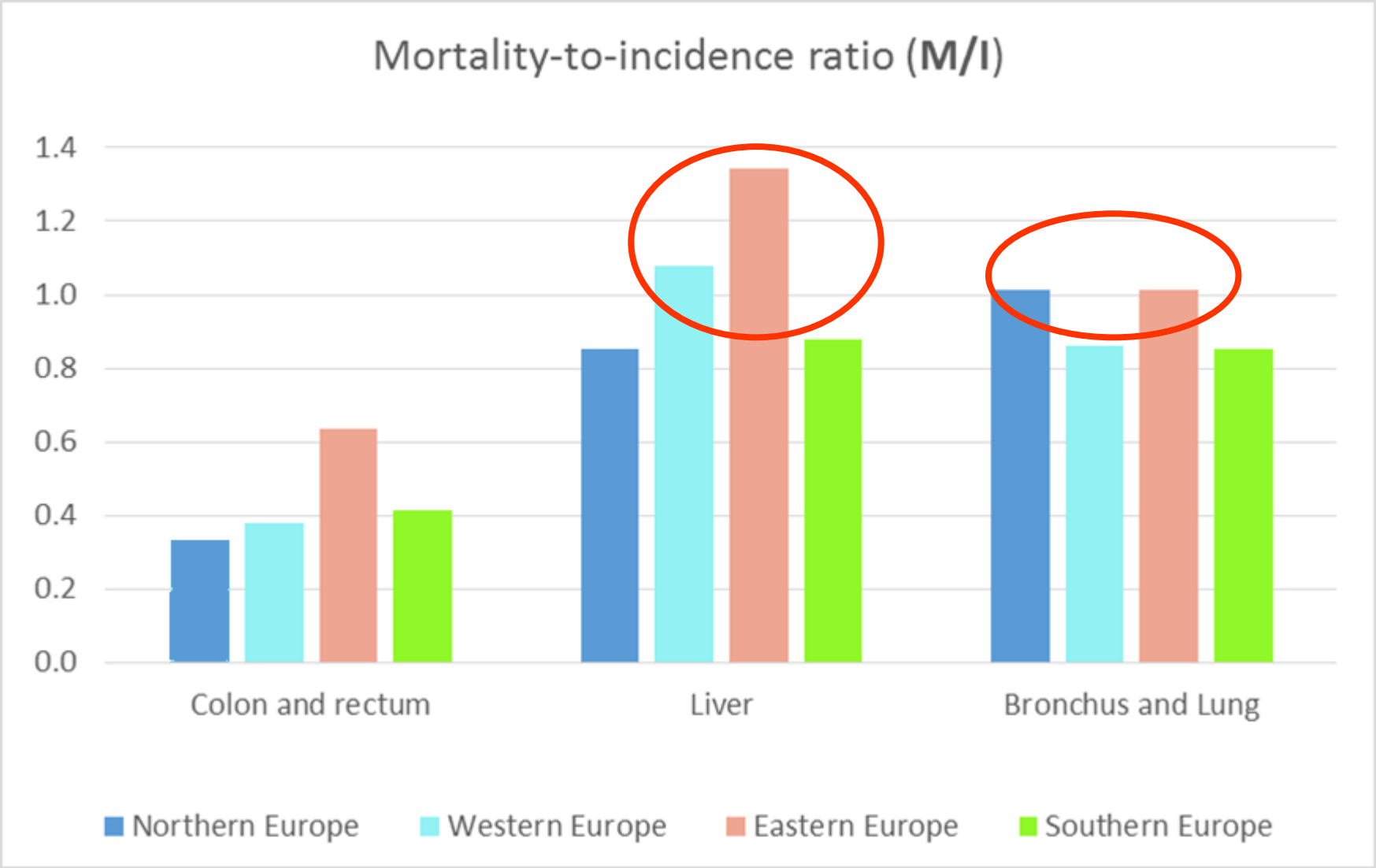
Results (3)



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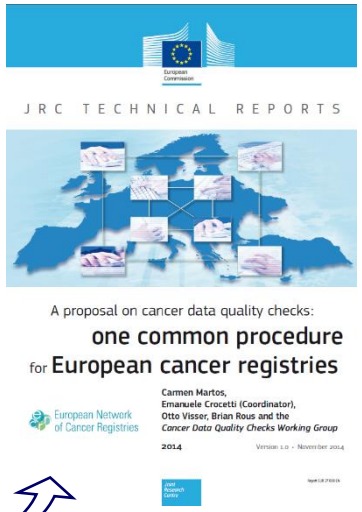
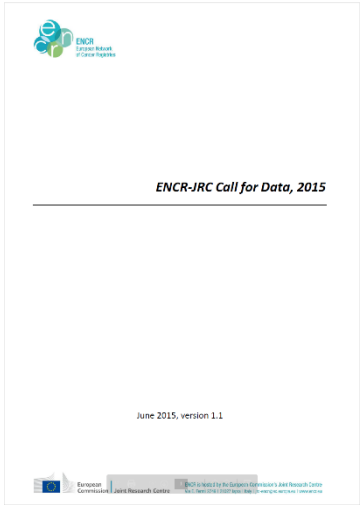
A proposal on cancer quality checks: one common procedure for European cancer registries

ENCR-JRC Working Group

- RARECARE/ RARECARENet
- ENCR
- IARC
- JRC
- Experts from the cancer registry community
- CONCORD
- EUROCARE



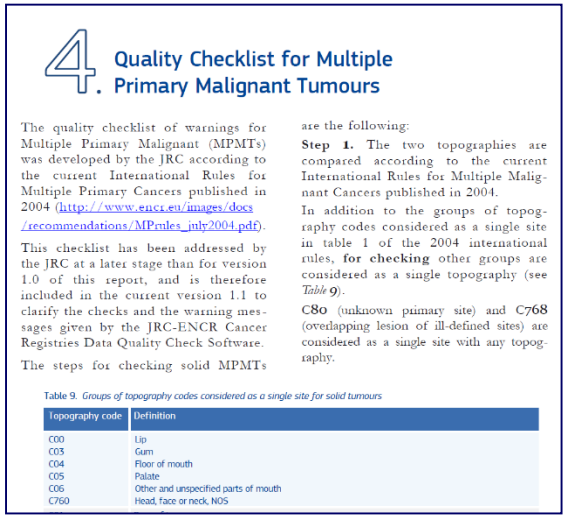
2014



2015

JRC-ENCR QCS

2018



4. Quality Checklist for Multiple Primary Malignant Tumours

The quality checklist of warnings for Multiple Primary Malignant (MPMTs) was developed by the JRC according to the current International Rules for Multiple Primary Cancers published in 2004 (http://www.encr.eu/images/docs/recommendations/MPrules_july2004.pdf).

