



I A R C

International Agency for Research on Cancer
World Health Organization
International Association of Cancer Registries



I A C R

CHECK AND CONVERSION PROGRAMS

FOR CANCER REGISTRIES

(IARC/IACR Tools for Cancer Registries)

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FOREWORD

The publication of the third edition of the International Classification of Diseases for Oncology (ICD-O-3) (WHO, 2000) required the preparation of new programs to convert and to validate data collected by cancer registries. The data are used for epidemiological research and to monitor disease incidence and survival, and it is imperative that they be accurate as possible, so as to provide a true reflection of patterns and trends in cancer occurrence.

A variety of methods are employed to check validity in cancer registries. A widely used method is the so-called internal consistency, whereby computer algorithms are used to detect unlikely or impossible codes, or combinations of codes. The programs provided in this publication include a revised version of the IARC/IACR Check Program originally published in *Comparability and Quality Control in Cancer Registration* (Parkin *et al*, 1994). This first program was created to assess data submitted for *Cancer Incidence in Five Continents* (IARC Scientific Publications nos. 120, 143 and 155). The new program is based on ICD-O-3.

Conversion programs are provided for ICD-O-3 to ICD-10, and the present publication also includes the programs which have been published previously to convert data between all editions of ICD-O and the International Classification of Diseases (ICD).

This publication is a result of the continuing collaboration between the International Agency for Research on Cancer and the International Association of Cancer Registries, and is the latest in a series of technical materials to help cancer registries worldwide to achieve high-quality data which can be used for comparative analyses.

IARC/IACR Conversion Programs

A variety of classification systems have been used over the years to code the topography, morphology and behaviour of cancer. The advent of the International Classification of Diseases for Oncology in 1976 (ICD-O-1), which is compatible with the IXth edition of the International Classification of Diseases (ICD-9), resulted in a rapid increase in conformity of use of the WHO international classifications in cancer registries.

Most cancer registries now code both topography and morphology using one of the three existing versions of ICD-O (ICD-O-1, 1976; ICD-O-2, 1990 and ICD-O-3, 2000). This allows registries to collect the maximum amount of information possible to describe a cancer, for example giving information on the site of an extra-nodal lymphoma, or of a melanoma. Data on cancer incidence, however, are conventionally presented primarily according to topography (incidence by histological type would be presented separately) and the data coded to ICD-O have to be converted to the appropriate revision of the ICD.

The programs provided with this publication permit the user to convert data between the following classifications:

ICD-9 (1975) to ICD-O-2 (1990)

ICD-9 (1975) and ICD-O-1 morphology (1976) to ICD-O-2 (1990)

ICD-10 (1992) to ICD-O-2 (1990)

ICD-10 (1992) and ICD-O-2 morphology (1990) to ICD-O-2 (1990)

ICD-O-1 (1976) to ICD-O-2 (1990)

ICD-O Field Trial Edition (1988) to ICD-O-2 (1990)

ICD-O-2 (1990) to ICD-O-3 (2000)

ICD-O-2 (1990) to ICD-9 (1975)

ICD-O-2 (1990) to ICD-10 (1992)

ICD-O-3 (2000) to ICD-10 (1992)

Instructions for use of the conversion programs are provided in Appendix 2 and in the setup of the programs.

The IARC/IACR CHECK Program

Internal consistency

The monitoring of data quality in a cancer registry is a continuous process, which includes routine checking for validity and consistency. The best test of validity involves comparing recorded data with the original source documents, to assess the degree of accuracy with which data from these documents were abstracted.

It is nonetheless important to monitor the internal consistency of the registry data, i.e. to detect impossible or unlikely combinations of codes for different data items. The complexity of this type of quality control operation varies from a rapid visual scan of an abstract to check that the essential items of information are complete, to extensive edit programs carried out by computer that are designed to flag any inconsistencies.

The most basic edit check is on the validity of the codes used, so that records with coded values outside the permitted range for the item (as defined in the registry) are rejected. At the next level are checks of logical consistency between data items. A cancer cannot be diagnosed before the date of birth of a patient, a man cannot have ovarian cancer, treatment cannot be undertaken for a patient who has died. An edit program would reject these impossible combinations. It may also flag *unlikely* or *unusual* combinations such as an unexpected cancer type in a child, a hospital department which would not normally treat the given diagnosis, or a child who is married.

Most registries use edit checks of varying degrees of complexity. Editing can take place at the time of data entry, or in batch mode at a later stage.

Development of the IARC/IACR CHECK Program

The first IARC/IACR CHECK Program was created to assess data submitted for Volume VI of *Cancer Incidence in Five Continents* (Parkin *et al.*, 1992). This was the first volume for which contributors were encouraged to send data as a listing of cases, specifying the coding scheme that was used for topography, morphology and basis of diagnosis. The program included the traditional data checks normally carried out in registries, such as validity of codes, sex versus site, age versus date of birth, site versus morphology, and site/histology versus age. The major part of the development work consisted of preparing an extensive check of the site/morphology combinations, in order to reject outright errors, and to flag unlikely combinations. The validation program for consistency between site and histology was based on ICDO-1 and -2. The present program is based on ICD-O-3.

The original program defined some 62 “families”, incorporating one or more ICD-O topography and morphology codes, that were considered as acceptable (likely combinations) or non-acceptable (very unlikely combinations). For example, the topographic code for bone (ICD-O-2 C40, C41) was considered acceptable with morphology codes for osteosarcomas, but not with carcinomas.

Following publication of ICD-O-3, the ‘families’ have been revised and a full description of accepted, unlikely and unacceptable site/morphology combinations is provided in Appendix 1.

It is important to note that the CHECK Program checks **only the data items normally used for the analysis of incidence, i.e. sex, age/date of birth, incidence date, site of primary, histology and behaviour, grade and basis of diagnosis**. It was designed for use with data sets from throughout the world; as a consequence, some of the controls may be less stringent than those designed for use in particular national or local settings.

Description of the program

Instructions for using this program are given in Appendix 2 and on the programs.

The edit checks carried out by the program are described below:

1. Individual data item edits

Date of birth	Must be a valid date according to the format specified.
Incidence date	Must be a valid date according to the format specified.
Age at incidence	Must be a positive numeric value, not greater than 105 years. Age can be calculated if both birth and incidence dates are provided. If date of birth is not known, the corresponding field must be filed with blanks, and age is set to 999.
Sex	Must be a valid code
Site	Must be a valid ICD-O-3 code.
Morphology	Must be a valid ICD-O-3 code.
Behaviour	Must be 0, 1, 2, 3 (and 6 or 9, if specified)
Grade	Must be a valid ICD-O-3 code.

2. Data combination edits

Incidence/birth dates	The birth date must be before the incidence date.																		
Age/incidence/birth dates	When all are present, the calculated age must be equal to age +/- one year.																		
Age/site/histology	<p>At certain ages some tumours are very unlikely. This routine identifies such sites and histologies:</p> <p>1. If the given age is less than 15, it performs a <i>childhood</i> check following rules described in the '<i>International Classification of Childhood Tumours</i>', page 11:</p> <table border="0"> <thead> <tr> <th><u>Diagnostic group</u></th> <th><u>Unlikely age (years)</u></th> </tr> </thead> <tbody> <tr> <td>Hodgkin lymphoma</td> <td>0-2</td> </tr> <tr> <td>Neuroblastoma</td> <td>10-14</td> </tr> <tr> <td>Retinoblastoma</td> <td>6-14</td> </tr> <tr> <td>Wilms' tumour</td> <td>9-14</td> </tr> <tr> <td>Renal carcinoma</td> <td>0-8</td> </tr> <tr> <td>Hepatoblastoma</td> <td>6-14</td> </tr> <tr> <td>Hepatic carcinoma</td> <td>0-8</td> </tr> <tr> <td>Osteosarcoma</td> <td>0-5</td> </tr> </tbody> </table>	<u>Diagnostic group</u>	<u>Unlikely age (years)</u>	Hodgkin lymphoma	0-2	Neuroblastoma	10-14	Retinoblastoma	6-14	Wilms' tumour	9-14	Renal carcinoma	0-8	Hepatoblastoma	6-14	Hepatic carcinoma	0-8	Osteosarcoma	0-5
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Hepatoblastoma	6-14																		
Hepatic carcinoma	0-8																		
Osteosarcoma	0-5																		

	<p>Chondrosarcoma 0-5 Ewing sarcoma 0-3 Non-gonadal germ cell 8-14 Gonadal carcinoma 0-14 Thyroid carcinoma 0-5 Nasopharyngeal carcinoma 0-5 Skin carcinoma 0-4 Carcinoma, NOS 0-4 Mesothelial neoplasms (M905_) 0-14</p> <p>2. If the given age is greater than 15, then the following combinations are considered to be <u>unlikely</u>:</p> <ul style="list-style-type: none"> • If age is less than 40 and site is C61._ and histology is 814_ • If age is less than 20 and site is C15._,C19._,C20._,C21._,C23._,C24._,C38.4,C50._,C53._,C54._ or C55._ • If age is less than 20 and site is C17._ and histology less than 9590 (i.e. not lymphoma) • If age is less than 20 and site is C33._ or site is C34._ or site is C18._ and histology is not equal to 824_ (i.e. not carcinoid). • If age is greater than 45 and site is C58._ and histology is 9100 • If age is less than or equal to 25 and histology is 9732 or 9823 • If histology is 8910,8960,8970,8981,8991,9072,9470,951_ or 9687
Site/histology	This routine identifies the morphological codes which are used exclusively with specific sites, or combinations of site and morphology which are unusual or unlikely. The morphological codes are grouped into 'families'. Appendix 1 shows a table of groups ("families") that are considered to be unusual or unlikely combinations.
Sex/site	Some sex/site combinations are impossible: <ol style="list-style-type: none"> 1. If sex is male and site is: C51._,C52._,C53._,C54._,C55._,C56._,C57._ or C58._ 2. If sex is female and site is C60._,C61._,C62._, or C63._
Sex/histology	Some sex/histology combinations are unlikely: <ol style="list-style-type: none"> 1. If sex is male and histological family is 23,24,25,26,27 2. If sex is female and histological family is 28 or 29

