4
Coding

Section 3.3.5 describes the extracting and abstracting of information on the cancer diagnosis from medical records and other medical reports. Chapter 4 will deal with the next step of converting the actual diagnosis of cancer into coded form. Thorough and precise abstracting will simplify this phase of cancer registration considerably.

4.1
Classification

Although several medical classification systems exist, two will be discussed in this section because of their particular relevance to cancer registration:

- the International Classification of Diseases for Oncology (ICD–O) (WHO, 1976, 1990), and
- the International Classification of Diseases (ICD) (WHO, 1977, 1992, 1993, 1994)

The ICD is a classification system used by many developing and developed countries worldwide for morbidity (primary and secondary care) and mortality (cause of death) coding. It provides codes for all diseases and injuries currently known to man and as such is much more complete in scope than ICD–O. However, ICD codes provide less detail on specific diseases. For instance, ICD cancer codes generally identify only the behaviour and the site of the tumour.

ICD–O, on the other hand, was created specifically for describing cancers and allows for the coding of site (topography), cell type (morphology), behaviour, as well as grading or differentiation. ICD–O was designed in such a way that it may be converted to ICD, so that comparisons are possible between cancer data coded by the two systems.

In deciding which classification system to use for coding of tumours, the cancer registry must take into consideration the following factors:

- the degree of detail desired,
- internal comparability of long time series, and
- international comparability between registries.

As a minimum, cancer registries should classify tumours as to:

(i) their primary site or anatomical location,

(ii) their histological type or morphology, and

(iii) behaviour.

In order to do this it is highly recommended that the ICD–O be used. On the other hand, if the coding of causes of death is also done within the cancer registry, this must be done using the ICD, so that non–cancer deaths may be included.

4.2
The International Classification of Diseases for Oncology (ICD-0)

The International Classification of Diseases for Oncology (ICD–O) is an extension of the chapter on "Neoplasms" in the ICD (Chapter 2). It is widely accepted internationally, which permits comparison of data between registries all over the world. It also facilitates collaboration between these agencies.

The First Edition of ICD–O appeared in 1976 and was based on the 9th Revision of the ICD. The Second and most recent Edition of ICD–O (1990) is an extension of the 10th revision of the ICD. All reference to ICD–O in this Manual will be to the Second Edition (1990) unless otherwise specified. Where ICD–O codes are provided, these will be Second Edition codes first with First Edition codes listed in brackets.

Key features of the ICD–O will be discussed below. However, it is imperative that users of the ICD–O manual become familiar with its contents, especially the introduction, pp. i – xliii. It is recommended that paragraphs or

sections of the introduction to which a coder often refers be highlighted or marked in a special way to permit quick reference.

4.2.1 General Description of ICD–O

The ICD–O consists of five main sections:

(a) Instructions for use

(b) Topography, numerical list

This is a numerical list of four–character codes ranging from C00.0 to C80.9. The decimal point (.) indicates subdivisions or subsites of the three–character categories. The codes C00.0 to C80.9 are adapted from the ICD–10 neoplasms chapter. In ICD–10, these codes represent the location (topography) of the tumour and the behaviour of the tumour. In ICD–O, only the site of the tumour is indicated by the topography code; a separate digit is attached to the morphology code to denote the behaviour of the tumour.

(c) Morphology, numerical list

This numerical list of five–digit code numbers ranges from 8000/0 to 9989/1. The first four digits indicate the specific histology, and the fifth digit, after the slash, is the behaviour code.

A sixth digit may be added to the morphology/behaviour code to indicate grading or differentiation. For lymphomas or leukaemias, this sixth digit is used to identify T– and B–cell origin.

(d) Alphabetic index

This is a listing of terms describing topography, morphology, and selected tumour–like lesions and conditions.

For each term, a code is provided which begins with a "C" if the term describes a site, or an "M" if the term describes a histology. Note that although the "C" is an essential component of the four–character topography code, the "M–" shown in the alphabetical index is only an indication that the following five digits constitute the morphology code.

It should also be noted that terms in the alphabetical index are bold–faced only if three or more modifying terms are listed below it; therefore, the word "Abdominal" is bold–faced as it is followed by the modifiers "aorta", "esophagus", "lymph node" and "vena cava", but the word "Abducens nerve" is not bold–faced.

Terms describing topography and terms describing morphology are always separated by a space before and after each group.

Terms which may be confused with neoplasms (called tumour–like lesions and conditions) are listed in the index with an M and seven dashes (M———). This is a reminder to the coder that the diagnosis is not that of a cancer and therefore not normally considered reportable.

(e) Differences in morphology between first and second editions

4.2.2 Use of alphabetical index and numerical lists

The alphabetical index should always be used for coding. The numerical lists are provided for confirmation of codes found in the index and for decoding and retrieval.

4.2.3 ICD–O complete code

A tumour, to be completely identified using ICD–O, will be assigned a 10–character code, as in the following example:

Diagnosis	**Poorly differentiated squamous cell carcinoma of the cervix uteri, NOS**		
ICD–0 codes:	C53.9	M–8070/33	(T180.9 M–8070/33)
Description:	Topography	C53.9	4 characters
	Histology	M–8070	4 digits
	Behaviour	/3	1 digit
	Grade:	3	1 digit
		10 characters	

4.2.4 Meaning of "NOS" and how it is used

The acronym NOS means "Not Otherwise Specified". It is used extensively in ICD–O, and coders must be familiar with this convention.

In the numerical lists and in the alphabetical index, "NOS" is used to indicate to the coder

and to the decoder that other modifiers of the term are listed elsewhere.
In the alphabetical index, "NOS" is first listed, followed by the alphabetical listing of the modifying words or adjectives. The code number for "NOS" is assigned when a topographic or a morphological term is not modified or when its adjective is not listed elsewhere in the ICD–O. In the latter case, "NOS" has a meaning equivalent to "NEC" (Not Elsewhere Classified) in the ICD.

Examples:

- In the alphabetical index, "Papillary carcinoma" is followed by a list of modifying words, with their specific morphology code numbers. If the diagnosis is "Papillary carcinoma", assign morphology to M–8050/3 (Papillary carcinoma, NOS).
- If the diagnosis given is "Occult sclerosing papillary carcinoma", again assign morphology code number M–8050/3, since neither the term "occult" nor the term "sclerosing" is listed among the modifying terms for papillary carcinoma.

4.2.5 Format of the ICD–O terms

Coders will find it useful to understand the format of terms appearing in the numerical lists. Each topographic and morphological term is listed only once. The first listed term is the preferred term and is printed in bold type under a particular code. Synonyms are indented under the preferred (first) term. Other 'equivalent' terms are listed below the preferred term but are not indented.

Example:

- C75.1 (T194.3) Pituitary gland
  Pituitary, NOS
  Hypophysis
  Rathke's pouch
  Sella turcica
  Pituitary fossa

In this example, pituitary gland would describe all cases coded to C75.1 (T194.3). Its synonyms are "Pituitary, NOS" and "Hypophysis". Its topographical subdivisions are "Rathke's pouch", "Sella turcica" and "Pituitary fossa", all of which are assigned to the same topography category C75.1 (T194.3) in the alphabetical index.

4.2.6 Topography

In cancer registries, the topography code is used to *report the site of origin of the tumour or its primary site*, not the secondary or metastatic site(s). The following guidelines will assist coders in selecting the most appropriate topography code when only difficult or unclear diagnoses are available.

*(1) Ill–defined sites (Rule 2)**

Some tumour sites are described only as regions or ill–defined body sites, for example, "lower limb", "head", "abdomen", "arm"; the tissue in which the tumour originated is not specified and such sites may have several component tissues. When further precision is not available, ill–defined sites are coded to C76 (T195).

To assist coders, the ICD–O index lists in parentheses at ill–defined sites examples of common neoplasms which may arise in specific tissues of those sites and provides a more precise topography code. In these cases, the topography code number to be assigned depends on the morphology of the tumour.

Examples:

- Diagnosis: Melanoma of arm

  ICD–O index: Arm

  C76.4 (T195.4) NOS

  C44.6 (T173.6) NOS (carcinoma, melanoma, nevus)

  C49.1 (T171.2) NOS (sarcoma, lipoma)

Comment: the coder is guided by the index to select code C44.6 (T173.6) if the site "arm" is "Not Otherwise Specified" and the morphology is stated to be "melanoma". By referring to the Topography numerical list, the coder notes that C44.6 (T173.6) is the category for "skin" of arm.

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*Rules referenced in parentheses in sections 4.1.2 and 4.1.3 are ICD-0 Second Edition rules which have been summarized on pages xli–xliii of the Introduction to ICD–0 Second Edition.

- Given a diagnosis of "Fibrosarcoma of trunk", the primary site is "Connective tissue, trunk" C49.6 (T171.7) not Trunk NOS C76.7 (T195.8).

(2) Peripheral nerves and connective tissues

Peripheral nerves, C47.–, and connective tissues, C49.–, include a variety of tissues which were grouped together in one category, T171, of ICD–O First Edition. In the Second Edition, C47 includes autonomic nervous system, ganglia, nerve, parasympathetic nervous system, peripheral nerve, spinal nerve, sympathetic nervous system; C49 includes adipose tissue, aponeuroses, artery, blood vessel, bursa, connective tissue, fascia, fatty tissue, fibrous tissue, ligament, lymphatic, muscle, skeletal muscle, subcutaneous tissue, synovia, tendon, tendon sheath, vein, vessel. Not all of these terms are listed in the alphabetical index for all regions of the body. Coders should therefore refer to the Topography numerical list for precise coding.

Example:

- a tumour of the fascia of hand should be coded to C49.1 (T171.1) even though the terms fascia of hand are not located in the alphabetical index.

(3) Adjectival forms

In general, noun forms appear in the numerical list and alphabetical index. When a tumour site is described using an adjective, as in "pyloric" instead of "pylorus", the coder will have to convert the adjective to its noun form before locating the term in ICD–O.

(4) Prefixes (Rule 3)

Prefixes such as peri–, para–, pre–, supra–, infra–, etc. are often used with topographic sites and various organs of the body. A few are listed in ICD–O and given specific code numbers; for example, "Periadrenal tissue", "Peripancreatic tissue" and "Retrocaecal tissue" have been listed and assigned to category C48.0 (T158.0) "Retroperitoneum". In practice, the use of such prefixes indicates that the topographic site is ill–defined. It is therefore suggested that code C76 (T195) be used for ill–defined sites not listed in ICD–O. The same general rule should also be used for other imprecise designations such as in the "area of" or in the "region of" a topographic site.

(5) Malignant neoplasms overlapping site boundaries (Rule 4)

It is the objective of tumour registries to report all malignant tumours according to their site of origin (i.e. the organ or tissue where their growth began). As this is not always possible, special ".8, overlapping lesion" codes are available for most three-digit categories and within most groupings of codes by body system. These ".8" subcategories should be used when:

(a) a tumour overlaps* two or more ICD–O three-digit site categories, or four–digit subcategories within a three-digit site category,

– AND –

(b) it is not known where the tumour originated.

Example:

- a malignant tumour of "skin of earlobe and neck" describes a tumour of overlapping sites only if the tumour extends from one site (earlobe, C44.2) to the next (neck, C44.4), and the site of origin is not known. In this case, the overlapping lesion code C44.8 should be reported.

If there are two tumours, one of the earlobe and one of the neck, or if the sites mentioned are not contiguous, or if the site of origin is known, then the special ".8" code is not appropriate.

CAUTION: When an overlapping site combination is specifically indexed, as in "carcinoma of oesophagus and stomach C16.0", the code provided in the index must be given priority.

*Overlapping sites are sites which are next to one another (contiguous) and in which the tumour is continuous from one site to the other

(6) Topography codes for lymphomas (Rule 12)

Lymphomas usually arise from lymph nodes. Hence if no site is indicated with a diagnosis of lymphoma, code to C77.9 (T196.9) "Lymph node, NOS".

If multiple nodes are involved, code to C77.8 (T196.8) "Lymph nodes of multiple regions".

Approximately 25% of lymphomas arise from lymphatic cells in organs such as stomach, intestine, skin and breast. These are extranodal lymphomas and should be coded to the organ in which they arise, for example "Stomach" C16.9 (T151.9).

Remember that all attempts should be made to report the primary site of the tumour and not the site of biopsy or metastasis.

(7) Topography code for leukaemias (Rule 13)

All leukaemias except myeloid sarcoma and leukaemic reticulo-endotheliosis should be given the site code C42.1 "Bone marrow". Leukaemias are considered to be site-specific morphology terms (see 4.2.7 (5)).

(8) Topography code for unknown primary site

If the primary site of the tumour:

- is not specified or not known
- cannot be determined by the morphological description (e.g. lymphoma or leukaemia)

assign the topography code number C80.9 (T.199.9) "Unknown primary site".

4.2.7 Morphology

The morphology code number in ICD-O consists of four digits, a slash mark or solidus, and a fifth digit: ——/–. The first four digits indicate the histology of the tumour and the fifth digit represents its behaviour.

Together the morphology or histology of the tumour and its behaviour provide one of the most important items of medical information about a tumour. Registries using the more general ICD should note that the morphology codes from ICD-O have been incorporated in the Index of ICD to allow more complete tumour reporting.