This checklist has been addressed by the JRC at a later stage than for version 1.0 of this report, and is therefore included in the current version 1.1 to clarify the checks and the warning messages given by the JRC-ENCR Cancer Registries Data Quality Check Software.

The steps for checking solid MPMTs are the following:

Step 1. The two topographies are compared according to the current International Rules for Multiple Malignant Cancers published in 2004.

In addition to the groups of topography codes considered as a single site in table 1 of the 2004 international rules, **for checking** other groups are considered as a single topography (see *Table 9*).

C80 (unknown primary site) and C768 (overlapping lesion of ill-defined sites) are considered as a single site with any 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

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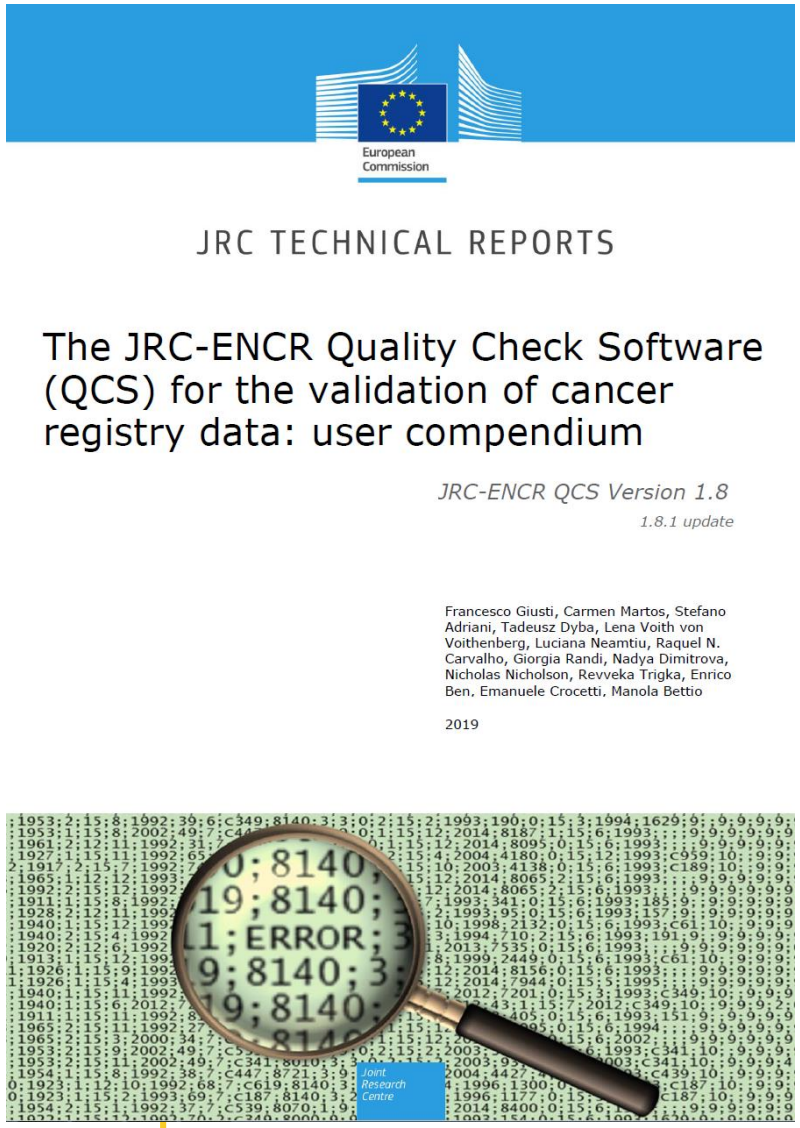
The JRC-ENCR Quality Check Software



- The JRC-ENCR Quality Check Software (QCS) was created for checking the **internal consistency** of cancer-registries' data against the requirements of the 2015 protocol of the *ENCR-JRC Call for data.*