Behaviour/site	<p>The following combinations are considered as <u>unlikely</u> by the program:</p> <table> <thead> <tr> <th>Site code</th> <th>Behaviour code</th> </tr> </thead> <tbody> <tr> <td>C40._</td> <td>2</td> </tr> <tr> <td>C41._</td> <td>2</td> </tr> <tr> <td>C42._</td> <td>2</td> </tr> <tr> <td>C47._</td> <td>2</td> </tr> <tr> <td>C49._</td> <td>2</td> </tr> <tr> <td>C70._</td> <td>2</td> </tr> <tr> <td>C71._</td> <td>2</td> </tr> <tr> <td>C72._</td> <td>2</td> </tr> </tbody> </table>	Site code	Behaviour code	C40._	2	C41._	2	C42._	2	C47._	2	C49._	2	C70._	2	C71._	2	C72._	2
Site code	Behaviour code																		
C40._	2																		
C41._	2																		
C42._	2																		
C47._	2																		
C49._	2																		
C70._	2																		
C71._	2																		
C72._	2																		
Behaviour/histology	<p>The combinations that are <i>not</i> listed in the morphology numeric list of ICD-O-3 are considered to be <u>unlikely</u>.</p>																		

Grade/histology	<p>Some histological terms, such as “<i>malignant teratoma, anaplastic</i>” (9082/34) include a grade description. This routine identifies these histological terms and checks if the associated grade code is correct (ICD-O-3 page 67):</p> <ol style="list-style-type: none"> 1. If behaviour code is less than 3 and grade code is less than 9 (only malignant tumours should be graded, ICD-O-3, page 30). 2. If grade code is greater or equal 5 and grade code is less or equal 8 and histology is less than 9590 (ICD-O-3 page 31). 3. If grade code is greater or equal 1 and grade code is less or equal 4 and histology greater or equal 9590. 4. If histology is 9702, 9705, 9706, 9708, 9709, 9717, 9718, 9729, 9827, 9834 or 9837 and grade code not equal to 5. 5. If histology is 9714 or 9831 and grade code not 5 or 7 (T-cell and Null cell lymphoma, anaplastic). 6. If histology is greater than or equal to 9700 and histology less than or equal to 9719 and is not in (4) or (5) and grade is not 5, 8 or 9 (T-cell and NK-cell lymphoma). 7. If histology is greater than or equal to 9670 and histology less than or equal to 9699 or histology is 9728, 9823, 9826, 9833 or 9836 and grade not equal to 6 (B-cell lymphoma). 8. If histology is 9948 and grade is not 8. 9. If histology is 8331,9187 or 9511 and grade is not 1. 10. If histology is 8332, 8858, 9083, 9243 or 9372 and grade is not 2. 11. If histology is 8631 or 8634 and grade is not 3. 12. If histology is 8020, 8021, 8805, 9062, 9082, 9390, 9392, 9401, 9451, 9505 or 9512 and grade is not 4.
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<p>Basis of diagnosis/histology</p>	<p>The ICD-O-3 morphological code is NOT allocated for the purpose of specifying the basis of diagnosis. However, it would be unlikely for some specific morphological diagnoses to have been made without a histological examination. Certain combinations are exceptions to this general rule and are validated by the program. This edit check is based on the results of a follow-up survey of European Cancer registries, carried out by the <i>European Network of Cancer Registries</i> (1999).</p> <p>A non-microscopically confirmed diagnosis (i.e. a record with a basis of diagnosis code that is NOT listed in the “<i>basis of diagnosis codes for microscopic verification</i>” fields) is accepted only with the following histological codes:</p> <ul style="list-style-type: none"> - Neoplasm, NOS (8000) - Islet cell tumours, gastrinomas (8150-8154) - Hepatocarcinoma (8170) - Pituitary tumours (8270-8281) - Melanoma of the eye (8720 and site is C69._) - Melanoma of skin (8720 and site is C44._) - Sarcoma, NOS (8800) - Nephroblastoma, NOS (8960) - Choriocarcinoma, NOS (9100) - Kaposi sarcoma (9140) - Craniopharyngioma (9350) - Glioma (9380) - Subependymal giant cell astrocytoma (9384/1) - Neuroblastoma, NOS (9500) - Retinoblastoma, NOS (9510) - Meningioma (9530-9539) - Lymphoma, NOS (9590) - Multiple myeloma (9732) - Waldenstrom macroglobulinemia (9761) - Leukaemia, NOS (9800) <p>Otherwise, the combination is considered as <u>unlikely</u>.</p>
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Appendix 1. Site-morphology combinations used in CHECK

Note: Morphological terms that are usually associated with a non-malignant behaviour code are in *italics*.

Family number	Family name	Family description	ICD O 3 Codes	Specific sites	Non-specific sites
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Group 1: Tumours with non-specific site-profile

1	Tumours accepted with any site code	8000 Neoplasm 8001 Tumour cells 8002 Malignant tumour, small cell type 8003 Malignant tumour, giant cell type 9590 Malignant lymphoma, NOS 9591 Malignant lymphoma, non-Hodgkin, NOS 9596 Composite Hodgkin and non-Hodgkin lymphoma 9650 Hodgkin lymphoma, NOS 9651 Hodgkin lymphoma, lymphocyte-rich 9652 Hodgkin lymphoma, mixed cellularity, NOS 9653 Hodgkin lymphoma, lymphocyte depletion, NOS 9654 Hodgkin lymphoma, lymphocyte depletion, diffuse fibrosis 9655 Hodgkin lymphoma, lymphocyte depletion, reticular 9659 Hodgkin lymphoma, nodular lymphocyte predominance 9661 Hodgkin granuloma 9662 Hodgkin sarcoma 9663 Hodgkin lymphoma, nodular sclerosis, NOS 9664 Hodgkin lymphoma, nodular sclerosis, cellular phase 9665 Hodgkin lymphoma, nodular sclerosis, grade 1 9667 Hodgkin lymphoma, nodular sclerosis, grade 2 9670 Malignant lymphoma, small B lymphocytic, NOS 9671 Malignant lymphoma, lymphoplasmacytic 9673 Mantle cell lymphoma 9675 Malignant lymphoma, mixed small and large cell, diffuse 9678 Primary effusion lymphoma 9680 Malignant lymphoma, large B-cell, diffuse, NOS 9684 Malignant lymphoma, large B-cell, diffuse, immunoblastic, NOS 9687 Burkitt lymphoma, NOS 9690 Follicular lymphoma, NOS 9691 Follicular lymphoma, grade 2 9695 Follicular lymphoma, grade 1 9698 Follicular lymphoma, grade 3 9699 Marginal zone B-cell lymphoma, NOS 9701 Sezary syndrome 9702 Mature T-cell lymphoma, NOS 9705 Angio-immunoblastic T-cell lymphoma 9714 Anaplastic large cell lymphoma, T cell and Null cell type 9716 Hepatosplenic gamma-delta cell lymphoma 9719 NK/T-cell lymphoma, nasal and nasal-type 9727 Precursor cell lymphoblastic lymphoma, NOS 9728 Precursor B-cell lymphoblastic lymphoma 9729 Precursor T-cell lymphoblastic lymphoma	ALL		
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1	Tumours accepted with any site code	9731 Plasmacytoma, NOS 9740 Mast cell sarcoma 9741 Malignant mastocytosis 9750 Malignant histiocytosis <i>9751 Langerhans cell histiocytosis, NOS</i> <i>9752 Langerhans cell histiocytosis, unifocal</i> <i>9753 Langerhans cell histiocytosis, multifocal</i> 9754 Langerhans cell histiocytosis, disseminated 9755 Histiocytic sarcoma 9756 Langerhans cell sarcoma 9757 Interdigitating dendritic cell sarcoma 9758 Follicular dendritic cell sarcoma 9760 Immunoproliferative disease, NOS 9762 Heavy chain disease, NOS <i>9766 Angiocentric immunoproliferative lesion</i> <i>9767 Angioimmunoblastic lymphadenopathy</i> <i>9768 T-gamma lymphoproliferative disease</i> <i>9769 Immunoglobulin deposition disease</i> 9930 Myeloid sarcoma <i>9970 Lymphoproliferative disorder, NOS</i> <i>9975 Myeloproliferative disease, NOS</i>	ALL
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<i>Group 2: Tumours with specific site-profile</i>			
2	Salivary gland tumours	8561 <i>Adenolymphoma</i> 8974 <i>Sialoblastoma</i>	C07 Parotid gland C08 Other and unspecified major salivary glands
3	Stomach tumours	8142 Linitis plastica 8214 Parietal cell carcinoma	C16 Stomach
4	Small intestine tumours	8683 <i>Gangliocytic paraganglioma</i> 9764 Immunoproliferative small intestinal disease	C17 Small intestine
5	Colo-rectal tumours	8213 <i>Serrated adenoma</i> 8220 Adenocarcinoma in adenomatous polyposis coli 8261 Adenocarcinoma in villous adenoma	C18 Colon C19 Rectosigmoid junction C20 Rectum C26 Other and ill-defined digestive organs C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
6	Anal tumours	8124 Cloacogenic carcinoma 8215 Adenocarcinoma of anal glands	C20 Rectum C21 Anus and anal canal
7	Gastrointestinal tumours	8144 Adenocarcinoma, intestinal type 8145 Carcinoma, diffuse type 8221 Adenocarcinoma in multiple adenomatous polyps 8936 Gastrointestinal stromal tumour, NOS 9717 Intestinal T-cell lymphoma	C15 Esophagus C16 Stomach C17 Small intestine C18 Colon C19 Rectosigmoid junction C20 Rectum C26 Other and ill-defined digestive organs C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
8	Liver tumours	8170 Hepatocellular carcinoma 8171 Hepatocellular carcinoma, fibrolamellar 8172 Hepatocellular carcinoma, scirrhous 8173 Hepatocellular carcinoma, spindle cell variant 8174 Hepatocellular carcinoma, clear cell type 8175 Hepatocellular carcinoma, pleomorphic type 8970 Hepatoblastoma 9124 Kupffer cell sarcoma	C22 Liver and intrahepatic bile ducts
9	Biliary tumours	8160 Cholangiocarcinoma 8161 Bile duct cystadenocarcinoma 8162 Klatskin tumour 8180 Combined hepatocellular carcinoma and cholangiocarcinoma 8264 <i>Papillomatosis, glandular</i>	C22 Liver and intrahepatic bile ducts C23 Gallbladder C24 Other and unspecified parts of biliary tract
10	Pancreatic tumours	8150 Islet cell carcinoma 8151 Insulinoma, malignant 8152 Glucagonoma, malignant 8154 Mixed islet cell and exocrine adenocarcinoma 8155 Vipoma, malignant 8202 <i>Microcystic adenoma</i> 8452 Solid pseudopapillary carcinoma 8453 Intraductal papillary-mucinous carcinoma, invasive 8971 Pancreatoblastoma	C25 Pancreas