Not all tumours are diagnosed microscopically by a pathologist. The diagnosis may be stated using non-specific terms instead of a specific histological type; for example malignant neoplasm, cancer, malignant tumour.In such cases, morphology code 8000/3 "Malignant neoplasm, NOS" is selected based on the physician's stated description.

*(1) **Behaviour codes (Rule 5)***

Behaviour refers to the degree of malignancy or how the tumour is expected to behave. ICD-O provides six one-digit codes for recording behaviour:

/0.....	Benign
/1.....	Uncertain whether benign or malignant Borderline malignancy Low malignant potential
/2.....	Carcinoma *in situ* Intraepithelial Noninfiltrating Noninvasive
/3.....	Malignant, primary site
/6.....	Malignant, metastatic site Malignant, secondary site
/9.....	Malignant, uncertain whether primary or metastatic site

Only behaviour digits /2 and /3 are routinely used in cancer registries. Behaviour code /0 may be used if a registry chooses to report certain benign tumours such as brain tumours. Some registries may also wish to register diagnoses of borderline malignancy, in which case /1 will be used. But codes /6 and /9 should never be used by cancer registries. The function of the registry is to identify primary malignancies. When only a metastatic site has been diagnosed, behaviour code /3 is used with topography code C80.9 (T199.9) "Unknown primary site". For example if a person has a carcinoma which has metastasized to the lung and the site of origin is unknown, the appropriate code is C80.9 (T199.9) "Unknown primary site" and M-8010/3 "Carcinoma, NOS".

Behaviour codes /6 and /9 are useful to pathologists wishing to identify all specimens as sites of primary tumour, extension or metastases.

(2) Morphology code matrix (Rule 5)

The morphology code numbers for terms in ICD–O can be easily understood by listing examples in a matrix form as shown in Table 1. In the first example, there are four terms with their morphology code numbers as printed in ICD–O. "Adenoma, NOS" is a benign tumour and has the behaviour code /0. "Adenocarcinoma, NOS" is the malignant equivalent of "Adenoma, NOS" and has the behaviour code of /3. "Adenocarcinoma, *in situ*" has the behaviour code of /2. "Bronchial adenoma" is a potentially malignant tumour, so a behaviour code of /1 is assigned to indicate that it is uncertain whether a particular bronchial adenoma will behave in a benign or a malignant manner.

In the second example in the matrix, (b), there are three terms listed at the four-digit morphology code number, 9130. "Hemangioendothelioma, benign" has the appropriate behaviour code of /0. Its malignant counterpart, "Hemangioendothelioma, malignant" or "Hemangioendothelial sarcoma" has the behaviour code for malignant tumours, /3. "Hemangioendothelioma, NOS", however, is assigned a behaviour code of /1, because it is uncertain whether a particular hemangioendothelioma, NOS will take a malignant or a benign course. The code number 9130/2 has not been used in the ICD–O.

In the third example in the matrix, (c), only one term, "Chordoma" is listed. The tumour is usually considered as malignant and has been assigned a behaviour code number of /3. Other numbers in the 9370 matrix code are available and could be used for appropriate diagnoses.

Any behaviour code may be attached to any four-digit morphology code number in the ICD–O; for example, if the in–situ form of a neoplasm is diagnosed, the behaviour code /2 is attached to the appropriate four-digit morphology code. The resulting combination of morphology/behaviour codes is valid whether or not it appears in the ICD–O Morphology numerical list.

If there is a conflict between the behaviour code specified by the ICD–O for a histological subtype and the behaviour described by a pathologist in the final pathological diagnosis, the pathological diagnosis generally takes precedence. For example, 'Malignant fibroma': Fibroma is assigned a behaviour code /0 in the ICD–O because it is a benign tumour. Its malignant counterpart is fibrosarcoma. However, since the pathologist designated the term malignant to describe fibroma, the behaviour code to be assigned in this case should be /3, since the pathological diagnosis takes precedence.

(3) Histological grading (Rule 6)

A one–digit code is provided to designate the grade or differentiation of malignant neoplasms. The histological grading code shown below is added to the five-digit morphology code, thus creating a complete six-digit code number, for example M–8040/32.

If a diagnosis indicates two different degrees of differentiation, the higher number grading code should be used. For example, "moderately differentiated squamous cell carcinoma with poorly differentiated areas" should be assigned the grading code 3; the complete code number is therefore M–8070/33.

Histological grading or differentiation refers to the degree or extent by which neoplastic cells have specialized characteristics of a particular tissue or organ. In general, the greater the differentiation, the more a tumour resembles the normal tissue from which it arose; the less differentiated, the more aggressive the tumour. The practice of grading varies among pathologists and many malignant tumours are not routinely graded. Individual registries must therefore decide whether they will use the sixth digit grading code.

For leukaemias and lymphomas, the sixth digit code is used to denote T– or B–cell origin (see 4.2.7 (9)).

Table 1 – Morphology and behaviour code matrix

5th digit behaviour code numbers				
Examples of four-digit morphology code numbers	/0 Benign	/1 Uncertain whether benign or malignant	/2 Carcinoma-*in-situ* Noninvasive Nonilfiltrating Intraepithelial	/3 Malignant primary site
(a) 8140	8140/0 Adenoma NOS	8140/1 Bronchial adenoma (C34.–) (T-162.–)	8140/2 Adenocarcinoma-*in-situ*	8140/3 Adenocarcinoma, NOS
(b) 9130	9130/0 Haemangioendothelioma, benign	9130/1 Haemangioendothelioma, NOS	9130/2	9130/3 Haemangioendothelioma, malignant
		Angioendothelioma		Haemangioendotheliosarcoma
(c) 9370	9370/0	9370/1	9370/2	9370/3 Chordoma

Table 2 - 6th digit code for histological grading and differentiation

Code No.		
1	Well differentiated	(Grade I)
2	Moderately differentiated	(Grade II)
3	Poorly differentiated	(Grade III)
4	Undifferentiated (Anaplastic)	(Grade IV)
9	Grade not determined, not stated or not applicable	

(4) Ca. in situ and CIN III

The term intraepithelial neoplasia has become widely accepted by cytologists and pathologists worldwide. When used in relation to the cervix uteri, the diagnosis "cervical intraepithelial neoplasia, grade III, (CIN III)" causes coding and reporting difficulties. CIN III, by definition, includes both carcinoma *in situ* (a reportable diagnosis) and severe dysplasia (a non–reportable diagnosis).

After consultation with experts in the field, the decision has been made that, for purposes of cancer registration, CIN III could be considered as synonymous with carcinoma *in situ*. The same guideline applies to the diagnosis of intraepithelial neoplasia in the vagina (VAIN III) and in the vulva (VIN III).

(5) Site–specific morphology terms (Rule 8)

Certain types of tumours arise exclusively or usually in specific organs or tissues. In other words, certain morphologies are site-specific.

Examples:

- hepatomas usually arise in the liver
- renal cell carcinomas usually arise in the kidney
- retinoblastomas usually arise in the retina
- follicular carcinomas usually arise in the thyroid

To assist coders, site–specific morphology terms have a topography code listed in parentheses beside them in the

numerical list and the alphabetical index. For example, cystadenofibroma is followed by the topography code for ovary, C56.9 (T183.0).

Use the topography code assigned to the morphology term when:

- no site is specified in the diagnosis, e.g. nephroblastoma, C64.9 (T189.0), kidney;
- the site given is an "ill-defined site", e.g. osteogenic sarcoma of arm, C40.0 (T170.4), bone of arm; or
- only a metastatic site is diagnosed, e.g. metastatic follicular carcinoma of femur, C73.9 (T193.9), thyroid gland.

DO NOT use the topography code assigned to the morphology term if:

- the site designated by the physician is different from the suggested T-site in ICD-O. For example, papillary cystadenocarcinoma of pancreas, C25.9 (T157.9), pancreas. In this case the suggested topography code C56.9 (T183.0), ovary, is ignored because the primary site of origin of the tumour is stated to be the pancreas.

(6) Pseudo-topographic morphology terms (Rule 9)

Certain neoplasms have morphological names which seem to imply a topographic location but these should not necessarily be coded to that site. For example, "Bile duct carcinoma" (M-8160/3) is a specific histology usually arising from the intrahepatic bile ducts of the liver, C22.1 (T-155.0). Do not code to bile duct C24.0 (T156.1) as primary site.

"Minor salivary gland" is a general term describing neoplasms of several histological types which can be found anywhere in the oral cavity and neighbouring organs. Coders should disregard the words "minor salivary gland" in a diagnosis and code to the more precise site and histology provided. For example "Minor salivary gland adenoid cystic carcinoma of the hard palate" should be coded to "Adenoid cystic carcinoma" M-8200/3, and "Hard palate" C05.0 (T145.2).

Use the topography code for oral cavity, C06.9 (T145.9) if no site of origin is given in a diagnosis.

(7) Compound morphology diagnoses (Rules 10 and 11)

Some tumours have more than one histological pattern and have been assigned special code numbers to show their compound nature.

Examples:

- embryonal carcinoma and teratoma, M-9081/3
- adenocarcinoma and squamous cell carcinoma, or adenosquamous carcinoma, M-8560/3
- basal-squamous cell carcinoma, M-8094/3
- papillary and follicular adenocarcinoma, M-8340/3

Compound morphology diagnoses are indexed in the ICD-O but not all combinations and permutations will appear. For example, "fibromyxosarcoma" is listed but the synonymous term myxofibrosarcoma is not listed. Coders must check all possible permutations before selecting a morphology code.

In cases where a single tumour is described by two or more adjectives which are normally assigned two or more morphology codes, SELECT THE HIGHER CODE NUMBER, as it is usually more specific. For example, a tumour described as a "transitional cell epidermoid carcinoma" should not be reported twice (once as a "transitional cell carcinoma", M-8120/3, and once as an "epidermoid carcinoma", M-8070/3). In this example only one tumour is reported. Select M-8120/3 as it is the higher, more specific number.

(8) Non-Hodgkin lymphomas

The greatest change and a major improvement from the First to the Second Edition of ICD-O is in the section on lymphomas. A reorganization and the addition of new terms and new

morphological categories simplify the task of coding. These improvements were made possible by the introduction of a Working Formulation (WF) for Non–Hodgkin Lymphomas (NHL). The WF is not a new classification but a means of translation between the more recognized classifications of NHL, for example, Rappaport, Dorfman, Lukes and Collins, Dr Lennert's Kiel classification, the British Lymphoma scheme (Dr Henry) and the WHO classification.

As shown in Table 3, the WF is divided into three main groupings: Low Grade, Intermediate Grade and High Grade. The Table shows the ten basic histological groups (A to J) of the WF and the equivalent terms in the Rappaport and Kiel classifications.

The WF is based primarily on the Lukes and Collins classification which groups lymphomas according to the cellular structure (small cells vs. large cells which may be either cleaved or non–cleaved).

Lymphomas are characterized by neoplastic proliferation of lymphocytes or histiocytes. The Rappaport classification is based on this terminology – the proliferation of either lymphocytes (lymphocytic lymphoma) or histiocytes (histiocytic lymphoma). The term "nodular" used in the Rappaport classification means the same as "follicular" used in the other classifications. The WF uses the term "follicular" in preference to "nodular" to indicate the architectural pattern.

Dr Lennert from Kiel, Federal Republic of Germany, used the terms centrocytic, which is equivalent to cleaved, and centroblastic, which is equivalent to non–cleaved.

Table 3. Non-Hodgkin lymphomas working formulation with related terms in Rappaport and Kiel classification and ICD-0 numbers

Working formulation Group terms	ICD-0 Code	Rappaport	Kiel
Low Grade			
A. Malignant lymphoma (ML) small lymphocytic plasmacytoid	9670/3 9671/3	Lymphocytic, wd. 9670/3 ML, plasmacytoid 9670/3	ML, lymphocytic 9670/3 ML, lymphoplasmacytic 9671/3
ML, consistent with chronic lymphocytic leukaemia (CLL)	9823/3		ML, consistent with CLL 9823/3
B. ML, follicular, small cleaved cell (FCC)	9695/3	ML, nodular lymphocytic wd. 9693/3, int. 9694/3	ML, centroblastic/centrocytic 9692/3
C. ML, follicular, mixed small cleaved and large cell	9691/3	ML, nodular mixed lymphocytic/histiocytic 9691/3	ML, centroblastic/centrocytic 9692/3
Intermediate Grade			
D. ML, follicular, large cell	9698/3	ML, nodular histiocytic 9698/3	ML, centroblastic, follicular 9697/3
E. ML, diffuse, small cleaved	9672/3	ML, diffuse lymphocytic, pd. 9672/3, int. 9673/3	ML, centrocytic 9674/3
F. ML, diffuse, mixed small and large cell	9675/3	ML, diffuse mixed lymphocytic/histiocytic 9675/3	ML, diffuse centroblastic centrocytic 9676/3

Table 3 contd.