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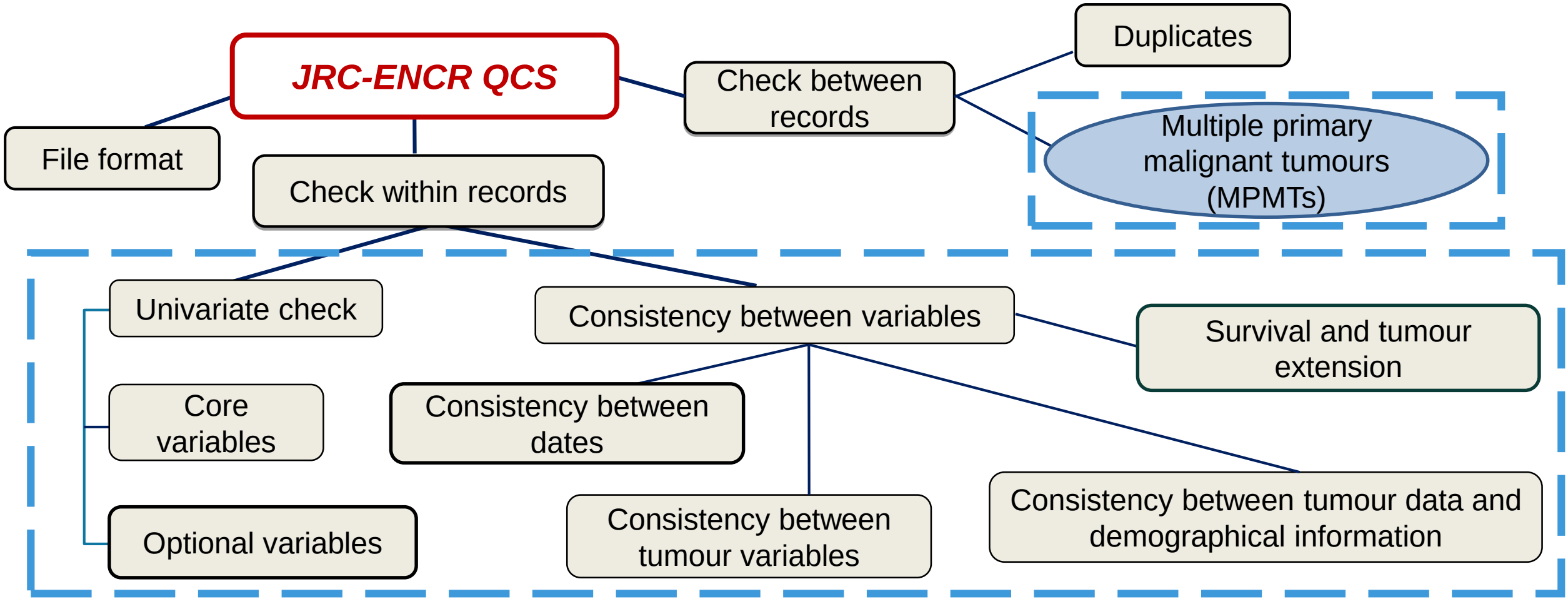
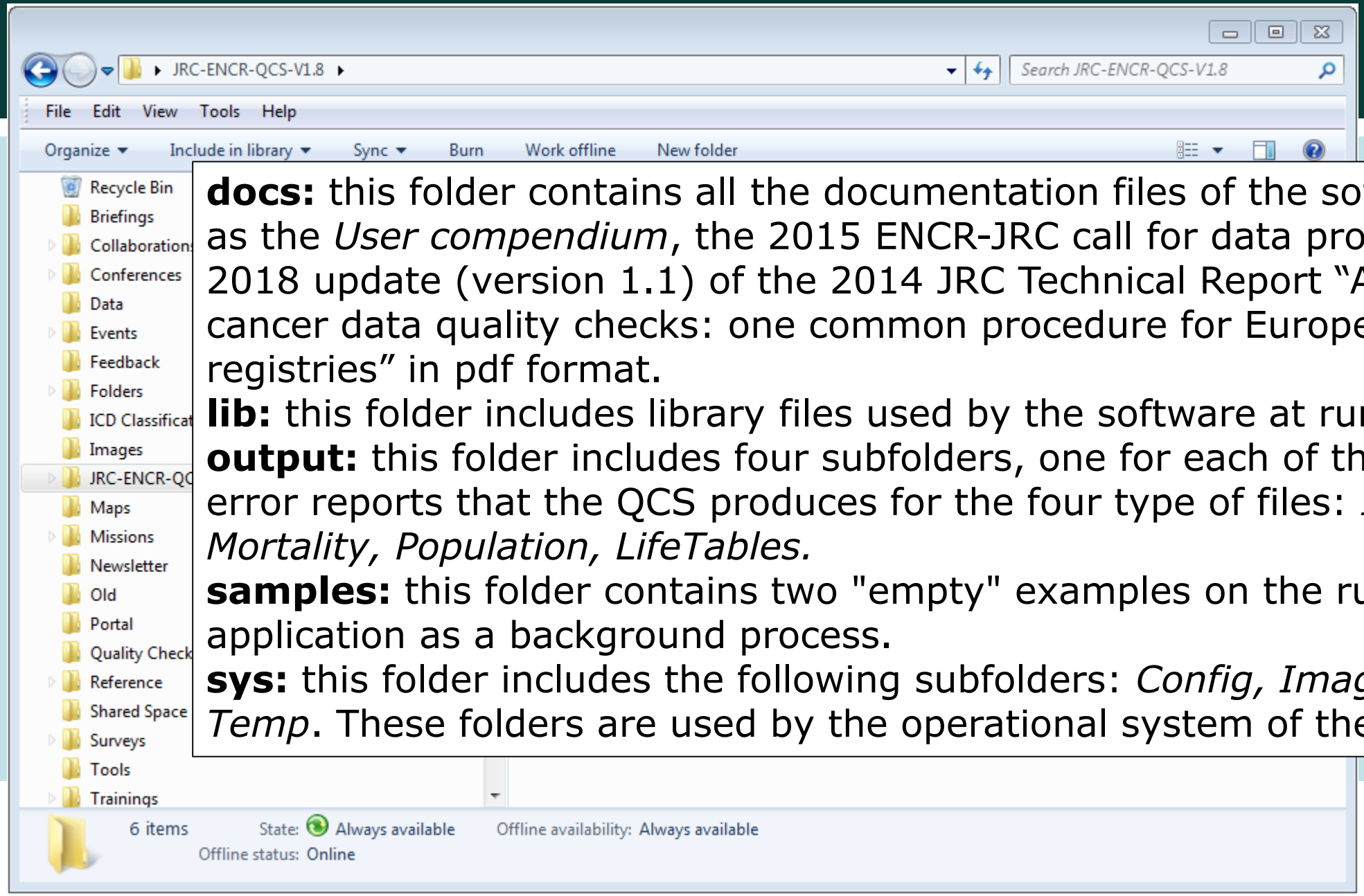
The JRC-ENCR Quality Check Software

encr.eu/tools-for-registries

The JRC data quality check process



JRC-ENCR Quality Check Software: folders



docs: this folder contains all the documentation files of the software, such as the *User compendium*, the 2015 ENCR-JRC call for data protocol and the 2018 update (version 1.1) of the 2014 JRC Technical Report "A proposal on cancer data quality checks: one common procedure for European cancer registries" in pdf format.

lib: this folder includes library files used by the software at run-time.

output: this folder includes four subfolders, one for each of the different error reports that the QCS produces for the four type of files: *Incidence, Mortality, Population, LifeTables.*

samples: this folder contains two "empty" examples on the running of the application as a background process.

sys: this folder includes the following subfolders: *Config, Images, Log, Temp*. These folders are used by the operational system of the QCS.