11	Olfactory tumours	9520 Olfactory neurogenic tumour 9521 Olfactory neurocytoma 9522 Olfactory neuroblastoma 9523 Olfactory neuroepithelioma	C30 Nasal cavity and middle ear C31 Accessory sinuses
12	Lung tumours	8012 Large cell carcinoma <i>8040 Tumourlet</i> 8041 Small cell carcinoma 8042 Oat cell carcinoma 8043 Small cell carcinoma, fusiform cell 8044 Small cell carcinoma, intermediate cell 8045 Combined small cell carcinoma 8046 Non-small cell carcinoma 8250 Bronchiolo-alveolar adenocarcinoma, NOS 8252 Bronchiolo-alveolar carcinoma, non-mucinous 8253 Bronchiolo-alveolar carcinoma, mucinous 8254 Bronchiolo-alveolar carcinoma, mixed mucinous and non-mucinous 8255 Adenocarcinoma with mixed subtypes <i>8827 Myofibroblastic tumour, peribronchial</i> <i>8972 Pulmonary blastoma</i>	C34 Bronchus and lung C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C76.1 Thorax NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
13	Mesotheliomas and pleuropulmonary Blastomas	8973 Pleuropulmonary blastoma 9050 Mesothelioma 9051 Fibrous mesothelioma 9052 Epithelioid mesothelioma 9053 Mesothelioma, biphasic, malignant <i>9055 Cystic mesothelioma</i>	C34 Bronchus and lung C38.4 Pleura NOS C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C48 Retroperitoneum and peritoneum C76.1 Thorax NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
14	Thymus tumours	8580 Thymoma 8581 Thymoma, type A 8582 Thymoma, type AB 8583 Thymoma, type B1 8584 Thymoma, type B2 8585 Thymoma, type B3 8586 Thymic carcinoma, NOS <i>8587 Ectopic hamartomatous thymoma</i> 8588 Spindle epithelial tumour with thymus-like element (SETTLE) 8589 Carcinoma showing thymus-like element (CASTLE) 9679 Mediastinal large B-cell lymphoma	C37 Thymus C38 Heart, mediastinum and pleura
15	Cystic tumours of atrio-ventricular node	<i>8454 Cystic tumour of atrioventricular node</i>	C38.0 Heart

16	Askin tumours	9365 Askin tumour	C39 Other and ill-defined sites within respiratory system and intrathoracic organs C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C49 Connective, subcutaneous and other soft tissues C76.1 Thorax NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
17	Adamantinomas of long bones	9261 Adamantinoma of long bones	C40.0 Long bones of upper limb, scapula and associated joints C40.2 Long bones of lower limb and associated joints C40.8 Overlapping lesion of bones, joints and articular cartilage of limbs C40.9 Bone of limb NOS
18	Bone tumours	8812 Periosteal fibrosarcoma 9180 Osteosarcoma, NOS 9181 Chondroblastic osteosarcoma 9182 Fibroblastic osteosarcoma 9183 Telangiectatic osteosarcoma 9184 Osteosarcoma in Paget disease of bone 9185 Small cell osteosarcoma 9186 Central osteosarcoma 9187 Intraosseous well differentiated osteosarcoma <i>9191 Osteoid osteoma</i> 9192 Parosteal osteosarcoma 9193 Periosteal osteosarcoma 9194 High grade surface osteosarcoma 9195 Intracortical osteosarcoma <i>9200 Osteoblastoma, NOS</i> <i>9210 Osteochondroma</i> 9250 Giant cell tumour of bone <i>9262 Ossifying fibroma</i> 9270 Odontogenic tumour <i>9271 Ameloblastic fibrodentinoma</i> <i>9272 Cementoma, NOS</i> <i>9273 Cementoblastoma, benign</i> <i>9274 Cementifying fibroma</i> <i>9275 Gigantiform cementoma</i> <i>9280 Odontoma, NOS</i> <i>9281 Compound odontoma</i> <i>9282 Complex odontoma</i> 9290 Ameloblastic odontosarcoma <i>9300 Adenomatoid odontogenic tumour</i> <i>9301 Calcifying odontogenic cyst</i> <i>9302 Odontogenic ghost cell tumour</i> 9310 Ameloblastoma <i>9311 Odontoameloblastoma</i> <i>9312 Squamous odontogenic tumour</i> <i>9320 Odontogenic myxoma</i> <i>9321 Central odontogenic fibroma</i> <i>9322 Peripheral odontogenic fibroma</i> 9330 Ameloblastic fibroma <i>9340 Calcifying epithelial odontogenic tumour</i> <i>9341 Clear cell odontogenic tumour</i> 9342 Odontogenic carcinosarcoma	C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites

19	Haematopoietic tumours	<p> 9689 Splenic marginal zone B-cell lymphoma 9732 Multiple myeloma 9733 Plasma cell leukemia 9742 Mast cell leukemia 9761 Waldenstrom macroglobulinemia 9765 <i>Monoclonal gammopathy of undetermined significance</i> 9800 Leukemia, NOS 9801 Acute leukemia, NOS 9805 Acute biphenotypic leukemia 9820 Lymphoid leukemia, NOS 9823 B-cell chronic lymphocytic leukemia/small lymphocytic lymphoma 9826 Burkitt cell leukemia 9827 Adult T-cell leukemia/lymphoma (HTKV-1 positive) 9831 T-cell large granular lymphocytic leukemia 9832 Prolymphocytic leukemia, NOS 9833 Prolymphocytic leukemia, B-cell type 9834 Prolymphocytic leukemia, T-cell type 9835 Precursor cell lymphoblastic leukemia, NOS 9836 Precursor B-cell lymphoblastic leukemia 9837 Precursor T-cell lymphoblastic leukemia 9840 Acute myeloid leukemia, M6 type 9860 Myeloid leukemia, NOS 9861 Acute myeloid leukemia, NOS 9863 Chronic myeloid leukemia, NOS 9866 Acute promyelocytic leukemia, t(15;17)(q22;q11-12) 9867 Acute myelomonocytic leukemia 9870 Acute basophilic leukemia 9871 Acute myeloid leukemia with abnormal marrow eosinophils 9872 Acute myeloid leukemia, minimal differentiation 9873 Acute myeloid leukemia without maturation 9874 Acute myeloid leukemia with maturation 9875 Chronic myelogenous leukemia, BCR/ABL positive 9876 Atypical chronic myeloid leukemia, BCR/ABL negative 9891 Acute monocytic leukemia 9895 Acute myeloid leukemia with multilineage dysplasia 9896 Acute myeloid leukemia, t(8;21)(q22;q22) 9897 Acute myeloid leukemia, 11q23 abnormalities 9910 Acute megakaryoblastic leukemia 9920 Therapy-related acute myeloid leukemia, NOS 9931 Acute panmyelosis with myelofibrosis 9940 Hairy cell leukemia 9945 Chronic myelomonocytic leukemia, NOS 9946 Juvenile myelomonocytic leukemia 9948 Aggressive NK-cell leukemia 9950 Polycythemia vera 9960 Chronic myeloproliferative disease, NOS 9961 Myeloid metaplasia with myeloid metaplasia 9962 Essential thrombocythemia 9963 Chronic neutrophilic leukemia 9964 Hypereosinophilic syndrome 9980 Refractory anemia 9982 Refractory anemia with sideroblasts 9983 Refractory anemia with excess blasts 9984 Refractory anemia with excess blasts in transformation 9985 Refractory cytopenia with multilineage dysplasia 9986 Myelodysplastic syndrome with 5q deletion (5q-) syndrome 9987 Therapy-related myelodysplastic syndrome, NOS 9989 Myelodysplastic syndrome, NOS </p>	C42 Hematopoietic and reticuloendothelial systems
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20	Skin tumours	<p>8081 <i>Bowen disease</i> 8090 Basal cell carcinoma, NOS 8091 Multifocal superficial basal cell carcinoma 8092 Infiltrating basal cell carcinoma 8093 Basal cell carcinoma, fibroepithelial 8094 Basosquamous carcinoma 8095 Metatypical carcinoma 8096 <i>Intraepidermal epithelioma of Jadassohn</i> 8097 Basal cell carcinoma, nodular 8100 <i>Trichoepithelioma</i> 8101 <i>Trichofolliculoma</i> 8102 Trichilemmoma 8103 <i>Pilar tumour</i> 8110 Pilomatrix carcinoma 8390 Skin appendage carcinoma 8391 <i>Follicular fibroma</i> 8392 <i>Syringofibroadenoma</i> 8400 Sweat gland adenocarcinoma 8401 Apocrine adenocarcinoma 8402 Nodular hidradenoma 8403 Malignant eccrine spiradenoma 8404 <i>Hidrocystoma</i> 8405 <i>Papillary hidradenoma</i> 8406 <i>Papillary syringadenoma</i> 8407 Sclerosing sweat duct carcinoma 8408 Eccrine papillary adenocarcinoma 8409 Eccrine poroma, malignant 8410 Sebaceous adnecarcinoma 8413 Eccrine adenocarcinoma 8420 Ceruminous adenocarcinoma 8542 Paget disease, extramammary 8790 <i>Cellular blue nevus</i> 9700 Mycosis fungoides 9709 Cutaneous T-cell lymphoma 9718 Primary cutaneous programs30+ T-cell lymphoproliferative disorder</p>	<p>C00 Lip C44 Skin C51 Vulva C60 Penis C63.2 Scrotum NOS C76 Other and ill-defined sites C80 Unknown primary site</p>
21	Tumours of skin and subcutaneous tissue	<p>8247 Merkel cell carcinoma 8832 Dermatofibrosarcoma 8833 Pigmented dermatofibrosarcoma protuberans 9507 <i>Pacinian tumour</i> 9708 Subcutaneous panniculitis-like T-cell lymphoma</p>	<p>C00 Lip C44 Skin C49 Connective, subcutaneous and other soft tissues C51 Vulva C60 Penis C63.2 Scrotum NOS C63.8 Overlapping lesion of male genital organs, C63.9 Male genital organs NOS C76 Other and ill-defined sites C80 Unknown primary site</p>
22	Breast tumours	<p>8204 <i>Lactating adenoma</i> 8314 Lipid-rich carcinoma 8315 Glycogen-rich carcinoma 8501 Comedocarcinoma 8502 Secretory carcinoma of breast 8505 <i>Intraductal papillomatosis, NOS</i> 8506 <i>Adenoma of nipple</i> 8507 <i>Intraductal micropapillary carcinoma</i> 8508 Cystic hypersecretory carcinoma 8512 Medullary carcinoma with lymphoid stroma 8513 Atypical medullary carcinoma 8520 Lobular carcinoma 8521 Infiltrating ductular carcinoma 8522 Infiltrating duct and lobular carcinoma 8523 Infiltrating duct mixed with other types of carcinoma 8524 Infiltrating lobular mixed with other types of carcinoma</p>	<p>C50 Breast C76.1 Thorax NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site</p>