Working formulation	ICD-0 Code	Rappaport	Kiel
G. ML, diffuse, large cell cleaved non/cleaved	9680/3 9681/3 9682/3	ML, diffuse, histiocytic 9680/3	ML, diffuse centroblastic 9683/3
High Grade			
H. ML, large cell, immunoblastic (diffuse)	9684/3	ML, diffuse, histiocytic 9680/3	ML, immunoblastic 9684/3 T-zone lymphoma 9703/3
I. ML, lymphoblastic (diffuse)	9685/3	ML, lymphoblastic, convoluted/non-convoluted 9685/3	ML, lymphoblastic 9685/3
J. ML, small, non/cleaved (diffuse)	9686/3	ML, undifferentiated, non-Burkitt's 9686/3	
Burkitt's	9687/3	ML, undifferentiated, Burkitt's 9687/3	Burkitt's type lymphoma 9687/3

Table 4 – 6th digit code for T–cell and B–cell designation for lymphomas and leukaemias

5	T–cell	
6	B–cell Pre–B B–Precursor	
7	Null cell Non T–non B	For leukaemias only
9	Cell type not determined, not stated or not applicable	

NHL can either be diffuse or follicular (nodular). Since the majority (85%) of NHL are diffuse, the NOS or unspecified lymphomas are grouped with the diffuse. For example, Malignant lymphoma, small cleaved cell, NOS has the same code as Malignant lymphoma, small cleaved cell, diffuse, M–9672/3.

For quick reference, all lymphomas are indexed under l–lymphoma, malignant in the alphabetical index.

T– or B–cell should not be coded unless the information is provided by a pathologist or in a marker study report.

(10) Multiple neoplasms (Rule 14)

It is quite possible for one person to develop more than one tumour. The second tumour may develop in the same organ, or elsewhere. It may be of the same histological type as the first tumour, or quite different. Such 'multiple tumours' may appear at more or less the same time or be separated by an interval. The increasingly intensive investigation and follow–up of the cancer patient (so that small or minimal lesions are detected), the use of treatments which are of themselves carcinogenic, and the prolongation of survival have led to the more frequent recognition of multiple primary tumours in the same individual.

The problem for the cancer registry is to decide whether the second tumour is a 'new' cancer – which is to be registered – or an extension or recurrence of the first cancer which is already registered. The registry should have clear procedures for coding and reporting multiple tumours.

For purposes of consistency and comparability of data between different registries, it is essential that similar rules are used. IARC and IACR have developed a set of rules which can be used in com-

parative studies. These rules are simple to apply, and relatively conservative in classifying fewer multiple cancers as second primaries than many other schemes. Because of this feature, it should be easy for registries to recode second primaries, as defined by their own rules, according to the IARC/IACR criteria, when the data are to be used for inter-registry comparisons. These rules are as follows:

(a) The recognition of the existence of two or more primary cancers does not depend on time.

(b) A primary cancer is one which originates in a primary site or tissue and is thus neither an extension, a recurrence nor a metastasis.

(c) Only one tumour shall be recognized in an organ or pair of organs or tissue. For tumours where site is coded by the First Edition of ICD-O (or by ICD-9) an organ or tissue is defined by the different three digit codes.

ICD-O (Second Edition) and ICD-10 have a more detailed set of topography codes. Some goups of codes are considered to be a single organ for the purposes of defining multiple tumours. These topography code groups are shown in Table 5.

Multifocal tumours – that is, discrete masses apparently not in continuity with other primary cancers originating in the same primary site or tissue (e.g. bladder), are thus counted as a single cancer.

(d) Rule (c) does not apply in two circumstances:

(i) For systemic or multicentric cancers potentially involving many discrete organs. Three histological groups – lymphomas, leukaemias and Kaposi's sarcoma (groups 7,8 and 9 in Table 6) – are included. They are counted only once in any individual.

(ii) Other specific histologies – groups 1,2,3,5 and 6 in Table 6 – are considered to be different for the purpose of defining multiple tumours. Thus, a different 'cancer' in the same organ is counted as a new tumour. Groups 4 and 10 include tumours which have not been satisfactorily typed histologically, and cannot therefore be distinguished from the other groups.

Table 5. Groups of topography codes from ICD-0 second edition which are considered a single site, in the definition of multiple cancers

C01 C02	Base of tongue Other & unspecified parts of tongue	(ICD-O-1 141)
C05 C06	Palate Other and unspecified parts of mouth	ICD-O-1 145)
C07 C08	Parotid gland Other and unspecified major salivary glands	(ICD-O-1 142)
C09 C10	Tonsil Oropharynx	(ICD-O-1 146)
C12 C13	Pyriform sinus Hypopharynx	(ICD-O-1 148)
C19 C20	Rectosigmoid junction Rectum	(ICD-O-1 154)
C23 C24	Gallbladder Other and unspecified parts of biliary tract	(ICD-O-1 156)
C30 C31	Nasal cavity and middle ear Accessory sinus	(ICD-O-1 160)
C33 C34	Trachea Bronchus and Lung	(ICD-O-1 162)
C40 C41	Bones, joints & articular cartilage of limbs Bones, joints & articular cartilage of other & unspec. sites	(ICD-O-1 170)
C60 C63	Penis Other and unspecified male genital organs	(ICD-O-1 187)
C64 C65 C66 C68	Kidney Renal pelvis Ureter Other and unspecified urinary organs	(ICD-O-1 189)
C74 C75	Adrenal gland Other endocrine glands and related structures	(ICD-O-1 194)

Table 6. Group of malignant neoplasms considered to be histologically 'different' for the purpose of defining multiple tumours (adapted from Berg, 1994)

Group		
	Carcinomas	
1	Epidermoid carcinomas	805–813
2	Adenocarcinomas	814,816,818–822,825–850,852–855, 857, 894
3	Other specific carcinomas	803–804, 815, 817, 823, 824,851,856, 858–867
4	Unspecified ('Carcinomas NOS')	801–802
5	Sarcomas & other soft tissue tumours	868–871,880–892, 899, 904,912–913, 915–934, 937,954–958
6	Other specified types of cancer	872–879,893,895–898, 900–903,905–911, 935–936, 938–953, 972–974 (976 for ICD–O–2 only)
7	Lymphomas	959–971 (975 for ICD–O–1 only)
8	Leukaemia	980–994
9	Kaposi's sarcoma	914
10	Unspecified types of cancer	800 (999 for ICD–O–1 only)

The numbers in parentheses refer to the first 3 digits of the ICD–O morphology code.

The groups numbered 1, 2, 3, 5, and 6 are considered specific histologies and thus are 'different' for the purpose of determining multiple tumours.

Example:

- Squamous cell carcinoma, nasopharynx

  Metastatic adenocarcinoma, supraclavicular lymph node.

These are considered two different histological types (groups 1 and 2) and thus are considered two different tumours.

On the other hand, the groups numbered 4 and 10 are not specific. They include tumours which have not been satisfactorily typed histologically (carcinoma, not otherwise specified or neoplasms, NOS or malignancy, NOS). Thus they cannot be considered as separate or distinct from the other groups.

Example:

- Carcinoma, NOS, cervix uteri

  Adenocarcinoma, endocervix

These cannot be considered as two different tumours because carcinoma, NOS cannot be separate from the specific histology, adenocarcinoma.

(a) Multifocal tumours

Tumours are multiple, discrete, and apparently not in continuity with the other similar primary tumours originating in the same primary site or tissue.

Example:

- bladder tumours or skin tumours.

(b) Multicentric tumours

Primary cancer originating in different parts of the lymphatic or haematopoietic tissue.

Multifocal as well as multicentric tumours would only be counted once, unless of 'different' histology.

For each independent cancer, a separate registry abstract is prepared, assigning the same patient registry number but with a higher sequence number.

(c) Sequence number

Sequence number refers to the order in which a primary malignancy is discovered in relation to the total number of primaries for a given patient. For example: the first primary tumour has a sequence number of 1; the second primary tumour has a sequence number of 2, and the third has a sequence number of 3. If multiple primaries are diagnosed simultaneously, assign lower sequence number to the tumour with the poorest prognosis and/or furthest extent of disease.

CODING EXERCISES

For the six sample cases described below, select the primary site of the malignancy and code according to ICD–O topography. The answers follow the exercises.

1. A 55-year old male complained of productive cough and chest pain, of 2 months duration. The patient is a

known smoker consuming about 1 pack of cigarettes daily since age 20. Physical examination revealed 1 x 1 cm firm to hard, fixed node on the left supraclavicular region. Chest X-ray revealed a pulmonary mass on the left upper lobe. Biopsy of the supraclavicular lymph node revealed metastatic squamous cell carcinoma, probable lung primary.

Primary site:

ICD-O T-code:

2. The final diagnosis on a pathology report is malignant lymphoma, lymphocytic, poorly differentiated, ileum.

Primary site:

ICD-O T-code:

3. A 40-year old female was found to have a 3 x 5 cm mass on the upper outer quadrant of the left breast, associated with a 2 x 2 cm mass on the left axilla. Section biopsy of the mass, left breast, revealed invasive duct carcinoma.

Primary site:

ICD-O T-code:

4. A 25-year old female had a violaceous soft tissue mass on the right shoulder region of 6 months duration. The mass gradually increased in size. About 2 months later she noted other similar masses at the arm and axilla. Biopsy of the mass on the right shoulder region revealed malignant haemangioendothelioma.

Primary site:

ICD-O T-code:

5. Ultrasonography of the liver in a 25-year old male complaining of right upper quadrant pain and abdominal enlargement revealed a solid mass measuring about 5 x 5 cm at the inferior portion of the right lobe of the liver. Other solid masses were noted on both lobes of the liver. Ultrasound-guided liver biopsy revealed hepatocellular carcinoma.

Primary site:

ICD-O T-code:

6. Pathological diagnosis: Metastatic follicular carcinoma of lung.

Primary site:

ICD-O T-code:

Code the following diagnoses according to ICD-O Topography and Morphology:

7. Secondary melanoma of liver.

ICD-O T-code:

ICD-O M-code:

8. Neuroblastoma.

ICD-O T:

ICD-O M:

9. Central giant cell granuloma of left leg.

ICD-O T:

ICD-O M:

Determine whether each of the following cases should be reported as multiple primaries or as one tumour only:

10. Carcinoma, appendix.

Carcinoma, descending colon.

Number of primaries reported:

11. Carcinoma, left breast.

Carcinoma, right breast.

Number of primaries reported:

12. Papillary serous cystadenocarcinoma, right ovary. Immature teratoma, left ovary.

Number of primaries reported:

13. Adenocarcinoma of lung.

Carcinoma of lung, 5 years later.

Number of primaries reported:

14. Basal cell carcinoma, skin, nose.

Basal cell carcinoma, skin, cheek.

Number of primaries reported:

15. Poorly differentiated lymphocytic lymphoma, ascending colon (July 1987).

Mucinous adenocarcinoma, sigmoid colon (April 1989). Number of primaries reported:

16. Invasive duct carcinoma, left breast (1981).

Metastatic ductal carcinoma, left supraclavicular region, probable breast origin (1981).

Number of primaries reported:

17. Papillary carcinoma and follicular carcinoma co-existing in the same mass, right lobe, thyroid gland.

Number of primaries reported:

ANSWERS

1. Left lung, upper lobe C34.1 (T162.3)

   (The mass on the left supraclavicular region was specified as metastatic)

2. Ileum C17.2 (T152.2)

   (Ileum is an extranodal site of malignant lymphoma)

3. Left breast, upper outer quadrant C50.4 (T174.4)

4. Soft tissue, right shoulder region C49.1 (T171.2)

5. Liver C22.0 (T155.0)

6. Thyroid gland C73.9 (T193.9)

   (Lung is NOT correct – it is the site of metastasis. In the ICD–O alphabetical index, the code C73.9 (T193.9) is given after Carcinoma, follicular, NOS, indicating that follicular carcinoma is a site–specific morphology to be reported as a primary of thyroid gland unless a different primary site is specified.)

7. ICD–O T C80.9 (T199.9) M–8720/3

8. ICD–O T C80.9 (T199.9) M–9500/3

9. This is a non–reportable diagnosis.

10. One tumour. According to the rules for multiple neoplasms only one tumour shall be recognized if arising in the same three-digit site (Appendix C18.1 (T153.5) and Descending colon C18.6 (T153.2)) and if the histologies are the same (Carcinoma M–8010/3).

11. Only one tumour. Even though the tumour arose bilaterally, the site codes C50.9 (T174.9) are the same at the three-digit level; the morphology codes are the same; and the existence of two or more primary tumours does not depend on time.

12. Two tumours. The tumour histologies are considered different: Papillary serous cystadenocarcinoma, M–8460/3, is from Group 2 and Immature teratoma, M–9080/3 from Group 6.

13. One tumour. The sites are the same, and Carcinoma NOS is considered the same as the more specific Adenocarcinoma.

14. One tumour. Sites are the same at the three-digit level and morphologies are the same. Also, this is considered a multifocal tumour and as such should be counted only once.

15. Two tumours. Although the sites are the same at the three-digit level (C18.2 (T153.6), Ascending colon, and C18.7 (T153.3) Sigmoid colon), there are two different or separate histological types: M–9672/3 (M–9630/3), Poorly differentiated lymphocytic lymphoma from Group 7, and Mucinous adenocarcinoma M–8480/3 from Group 2.