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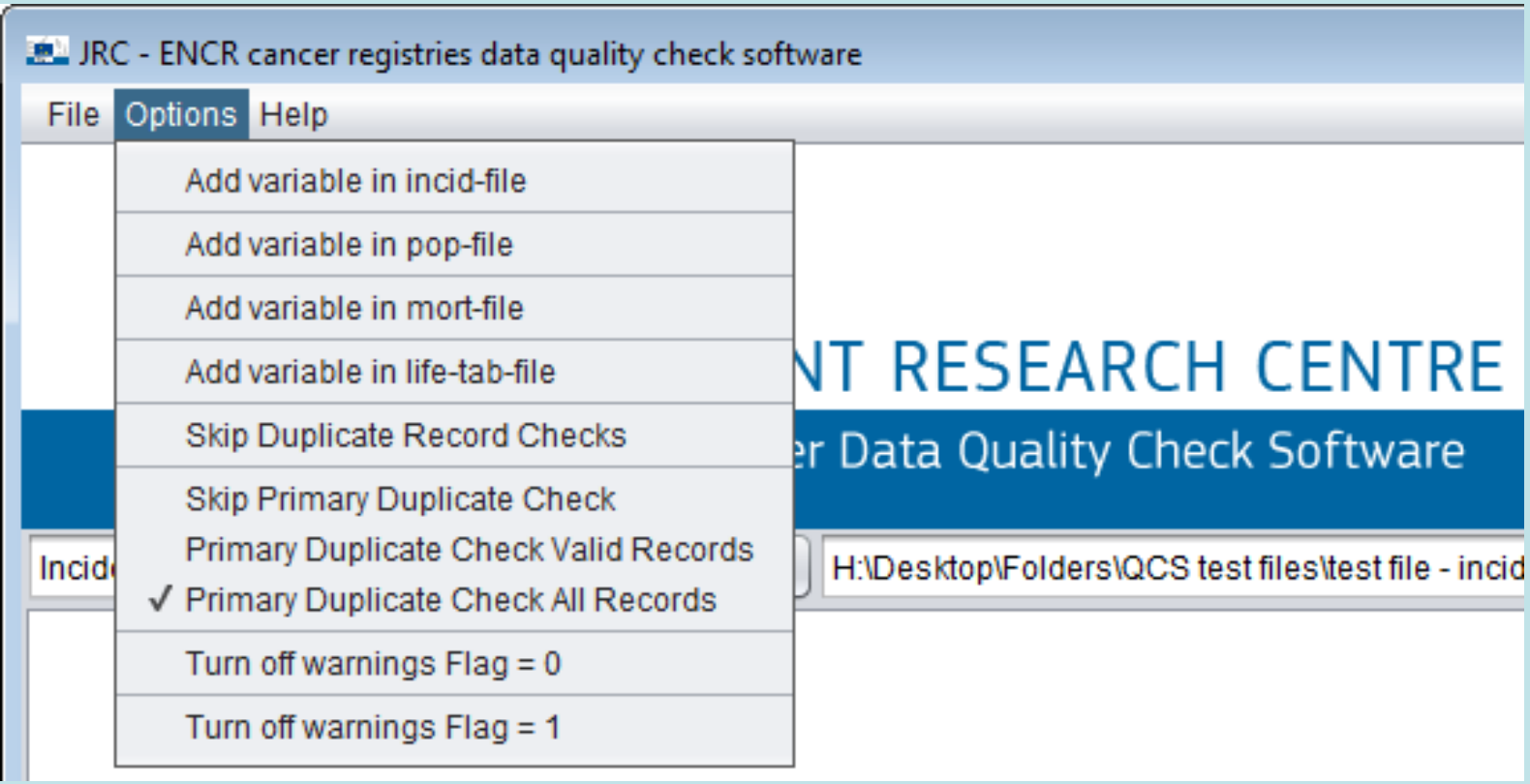
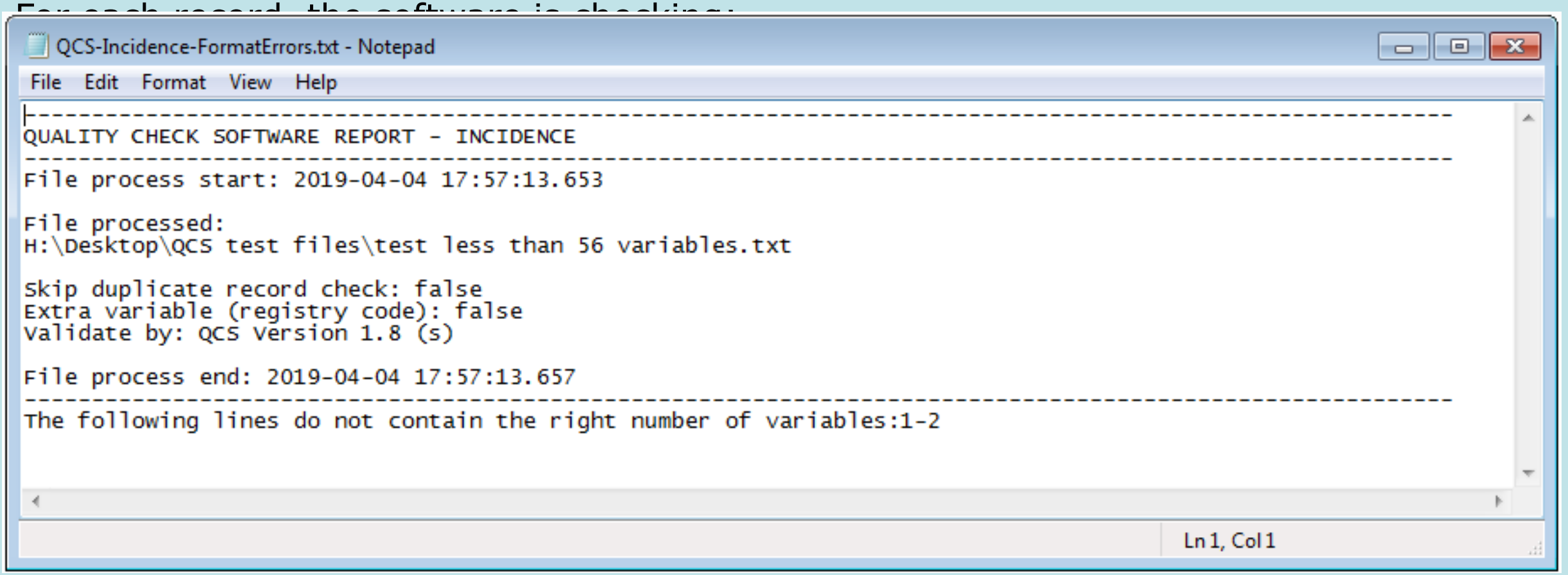
Running the JRC-ENCR Quality Check Software



- Prepare the file (header, number of variables, file format).
- Run (possibility to select different options).

JRC-ENCR Quality Check Software: file format check

For each record, the software is checking:



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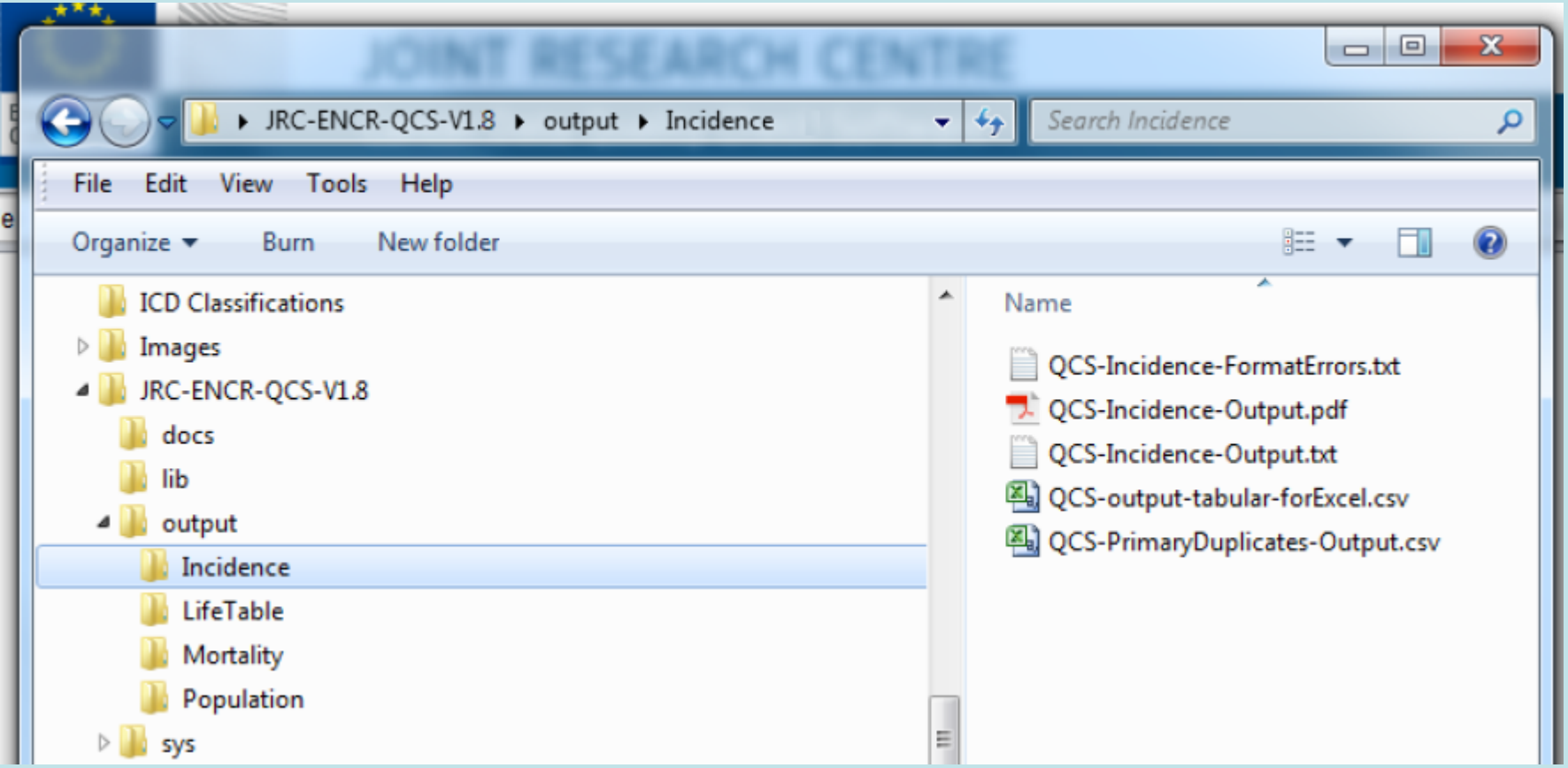
JRC-ENCR QCS output: files



- **Format Errors**
- **PDF Output**
- **TXT Output**
- **CSV Output**

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JRC-ENCR QCS output: PDF and TXT files

PDF and **TXT** outputs **(QCS-Incidence-Output.pdf** and **.txt)**

Variables: 1_Flag, 2_Patient_ID, 3_Tumour_ID, 13_Topo, 14_Morpho, 15_Beh, 7_Sex, DoI, DoB, *Var_Name*, *Var_Value*, *Error_Code*

```
**********************************************************************************************************
ERRORS AND WARNINGS
**********************************************************************************************************
----------------------------------------------------------------------------------------------------------
 2_Patient_ID                                          3_Tumour_ID
----------------------------------------------------------------------------------------------------------
 1_Flag  13_Topo  14_Morpho  15_Beh  7_Sex  DoI        DoB          Var_Name       Var_Value  Error_Code
----------------------------------------------------------------------------------------------------------
 1       C421     9731       3       2      4/11/2014  2/12/1958    14_Morpho      9731       W-MOTO
                                                                    13_Topo        C421       W-MOTO
```

JRC-ENCR QCS output: CSV file

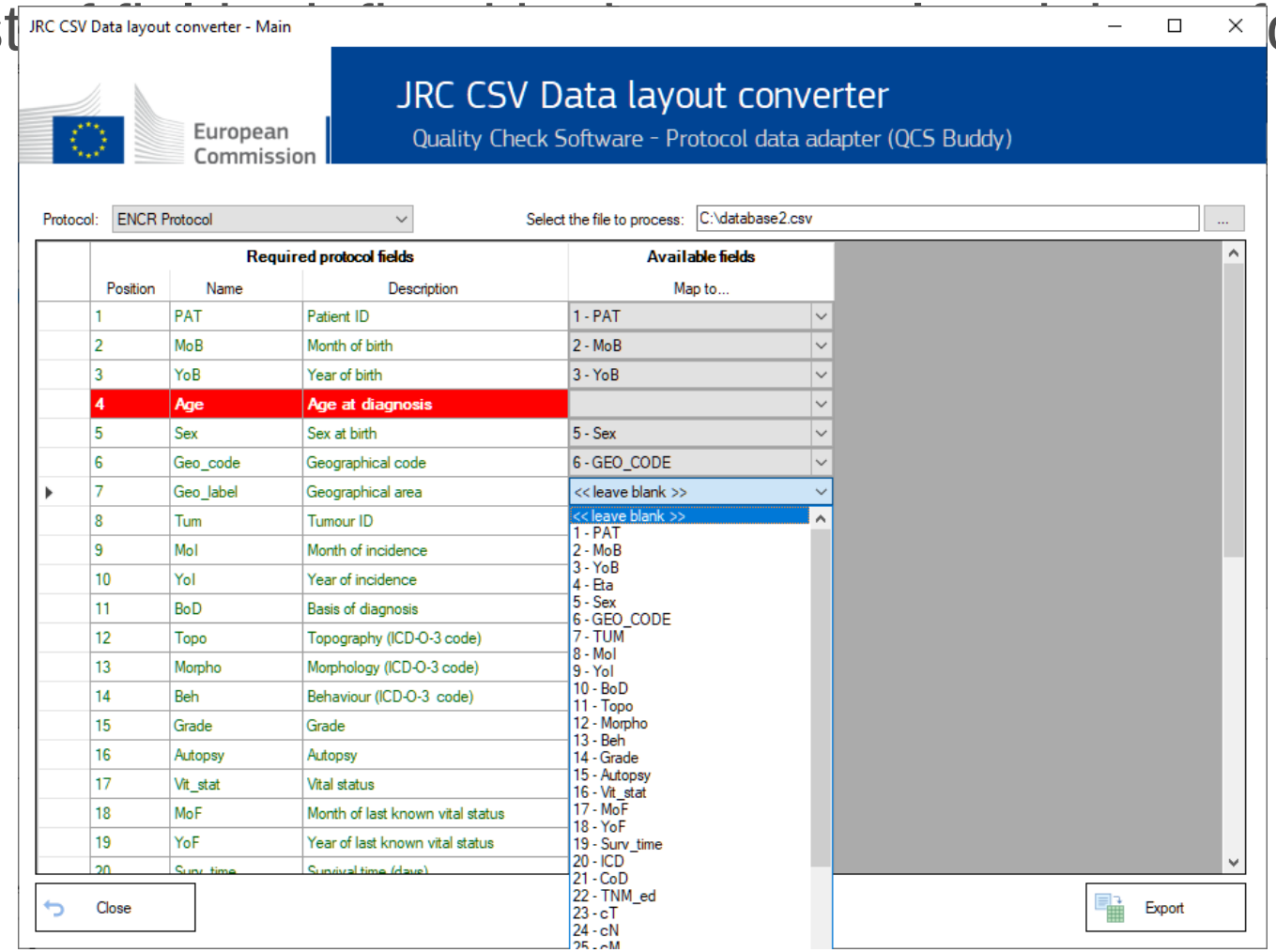
CSV output **(QCS-output-tabular-forExcel.csv)**