22	Breast tumours	8530 Inflammatory carcinoma 8540 Paget disease, mammary 8541 Paget disease and infiltrating duct carcinoma of breast 8543 Paget disease and intraductal carcinoma of breast 8983 <i>Adenomyoepithelioma</i> 9010 <i>Fibroadenoma</i> 9011 <i>Intracanalicular fibroadenoma</i> 9012 <i>Pericanalicular fibroadenoma</i> 9016 <i>Giant fibroadenoma</i> 9020 Phyllodes tumour 9030 <i>Juvenile fibroadenoma</i>	C50 Breast C76.1 Thorax NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
23	Genital rhabdomyomas	8905 <i>Genital rhabdomyoma</i>	C51 Vulva C52 Vagina C57.8 Overlapping lesion of female genital organs C57.9 Female genital tract, NOS
24	Endometrial stromal sarcomas	8930 Endometrial stromal sarcoma, NOS 8931 Endometrial stromal sarcoma, low grade	C54 Corpus uteri C55 Uterus, NOS C57.8 Overlapping lesion of female genital organs C57.9 female genital tract, NOS
25	Ovarian tumours	8313 Clear cell adenocarcinofibroma 8441 Serous cystadenocarcinoma, NOS 8442 <i>Serous cystadenoma, borderline malignancy</i> 8443 <i>Clear cell cystadenoma</i> 8444 <i>Clear cell cystic tumour of borderline malignancy</i> 8451 <i>Papillary cystadenoma, borderline malignancy</i> 8460 Papillary serous cystadenocarcinoma 8462 <i>Serous papillary cystic tumour of borderline malignancy</i> 8463 <i>Serous surface papillary tumour of borderline malignancy</i> 8470 Mucinous cystadenocarcinoma, NOS 8471 Papillary mucinous cystadenocarcinoma 8472 <i>Mucinous cystic tumour of borderline malignancy</i> 8473 <i>Papillary mucinous cystadenoma, borderline malignancy</i> 8593 <i>Stromal tumour with minor sex cord elements</i> 8600 Thecoma 8601 <i>Thecoma, luteinized</i> 8602 <i>Sclerosing stromal tumour</i> 8610 <i>Luteoma, NOS</i> 8620 Granulosa cell tumour, malignant 8621 <i>Granulosa cell-theca cell tumour</i> 8622 <i>Granulosa cell tumour, juvenile</i> 8623 <i>Sex cord tumour with annular tubules</i> 8632 <i>Gynandroblastoma</i> 8641 <i>Sertoli cell tumour with lipid storage</i> 8660 <i>Hilus cell tumour</i> 8670 Lipid cell tumour of ovary 9000 Brenner tumour 9013 <i>Adenofibroma</i> 9014 Serous adenocarcinofibroma 9015 Mucinous adenocarcinofibroma 9090 Struma ovarii, malignant 9091 <i>Strumal carcinoid</i>	C56 Ovary C57 Other and unspecified female genital organs C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
26	Placental tumours	9103 <i>Partial hydatidiform mole</i> 9104 <i>Placental site trophoblastic tumour</i>	C58 Placenta

27	Tumours of female genital organs	8380 Endometrioid adenocarcinoma, NOS 8381 Endometrioid adenofibroma 8382 Endometrioid adenocarcinoma, secretory variant 8383 Endometrioid adenocarcinoma, ciliated cell variant 8384 Adenocarcinoma, endocervical type 8482 Mucinous adenocarcinoma, endocervical type 8934 Carcinofibroma 8950 Mullerian mixed tumour 8951 Mesodermal mixed tumour	C48 Retroperitoneum and peritoneum C49.4-9 Connective, subcutaneous and other soft tissues (part) C53 Cervix uteri C54 Corpus uteri C55 Uterus, NOS C56 Ovary C57 Other and unspecified female genital organs C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
28	Queyrat erythroplasias	8080 <i>Queyrat erythroplasia</i>	C60 Penis
29	Testicular tumours	9061 Seminoma, NOS 9062 Seminoma, anaplastic 9063 Spermatocytic seminoma 9102 Malignant teratoma, trophoblastic	C62 Testis C63 Other and unspecified male genital organs
30	Renal tumours	8312 Renal cell carcinoma 8316 Cyst-associated renal cell carcinoma 8317 Renal cell carcinoma, chromophobe type 8318 Renal cell carcinoma, sarcomatoid 8319 Collecting duct carcinoma <i>8325 Metanephric adenoma</i> <i>8361 Juxtaglomerular tumour</i> 8959 Malignant cystic nephroma 8960 Nephroblastoma 8964 Clear cell sarcoma of kidney <i>8965 Nephrogenic adenofibroma</i> <i>8966 Renomedullary interstitial cell tumour</i> <i>8967 Ossifying renal tumour</i>	C64 Kidney C68.8 Overlapping lesion of urinary organs C68.9 Urinary system NOS
31	Retinoblastomas	9510 Retinoblastoma, NOS 9511 Retinoblastoma, differentiated 9512 Retinoblastoma, undifferentiated 9513 Retinoblastoma, diffuse <i>9514 Retinoblastoma, spontaneously regressed</i>	C69.2 Retina C69.8 Overlapping lesion of eye and adnexa C69.9 Eye NOS
32	Naevi and melanomas of the eye	<i>8726 Magnocellular nevus</i> 8773 Spindle cell melanoma, type A 8774 Spindle cell melanoma, type B	C69 Eye and adnexa
33	Meningeal tumours	8728 Meningeal melanomatosis 9530 Meningioma <i>9531 Meningothelial meningioma</i> <i>9532 Fibrous meningioma</i> <i>9533 Psammomatous meningioma</i> <i>9534 Angiomatous meningioma</i> <i>9535 Hemangioblastic meningioma</i> <i>9537 Transitional meningioma</i> 9538 Papillary meningioma 9539 Meningeal sarcomatosis	C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system
34	Cerebellar tumours	9470 Medulloblastoma 9471 Desmoplastic nodular medulloblastoma 9472 Medulloyoblastoma 9474 Large cell medulloblastoma 9480 Cerebellar sarcoma <i>9493 Dysplastic gangliocytoma of cerebellum (Lhermitte-Duclos)</i>	C71.6 Cerebellum NOS C71.8 Overlapping lesion of brain C71.9 Brain NOS C72.8 Overlapping lesion of brain and central nervous system C72.9 Nervous system NOS

35	Cerebral tumours	9381 Gliomatosis cerebri 9390 Choroid plexus carcinoma <i>9444 Chordoid glioma</i>	C71 Brain C72.8 Overlapping lesion of brain and central nervous system C72.9 Nervous system NOS
36	CNS tumours	<i>9121 Cavernous hemangioma</i> <i>9122 Venous hemangioma</i> <i>9123 Racemose hemangioma</i> <i>9131 Capillary hemangioma</i> 9380 Glioma, malignant 9382 Mixed glioma <i>9383 Subependymoma</i> <i>9384 Subependymal giant cell astrocytoma</i> 9391 Ependymoma, NOS 9392 Ependymoma, anaplastic 9393 Papillary ependymoma <i>9394 Myxopapillary ependymoma</i> 9400 Astrocytoma, NOS 9401 Astrocytoma, anaplastic 9410 Protoplasmic astrocytoma 9411 Gemistocytic astrocytoma <i>9412 Desmoplastic infantile astrocytoma</i> <i>9413 Dysembryoplastic neuroepithelial tumour</i> 9420 Fibrillary astrocytoma <i>9421 Pilocytic astrocytoma</i> 9423 Polar spongioblastoma 9424 Pleomorphic xanthoastrocytoma 9430 Astroblastoma 9440 Glioblastoma, NOS 9441 Giant cell glioblastoma 9442 Gliosarcoma 9450 Oligodendroglioma, NOS 9451 Oligodendroglioma, anaplastic 9460 Oligodendroblastoma 9473 Primitive neuroectodermal tumour, NOS 9505 Ganglioglioma, anaplastic <i>9506 Central neurocytoma</i> 9508 Atypical teratoid/rhabdoid tumour	C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C75.3 Pineal gland
37	Thyroid tumours	8330 Follicular adenocarcinoma, NOS 8331 Follicular adenocarcinoma, well differentiated 8332 Follicular adenocarcinoma, trabecular 8333 Fetal adenocarcinoma <i>8334 Macrofollicular adenoma</i> 8335 Follicular carcinoma, minimally invasive <i>8336 Hyalinizing trabecular adenoma</i> 8337 Insular carcinoma 8340 Papillary carcinoma, follicular variant 8341 Papillary microcarcinoma 8342 Papillary carcinoma, oxyphilic cell 8343 Papillary carcinoma, encapsulated 8344 Papillary carcinoma, columnar cell 8345 Medullary carcinoma with amyloid stroma 8346 Mixed medullary-follicular carcinoma 8347 Mixed medullary-papillary carcinoma 8350 Nonencapsulated sclerosing carcinoma	C73 Thyroid gland
38	Adrenal tumours	8370 Adrenal cortical carcinoma <i>8371 Adrenal cortical adenoma, compact cell</i> <i>8372 Adrenal cortical adenoma, pigmented</i> <i>8373 Adrenal cortical adenoma, clear cell</i> <i>8374 Adrenal cortical adenoma, glomerulosa cell</i> <i>8375 Adrenal cortical adenoma, mixed cell</i> 8700 Pheochromocytoma, malignant	C74 Adrenal gland
39	Parathyroid tumours	8321 Chief cell adenoma 8322 Water-clear cell adenocarcinoma	C75.0 Parathyroid gland