16. One tumour. The metastatic tumour is considered to have arisen from the first reported primary (1981).

17. One tumour. This is considered a tumour of compound morphology and is assigned code M–8340/3 (Papillary and follicular carcinoma). It is also site-specific to the thyroid gland.

4.3 The International Classification of Diseases (ICD)

The ICD is the principal classification system used internationally for classifying diseases. It was originally known as the International List of Causes of Death. Its name was changed to the International Classification of Diseases when the need for classifying causes of illness as well as death was recognized (1948, Sixth Revision). Publication of the ICD has been the responsibility of the World Health Organization (WHO) since WHO's creation after the Second World War. The ICD is revised approximately every ten years, and while the Ninth Revision (ICD–9) is still largely in use, many countries are changing or will soon change to the Tenth Revision (ICD–10).

The purpose of this section is to present a general overview of the ICD, with special emphasis on the neoplasms chapter from which the ICD–O topography axis is derived. Because section 4.2 provides a detailed description of the Second Edition of ICD–O, this section will deal with its parent classification, the ICD–10, rather than ICD–9. The basic structure of the neoplasms chapter of the ICD has remained unchanged over the more recent revisions, and it is intended here to provide cancer registries with a useful reference to the general characteristics of the ICD. Those persons wishing

to do statistical analyses over time (trends) are advised to review and compare in detail each revision in use during the period being studied.

With the Tenth Revision, the title of the classification has been changed to 'International Statistical Classification of Diseases and Related Health Problems' although it will continue to be referred to as the 'ICD'.

ICD–10 consists of a three-volume set:

- Volume 1: Tabular List
- Volume 2: Instruction Manual
- Volume 3: Alphabetical Index ICD–10 contains 21 chapters based on:
- aetiology, for example Chapter 1 – Certain infectious and parasitic diseases;
- anatomy, for example Chapter 10 – Diseases of the respiratory system;
- circumstances, for example Chapter 15– Pregnancy, childbirth and the puerperium.

See Table 7 for a listing of chapters.

Table 7. Chapters of ICD–10

Chap.	
I	Certain infectious and parasitic diseases (A00–B99)
II	Neoplasms (C00–D49)
III	Diseases of the blood and blood–forming organs and certain disorders involving the immune mechanism (D50–D99)
IV	Endocrine, nutritional and metabolic diseases (E00–E99)
V	Mental and behavioural disorders (F00–F99)
VI	Diseases of the nervous system (G00–G99)
VII	Diseases of the eye and adnexa (H00–H49)
VIII	Diseases of the ear and mastoid process (H50–H99)
IX	Diseases of the circulatory system (I00–I99)
X	Diseases of the respiratory system (J00–J99)
XI	Diseases of the digestive system (K00–K99)
XII	Diseases of the skin and subcutaneous tissue (L00–L99)
XIII	Diseases of the musculoskeletal system and connective tissue (M00-M99)
XIV	Diseases of the genitourinary system (N00–N99)
XV	Pregnancy, childbirth and the puerperium (000–O99)
XVI	Certain conditions originating in the perinatal period(P00–P99)
XVII	Congenital malformations, deformations, and chromosomal abnormalities (Q00–Q99)
XVIII	Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (R00–R99)
XIX	Injury, poisoning and certain other consequences of external causes (S00–T99)
XX	External causes of morbidity and mortality (V00–Y99)
XXI	Factors influencing health status and contact with health services (Z00–Z99).

ICD–10 codes are alphanumeric, the first character being a letter and the remaining characters, numbers. The use of an alpha character is a major change from the previous ICD revisions and serves to double the size of the classification.

The majority of chapters have been assigned a unique letter which provides 100 three–character codes, for example Chapter VI, "Diseases of the nervous system", has been assigned categories G00–G99. The neoplasms chapter has been assigned 150 three–character categories and it shares the letter D with "Diseases of the blood and blood–forming organs and certain disorders involving the immune mechanism". The letter U has been reserved for future additions and changes and for possible individualized assignment at the national level.

Within chapters the three-character categories are grouped into blocks containing similar disease entities. Within the blocks, each three-character category may be further sub-divided into four-character codes for additional detail. Table 8 shows the broad groups or blocks within Chapter II, 'Neoplasms'. Notice that neoplasms are grouped first according to behaviour (malignant C00–C97, *in situ* D00–D09, benign D10–D36, and un-certain and unknown behaviour D37–D48).

Table 8. Chapter II: Neoplasms (C00-D48)

C00–C75	Malignant neoplasms of specified sites, except of lymphoid, haematopoietic and related tissue	
	C00–C14	Lip, oral cavity and pharynx
	C15–C26	Digestive organs
	C30–C39	Respiratory and intrathoracic organs
	C40–C41	Bone and articular cartilage
	C43–C44	Melanoma and other malignant neoplasms of skin
	C45–C49	Mesothelial and soft tissue
	C50	Breast
	C51–C58	Female genital organs
	C60–C63	Male genital organs
	C64–C68	Urinary tract
	C69–C72	Eye, brain and other parts of central nervous system
	C73–C75	Thyroid and other endocrine glands
C76–C80	Malignant neoplasms of ill–defined, secondary and unspecified sites	
C81–C96	Malignant neoplasms of lymphoid, haematopoietic and related tissue	
C97	Malignant neoplasms of independent (primary) multiple sites	
D00–D09	*In situ* neoplasms	
D10–D36	Benign neoplasms	
D37–D48	Neoplasms of uncertain and unknown behaviour	

It is important to be familiar with the differences between ICD–10 and ICD–O if comparing data collected by the two systems. Specific features of ICD–10 and how these features differ in ICD–O are discussed below.

4.3.1 Differences between ICD-0 and ICD-10

The differences between ICD–O and ICD–10 are detailed on pages xii–xiv of the Second Edition of ICD–O. Because of their importance they are reproduced here to assist those who wish to:

- use both systems to code cancer registry data,
- compare data from the two systems, or
- use coded cause of death information (which is coded only to ICD–10).

There are basic differences between the structure of ICD–O and that of ICD. Chapter II, "Neoplasms", of ICD is basically a topography code that takes into account the behaviour of the neoplasm, i.e., malignant, benign, *in situ*, or uncertain whether malignant or benign, by using a specific block of categories to identify each of these types of behaviour. ICD–O has one set of four characters for topography based on the malig-nant neoplasm section of ICD–10, and the behaviour code, incorporated in the morphology field identifies whether the neoplasm is malignant, benign, etc.

Table 9 shows the correspondence between the behaviour code of ICD–O and the different sections of Chapter II of ICD–10. This table may be used by cancer registry personnel as a basic editing tool to check that there is general agreement between the ICD–O and ICD–10 codes assigned to the same diagnosis. For example, a case coded to ICD–O behaviour digit /2 could only have an ICD–10 code in the range D00–D09.

Table 9. ICD-0 morphology and corresponding section of ICD-10, Chapter II.

Behaviour code	Category	Term
/0	D10–D36	Benign neoplasms
/1	D37–D48	Neoplasms of uncertain and unknown behaviour
/2	D00–9	*In situ* neoplasms
/3	C00–C76, C80–C97	Malignant neoplasms, stated or presumed to be primary
/6	C77–C79	Malignant neoplasms, stated or presumed to be secondary

The ICD–10 alphabetical index has under the word "Neoplasm" a table of five columns with the following headings: Malignant, Secondary or metastatic, *In situ*, Benign, Uncertain and unknown behaviour, and listing the appropriate ICD–10 category for each site of the body in alphabetical order.

For example, the entry for lung is:

LUNG	
Malignant	C34.9
Secondary or metastatic	C78.0
In situ	D02.2
Benign	D14.3
Uncertain and unknown	D38.1

In ICD–10 five different categories of four characters each are therefore needed to describe all lung neoplasms. In ICD–O there is only one topography code (C34.9) for lung: the behaviour code is part of the morphology code denoted by the letter M and changes according to the nature of the tumour. For example in ICD–O, malignant neoplasm of the lung, e.g. Carcinoma, is coded C34.9, M–8010/3; a benign neoplasm of lung, e.g., Adenoma, is denoted C34.9, M–8140/0. Note that the topography code (C34.9) remains the same for both. In ICD–10 the benign neoplasm would be coded D14.3. Another fundamental difference between ICD and ICD–O is that very few histological types are identified in ICD. There is no way to distinguish between an Adenocarcinoma of the lung and a Squamous cell carcinoma of the lung. Both would be coded to C34.9 in ICD–10. In ICD–O an Adenocarcinoma of lung would be coded C34.9, M–8140/3 whereas a Squamous cell carcinoma of lung is C34.9, M–8070/3. Until the publication of ICD–10, there were only four histological types of malignant tumour with their own ICD categories: Lymphomas, Leukaemias, Melanoma of skin and Choriocarcinoma. However, in ICD–10 several more categories based on histological type have been added, principally Mesothelioma (C45) and Kaposi's sarcoma (C46). In addition, liver cancer (C22) has been divided into 'subsites' comprising morphological entities.

4.3.2 ICD-0 categories not used in ICD-0, Second Edition

As noted previously, the ICD–10 categories C00–C97 include a few categories which are either based on morphology or denote metastatic or secondary neoplasms which are taken care of by the behaviour code in ICD–O. The ICD–10 categories omitted from the topography section of ICD–O are:

ICD-0 category	Term	Equivalent ICD-0 behaviour code
C43	Melanoma of skin	/3
C45	Mesothelioma	/3
C46	Kaposi's sarcoma	/3
C78	Secondary malignant neoplasms of respiratory and digestive systems	/6
C79	Secondary malignant neoplasm of other specified sites	/6

C81–C96	Malignant neoplasms of lymphoid, haematopoietic and related tissue	/3
C97	Malignant neoplasms of independent (primary) multiple sites	/3
D00–D09	*In Situ* neoplasms	/2
D10–D36	Benign neoplasms	/0
D37–D48	Neoplasms of uncertain and unknown behaviour	/1

The C81–C96 section of ICD–10 is used for malignant neoplasms stated or presumed to be primary in lymphoid, haematopoietic and related tissue. In ICD–O these are assigned specific morphology code numbers and the behaviour code /3, combined with the appropriate topography code in the range C00–C80. For example, Lymphocytic lymphoma of the stomach is coded C83.0 in ICD–10 but in ICD–O the topography would be coded Stomach C16.9 and the morphology M–9670/3.

The C97 category in ICD–10 is not included in ICD–O as each multiple site is usually coded separately.

4.3.3 *Special Codes in ICD–O for Topography of Lymph Nodes (C77) and Haematopoietic and Reticuloendothelial Systems (C42)*

In ICD–10 the category C77 is used for Secondary and unspecified malignant neoplasms of lymph nodes; the same code number is used for both primary and metastatic neoplasms of lymph nodes in ICD–O. Thus, most of the malignant lymphomas (C81–C85) in ICD–10 are coded to the topography code number C77 in ICD–O.

C42 is an unused category in ICD–10 that is used in ICD–O to designate several topographic sites within the haematopoietic and reticuloendothelial system. This category is used principally as the topography site for most of the leukaemias C42.1 (bone marrow) and related conditions which are coded C90–C95 in ICD–10. The listing for C42 in ICD–O is as follows:

C42 haematopoietic and reticuloendothelial systems	
C42.0	Blood
C42.1	Bone marrow
C42.2	Spleen
C42.3	Reticuloendothelial system, NOS
C42.4	Haematopoietic system, NOS

For example, Chronic lymphocytic leukaemia is coded C91.1 in ICD–10 whereas in ICD–O it is coded C42.1 (topography for bone marrow), M–9823/3 (to denote chronic lymphocytic leukaemia).

The ICD–10 category for malignant neoplasm of spleen (C26.1) does not appear under digestive organs in ICD–O, Second Edition. Following the practice of ICD–O, First Edition, the spleen is assigned code C42.2, under the Haematopoietic and Reticuloendothelial system.

4.3.4 *Hydatidiform Mole and Neurofibromatosis (von Recklinghausen's Disease except bone)*

The final differences between ICD–O and Chapter II of ICD–10 are that "Hydatidiform mole, NOS", C58.9 M–9100/0 in ICD–O, is not classified in Chapter II, "Neoplasms", of ICD–10 but in Chapter XV, "Pregnancy, childbirth and the puerperium" (Category O01.9, Hydatidiform mole), and Neurofibromatosis including Von Recklinghausen's disease except of bone, M–9540/1 in ICD–O, appears in Chapter XVII "Congenital malformation" as category Q85.0.

4.4 Staging

Staging is the attempt to assess the size of a tumour and its extent of involvement throughout the body. It is a simple, clear way of assigning patients to groups which differ in the extent of their disease.

There are several reasons for staging of tumours:

(1) Staging sorts individuals into groups which can be compared, from a local to an international level.

(2) It helps in comparisons of outcome – for example the results of different treatments in groups of patients. Such comparisons should be made between patients with a similar extent of disease at diagnosis.

(3) Staging helps in planning appropriate treatment for cancer patients.

(4) It assists in prognosis (description of the likely outcome of the disease, e.g., survival).

4.4.1 Staging systems

There are many different staging systems, some of which are general (apply to all types of tumours), and some of which are specific to certain types of tumours. Examples of staging systems are:

TNM Staging System: this was introduced by the International Union Against Cancer (UICC) and the American Joint Committee on Cancer (AJCC) (see section 4.4.2).