Variables: Line_nr, 2_Patient_ID, 3_Tumour_ID, 1_Flag, 13_Topo, 14_Morpho, 15_Beh, 7_Sex, DoI, DoB, *Error_code*, *Error_Description*, *Var1_Name*, *Var1_Value*, *Var2_Name*…

Line_nr	2_Patient_ID	3_Tumour_ID	1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Error_code	Error_Description	Var1_Name	Var1_Value	Var2_Name	Var2_Va
209	13198	1	1	C421	9731	3	2	04/11/2014	02/12/1958	W-MOTO	Morphology + Topography not valid	13_Topo	C421	14_Morpho	9731
213	13490	1	1	C539	8000	3	2	30/06/2014	26/06/1970	W-BDMS	Morphology not specific enough (p.30)	14_Morpho	8000	12_BoD	7
217	13498	1	1	C445	8090	3	1	29/03/2014	31/05/1967	W-TOLA	Topography + Laterality not valid	13_Topo	C445	23_Laterality	3
251	13555	2	1	C445	8092	3	1	17/08/2014	10/10/1972	W-TOLA	Topography + Laterality not valid	13_Topo	C445	23_Laterality	3
444	13787	1	1	C445	8743	2	1	09/10/2014	21/10/1953	E-MOBE	Morphology + Behavior not valid	14_Morpho	8743	15_Beh	2
874	14002	1	1	C445	8743	2	1	10/11/2014	10/10/1952	W-TOLA	Topography + Laterality not valid	13_Topo	C445	23_Laterality	2
1903	15011	1	1	C421	9761	3	1	15/09/2015	23/11/1969	W-MOTO	Morphology + Topography not valid	13_Topo	C421	14_Morpho	9761
1951	15077	1	1	C445	8743	2	2	19/09/2015	02/03/1947	E-MOBE	Morphology + Behavior not valid	14_Morpho	8743	15_Beh	2
2566	15701	1	1	C421	9960	3	2	01/11/2015	14/03/1948	W-BDMS	Morphology not specific enough (p.30)	14_Morpho	9960	12_BoD	5
2571	15709	1	1	C445	8090	3	2	10/10/2015	27/03/1943	W-TOLA	Topography + Laterality not valid	13_Topo	C445	23_Laterality	2
2575	15722	1	1	C421	9962	3	1	23/09/2015	18/01/1934	W-BDMU	BoD + Morpho/Beh (p.30)	14_Morpho	9962	12_BoD	6
2756	15929	1	1	C421	9731	3	1	12/08/2015	15/08/1933	W-MOTO	Morphology + Topography not valid	13_Topo	C421	14_Morpho	9731

CSV Data layout converter (*QCS Buddy*)

- List [illegible] found in the data file



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Quality Check Software (QCS) Version 2.0

- Updated list of checks

```
**********************************************************************
KEY TO ERROR AND WARNING CODES
**********************************************************************

E-AGEC: Age is invalid + impossible to calculate age from DoI - DoB
E-AGED: DoI - DoB different from Age
E-CoDA: DoB + DoI not coherent (p.16)
E-CoDV: Date of last known vital status not valid
E-DUPL: Duplicate PatientID-TumourID
E-ECOD: ICD edition + Cause of death not valid
E-FORM: Format error
E-HEAD: Errors in the file header (number of columns, header's separator,
        order of columns, etc.)
E-MISS: Value missing
E-OUTR: Value out of range
E-RECO: Wrong number of fields in the record
E-SETO: Topography + Sex not valid (tab.4)
```

```
WARNING CODES:

W-AGMT: Unlikely Age + tumour type (tab.3)
W-BDMO: Morphology too specific (p.30)
W-BDMS: Morphology not specific enough (p.30)
W-BDMU: BoD + Morphology/Behaviour (p.30)
W-BDpM: BoD + pM not valid (p.40)
W-BDpN: BoD + pN not valid (p.40)
W-BDpT: BoD + pT not valid (p.40)
W-BEGR: Behaviour + grade not valid (tab.7)
W-BTNM: Behaviour + TNM not valid (p.41)
W-EDIM: Consistency between TNM edition and pM
W-MISS: Value missing
W-MOBE: Morphology + Behaviour not valid
W-MOGR: Morphology + grade not valid (tab.6-7)
W-MOTO: Morphology + Topography not valid (tab.8)
W-MPMT: Multiple primary malignant tumour (p.42)
W-SEMO: Sex + Morphology not valid (tab.5)
W-TNME: TNM edition not valid
W-TNMM: Morphology not addressed by the Topography table
        used by the target TNM edition
W-TNMS: Topography + TNM edition + T,N,M + Stage (p.54-99)
W-UNKN: Value set to missing/unknown
```

Stage: updates and new checks with QCS 2.0

- Consistency between Topography, TNM Edition, TNM and Stage (**W-TNMS**)
- Consistency between Topography, TNM Edition, TNM, Stage and Morphology (**W-TNMM**)
- Consistency between TNM Edition and pM (**W-EDIM**)
- Invalid TNM Edition (**W-TNME**)
- All **TNM** Checks: update to **8th Edition (6th and 7th Eds are also included)**

QCS 2.0

- **ICD-O-3.2** implementation

Code	Beh	Terms
8023	/3	Nuclear protein in testis (NUT) associated carcinoma NUT carcinoma NUT midline carcinoma
8054	/0	Warty dyskeratoma
	/3	Warty carcinoma Condylomatous carcinoma Warty-basaloid carcinoma
8085	/3	Squamous cell carcinoma, HPV-positive

IACR International Association of Cancer Registries

Groups of malignant neoplasms considered to be histologically 'different' for the purpose of defining multiple tumours, ICD-O-3.2