40	Pituitary tumours	8270 Chromophobe carcinoma <i>8271 Prolactinoma</i> 8272 Pituitary carcinoma, NOS 8280 Acidophil carcinoma 8281 Mixed acidophil-basophil carcinoma 8300 Basophil carcinoma <i>9350 Craniopharyngioma</i> <i>9351 Craniopharyngioma, adamantinomatous</i> <i>9352 Craniopharyngioma, papillary</i> <i>9582 Granular cell tumour of the sellar region</i>	C75.1 Pituitary gland C75.2 Craniopharyngeal duct
41	Pineal tumours	<i>9360 Pinealoma</i> <i>9361 Pineocytoma</i> 9362 Pineoblastoma	C75.3 Pineal gland
42	Carotid body tumours	<i>8692 Carotid body tumour</i>	C75.4 Carotid body
43	Tumours of glomus jugulare / aortic body	<i>8690 Glomus jugulare tumour</i> <i>8691 Aortic body tumour</i>	C75.5 Aortic body and other paraganglia
44	Adenoid basal carcinomas	8098 Adenoid basal carcinoma	C44 Skin C53 Cervix uteri C57.8 Overlapping lesion of female genital organs C57.9 Female genital tract, NOS
45	Gastrinomas Somatostatinomas Enteroglucagonomas	8153 Gastrinoma 8156 Somatostatinoma 8157 Enteroglucagonoma	C16 Stomach C17 Small intestine C25 Pancreas C26 Other and ill-defined digestive organs C76.2 Abdomen NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
46	Oxyphilic adenocarcinomas	8290 Oxyphilic adenocarcinoma	C07 Parotid gland C08 Other and unspecified major salivary glands C64 Kidney C68.8 Overlapping lesion of urinary organs C68.9 Urinary system NOS C73 Thyroid gland C75.8 Overlapping lesion of endocrine glands and related structures C75.9 Endocrine gland, NOS C76.0 Head, face or neck NOS C76.2 Abdomen NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
47	Papillary (cyst)adenocarcinomas	8450 Papillary cystadenocarcinoma, NOS	C25 Pancreas C26 Other and ill-defined digestive organs C56 Ovary C57 Other and unspecified female genital organs
48	Serous surface papillary carcinomas	8461 Serous surface papillary carcinoma	C48 Retroperitoneum and peritoneum C56 Ovary

49	Gonadal tumours	<p>8590 Sex cord-gonadal stromal tumour, NOS 8591 Sex cord-gonadal stromal tumour, incompletely differentiated 8592 Sex cord-gonadal stromal tumour, mixed forms 8630 Androblastoma 8631 Sertoli-Leydig cell tumour 8633 Sertoli-Leydig cell tumour, retiform 8634 Sertoli-Leydig cell tumour, poorly differentiated, with heterologous elements 8640 Sertoli cell carcinoma 8642 Large cell calcifying Sertoli cell tumour 8650 Leydig cell tumour 9054 Adenomatoid tumour, NOS</p>	<p>C56 Ovary C57.8 Overlapping lesion of female genital organs C57.9 Female genital tract, NOS C62 Testis C63.8 Overlapping lesion of male genital organs, C63.9 Male genital organs NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site</p>
50	Naevi and Melanomas	<p>8720 Malignant melanoma, NOS 8721 Nodular melanoma 8722 Balloon cell melanoma 8723 Malignant melanoma, regressing 8725 <i>Neuronevus</i> 8727 <i>Dysplastic nevus</i> 8730 Amelanotic melanoma 8740 Malignant melanoma in junctional nevus 8741 Malignant melanoma in precancerous melanosis 8742 Lentigo maligna melanoma 8743 Superficial spreading melanoma 8744 Acral lentiginous melanoma, malignant 8745 Desmoplastic melanoma, malignant 8746 Mucosal lentiginous melanoma 8750 <i>Intradermal nevus</i> 8760 <i>Compound nevus</i> 8761 Malignant melanoma in giant pigmented nevus 8762 <i>Proliferative dermal lesion in congenital nevus</i> 8770 Epithelioid and spindle cell melanoma 8771 Epithelioid cell melanoma 8772 Spindle cell melanoma, NOS 8780 Blue nevus</p>	<p>C20 Rectum C21 Anus and anal canal C43 Nasal cavity and middle ear C44 Skin C51 Vulva C60 Penis C63.2 Scrotum, NOS C69 Eye and adnexa C70 Meninges C76 Other and ill-defined sites C80 Unknown primary site</p>
51	Adenosarcomas and Mesonephromas	<p>8932 <i>Adenomyoma</i> 8933 Adenosarcoma 9110 Mesonephroma</p>	<p>C51 Vulva C52 Vagina C53 Cervix uteri C54 Corpus uteri C55 Uterus, NOS C56 Ovary C57 Other and unspecified female genital organs C64 Kidney C65 Renal pelvis C66 Ureter C67 Bladder C68 Other and unspecified urinary organs C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site</p>
52	Stromal sarcomas	<p>8935 Stromal sarcoma, NOS</p>	<p>C50 Breast C53 Cervix uteri C54 Corpus uteri C55 Uterus, NOS C56 Ovary C57 Other and unspecified female genital organs C76.1 Thorax, NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site</p>

53	Tumours of bone and connective tissue	9040 Synovial sarcoma, NOS 9041 Synovial sarcoma, spindle cell 9042 Synovial sarcoma, epithelioid cell 9043 Synovial sarcoma, biphasic 9044 Clear cell sarcoma, NOS 9251 Malignant giant cell tumour of soft parts 9252 Malignant tenosynovial giant cell tumour 9260 Ewing sarcoma	C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C49 Connective, subcutaneous and other soft tissues C76 Other and ill-defined sites C80 Unknown primary site
54	Chondromatous tumours	9220 Chondrosarcoma, NOS 9221 Juxtacortical chondrosarcoma 9230 Chondroblastoma 9231 Myxoid chondrosarcoma 9240 Mesenchymal chondrosarcoma <i>9241 Chondromyxoid fibroma</i> 9242 Clear cell chondrosarcoma 9243 Dedifferentiated chondrosarcoma	C30.0 Nasal cavity C31 Accessory sinuses C32.3 Laryngeal cartilage C32.8 Overlapping lesion of larynx C32.9 Larynx NOS C33.9 Trachea C39 Other and ill-defined sites within respiratory system and intrathoracic organs C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C49 Connective, subcutaneous and other soft tissues C76 Other and ill-defined sites C80 Unknown primary site
55	Intraepithelial tumours	<i>8077 Squamous intraepithelial neoplasia (CIN III, VAIN III, VIN III, AIN III)</i> <i>8148 Glandular intraepithelial neoplasia (PIN III)</i>	C21 Anus and anal canal C51 Vulva C52 Vagina C53 Cervix uteri C61 Prostate gland
56	Transitional cell tumours	8120 Transitional cell carcinoma 8121 Schneiderian carcinoma 8122 Transitional cell carcinoma, spindle cell 8130 Papillary transitional cell carcinoma 8131 Transitional cell carcinoma, micropapillary	C11 Nasopharynx C14 Other and ill-defined sites in lip, oral cavity and pharynx C20 Rectum C21 Anus and anal canal C26 Other and ill-defined digestive organs C30 Nasal cavity and middle ear C31 Accessory sinuses C39 Other and ill-defined sites within respiratory system and intrathoracic organs C53 Cervix uteri C61 Prostate gland C64 Kidney C65 Renal pelvis C66 Ureter C67 Bladder C68 Other and unspecified urinary organs C76.0 Head, face or neck NOS C76.1 Thorax, NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site

57	Carcinoid tumours	8240 Carcinoid tumour, NOS 8241 Enterochromaffin cell carcinoid 8242 Enterochromaffin-like cell tumour 8243 Goblet cell carcinoid 8244 Composite carcinoid 8245 Adenocarcinoid tumour 8246 Neuroendocrine carcinoma, NOS <i>8248 Apudoma</i> 8249 Atypical carcinoid tumour	C15 Esophagus C16 Stomach C17 Small intestine C18 Colon C19 Rectosigmoid junction C20 Rectum C21 Anus and anal canal C22 Liver and intrahepatic bile ducts C23 Gallbladder C24 Other and unspecified parts of biliary tract C25 Pancreas C26 Other and ill-defined digestive organs C34 Bronchus and lung C37 Thymus C38.1-3 Mediastinum C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C56 Ovary C57.8 Overlapping lesion of female genital organs C57.9 Female genital tract, NOS C73 Thyroid gland C76.0 Head, face or neck NOS C76.1 Thorax, NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
58	Ductal and lobular tumours	8500 Infiltrating duct carcinoma 8503 Intraductal papillary adenocarcinoma with invasion 8504 Intracystic carcinoma, NOS 8514 Duct carcinoma, desmoplastic type 8525 Polymorphous low grade adenocarcinoma	C06.9 Mouth NOS C07 Parotid gland C08 Other and unspecified major salivary glands C21 Anus and anal canal C22 Liver and intrahepatic bile ducts C23 Gallbladder C24 Other and unspecified parts of biliary tract C25 Pancreas C26.8 Overlapping lesion of digestive system C26.9 Gastrointestinal tract, NOS C50 Breast C61 Prostate gland C63.8 Overlapping lesion of male genital organs C63.9 Male genital organs NOS C75.8 Overlapping lesion of endocrine glands and related structures C75.9 Endocrine gland, NOS C76.0 Head, face or neck NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site