SEER Summary Staging: developed by the Surveillance Epidemiology and End Results (SEER) program of the National Cancer Institute of the USA.

FIGO Staging System: developed by the International Federation of Gynecology and Obstetrics for staging of female reproductive site cancers.

Dukes' Staging System: a staging system for colon and rectum based on the depth of invasion into the intestinal wall and the presence of lymph node involvement.

Clark's level: a pathological staging system for melanoma, skin, based on the depth of invasion into the different layers of the skin.

Breslow's: this is also a pathological staging system for melanoma, skin, measuring thickness of the tumour in millimetres.

Jewett/Marshall: a pathological system for bladder cancer based on the depth of invasion into the bladder wall.

American/Whitmore: a staging system used for prostate cancer, based on extent and site of the tumour.

Ann Arbor: a staging system for lymphomas (Hodgkin's disease and non-Hodgkin lymphoma) based on lymph node and visceral involvements.

Smith/Skinner: a staging system for cancer of the testis.

Jackson: a staging system for cancer of the penis.

National Wilms's Tumour Study Group: a staging system for Wilms's tumour of the kidney.

The staging system used may vary from registry to registry. It is important that the system used by a particular registry be specified and guidelines should be clearly written. A simple classification which may be used by population-based registries to describe the extent of spread of a particular cancer may be limited to:

In-situ

Localized

Regional

Distant

Unknown

The stage of disease is assigned after the extent of the tumour in the body has been determined. This requires:

(1) Determination of the site of origin (primary site)

(2) Review of:
- History
- Physical examination
- X-rays/scans and other imaging techniques endoscopy reports
- Operative reports
- Pathology reports (including cytology, haematology, surgical pathology and autopsy)
- Progress notes
- Discharge summary

Many staging systems are concerned with the clinical (pre-treatment) assessment of the extent of spread of the tumour, for example the American Joint Committee on Staging and the International Union Against Cancer (TNM system). The staging is therefore based on all available diagnostic evidence prior to the start of treatment.

Other staging systems are based on all available diagnostic and therapeutic evidence obtained during the first course of treatment, which includes the operative findings as well as pathological reports following surgery.

The summary stage should be determined after considering all the available information pertaining to the degree of spread of the tumour from the history, physical examination, laboratory results, radiological findings, endoscopic and operative findings, and pathological reports.

In the next sections, two of the more common staging systems used will be presented, namely the TNM Staging System and Summary Staging.

4.4.2 The TNM Staging System

A classification scheme used frequently for clinical staging is the TNM classification, which attempts to define the primary site by extent, degree of nodal disease and presence or absence of distant metastasis.

The TNM classification was promulgated by the International Union Against Cancer (UICC), through its Committee on Clinical Stage Classification and Applied Statistics (1954), later known as the TNM Committee. The American Joint Committee on Cancer (AJCC) organized in 1959 as the American Joint Committee for Cancer Staging and End-Results Reporting also decided to use the TNM system in describing the anatomical extent of the tumour prior to treatment. However, there were some instances when the recommendations of these two committees regarding staging have not been uniform. In the latest revision (the third edition) of the "Manual for Staging of Cancer" (AJCC, 1988), efforts have been made to reach uniform recommendations of the two groups in order to arrive at a single staging scheme which can be used all over the world.

The primary basis for TNM staging is the anatomical extent of the tumour. However, for some tumours, the histological grading (soft tissue sarcomas) and age (thyroid cancer) are also important considerations.

The TNM staging system describes the anatomical extent of the disease based on three elements: T, N, and M.

- "T" stands for the primary tumour. The letter T is followed by a number, the suffix, to describe increasing sizes of the tumour and/or involvement by direct extension, e.g., T0, T1, T2, T3, etc.
- "N" stands for regional lymph node involvement. The letter N is followed by a number, the suffix, to describe the absence of involvement or the increasing degree of involvement of these lymph nodes (e.g., N0, N1, N2, etc.)
- "M" refers to distant metastasis. There are two suffixes, 0 and 1, to describe the absence of such metastasis (**M0**) or their presence (**M1**).

The general classification rules for all sites are as follows:

(1) All cases should be confirmed histologically. Cases not confirmed must be reported separately.

(2) Four classifications are described for each site, namely:

Clinical classification designated as **cTNM**: uses all information available prior to the first definitive treatment, including evidence arising from physical examination, imaging, endoscopy, biopsy, surgical and other relevant findings.

Pathological Classification (**pTNM**): uses all information acquired before treatment, supplemented or modified by evidence from pathological examination of the resected specimen. This entails the pathological assessment of the primary tumour (pT), the regional lymph nodes (pN) and distant metastasis (pM).

Retreatment Classification (**rTNM**): uses all information available at the time of re-treatment (further definitive treatment planned after a disease free interval), to stage a recurrent tumour. Microscopic confirmation of the recurrence is necessary.

Autopsy Classification (**aTNM**): a classification used only when the cancer is first diagnosed at autopsy; uses all

pathological information following a post-mortem examination.

(3) After the T, N and M or pT, pN and pM have been determined these may be grouped into stages, which are more or less similar with respect to survival.

The **stage groupings** are:

Stage 0 (*in situ*)

Stage I

Stage II

Stage III

Stage IV

Once established, the TNM classification and stage groupings will remain unchanged. The clinical stage is important in selecting treatment, while pathological stage is for prognosis and the evaluation of results of treatment.

(4) When in doubt as to the correct T, N or M category, assign to the less advanced category.

(5) If the registry records TNM staging, this can only be abstracted if TNM is recorded in the clinical notes. This cannot be allocated by the abstractor.

The staging comparison charts on the following pages are intended as reference for tumour registrars who commonly record Summary Staging on their abstracts but frequently see terminology such as Stage IA, Dukes' B or Level III in the medical records. Summary Staging is described in the next section (4.4.3).

LIP AND ORAL CAVITY Relationship of summary stage to TNM (AJCC, 1988)					
Summary stage	Extent of disease	AJCC stage	T	N	M
In-situ	Carcinoma *in situ*	0	Tis	NO	MO
Localized	Tumour ≤ 2 cm in size	I	T1	NO	MO
	Tumour 2–4 cm in size	II	T2	NO	MO
	Tumour ≥ 4 cm in greatest dimension, without infiltration of adjacent structure	III	T3	NO	MO
Regional	Tumour 2–4 cm in size, with metastasis to single ipsilateral LN ≤ 3 cm in greatest dimension	III	T1 T2	N1 N1	MO MO
	Tumour ≥ 4 cm in size, with ipsilateral LN ≤ 3 cm in greatest dimension		T3	N1	MO
Distant	Tumour invades adjacent structures (through cortical bone, deep muscles of tongue, skin, maxillary sinus)	IV			
	Tumour any size, with LN metastases ≥ 3 cm in greatest dimension		Any T	N2,N3	MO
	Metastasis to distant organs		Any T	Any N	M1

PHARYNX Relationship of summary stage to TNM (AJCC, 1988)					
Summary stage	Extent of disease	AJCC stage	T	N	M
In-situ	Carcinoma *in situ*	0	Tis	NO	MO
Localized	Tumour ≤ 2 cm in size limited to one subsite (e.g., nasopharynx or hypopharynx), not fixed	I	T1	NO	MO
Regional	Tumour 2–4 cm in size invades more than one subsite, or an adjacent site	II	T2 T3	N1 N0	M0 M0
	With metastasis to single ipsilateral LN ≤ 3 cm in greatest dimension		T1 T2 T3	N1 N1 N1	M0 M0 M0
Distant	Tumour invades adjacent structures (skull and/or cranial nerves for nasopharynx; cartilage or soft tissues, neck for hypopharynx)		T4 T4	N0 N1	M0 M0
	With metastasis to single or multiple ipsilateral LN > 6 cm in size, or to contralateral or bilateral LN > 6 cm in size		Any T Any T	N2 N3	M0 M0
	With metastasis to distant organs		Any T	Any N	M1

LUNG Relationship of summary stage to TNM: (AJCC, 1988)					
Summary stage	Extent of disease (based on AJCC definitions)	AJCC stage	T	N	M
In-situ	Carcinoma *in situ*	0	Tis	NO	MO
Localized	Tumour ≤ 3 cm in size; surrounded by lung or visceral pleura, without invasion more proximal than the lobar bronchus	I	T1	NO	MO
	Tumour ≥ 3 cm in size, involving main bronchus ≥ 2 cm distal to carina with or without atelectasis or obstructive pneumonitis extending to the hilar region	I	T2	NO	MO
Regional	Tumour ≤ 3 cm, peripheral with involvement of ipsilateral intrapulmonary, peribronchial and/or hilar lymph node(s)	II	T1	N1	M0
	Tumour ≥ 3 cm, peripheral or involving the main bronchus, ≥2 cm distal to carina with invasion of visceral pleura, with involvement of ipsilateral, intrapulmonary, peribronchial and/or hilar lymph node(s)	II	T2	N1	M0
	Tumour of any size invading the parietal pleura, parietal pericardium, mediastinal pleura and diaphragm with or without ipsilateral peribronchial or hilar lymph node involvement	IIIA N1	T3	N0	M0
	Tumour in the main bronchus ≤ 2 cm distal to the carina but not involving the carina with atelectasis or obstructive pneumonitis of entire lung	IIIA	T3	N0	M0
	Tumour of any size, with involvement of the ipsilateral diastinal and/or subcarinal lymph node(s)	IIIA	Any T	N2	M0
	Tumour of any size, with invasion of the mediastinum, heart, great vessels, trachea, oesophagus, vertebral body, carina or with malignant pleural effusion	IIIB	T4	Any N	M0
Distant	Involvement of bilateral mediastinal and/or hilar lymph node(s)	IIIB	Any T	N3	M0
	Involvement of ipsilateral or contralateral scalene or supraclavicular lymph node(s)	IIIB	Any T	N3	M0
	Involvement of distant organs	IV	Any T	Any N	M1
Note: Vocal cord paralysis, superior vena caval obstruction and compression of trachea or oesophagus are related to metastases in mediastinal nodes. These should be classified as N2 (ipsilateral) or N3 (contralateral). A discontinuous lesion outside the parietal pleura in the chest wall is M1.					

BREAST Relationship of summary stage to TNM: (AJCC, 1988)					
Summary stage	Extent of disease	AJCC stage	TNM T	N	M
In situ	Carcinoma *in situ* Intraductal carcinoma Lobular carcinoma in situ Paget's disease of the nipple with no tumour	0	Tis	N0	M0
Localized	Tumour < 2 cm in size without fixation topectoral fascia or skin	I	T1a) T1b) T1c)	N0	M0
	Tumour 2-5 cm in size, without fixation to pectoral fascia or skin	IIA	T2	N0	M0
	Tumour > 5 cm in size, without fixation to pectoral fascia or skin	IIB	T3	N0	M0
Regional	Tumour < 2 cm in size, with metastasis to movable ipsilateral axillary lymph node(s)	IIA	T1	N1	M0
	Tumour 2-5 cm in size, with metastasis to movable ipsilateral axillary lymph node(s)	IIB	T2	N1	M0
	Tumour < 5 cm in size, with metastasis to ipsilateral axillary node(s) fixed to one another or to other structures	IIIA	T0 T1 T2	N2	M0
	Tumour > 5 cm in size with metastasis to movable or fixed ipsilateral axillary lymph node(s)	IIIA	T3	N1 N2	M0
	Tumour, any size, with direct extension to chest wall or skin	IIIB	T4	ANY N	M0
	Metastasis to ipsilateral internal mammary lymph node(s)	IIIB	Any T	N3	M0
Distant	Metastasis to ipsilateral supraclavicular lymph nodes or metastasis to distant organs	IV	Any T	Any N	M1

CERVIX Relationship of summary stage to TNM (AJCC, 1988)						
Summary stage	FIGO	Extent of disease (based on FIGO definitions)	AJCC stage	T	N	M
In situ	0	Carcinoma *in situ* Intraepithelial	0	Tis	N0	M0
Local-ized	Ia Ia1 Ia2	Microinvasive carcinoma Minimal microscopic stromal invasion Invasion of ≤ 5mm from base of epithelium and ≤ 7 mm in horizontal spread	IA	T1a T1a1 T1a2	N0	M0
	Ib	Tumour larger than T1a2	IB	T1b	N0	M0
Regional	IIa	Cervical carcinoma invades beyondthe uterus, up to upper 2/3 of vagina without parametrial invasion	IIA	T2a	N0	M0
	IIb	Extension to parametria but not to the lateral pelvic wall	IIB	T2b	N0	M0
	IIIa	Extension to the lower third of vagina. No extension to pelvic wall	IIIA	T3a	N0	M0
	IIIb	Extension to the pelvic wall and/or hydronephrosis or non-functioning kidney	IIIb	T3b	N0	M0
		Regional lymph node metastases Extension to the wall of the rectumor bladder (excluding mucosa), cul-de-sac or bullous oedema of the bladder	IIIB IIIB	T1–T3 T3b	3N1 Any N	M0 M0
Distant	IVa	Extension to mucosa of bladder or rectum and/or extension beyond the true pelvis	IVA	T4	Any N	M0
	IVb	Distant metastasis	IVB	Any T	Any N	M1

4.4.3 Staging (Final extent of the disease)

Summary staging refers to the classification of a cancer case into broad categories (in-situ, localized, regional and distant), representing the extent of involvement of the tumour as determined using all diagnostic and therapeutic evidence available at the end of the first course of therapy, or within four months of the date of diagnosis, whichever is earlier. It must be supported by the information abstracted on diagnostic procedures.