International Agency for World Health Organization

Group	ICD-O-3 Morphology
Carcinomas	
1. Squamous and transitional cell carcinoma	8051-8086, 8120-8131
2. Basal cell carcinomas	8090-8110
3. Adenocarcinomas	8140-8149, 8160-8163, 8190-8221, 8250-8552, 8570-8576, 8940-8941, 9110
4. Other specific carcinomas	8023, 8030-8046, 8150-8158, 8170-8180, 8230-8249, 8560-8562, 8580-8589
(5.) Unspecified carcinomas (NOS)	8010-8015, 8020-8022, 8050
6. Sarcomas and soft tissue tumors	8680-8714, 8800-8921, 8930-8936, 8990-8992, 9040-9045, 9120-9125, 9130-9138, 9141-9252, 9370-9373, 9540-9582

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• JRC-ENCR QCS: interpretation of the output

ERRORS (E-)

- ❑ **Core/optional variable values (E-OUTR)**
- ❑ **Core/optional variable format (E-FORM)**
- ❑ **Core variable missing values (E-MISS)**
- ❑ **Morphology and behaviour combinations (E-MOBE)**
- ❑ **Coherence between dates (E-CoDV) e (E-CoDA)**
- ❑ **Sex and topography combinations (E-SETO)**

WARNINGS (W-)

- ❑ **Age and topography/morphology combinations (W-AGMT)**
- ❑ **Basis of diagnosis and morphology combinations (W-BDMO and W-BDMS)**
- ❑ **Basis of diagnosis and morphology/behaviour combinations (W-BDMU)**
- ❑ **Behaviour and TNM combinations (W-BTNM)**
- ❑ **Morphology, behaviour and grade combinations (W-MOGR)**
- ❑ **Morphology and topography combinations (W-MOTO)**

WARNINGS for Multiple Primary Malignant Tumours

• JRC-ENCR QCS: interpretation of the output

Consistency within variables

1. **Core and optional variable values according to the 2015 call for data protocol (E-OUTR).**

2. **Core and optional variable format according to the 2015 call for data protocol (E-FORM).**

3. **Core variable missing values (E-MISS) and unknown values (W-UNKN). Missing and unknown values are allowed for the optional variables.**

• JRC-ENCR QCS: interpretation of the output

Consistency within variables

1. Core and optional variable values (E-OUTR)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C427	9800	3	2	15/9/1999	15/10/1910	13_Topo	C427	E-OUTR

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C349	8140	3	2	11/4/2002	14/11/1924	27_Cause_death	XXX.9	E-OUTR

• JRC-ENCR QCS: interpretation of the output

Consistency within variables

2. Core and optional variable format (E-FORM)

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C443	80984	3	1	99/99/2012	99/99/9999	14_Morpho	80984	E-FORM

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C349	8000	3	1	12/6/2003	9/1/1933	27_Cause_death	0162.9	E-FORM

• JRC-ENCR QCS: interpretation of the output

Consistency within variables

3. Core variable missing values (E-MISS)

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C187		0	1	99/9/2000	99/11/1927	14_Morpho		E-MISS

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C349	8045	3	1	99/99/2011	99/99/999	12_BoD		E-MISS

• JRC-ENCR QCS: interpretation of the output

Consistency within variables

3. Core variable unknown/missing values (W-UNKN)/(E-MISS)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C323	8480	3	1	99/99/2008	99/99/9999	12_BoD	9	W-UNKN

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C159	8070	3	1	27/3/2009	99/99/9999	5_Month_DoB	99	W-UNKN
							6_Year_DoB	9999	W-UNKN
							11_Age	999	E-MISS

• JRC-ENCR QCS: interpretation of the output

Consistency between variables

1. **Consistency between dates:**
   Date of birth and date of incidence **(E-CoDA)**
   Date of incidence and date of follow-up **(E-CoDV)**
2. **Consistency between demographical information and tumour data:**
   Sex and topography **(E-SETO)**
   Age and topography/morphology **(W-AGMT)**
3. **Consistency between tumour variables:**
   Morphology and behaviour **(E-MOBE)**
   Behaviour and TNM **(W-BTNM)**
   Basis of diagnosis and morphology/behaviour **(W-BDMU)**
   Morphology, behaviour and grade **(W-MOGR)**
   Basis of diagnosis and morphology **(W-BDMO and W-BDMS)**
   Morphology and topography **(W-MOTO)**
4. **Survival and extent of disease**

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between dates

Consistency between date of birth and date of incidence (E-CoDA)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C159	8140	3	2	15/12/1992	30/8/2016	6_Year_DoB	2016	E-CoDA

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C159	8140	3	2	15/12/1992	30/8/2016	4_Day_DoB	30	E-CoDV
							5_Month_DoB	8	E-CoDV
							6_Year_DoB	2016	E-CoDV
							19_Day_FU	15	E-CoDV
							20_Month_FU	1	E-CoDV
							21_Year_FU	1993	E-CoDV

Consistency between date of incidence and date of follow-up (E-CoDV)

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between demographical information and tumour data

Consistency between sex and topography (E-SETO)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C569	8000	3	1	99/99/2009	99/99/9999	7_Sex 13_Topo	1 C569	E-SETO E-SETO

Consistency between age and topography/morphology (W-AGMT)

2_Patient_I						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C619	8140	3	1	99/3/2007	29/5/1996	11_Age 13_Topo 14_Morpho	10 C619 8140	W-AGMT W-AGMT W-AGMT

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between morphology and behaviour (E-MOBE)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C421	9950	1	1	20/12/1989	7/3/1921	14_Morpho 15_Beh	9950 1	E-MOBE E-MOBE

Consistency between behaviour and TNM (W-BTNM)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C629	9061	3	1	99/2/2011	99/9/1991	15_Beh 30_pT	3 is	W-BTNM W-BTNM

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between basis of diagnosis and pT (W-BDpT)

PAT 4089 Tum 407

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
5	C343	8046	3	1	16/02/2004	01/12/1954	12_BoD 30_pT	5 2	W-BDpT W-BDpT

Consistency between basis of diagnosis and pN (W-BDpN)

PAT 44346 Tum 1860

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
6	C341	8140	3	1	11/10/2007	23/09/1947	12_BoD 31_pN	6 1	W-BDpN W-BDpN

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between basis of diagnosis and pM (W-BDpM)

PAT 3154 Tum 44379

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
4	C619	8000	3	1	22/07/2008	23/01/1938	12_BoD 32_pM	4 1	W-BDpM W-BDpM

Consistency between TNM edition and pM (W-EDIM)

PAT 2387 Tum 3012

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
7	C009	8140	3	2	11/1980	1/1930	TNM_ed pM	7 X	W-EDIM W-EDIM

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between TNM and morphology (W-TNMM)

PAT 135 Tum 131

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
7	C240	8240	3	2	14/05/2004	24/04/1940	13_Topo	C240	W-TNMM
							14_Morpho	8240	W-TNMM
							37_TNM_edition	6	W-TNMM
							36_Stage	IB	W-TNMM
							30_pT	2	W-TNMM
							31_pN	0	W-TNMM
							32_pM	0	W-TNMM
							33_cT	9	W-TNMM
							34_cN	9	W-TNMM
							35_cM	9	W-TNMM