59	Paragangliomas	8680 Paraganglioma <i>8681 Sympathetic paraganglioma</i> <i>8682 Parasympathetic paraganglioma</i> 8693 Extra-adrenal paraganglioma 8710 Glomangiosarcoma 8711 Glomus tumour <i>8712 Glomangioma</i> <i>8713 Glomangiomyoma</i>	C38 Heart, mediastinum and pleura C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C67 Bladder C68 Other and unspecified urinary organs C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C73 Thyroid gland C74 Adrenal gland C75 Other endocrine glands and related structures C76 Other and ill-defined sites C80 Unknown primary site
60	Germ cell and trophoblastic tumours	9060 Dysgerminoma 9064 Germinoma 9065 Germ cell tumour, nonseminomatous 9070 Embryonal carcinoma, NOS 9071 Yolk sac tumour 9072 Polyembryoma <i>9073 Gonadoblastoma</i> 9080 Teratoma, NOS 9081 Teratocarcinoma 9082 Malignant teratoma, undifferentiated 9083 Malignant teratoma, intermediate 9084 Teratoma with malignant transformation 9085 Mixed germ cell tumour 9105 Trophoblastic tumour, epithelioid	C38 Heart, mediastinum and pleura C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C56 Ovary C57 Other and unspecified female genital organs C62 Testis C63 Other and unspecified male genital organs C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C75 Other endocrine glands and related structures C76.0 Head, face or neck NOS C76.1 Thorax, NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site

61	Choriocarcinomas	9100 Choriocarcinoma, NOS 9101 Choriocarcinoma combined with other germ cell elements	C38 Heart, mediastinum and pleura C56 Ovary C57 Other and unspecified female genital organs C58 Placenta C62 Testis C76.1 Thorax, NOS C76.2 Abdomen NOS C76.3 Pelvis NOS C76.7 Other ill-defined sites C76.8 Overlapping lesion of ill-defined sites C80 Unknown primary site
62	Chordomas	9370 Chordoma, NOS 9371 Chondroid chordoma 9372 Dedifferentiated chordoma <i>9373 Parachordoma</i>	C11 Nasopharynx C14 Other and ill-defined sites in lip, oral cavity and pharynx C30 Nasal cavity and middle ear C31 Accessory sinuses C39 Other and ill-defined sites within respiratory system and intrathoracic organs C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C49 Connective, subcutaneous and other soft tissues C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C75 Other endocrine glands and related structures C76 Other and ill-defined sites C80 Unknown primary site
63	Neuroepitheliomatous tumours	9490 Ganglioneuroblastoma <i>9491 Ganglioneuromatosis</i> <i>9492 Gangliocytoma</i> 9500 Neuroblastoma, NOS 9501 Medulloepithelioma, NOS 9502 Teratoid medulloepithelioma 9503 Neuroepithelioma 9504 Spongioneuroblastoma	C38 Heart, mediastinum and pleura C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C69 Eye and adnexa C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C74 Adrenal gland C75.8 Overlapping lesion of endocrine glands and related structures C75.9 Endocrine gland, NOS C76 Other and ill-defined sites C80 Unknown primary site

64	Nerve sheath tumours	<p>9540 Malignant peripheral nerve sheath tumour <i>9541 Melanotic neurofibroma</i> <i>9550 Plexiform neurofibroma</i> 9560 Neurilemoma 9561 Malignant peripheral nerve sheath tumour with rhabdomyoblastic differentiation <i>9562 Neurothekeoma</i> <i>9570 Neuroma, NOS</i> 9571 Perineurioma</p>	<p>C38 Heart, mediastinum and pleura C39.8 Overlapping lesion of respiratory system and intrathoracic organs C39.9 Ill-defined sites within respiratory system C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C69 Eye and adnexa C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C76 Other and ill-defined sites C80 Unknown primary site</p>
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Group 3: Tumours with inverse site-profile

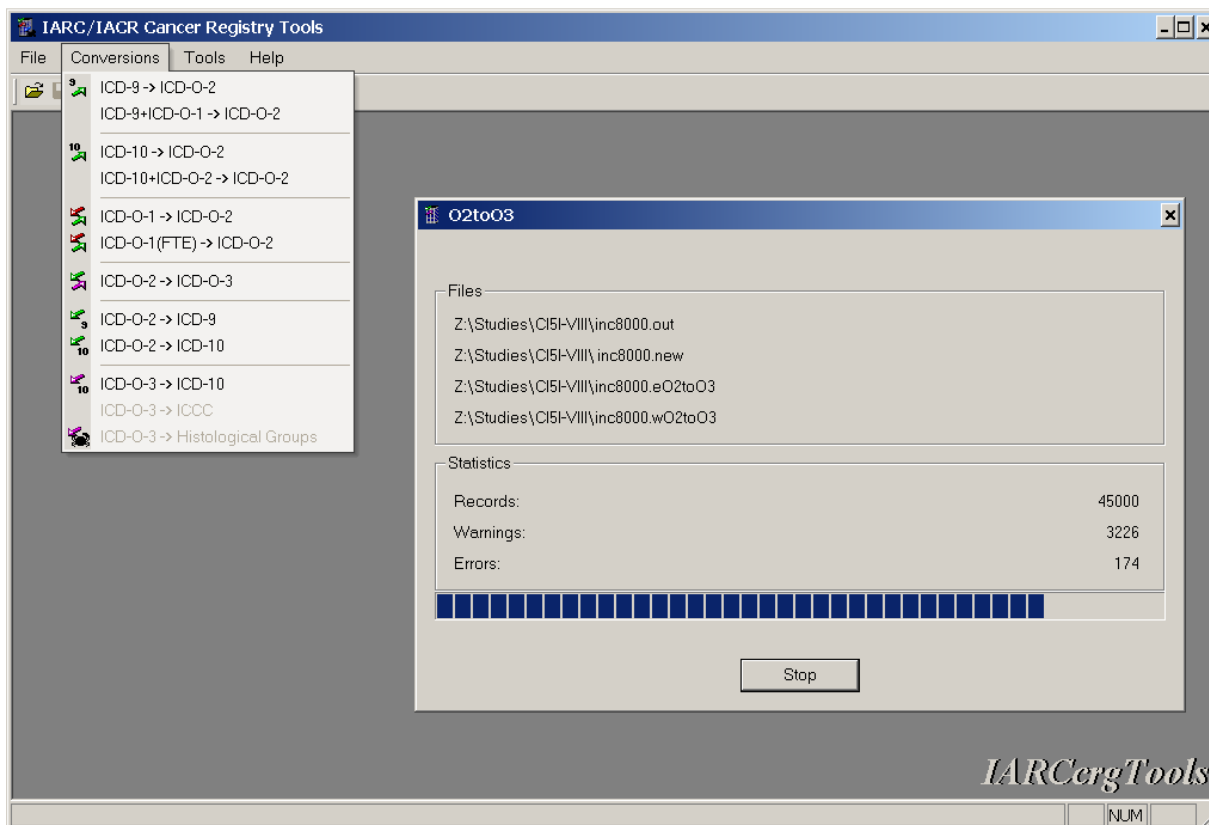
65	Not haematopoietic tumours	<p>8004 Malignant tumour, spindle cell type 8005 Malignant tumour, clear cell type <i>8831 Histiocytoma, NOS</i> <i>8834 Giant cell fibroblastoma</i> <i>8835 Plexiform fibrohistiocytic tumour</i> <i>8836 Angiomatoid fibrous histiocytoma</i> 9170 Lymphangiosarcoma <i>9171 Capillary lymphangioma</i> <i>9172 Cavernous lymphangioma</i> <i>9173 Cystic lymphangioma</i> <i>9174 Lymphangiomyomatosis</i> <i>9175 Hemolymphangioma</i></p>	<p>NOT C42 Hematopoietic and reticuloendothelial systems</p>
66	Not site-specific carcinomas	<p>8010 Carcinoma, NOS 8011 Epithelioma 8013 Large cell neuroendocrine carcinoma 8014 Large cell carcinoma with rhabdoid phenotype 8015 Glassy cell carcinoma 8020 Carcinoma, undifferentiated, NOS 8021 Carcinoma, anaplastic, NOS 8022 Pleomorphic carcinoma 8030 Giant cell and spindle cell carcinoma 8031 Giant cell carcinoma 8032 Spindle cell carcinoma, NOS 8033 Pseudosarcomatous carcinoma 8034 Polygonal cell carcinoma 8035 Carcinoma with osteoclast-like giant cells 8050 Papillary carcinoma, NOS 8051 Verrucous carcinoma, NOS 8052 Papillary squamous cell carcinoma <i>8053 Squamous cell papilloma, inverted</i> <i>8060 Squamous papillomatosis</i> 8070 Squamous cell carcinoma, NOS 8071 Squamous cell carcinoma, keratinizing, NOS 8072 Squamous cell carcinoma, large cell, nonkeratinizing, NOS 8073 Squamous cell carcinoma, small cell, nonkeratinizing 8074 Squamous cell carcinoma, spindle cell 8075 Squamous cell carcinoma, adenoid 8076 Squamous cell carcinoma, microinvasive 8078 Squamous cell carcinoma with horn formation 8082 Lymphoepithelial carcinoma 8083 Basaloid squamous cell carcinoma 8084 Squamous cell carcinoma, clear cell type 8123 Basaloid carcinoma 8140 Adenocarcinoma, NOS 8141 Scirrhous adenocarcinoma 8143 Superficial spreading adenocarcinoma <i>8146 Monomorphic adenoma</i> 8147 Basal cell adenocarcinoma <i>8149 Canalicular adenoma</i> 8190 Trabecular adenocarcinoma <i>8191 Embryonal adenoma</i> 8200 Adenoid cystic carcinoma 8201 Cribriform carcinoma, NOS 8210 Adenocarcinoma in adenomatous polyp 8211 Tubular adenocarcinoma <i>8212 Flat adenoma</i> 8230 Solid carcinoma, NOS 8231 Carcinoma simplex 8251 Alveolar adenocarcinoma 8260 Papillary adenocarcinoma, NOS 8262 Villous adenocarcinoma</p>	<p>NOT C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C42 Hematopoietic and reticuloendothelial systems C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C77 Lymph nodes</p>