Clinical staging pertains to the extent of the disease or most extensive tumour involvement as assessed clinically (physical examination, clinical investigations, manipulative procedures), prior to initiation of any treatment.

Surgical-cum-pathological extent of disease before treatment contains information on the extent of the disease based on clinical observations prior to treatment, and augmented by findings at surgery, including histological information on lymph node involvement and extension of the tumour to other organs as well as distant metastasis, or by findings at autopsy if the patient died before treatment could be given. This staging procedure presents a more accurate picture of the spread of the malignancy from the origin.

There are several classification systems used to describe the stage or extent of the disease. It is important that the system used by a particular registry be specified, and guidelines clearly written. The most detailed is the TNM system, but more compact systems exist, for example the SEER Summary Staging, given below with suggested codes:

1 In-situ
2 Localized
3 Regional: direct extension to adjacent organs or tissues
4 Regional: lymph node involvement
5 Regional: direct extension and lymph node involvement
6 Distant metastasis
7 Not applicable
8 Unknown or unstageable (stage cannot be determined from the information available

A simple classification would be limited to:

In-situ
Localized
Regional
Distant
Unknown

(1) Definitions of these terms are as follows:

(a) *In-situ.* Based on microscopic examination of tissue or cells, the tumour has all the characteristics of malignancy, except that the lesion has not extended beyond the basement membrane of the epithelium.

Certain terms indicate an in-situ stage:

- Non-infiltrating
- Non-invasive
- Pre-invasive
- Confined to epithelium
- Involvement up to but not including the basement membrane
- No stromal invasion
- Intraepidermal
- Intraepithelial
- Intraductal
- Adenocarcinoma in an adenomatous polyp with no invasion of stalk
- Stage 0
- Clark's Level I for melanoma (limited to epithelium)
- CIN III (Cervical Intraepithelial Neoplasia, Grade III)
- Queyrat's erythroplasia

The behaviour code in the ICD-O system for a tumour designated as in-situ is /2.

(b) *Localized.* The tumour is invasive but is still confined entirely to the organ of origin.

For most sites, the tumour might be widely invasive within the organ, but as long as it does not extend beyond the outer limits of the organ and there is no evidence of metastasis to other parts of the body including the regional lymph nodes, the tumour is considered localized.

Intraluminal extension of the tumour to the immediately contiguous segment of the large bowel is considered localized, unless the invaded segment has an identifiably different pattern of lymph node drainage.

For tumours where the primary site or the regional lymph nodes are inaccessible, like the oesophagus, lung and pancreas, clinical diagnosis alone may not suffice to stage the tumour as localized, unless clinical investigations such as CT scans provide enough information to rule out spread of the disease. If surgery has been performed, study the operative report to look for evidence of extension of the tumour to other organs, spread to lymph nodes, or presence of metastasis.

(c) *Regional.* The tumour has grown beyond the organ of origin. It has spread to adjacent organs or tissues by direct extension and/or to regional lymph nodes. Make sure that there is no evidence of distant metastasis based on radiological and scan examinations of the lung, bone, and liver. Check progress notes as well as the discharge summary for any mention of metastasis.

The Summary Staging Guide for the Cancer Surveillance, Epidemiology and End Results Reporting (SEER) program provides a list of structures or organs considered to be regional for each site. It also provides a list of regional lymph nodes for each specific site (see Appendix 4.1).

(d) *Distant.* The tumour has extended beyond the primary site by:

- direct extension beyond the adjacent organs or tissues specified as regional by the Summary Staging Guide (see Appendix 4.1);
- metastasis to distant lymph nodes;
- development of secondary or metastatic tumours in completely different organs of the body for example brain, liver, lung or bone metastasis.

This category also includes contralateral or bilateral lymph node metastasis if the primary site is not situated in the midline of the body.

The different types of systemic malignant tumours are also included in this stage:

- the leukaemias
- multiple myeloma
- malignant histiocytosis

(e) *Unknown or unstageable.* The information in the medical record is not sufficient to assign a stage, and/or the primary site is not known.

(f) *Not applicable.* Cases in which the diagnosis of cancer is based on clinical examination alone, especially when the primary site and regional lymph nodes are not accessible.

OTHER TERMS commonly used to describe stage include:

(i) *Invasion.* Local spread of a neoplasm by infiltration into or destruction of adjacent tissue.
(ii) *Microinvasive.* The earliest invasive stage. In cervical cancer, microinvasive stage refers to a limited stromal invasion.
(iii) *Direct extension.* Extension in a continuous fashion from the primary site to other parts of the body .
(iv) *Regional.* Organs or tissues related to a site by physical proximity. This also applies to the first chain of lymph nodes draining the area of the site (see Appendix 4.1).

(2) Ambiguous Terms

Physicians sometimes use ambiguous terms to indicate involvement of a tissue or an organ by a tumour. Interpret the following terms as *involvement*:

- Apparently
- Compatible with
- Consistent with
- Encroaching upon
- Extension or invasion
- Induration (used to describe surrounding fibrous or connective tissue adjacent to the tumour and is to be interpreted as extension of the malignant growth)
- Favour
- Most likely
- Presumed
- Probable
- Suspect(ed)
- Suspicious
- to, into, onto or out onto
- Typical of/for

Do not consider the following terms as evidence of involvement:

- Approaching
- Rule out
- Equivocal
- Suggests
- Possible
- Very close to
- Questionable
- Worrisome

(3) Special Rules for Lymph Nodes

Mass NOS: When a mass is found in the mediastinum, retroperitoneum and/or mesentery, and there is no specific information about the tissue involved, assume that the mass is a lymph node.
Lymphomas: For lymphomas, if lymph nodes are described as "enlarged", "palpable", or "visibly swollen", consider the nodes to be involved.

(4) Procedures for Summary Staging

How to determine the extent of disease before assigning stage:

(a) Determine the site of origin (primary site) of the tumour.
(b) Study the medical record very well and consider all diagnostic and therapeutic information available up to the end of the first course of therapy or within four months from diagnosis.
(c) Review:
History
Physical examination
X-rays/scans and other imaging techniques
Endoscopy reports
Operative reports
Pathology reports (including cytology, haematology, surgical pathology and autopsy)
Progress notes
Discharge summary
(d) Note the presence of terms such as "in-situ" or "metastasis" in the pathology report or the mention of "metastasis" in the clinical, radiological, operative, or pathological records.
(e) *Staging by physicians:* In some records, the physician has assigned a stage of the disease, using staging systems such as: TNM, FIGO, Dukes' or other systems. In these cases, use the information as a guide in coding the stage, especially if the information in the medical record regarding the extent of tumour involvement is incomplete. However, one should consider the following:

Physicians may use different versions of a staging system and a specific designation may have different meanings depending on the version of the system used. It is therefore important for the registrar to know the version of the staging used by the physician in order to translate it into in-situ, localized, regional or distant, based on the criteria formulated by the cancer registry.

Example: For colo-rectal cancer, the staging used may be the original Dukes' Classification or its modifications. Duke's classification C (Regional involvement but without distant metastasis) is equivalent to Regional.

For some staging systems, only information based on clinical (pre-treatment) assessments of the extent of the tumour is used (Clinical Staging). In contrast, other staging schemes make use of information based on diagnostic procedures carried out prior to treatment and supplemented by findings during surgery and the pathological examination of the resected specimen (Pathological Staging). For example, the FIGO classification of cancer of the cervix makes use of clinical findings only. While clinical staging is satisfactory for accessible sites, it is relatively unsatisfactory for staging internal cancers such as stomach, intestines, pancreas, brain and ovaries. A more extensive lesion may often be found

on surgery in contrast to what is anticipated clinically.
In the absence of any pathological information, accept the clinical stage given by the physician.

(f) Conflicting reports: If the stage recorded in one report clearly contradicts another report, ask the attending physician or the registry's medical consultant for clarification.

Exercises on primary site, histology coding, most valid basis for diagnosis and SEER summary staging

1. A 40–year old female was admitted on 20 August 1987 with a 4 x 5 1/2 cm. mass on the upper half of the right breast, movable, with no skin dimpling. There were axillary masses, discrete, movable on the right axilla.	
Chest X–ray : Negative	Aspiration biopsy, right breast (10/08/87)
Cytology: (+) for malignant cells	Section biopsy, right breast (15/08/87)
Pathological report: Lobular carcinoma–*in–situ*, right breast	
Modified radical mastectomy (22/08/87)	
Pathological report: Infiltrating lobular carcinoma, right breast; 5/12 axillary lymph nodes (+) for metastases.	
Give the following:	Primary Site:
M–code:	T–Code
Histology:	SEER Summary Stage:
Most Valid Basis of Diagnosis:	

2. A 38 year old female was admitted on 12/07/86 complaining of vaginal bleeding.	
Physical Examination: (+) 3 x 3 mm. lesion, anterior lip of exocervix; uterus not enlarged; adnexae (–)	
Papanicolaou smear (cervical cytology) done on 12/03/86	Class V consistent with squamous cell carcinoma
Biopsy, cervix under colposcopy (12/03/86).	Pathological report: Squamous cell carcinoma–*in–situ* with questionable microinvasion
Pathological report: Extensive squamous cell carcinoma in situ; margins of resection clear.	Conization, cervix (12/08/86)
Give the following:	Primary Site:
M–code:	Code
Histology:	SEER Summary Stage:
Basis for Diagnosis:	

3. A 67 year old male, consulted the LCP with the complaints of productive cough of 2 months duration, associated with weight loss. No haemoptysis. Patient is a chronic smoker.	
On physical examination there were no lymphadenopathies noted. Harsh breath sounds were noted on both lung fields.	No rales nor wheezes appreciated.
Fiberoptic bronchoscopy (15/11/88) findings: Narrowed and deformed opening to the upper lobe segments, with an area of bleeding near the anterior segment.	Operative Diagnosis: Bronchogenic carcinoma, right upper lobe.
Bronchial biopsy (15/11/88): Squamous cell carcinoma, poorly differentiated, right upper lobe	Cytology, bronchial washings (15/11/88): Class III
Pathological report: Poorly differentiated squamous cell carcinoma, right upper lobe; 0/3 lymph nodes (+) for metastasis.	Right upper lobe lobectomy (22/11/88)
Give the following:	Primary Site:
M–code:	T–Code
Histology:	SEER Summary Stage:
Most Valid Basis of Diagnosis:	

ANSWERS:

1. PRIMARY SITE: Breast, upper half	T–code: C50.8 (174.8)
HISTOLOGY: Inf. lobular carcinoma	M–code: 8520/3
MOST VALID BASIS OF DIAGNOSIS: Histology of primary	
SEER SUMMARY STAGE: Regional, by lymph node involvement	
2. PRIMARY SITE: Exocervix	T–code: C53.1 (180.1)
HISTOLOGY: Squamous cell carcinoma–in–situ M–code: 8070/2	
MOST VALID BASIS OF DIAGNOSIS: Histology of Primary	
SEER SUMMARY STAGE: In–Situ	
3. PRIMARY SITE: Right upper lobe	T–code: C34.1 (162.3)
HISTOLOGY: Squamous cell carcinoma M–code: 8070/3	
MOST VALID BASIS OF DIAGNOSIS: Histology of Primary	SEER SUMMARY STAGE: Localized

Appendices

The appendices to this section can serve as a guide when abstracting and assessing extent of the disease.

Appendix 4.1

Summary Staging Guide (SEER)

In-situ, localized, regional and distant extent of disease by site.

Appendix 4.2

Examples of abstracting instructions for lung, breast and cervix, based on the SEER Summary Staging Guide (SEER, 1977).

Appendix 4.3

Definitions of anatomical sites according to the Manual for Staging of Cancer of the American Joint Committee on Cancer Staging (AJCC, 1988).

Appendix 4.1

Summary Staging Guide

The Summary Staging Guide groups together the different disease categories into:

- in-situ
- localized
- regional
- distant

The Summary Stage groupings take into consideration all of the observations noted during clinical examination, during surgery (operative findings) and the results of the pathological examination of any specimen removed. The order of priority is

- pathological
- operative
- clinical

1. Summary staging definitions

IN-SITU	intraepithelial, noninvasive, noninfiltrating
LOCALIZED Within organ	a. Invasive cancer confined to organ of origin b. Intraluminal extension where specified. *Example:* intraluminal extension to immediately contiguous segments of the colon is considered localized unless the invaded segment has a different pattern of lymph node drainage.
REGIONAL Beyond the organ of origin	a. By direct extension to adjacent organs/tissues b. To regional lymph nodes c. Both by direct extension or lymph node involvement.
DISTANT Direct extension of metastasis	a. Direct continuity to organs other than above b. Discontinuous metastasis c. To distant lymph nodes

2. Site staging definitions

The International Classification of Diseases for Oncology (ICD-0) topography codes are indicated under each specified site. The ICD-0 second edition T–code is given first, followed by the 1st edition T–code.