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between TNM and stage (W-TNMS)

PAT 421 Tum 479

BoD	Topo	Morpho	Beh	Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
7	C621	9061	3	1	13/09/2004	17/04/1978	13_Topo	C621	W-TNMS
							14_Morpho	9061	W-TNMS
							37_TNM_edition	6	W-TNMS
							36_Stage	IB	W-TNMS
							30_pT	2	W-TNMS
							31_pN	1	W-TNMS
							32_pM	0	W-TNMS
							33_cT	9	W-TNMS
							34_cN	9	W-TNMS
							35_cM	9	W-TNMS
							16_Grade	9	W-TNMS
							11_Age	26	W-TNMS
							15_Beh	3	W-TNMS

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between basis of diagnosis and morphology/behaviour (W-BDMU)

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C421	9823	3	2	99/5/2013	99/7/1927	14_Morpho 12_BoD	9823 6	W-BDMU W-BDMU

2_Patient_ID					3_Tumour_ID				
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C187	8210	2	2	99/11/1996	99/11/1922	12_BoD 15_Beh	6 2	W-BDMU W-BDMU

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between morphology, behaviour and grade (W-MOGR)

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C569	8620	3	2	27/5/2011	10/7/1954	16_Grade	5	W-MOGR
							14_Morpho	8620	W-MOGR
							15_Beh	3	W-MOGR

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C445	9709	3	1	99/5/1998	99/11/1913	16_Grade	6	W-MOGR
							14_Morpho	9709	W-MOGR
							15_Beh	3	W-MOGR

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between basis of diagnosis and morphology/behaviour (W-BDMO)

Morphology/behaviour are too specific respect to the basis of diagnosis

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C209	8140	2	2	23/10/2013	28/11/1927	12_BoD	1	W-BDMO
							15_Beh	2	W-BDMO

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C421	9732	3	1	27/3/1973	1/7/1915	14_Morpho	9732	W-BDMO
							12_BoD	2	W-BDMO

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between basis of diagnosis and morphology (W-BDMS)

Morphology is not specific enough respect to the basis of diagnosis

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C341	8000	3	2	99/1/1991	99/1/1907	14_Morpho 12_BoD	8000 7	W-BDMS W-BDMS

2_Patient_ID						3_Tumour_ID			
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C809	8001	3	2	99/5/1990	99/8/1914	14_Morpho 12_BoD	8001 7	W-BDMS W-BDMS

• JRC-ENCR QCS: interpretation of the output

Consistency between variables: consistency between tumour variables

Consistency between morphology and topography (W-MOTO)

2_Patient_ID 3_Tumour_ID

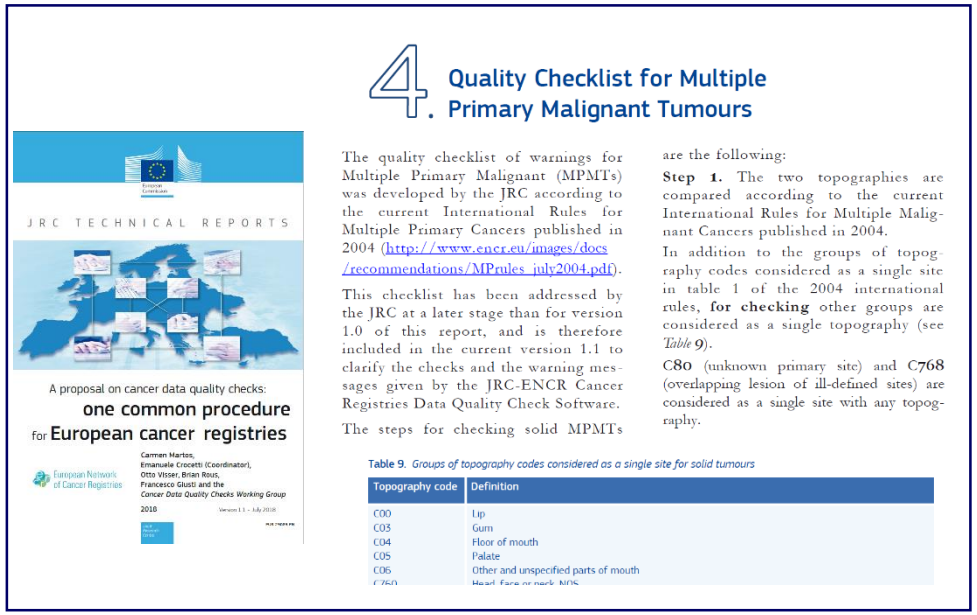
1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
0	C779	8070	3	2	30/12/2008	31/10/1946	14_Morpho 13_Topo	8070 C779	W-MOTO W-MOTO

2_Patient_ID 62731 3_Tumour_ID

1_Flag	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	Var_Name	Var_Value	Error_Code
1	C809	9823	3	1	30/10/2003	29/5/1944	14_Morpho 13_Topo	9823 C809	W-MOTO W-MOTO

• JRC-ENCR QCS: interpretation of the output

Consistency between records: Multiple Primary Malignant tumours (MPMT)



1. The 2004 International rules for multiple primary cancers have been implemented in the JRC-ENCR QCS, taking into account the criteria for reporting/analysis.
2. The objective is to identify tumours which were registered as MPMT and could be the same tumour.
3. Example: 2 breast tumours with the same morphology are considered the same tumour for incidence estimation, independently of the laterality.
   Nevertheless, if the laterality is different, both tumours should be registered.

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• JRC-ENCR QCS: interpretation of the output

Checks between records: Multiple Primary Malignant Tumours

2_Patient_ID	A					3_Tumour_ID	a	
12_BoD	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	18_Vital_Status	23_Laterality
2	C717	8000	3	2	23/12/1996	31/12/1934	2	9

2_Patient_ID	A					3_Tumour_ID	b	
12_BoD	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	18_Vital_Status	23_Laterality
5	C717	9590	3	2	22/11/1996	31/12/1934	2	9

- JRC-ENCR QCS: interpretation of the output

Checks between records: Multiple Primary Malignant Tumours

2_Patient_ID	B					3_Tumour_ID	a	
12_BoD	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	18_Vital_Status	23_Laterality
7	C619	8140	3	1	10/1/2008	27/6/1929	2	9
2_Patient_ID	B					3_Tumour_ID	b	
12_BoD	13_Topo	14_Morpho	15_Beh	7_Sex	DoI	DoB	18_Vital_Status	23_Laterality
7	C809	8010	3	1	30/4/2008	27/6/1929	2	9

Keep in touch

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Your feedback will be greatly appreciated ☺

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