66	Not site-specific carcinomas	8263 Adenocarcinoma in tubulovillous adenoma 8310 Clear cell adenocarcinoma, NOS <i>8311 Hypernephroid tumour</i> 8320 Granular cell carcinoma 8323 Mixed cell adenocarcinoma <i>8324 Lipoadenoma</i> <i>8360 Multiple endocrine adenomas</i> 8430 Mucoepidermoid carcinoma 8440 Cystadenocarcinoma, NOS 8480 Mucinous adenocarcinoma 8481 Mucin-producing adenocarcinoma 8490 Signet ring cell carcinoma 8510 Medullary carcinoma, NOS 8550 Acinar cell carcinoma 8551 Acinar cell cystadenocarcinoma 8560 Adenosquamous carcinoma 8562 Epithelial-myoepithelial carcinoma 8570 Adenocarcinoma with squamous metaplasia 8571 Adenocarcinoma with cartilaginous and osseous metaplasia 8572 Adenocarcinoma with spindle cell metaplasia 8573 Adenocarcinoma with apocrine metaplasia 8574 Adenocarcinoma with neuroendocrine differentiation 8575 Metaplastic carcinoma, NOS 8576 Hepatoid adenocarcinoma 8940 Mixed tumour, malignant, NOS 8941 Carcinoma in pleomorphic adenoma 8980 Carcinosarcoma, NOS 8981 Carcinosarcoma, embryonal 8982 Malignant myoepithelioma	NOT C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C42 Hematopoietic and reticuloendothelial systems C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C49 Connective, subcutaneous and other soft tissues C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C77 Lymph nodes
67	Not site-specific sarcomas	<i>8671 Adrenal rest tumour</i> 8800 Sarcoma NOS 8801 Spindle cell sarcoma 8803 Small cell sarcoma 8804 Epithelioid sarcoma 8805 Undifferentiated sarcoma 8806 Desmoplastic small round cell tumour 8963 Malignant rhabdoid tumour 9120 Hemangiosarcoma <i>9125 Epithelioid hemangioma</i> 9130 Hemangioendothelioma 9133 Epithelioid hemangioendothelioma <i>9135 Endovascular papillary angioendothelioma</i> <i>9136 Spindle cell hemangioendothelioma</i> <i>9141 Angiokeratoma</i> <i>9142 Verrucous keratotic hemangioma</i> 9150 Hemangiopericytoma <i>9160 Angiofibroma, NOS</i> <i>9161 Acquired tufted hemangioma</i> <i>9363 Melanotic neuroectodermal tumour</i> 9364 Peripheral neuroectodermal tumour 9580 Granular cell tumour 9581 Alveolar soft part sarcoma	NOT C42.0 Blood C42.1 Bone marrow C42.3 Reticuloendothelial system, NOS C42.4 Hematopoietic system, NOS C77 Lymph nodes
68	Giant cell sarcomas	8802 Giant cell sarcoma (except of bone)	NOT C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C42.0 Blood C42.1 Bone marrow C42.3 Reticuloendothelial system, NOS C42.4 Hematopoietic system, NOS C77 Lymph nodes

69	Not CNS affecting sarcomas	<p>8810 Fibrosarcoma, NOS 8811 Fibromyxosarcoma 8813 Fascial fibrosarcoma 8814 Infantile fibrosarcoma 8815 Solitary fibrous tumour <i>8820 Elastofibroma</i> <i>8821 Aggressive fibromatosis</i> <i>8822 Abdominal fibromatosis</i> <i>8823 Desmoplastic fibroma</i> <i>8824 Myofibromatosis</i> <i>8825 Myofibroblastic tumour, NOS</i> <i>8826 Angiomyofibroblastoma</i> 8830 Malignant fibrous histiocytoma 8840 Myxosarcoma <i>8841 Angiomyxoma</i> <i>8842 Ossifying fibromyxoid tumour</i> 8850 Liposarcoma, NOS 8851 Liposarcoma, well differentiated 8852 Myxoid liposarcoma 8853 Round cell liposarcoma 8854 Pleomorphic liposarcoma 8855 Mixed liposarcoma <i>8856 Intramuscular lipoma</i> 8857 Fibroblastic liposarcoma 8858 Dedifferentiated liposarcoma <i>8860 Angiomyolipoma</i> <i>8861 Angiolipoma, NOS</i> <i>8862 Chondroid lipoma</i> <i>8870 Myelolipoma</i> <i>8880 Hibernoma</i> <i>8881 Lipoblastomatosis</i> 8890 Leiomyosarcoma, NOS 8891 Epithelioid leiomyosarcoma <i>8892 Cellular leiomyoma</i> <i>8893 Bizarre leiomyoma</i> 8894 Angiomyosarcoma 8895 Myosarcoma 8896 Myxoid leiomyosarcoma <i>8897 Smooth muscle tumour of uncertain malignant potential</i> <i>8898 Metastasizing leiomyoma</i> 8900 Rhabdomyosarcoma, NOS 8901 Pleomorphic rhabdomyosarcoma, adult type 8902 Mixed type rhabdomyosarcoma <i>8903 Fetal rhabdomyoma</i> <i>8904 Adult rhabdomyoma</i> 8910 Embryonal rhabdomyosarcoma, NOS 8912 Spindle cell rhabdomyosarcoma 8920 Alveolar rhabdomyosarcoma 8921 Rhabdomyosarcoma with ganglionic differentiation 8990 Mesenchymoma 8991 Embryonal sarcoma <i>9132 Intramuscular hemangioma</i></p>	<p>NOT C42.0 Blood C42.1 Bone marrow C42.3 Reticuloendothelial system, NOS C42.4 Hematopoietic system, NOS C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C77 Lymph nodes</p>
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70	Kaposi sarcoma	9140 Kaposi sarcoma	NOT C07 Parotid gland C08 Other and unspecified major salivary glands C22 Liver and intrahepatic bile ducts C23 Gallbladder C24 Other and unspecified parts of biliary tract C25 Pancreas C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites C42 Hematopoietic and reticuloendothelial systems C47 Peripheral nerves and autonomic nervous system C48 Retroperitoneum and peritoneum C50 Breast C51 Vulva C52 Vagina C53 Cervix uteri C54 Corpus uteri C55 Uterus, NOS C56 Ovary C57 Other and unspecified female genital organs C58 Placenta C61 Prostate gland C62 Testis C64 Kidney C65 Renal pelvis C66 Ureter C67 Bladder C68 Other and unspecified urinary organs C70 Meninges C71 Brain C72 Spinal cord, cranial nerves and other parts of central nervous system C73 Thyroid gland C74 Adrenal gland C75 Other endocrine glands and related structures
71	Plasmacytomas, extramedullary	9734 Plasmacytoma, extramedullary	NOT C40 Bones, joints and articular cartilage of limbs C41 Bones, joints and articular cartilage of other and unspecified sites

Appendix 2. IARC/IACR CHECK Program (*IARCCrgTools*)



Instructions for use

System requirements:

- Windows 95/98/Me/NT/2000/XP
- 5 Mb hard disk space requested
- 64 Mb central memory recommended

All the programs run in batch mode only, using text files with fixed field format (information is aligned into columns of equal width). Online help included.

Conversions

ICD-9 (1975) to ICD-O-2 (1990)
ICD-9 (1975) and ICD-O-1 morphology (1976) to ICD-O-2 (1990)
ICD-10 (1992) to ICD-O-2 (1990)
ICD-10 (1992) and ICD-O-2 morphology (1990) to ICD-O-2 (1990)
ICD-O-1 (1976) to ICD-O-2 (1990)
ICD-O Field Trial Edition (1988) to ICD-O-2 (1990)
ICD-O-2 (1990) to ICD-O-3 (2000)
ICD-O-2 (1990) to ICD-9 (1975)
ICD-O-2 (1990) to ICD-10 (1992)
ICD-O-3 (2000) to ICD-10 (1992)

Tools

1. IARC-CHECK program

IARCcrgTools includes a new version of the IARC-CHECK program that checks for the validity and for the consistency between variables:

- Age/Incidence and birth dates
- Age/Site/Histology (ICD-O-3)
- Site/Histology (ICD-O-3)
- Sex/Site
- Sex/Histology (ICD-O-3)
- Behaviour/Site (ICD-O-3)
- Behaviour/Histology (ICD-O-3)
- Grade/Histology (ICD-O-3)
- Basis of diagnosis/Histology (ICD-O-3)

2. The IARC/IACR multiple primary check program, based on ICD-O-3 and revised multiple primary rules for ICD-O-3 (IARC, 2004).