IN-SITU:	Non-invasive	
LOCALIZED	Vermilion surface Labial mucosa (inner lip) Multiple foci	Skin of lip Musculature Localized, NOS
REGIONAL, DIRECT EXTENSION	Commissure(s) of lips Buccal mucosa (inner cheek)	Maxilla Lower lip Gingiva, upper Nose
REGIONAL, LYMPH NODES	Facial: buccinator Parotid: infra-auricular, preauricular Submental Submandibular (submaxillary)	
DISTANT, DIRECT EXTENSION OR METASTASIS DISTANT, LYMPH NODES	Internal jugular Upper cervical (including cervical, NOS) Supraclavicular (transverse cervical) Other distant nodes	

LOWER LIP (T–C00.1, C00.4; 140.1, 140.4)		
IN–SITU	Non–invasive	
LOCALIZED	Vermilion surface Labial mucosa(inner lip) Multiple foci	Skin of lip Musculature Localized, NOS
REGIONAL, DIRECT EXTENSION	Commissure(s) of lips Buccal mucosa (inner cheek) Mandible	Upper lip Gingiva, lower
REGIONAL, LYMPH NODES	Facial: mandibular Submental	Submandibular (sub-maxillary)
DISTANT, DIRECT EXTENSION OR METASTASIS DISTANT, LYMPH NODES	Internal jugular Upper cervical (including cervical, NOS)	Supraclavicular (transverse cervical) Other distant nodes

COMMISSURE OF LIP (T–C00.6; 140.6)		
IN–SITU	Non–invasive	
LOCALIZED	Vermillion surface Labial mucosa (inner lip)	Localized, NOS Skin of lip Musculature
REGIONAL, DIRECT EXTENSION	Both lips Buccal mucosa (inner cheek) Nose	Maxilla Gingiva Mandible
REGIONAL, LYMPH NODES	Facial: mandibular Parotid: infra–auricular, preauricular	Submental Submandibular (submaxillary)
DISTANT, DIRECT EXTENSION OR METASTASIS DISTANT, LYMPH NODES	Internal jugular Upper cervical (including cervical, NOS)	Supraclavicular (transverse cervical) Other distant nodes

BASE OF TONGUE (T–C01.9; 141.0)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to posterior 1/3 of tongue on one side	Midline tumour; tumour has crossed midline Localized, NOS
REGIONAL, DIRECT EXTENSION	Anterior 2/3, tongue Gingiva, lower Sublingual gland Floor, mouth Epiglottis, lingual (pharyngeal surface)	Vallecula (including pharyngo-epiglottic and glosso–epiglottic folds) Lateral pharyngeal wall (tonsillar pillars, fossae and tonsils
REGIONAL, LYMPH NODES	Submandibular (submaxillary)	Internal jugular: subdigastric Upper cervical (or cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Mandible Soft palate, including uvula	Larynx Hypopharynx
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

ANTERIOR 2/3 OF TONGUE (T–C02.0–C02.4; 141.1–141.4, 141.6)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to ant. 1/3 of tongue, on one sidewith or without invasion of musculature	Midline tumour; tumour crossed midline Localized, NOS
REGIONAL, DIRECT EXTENSION	Floor, mouth Base, tongue Sublingual gland	Lower gingiva Mandible
REGIONAL, LYMPH NODES	Submandibular (submaxillary) Sublingual Submental	Internal jugular: subdigastric, supraomohyoid Upper cervical (cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Lateral pharyngeal wall Soft palate, including uvula	Other distant involvement Maxilla
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

PAROTID GLAND (T–C07.9; 142.0)		
IN–SITU	Non–invasive	
LOCALIZED	Entirely within benign tumour capsule Substance of parotid gland not invaded	Multiple foci but confined to substance of parotid Localized, NOS
REGIONAL, DIRECT EXTENSION	Periglandular soft tissue Nerves: facial; auricular; spinal accessory Skeletal muscles: digastric, sternocleidomastoid, masseter, pterygoid, styloid Periosteum of mandible Pharyngeal mucosa Submandibular (submaxillary) gland	Skin Mandible Major blood vessel(s): carotid artery; facial artery or vein; maxillary artery; jugular vein Mastoid process External auditory meatus Skull
REGIONAL, LYMPH NODES	Parotid: intra–parotid; infra–auricular; preauricular	Submandibular (submaxillary)
DISTANT, DIRECT EXTENSION OR METASTASIS DISTANT, LYMPH NODES	Upper cervical (including cervical, NOS)	Supraclavicular (transverse cervical) Other distant nodes

UPPER GUM (GINGIVA) (T–C03.0; 143.0)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa Invasion of lamina propria (mucoperiosteum)	Localized, NOS
REGIONAL, DIRECT EXTENSION	Maxilla Buccal mucosa (inner cheek) Lateral pharyngeal wall (tonsillar pillars, tonsillar fossae, tonsils)	Soft tissue of face Hard or soft palate Labial mucosa, upper lip
REGIONAL, LYMPH NODES	Facial: mandibular Submandibular (submaxillary) Upper cervical (including cervical, NOS)	Retropharyngeal Internal jugular
DISTANT, DIRECT EXTENSION OR METASTASIS	Maxillary antrum Skull, including floor, orbit	Other distant involvement Skin Nasal Cavity
DISTANT LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

LOWER GUM (GINGIVA) AND RETROMOLAR TRIGONE (T–C03.1, C06.2; 143.1, 145.6)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa	Invades lamina propria Localized, NOS
REGIONAL, DIRECT EXTENSION	Mandible; periosteum Floor, mouth Buccal muocsa (inner cheek) Labial mucosa, lower lip	Tongue Lateral pharyngeal wall Soft palate; uvula Soft tissue, face
REGIONAL, LYMPH NODES	Facial: mandibular Submandibular (submaxillary) Submental	Internal jugular: subdigastric; supraomohyoid Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Skin	Other distant involvement Skull
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

FLOOR OF MOUTH (T-C04.0–C04.1, C04.8–C04.9; 144.0–144.1, 144.8, 144.9)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa, one side submucosa invaded musculature invaded	Midline tumour; tumour crossed midline Localized, NOS
REGIONAL, DIRECT EXTENSION	Lower gum Ant. 2/3, tongue Submandibular (submaxillary) gland(s) Sublingual gland Periosteum, mandible Mandible Base of tongue	Vallecula (pharyngoepiglottic & glossoepiglottic folds) Epiglottis, pharyngeal (lingual) surface Lateral pharyngeal wall (tonsillar pillars, tonsillar fossae, tonsils) Underlying soft tissues Skin
REGIONAL, LYMPH NODES	Submandibular (submaxillary) Submental Sublingual Internal jugular: subdigastric, supraomohyoid	Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS		
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

CHEEK (BUCCAL) MUCOSA AND VESTIBULE, MOUTH (T–C06.0, C06.1; 145.0, 145.1)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa Localized, NOS	Submucosa invaded
REGIONAL, DIRECT EXTENSION	Soft tissue, cheek Lateral pharyngeal wall Skin	Gingiva Lip(s)
REGIONAL, LYMPH NODES	Facial: buccinator; mandibular Parotid: preauricular, infra–auricular	Submandibular (submaxillary) Internal jugular: subdigastric Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Base or ant. 2/3 of tongue Hard or soft palate	Bone: maxilla, mandible, skull Other distant involvement
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

HARD PALATE (T-CO5.O; 145.2)		
IN-SITU	Non-invasive	
LOCALIZED	Confined to mucosa, one side Localized, NOS	Midline tumour; tumour crossed midline
REGIONAL, DIRECT EXTENSION	Soft palate; uvula Palatine bone Buccal mucosa (inner cheek)	Upper gingiva Maxilla
REGIONAL, LYMPH NODES	Submandibular (submaxillary) Retropharyngeal	Internal jugular: subdigastric Upper cervical including cervical, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Nasal cavity; floor of nose Maxillary antrum (sinus)	Other distant involvement Nasopharynx
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

SOFT PALATE AND UVULA (T-C05.1, C05.2; 145.3, 145.4)		
IN-SITU	Non-invasive	
LOCALIZED	Confined to mucosa, one side Invasion, submucosa/musculature on one side	Midline tumour; tumour has crossed midline Localized, NOS
REGIONAL, DIRECT EXTENSION	Hard palate, mucosa Lateral pharyngeal wall Buccal mucosa	Upper gingiva (inner cheek) Nasal cavity floor
REGIONAL, LYMPH NODES	Submandibular (submaxillary) Retropharyngeal	Internal jugular: subdigastric Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Tongue Nasopharynx Maxillary antrum (sinus) Palatine bone	Other distant involvement Maxilla Mandible
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

OROPHARYNX (T–C09.8, C09.9, C10.9; 146.0–146.9)		
IN-SITU	Non-invasive	
	(Tumours not fixed) Confined to posterior wall, anterior wall or lateral walls(s)	Localized, NOS
REGIONAL DIRECT EXTENSION	Tumour not fixed but extends into: Soft tissue, neck Base, tongue Pyriform sinus Soft palate; uvula Gum (gingiva), posterior Tumour described as 'fixed to adjacent tissues'	
REGIONAL LYMPH NODES	Retropharyngeal Internal jugular: subdigastric; supraomohyoid	Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Both lateral wall involved *via* soft palate or base of tongue Other distant involvement	Hard palate Mandible Parotid gland
DISTANT, LYMPH NODES	Submandibular Supraclavicular (transverse cervical)	Other distant nodes

NASOPHARYNX (T- C11.0–C11.3, C11.8–C11.9; 147.0–147.3, 147.8–147.9)		
IN-SITU	Non-invasive	
LOCALIZED (tumour is not fixed)	Confined to posterior superior wall (vault), and/or lateral wall(s) into eustachian tube or middle ear	Localized, NOS
REGIONAL, DIRECT EXTENSION	Tumour not fixed, but extends into: Oropharynx; nasal cavity Skull including floor of orbit Pterygopalatine fossa Soft palate, including uvula	Tumour described as "fixed to adjacent tissues"
REGIONAL, LYMPH NODES	Retropharyngeal Internal jugular	Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Brain, including cranial nerves Accessory sinus: maxillary, sphenoid, ethmoid, frontal Hard palate	Hypopharynx Soft tissues of neck Other distant involvement
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical) Submandibular	Other distant nodes

HYPOPHARYNX (T–C12.9, C13.0, C13.1, C13.2, C13.8, C13.9, C14.1; 148.0–148.3, 148.8–148.9)		
IN-SITU	Non-invasive	
LOCALIZED (tumour is not fixed)	Confined to: Priform sinus and/or postcricoid area and/or posterior pharyngeal wall	Localized, NOS
REGIONAL, DIRECT EXTENSION	Tumour not fixed, but extends into: Oropharynx; larynx Soft tissues of neck Prevertebral muscle(s)	Upper oesophagus Tumour described as "fixed to adjacent tissues"
REGIONAL, LYMPH NODES	Retropharyngeal Internal jugular: subdigastric, supraomohyoid	Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Nasopharynx Base of tongue	Floor, mouth Other distant involvement
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

CERVICAL OR UPPER OESOPHAGUS (T–C.15.0, C15.3; 150.0,150.3)		
IN–SITU	Non–invasive	
LOCALIZED	Mucosa, upper oesophagus Mucosa but extends to middle oesophagus	Invades muscularis Localized, NOS
REGIONAL, DIRECT EXTENSION	Adventitia and/or soft tissues, neck Major blood vessel(s): carotid artery, subclavian artery, jugular vein Thyroid gland Oesophagus is described as "fixed"	Extension to: Hypopharynx; larynx Trachea, including carina Cervical vertebra(e)
REGIONAL LYMPH NODES	Paraoesophageal Internal jugular	Anterior deep cervical: laterotracheal (recurrent) Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS	Main stem bronchus Lung and/or pleura	Other distant involvement
DISTANT, LYMPH NODES	Posterior mediastinal Supraclavicular (transverse cervical)	Other distant nodes

THORACIC OR MIDDLE OESOPHAGUS (T–C15.1–C15.4; 150.1, 150.4)		
IN–SITU	Non–invasive	
LOCALIZED	Mucosa of middle oesophagus Mucosa but extends to upper and/ lower oesophagus	Involvement of muscularis Localized, NOS
REGIONAL, DIRECT EXTENSION	Adventitia and/or soft tissue Major blood vessel(s):aorta, vena cava Main stem bronchus pulmonary artery or vein Oesophagus is described as "fixed" Trachea Carina	Extension to: Lung, via bronchus Pleura Pericardium Ribs Mediastinal structure(s), NOS Diaphragm Thoracic vertebra(e)
REGIONAL, LYMPH NODES	Paraoesophageal Tracheobronchial: peritracheal, carinal (bifurcation) hilar (pulmonary roots) Posterior mediastinal	Internal jugular Left gastric: cardiac, lesser curvature Upper cervical (including cervical, NOS)
DISTANT, DIRECT EXTENSION OR METASTASIS		
DISTANT, LYMPH NODES	Supraclavicular (transverse cervical)	Other distant nodes