Overview

IARCcrgTools provides a user-friendly interface to convert and check your data file. This interface includes:

1. File editing facilities
2. Batch conversion programs
3. The *IARC/IACR CHECK* program for checking validity and consistency
4. A multiple primaries check program
5. A facility to convert file from delimited to fixed field format
6. Help facilities

The input data file **must** be a **text** file with a fixed field format, containing the following variables:

- Registration/identification number
- Incidence date (free format) *(not required for conversion)*
- Birth date (free format) and/or age *(not required for conversion)*
- Sex
- Topography (**ICD-O-3 for CHECK**)
- Histology (**ICD-O-3 for CHECK**)
- Behaviour code
- Grade code (optional)
- Basis of diagnosis *(not required for conversion)*

To convert or check a data file using *IARCcrgTools*, you perform the following steps using a conversion or check wizard process:

1. Select the program you wish to use.
2. Select the input file you want to convert or check, and the output file to which the new codes will be recorded.
3. Define the layout of the input file
4. Define the format of the variables
5. Start the conversion or the check process.

Input file example

```
223612 2 56 19340808 19910503 C504 85003 1
601426 2 84 19052507 19892809 C180 81403 1
601476 2 51 19371304 19882212 C509 81403 1
601799 2 75 19143108 19901501 C343 82603 1
601975 1 66 19230505 19891809 C185 81403 1
603437 2 39 19512307 19911601 C504 85003 1
```

Item	Columns
ID number	(1: 6)
Sex	(8: 8)
Age	(10:11)
Birth date	(13:20)
Incidence date	(22:29)
ICD-O-3 (T)*	(31:34)
ICD-O-3 (M)*	(36:39)
Behaviour	(40:40)
Basis of diagnosis	(42:42)

- The file format, i.e. the position of each variable within a record is free, but must be the same throughout the file.
- The date(s) format(s) is(are) free (the birth date is optional)

*If you use another coding scheme, convert your data file first using the appropriate conversion program.

Data processing

When a conversion or check program is launched, a dialogue box appears showing the number of records currently processed, and the number of errors or warnings. To stop the process, simply click on the *Stop* button.

Rules which apply to all programs

Each program creates up to four output files:

1. An output data file, which has the same layout as the input file but with symbol(s) and the new codes written at the end or replacing the original codes.
2. A warning file, created in the same directory as the input file, with the same name but a different extension where the records to be checked are written. This file contains all unlikely combinations of items. These records are also included in the output file. If no error occurs, this file is deleted at the end of the process.
3. An error file, created in the same directory as the input file, with the same name but a different extension. The file contains all invalid combinations of items. The records included in this file are NOT included in the output file. If no error occurs, the file is deleted at the end of the process.
4. A definition file, located in the same directory as the input file, with the same name and file extension .DFI (conversion programs), .FRM (IARC*check*), .MPR (multiple check)

where the program records the layout of the input file. Each time a conversion program or a check program is run, this file is read, and updated at the end of the process.

IARC CHECK program

This program checks for the validity of variables (i.e. the variables you defined in the file layout section), and the consistency between variables:

Age/Incidence and birth dates
Age/Site/Histology
Site/Histology
Sex/Site
Sex/Histology
Behaviour/Site
Behaviour/Histology
Grade/Histology
Basis of diagnosis/Histology

Output files

1. The output data file you specified.
2. An error file: the extension is **.ERR**. This file contains the erroneous records which were NOT written to the output file.
3. A warning file: the extension is **.CHK**. It contains records which have been written to the output file, but which should be checked.

Age/Incidence and birth dates

This routine validates the combination of age and birth/incidence dates, according to the date formats. If the calculated age is different from the given age (+/- 1 year), then the corresponding record is written in the error file.

If age is not given (i.e. age is not defined in the input file layout), and both birth and incidence dates are defined, then the calculated age will be written in the output file at the end of each individual record.

Age/site/histology

This routine validates the combination of age and ICD-O-3 topography and/or histology (4 characters).

Sex/site control

This routine validates the combination of sex and ICD-O-3 topography. The following combinations are **invalid**:

Sex/histology control

This routine validates the combination of sex and ICD-O-3 histology (not including the behaviour code).

Behaviour/site control

This routine validates the combination of ICD-O-3 behaviour and site codes.

Behaviour/histology control

This routine validates the combination of ICD-O-3 behaviour and histological codes.

Grade/morphology control

The routine identifies histological terms associated with a specific grade code and performs a series of consistency edits.

Basis of diagnosis/histology control

It would be unlikely for some specific morphological diagnoses to have been made without a histological examination. Certain combinations are exceptions to this general rule and are validated by the program

Appendix 3. IARC/IACR Multiple Primary Rules

Multiple primaries check program

This batch program detects multiple primaries following the IARC/IACR rules. The program has been developed in the Descriptive Epidemiology Group at IARC.

Please note that:

1. The program does not make any preliminary consistency or validity checks.
2. The data must be coded to ICD-O-3 (T) and (M).
3. The maximum number of records which can be processed is limited only by the amount of central memory. The program has been tested with files containing up to 2,000,000 records.
4. The identification code must identify the patient (not the tumour) and cannot exceed 15 characters.
5. The maximum number of tumours in a same patient that the program can detect is limited to 55.
6. The program processes only malignant cases: all behaviour codes other than /3, with the exception of *in situ* (/2) tumours of the bladder (C67), and benign tumours (behaviour 0/ or /1) of the brain (C70-72) are excluded.

Output files:

1. The output data file you specified. This file has the same format as the input file, but does not contain the erroneous records and those identified as duplicate registrations (see below).
2. A multiple primaries file: the extension is **MUL**. This file contains the duplicate records, and indicates which of them are multiple primaries and have been excluded.
3. An error file: the extension is **EXL**. It contains records having a non-malignant behaviour code.



IACR



IARC



International Agency for Research on Cancer
World Health Organization
International Association of Cancer Registries
European Network of Cancer Registries

INTERNATIONAL RULES FOR MULTIPLE PRIMARY CANCERS (ICD-O Third Edition)

IARC, Lyon, 2004

Internal Report No. 2004 / 02

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MULTIPLE PRIMARY NEOPLASMS

Cancer registries use different rules for defining multiple primaries when registering cancer cases. The rules given here are for **reporting** data on cancer incidence and survival, so that cancer risk and outcome are comparable between different populations.

For **collection**, it is recommended that registries collect and register more detailed data and some suggestions are given in the Recommendations for Recording which follow. Such cases should be collapsed to conform to the international rules for analysis.

RULES FOR REPORTING INCIDENCE AND SURVIVAL

1. The recognition of the existence of two or more primary cancers does not depend on time.
2. A primary cancer is one that originates in a primary site or tissue and is not an extension, nor a recurrence, nor a metastasis.
3. Only one tumour shall be recognised as arising in an organ or pair of organs or tissue.
Some groups of codes are considered to be a single organ for the purposes of defining multiple tumours. These topography code groups are shown in Table 1.

Multifocal tumours – that is, discrete masses apparently not in continuity with other primary cancers originating in the *same* primary site or tissue, for example bladder – are counted as a single cancer.

4. Rule 3 does not apply in two circumstances:
 - 4.1 Systemic (or multicentric) cancers potentially involving many different organs are only counted once in any individual. These are Kaposi sarcoma (group 15 in Table 2) and tumours of the haematopoietic system (groups 8-14 in Table 2).
 - 4.2 Neoplasms of different morphology should be regarded as multiple cancers (even if they are diagnosed simultaneously in the same site).

If the morphological diagnoses fall into one category in Table 2, and arise in the same primary site, they are considered to be the same morphology for the purpose of counting multiple primaries. If the morphological diagnoses fall into two or more of the categories in Table 2, even if they concern the same site, the morphology is considered to be different, and two or more cases should be counted.

Single tumours containing several different histologies which fall into one histological group in Table 2 are registered as a single case, using the numerically highest ICD-O morphology code.

If, however, one morphology is not specific (groups (5), (14) and (17)) and a specific morphology is available, the case should be reported with the specific histology and the non-specific diagnosis should be ignored.

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	
C12	Pyriiform sinus	
C13	Hypopharynx	
C14	Other and ill-defined sites in lip, oral cavity and pharynx	C14.0
C19	Rectosigmoid junction	
C20	Rectum	C20.9
C23	Gallbladder	
C24	Other and unspecified parts of biliary tract	C24.9
C33	Trachea	
C34	Bronchus and lung	C34.9
C40	Bones, joints and articular cartilage of limbs	
C41	Bones, joints and articular cartilage of other and unspecified sites	C41.9
C65	Renal pelvis	
C66	Ureter	
C67	Bladder	
C68	Other and unspecified urinary organs	C68.9

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*, 2nd edition, Chapter 3 of Section 1: Basic Concepts. Oxford, New York, Oxford University Press, pp. 28-44, 1994).

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
7. Mesothelioma	9050-9055

Tumours of haematopoietic and lymphoid tissues

8. Myeloid	9840, 9861-9931, 9945-9946, 9950, 9961-9964, 9980-9987
9. B-cell neoplasms	9670-9699, 9728, 9731-9734, 9761-9767, 9769, 9823-9826, 9833, 9836, 9940
10. T-cell and NK-cell neoplasms	9700-9719, 9729, 9768, 9827-9831, 9834, 9837, 9948
11. Hodgkin lymphoma	9650-9667
12. Mast-cell Tumours	9740-9742
13. Histiocytes and Accessory Lymphoid cells	9750-9758
(14) Unspecified types	9590-9591, 9596, 9727, 9760, 9800-9801, 9805, 9820, 9832, 9835, 9860, 9960, 9970, 9975, 9989
15. Kaposi sarcoma	9140
16. Other specified types of cancer	8720-8790, 8930-8936, 8950-8983, 9000-9030, 9060-9110, 9260-9365, 9380- 9539
(17) Unspecified types of cancer	8000-8005

RECOMMENDATIONS FOR RECORDING

1. Two tumours of different laterality, but of the same morphology, diagnosed in paired organs (e.g. breast) should be registered separately unless stated to have originated from a single primary.

Exceptions to this rule are:

- a) Tumours of the ovary (of the same morphology)
- b) Wilm's tumour (nephroblastoma) of the kidney.
- c) Retinoblastoma

which should be recorded as a single bilateral registration when they occur on both sides.

Reminder: tumours in paired organs of completely different histology should be registered separately.

2. Cancers which occur in any 4th character subcategory of colon (C18) and skin (C44) should be registered as multiple primary cancers.

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