ABDOMINAL OR LOWER OESOPHAGUS (T–C15.2, C15.5; 150.2, 150.5)		
IN–SITU	Non–invasive	
LOCALIZED	Mucosa, lower oesophagus Mucosa but extends to middle oesophagus	Muscularis involvement Localized, NOS
REGIONAL, DIRECT EXTENSION	Adventitia and/or soft tissue Oesophagus described as "fixed"	Involvement of: Diaphragm: Cardia of stomach Major blood vessels: aorta, gastric artery/vein,vena cava
REGIONAL, LYMPH NODES	Paraoesophageal Left gastric: cardiac, lesser curvature, perigastric, NOS	Posterior mediastinal
DISTANT, DIRECT EXTENSION OR METASTASIS	"Diaphragm is fixed" (indicates phrenic nerve involvement by tumour)	Other distant involvement
DISTANT, LYMPH NODES	Caeliac Para–aortic	Other distant nodes

STOMACH (Excluding Cardiooesophageal Junction) (T–C16.0–C16.6, C16.8–C16.9; 151.0–151.6, 151.8–151.9)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/submucosa/muscularis propria Stalk invaded (if polyp) Subserosal tissue invaded (includes extension through the wall, NOS)	Implants inside the stomach Localized, NOS
REGIONAL, DIRECT EXTENSION	Perigastric fat Lesser omentum Ligaments: gastrocolic, gastrohepatic, gastrosplenic Gastric artery Invasion of (through) serosa Diffuse involvement of entire thickness of stomach wall (linitis plastica)	*Extension to :* Oesophagus Diaphragm Duodenum Liver Spleen Pancreas Omentum (greater) Jejunum, ileum Transverse colon, hepatic and splenic flexures
REGIONAL, LYMPH NODES	*Inferior gastric:* gastrocolic, gastroepiploic, right/NOS greater curvature greater omentum infrapyloric pyloric subpyloric *Splenic hilar:* left gastroepiploic pancreaticolienal peripancreatic splenic	*Superior gastric:* cardiac cardiooesophageal gastrohepatic left gastric lesser curvature lesser omentum paracardiac Perigastric, NOS Nodule(s) in perigastric fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Left kidney Adrenal gland(s) Ovary (Krukenberg tumour)	Other distant involvement Abdominal wall Retroperitoneum
DISTANT, LYMPH NODES	Caeliac Hepatic Mesenteric, superior/inferior Other distant nodes	Para–aortic Portal Retroperitoneal

DUODENUM (T–C17.0; 152.0)		
IN–SITU	Non–invasive	
LOCALIZED	Invasive cancer confined to a polyp Confined to submucosa/ muscularis and/or serosa	Intraluminal to jejunum Localized, NOS
REGIONAL, DIRECT EXTENSION	Periduodenal tissue Mesentery, including mesenteric fat Stomach Extrahepatic bile duct(s), including ampulla of Vater Pancreas, including pancreatic duct Greater omentum Major blood vessels: aorta, superior mesenteric artery or vein, vena cava , portal vein,	renal vein, gastro–duodenal artery Small intestine *via* serosa Transverse colon, including hepatic flexure Right and/or quadrate lobe, liver Gallbladder Right kidney Right ureter Diaphragm Abdominal wall Retroperitoneum
REGIONAL, LYMPH NODES	Hepatic: pancreaticoduodenal, infrapyloric, gastroduodenal	
DISTANT, DIRECT EXTENSION OR METASTASIS		
DISTANT, LYMPH NODES	Superior mesenteric	Other distant nodes

JEJUNUM AND ILEUM (T–C17.1, C17.2; 152.1, 152.2)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to a polyp Confined to submucosa/muscularis/ serosa Intraluminal to ileocecal valve/ cecum or ileum	Intraluminal to duodenum from jejunum Localized, NOS
REGIONAL, DIRECT EXTENSION	Mesentery, including mesenteric fat Abdominal wall Retroperitoneum	Small intestine via serosa Large intestine, including appendix
REGIONAL, LYMPH NODES	Posterior caecal (terminal ileum only)	Ileocolic (terminal ileum only) Superior mesenteric
DISTANT, DIRECT EXTENSION OR METASTASIS	Bladder Uterus Ovary	Fallopian tube Other distant involvement
DISTANT, LYMPH NODES		

CAECUM (T–C18.0; 153.4)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa, submucosa, muscularis propria Stalk invaded (if polyp) Superficial invasion Subserosal tissue invaded (including ext. through wall)	Intraluminal to appendix, caecum or ileocaecal valve, ileum, ascending colon Implants inside the caecum Localized, NOS
REGIONAL, DIRECT EXTENSION	Mesentery, including mesenteric fat Pericolic (pericaecal) fat Adjacent tissue(s), NOS Invasion of (through) serosa	Extension to: greater omentum, retroperitoneum, abdominal wall, small intestine other than ileum
REGIONAL, LYMPH NODES	Epicolic Ileocolic Right colic (including colic, NOS) Mesenteric, superior or NOS	Nodule(s) in pericolic fat Paracolic Middle colic
DISTANT, DIRECT EXTENSION OR METASTASIS	Uterus Ovary Fallopian tube Urinary bladder	Gallbladder Other segment of colon *via* serosa Other distant involvement
DISTANT, LYMPH NODES	Inferior mesenteric Para–aortic	Retroperitoneal Other distant nodes

ASCENDING COLON (T–C18.2; 153.6)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis propria Stalk invaded (if polyp) Superficial invasion Subserosal tissue invaded (including extension through the wall, NOS)	Intraluminal to caecum, appendix, ileocaecal valve, transverse colon Implants inside the ascending colon Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Pericololic fat Retroperitoneal fat Adjacent tissue(s), NOS Invasion of (through) serosa Extension to: Right ureter	Right kidney Liver, right lobe Greater omentum Retroperitoneum Abdominal wall Small intestine
REGIONAL, LYMPH NODES	Epicolic Paracolic Ileocolic Nodule(s) in pericolic fat	Right colic (including colic, NOS) Middle colic Mesenteric,superior, or NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Uterus Urinary bladder Ovary Gallbladder	Fallopian tube Other distant involvement Other segment of colon, *via* serosa
DISTANT, LYMPH NODES	Inferior mesenteric Para–aortic	Retroperitoneal Other distant nodes

TRANSVERSE COLON (Including flexures) (T–C18.3, C18.4, C18.5; 153.0, 153.1, 153.7)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis mucosae Stalk invaded (if polyp) Superficial invasion Subserosal tissue invaded (including extension through the wall, NOS)	Intraluminal to ascending or descending colon Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Mesentery (mesenteric fat); moesocolon Pericolic fat Greater omentum; gastrocolic ligament Adjacent tissue(s), NOS Invasion of (through) serosa	Extension to: Stomach Pancreas Small intestine Liver Gallbladder/bile ducts Spleen Kidney Retroperitoneum Abdominal wall
REGIONAL, LYMPH NODES	Epicolic Paracolic Right colic for hepatic flexure only Middle colic Colic, NOS Left colic for splenic flexure only	Inferior mesenteric for splenic flexure only Superior mesenteric for hepatic flexure and transverse colon only Mesenteric, NOS Nodule(s) in pericolic fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Other segment of colon, *via* serosa Diaphragm Ureter	Adrenal gland Ovary Other distant involvement
DISTANT, LYMPH NODES	Para–aortic or retroperitoneal Inferior mesenteric for hepatic flexure and transverse colon only	Superior mesenteric for splenic flexure only

DESCENDING COLON (T–C18.6; 153.2)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis propria Stalk invaded (if polyp) Superficial invasion Subserosal tissue invaded (including extension	through the wall, NOS) Intraluminal to splenic flexure, transverse colon, sigmoid colon Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Pericolic fat, NOS Retroperitoneal fat Adjacent tissue(s), NOS Invasion of (through) serosa Extension to: Small intestine	Retroperitoneum Greater omentum Spleen Abdominal wall or pelvic wall Left ureter Left kidney
REGIONAL, LYMPH NODES	Epicolic Paracolic Left colic (including colic, NOS)	Mesenteric, inferior or NOS Nodule(s) in pericolic fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Uterus Ovary Fallopian tube	Other segment of colon *via* serosa Other distant involvement
DISTANT, LYMPH NODES	Para–aortic Retroperitoneal	Superior mesenteric Other distant nodes

SIGMOID COLON (T–C18.7; 153.3)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis propria Stalk invaded (if polyp) Superficial invasion Subserosal tissue invaded	(including extension through the wall, NOS) Intraluminal to descending colon, rectosigmoid or rectum Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Mesentery (including mesenteric fat); moesosigmoid Pericolic fat Adjacent tissue(s), NOS	Invasion of (through) serosa Extension to: Greater omentum Abdominal or pelvic wall Small intestine
REGIONAL, LYMPH NODES	Epicolic Superior hemorrhoidal Paracolic Superior rectal Colic, NOS	Sigmoidal Nodule(s) in pericolic fat Mesenteric, inferior or superior
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Uterus Cul de sac (rectouterine pouch) Ovary Fallopian tube	Ureter Urinary bladder Other segment of colon *via* serosa Other distant involvement
DISTANT, LYMPH NODES	Para–aortic Retroperitoneal	Superior mesenteric Other distant nodes

RECTOSIGMOID (T-C19.9; 154.0)		
IN-SITU	Non-invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis propria Stalk invaded (if polyp) Superficial invasion	Subserosal tissue invaded (including through the wall, NOS) Intraluminal to sigmoid colon or rectum Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Mesentery, including mesenteric fat Pericolic (perirectal) fat Adjacent tissue(s), NOS Invasion of (through) serosa	Extension to: Small intestine Cul de sac (rectouterine pouch) Pelvic wall/ pelvic plexuses
REGIONAL, LYMPH NODES	Paracolic (including colic, NOS) Pararectal Hemorrhoidal, superior or middle	Sigmoidal Internal iliac (hypogastric) Mesenteric, inferior or NOS Nodule(s) in pericolic fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Uterus Vagina Urinary bladder and/or ureter Prostate	Skeletal muscles of pelvic floor Fallopian tube Ovary Other segment of colon *via* serosa Other distant involvement
DISTANT, LYMPH NODES	Para-aortic Retroperitoneal	Superior mesenteric Other distant nodes

RECTUM (T–C20.9; 154.1)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to mucosa/ submucosa/ muscularis propria Stalk invaded Superficial invasion	Invasion through muscularis propria (including extension through wall, NOS) Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to : Perirectal fat Rectovaginal septum Adjacent tissue(s), NOS Invasion of (through) serosa Intraluminal extension to rectosigmoid or anus	Extension to: Colon, Anus (except intraluminal) Vagina Cul de sac (rectouterine pouch)
REGIONAL, LYMPH NODES	Pararectal Hemorrhoidal, superior or middle Sacral	Sigmoidal Mesenteric, inferior or NOS Internal iliac (hypogastric) Nodule(s) in perirectal fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Uterus Urinary bladder Sacrum Sacral plexus	Bones of pelvis Ovary Urethra Perineum: perianal skin Other distant involvement
DISTANT, LYMPH NODES	Para–aortic Retroperitoneal Other distant nodes	Superior mesenteric Inguinal

LIVER AND INTRAHEPATIC BILE DUCTS (T–C22.0–C22.1; 155.0–155.1)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to one lobe Satellite nodule(s) confined to one lobe	Localized, NO
REGIONAL, DIRECT EXTENSION	More than one lobe involved by contiguous growth Gallbladder from right lobe of liver Extrahepatic blood vessel(s): hepatic artery, vena cava, portal vein(s) Extrahepatic bile duct(s) Diaphragm	Peritoneum Ligament(s): falciform, coronary, triangular, hepatogastric, hepatoduodenal Lesser omentum
REGIONAL, LYMPH NODES	Cardiac Diaphragmatic: pericardial Posterior mediastinal	Lateral aortic (retroperitoneal): coronary, renal artery
DISTANT, DIRECT EXTENSION OR METASTASIS	Satellite nodules in more than one lobe of liver, surface or parenchymal Hepatic: hepatic pedicle, inferior vena cava, hepatic artery	Extension to pleura, pancreas, stomach Other distant involvement
DISTANT, LYMPH NODES		

PANCREAS (HEAD) (T–C25.0; 157.0)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to head of pancreas/body of pancreas	With obstruction, but no invasion, of extrahepatic bile duct(s) Localized, NOS
REGIONAL, DIRECT EXTENSION	Extrahepatic bile duct(s), including ampulla of Vater Duodenum Stomach adjacent to head of pancreas; stomach, NOS Liver Major blood vessels(s): hepatic, pancreaticoduodenal and/or gastroduodenal arteries, superior mesenteric	artery or vein, portal vein Transverse colon, including hepatic flexure Peritoneum Mesentery, moesocolon, mesenteric fat Greater and lesser omentum Gallbladder Tumour described as 'fixed to adjacent tissues'
REGIONAL, LYMPH NODES	Peripancreatic Hepatic: periportal, pancreatocoduodenal, infrapyloric	Superior mesenteric Lateral aortic (retroperitoneal) Celiac
DISTANT, DIRECT EXTENSION OR METASTASIS	Extension to: Body of stomach Kidney and/or ureter Adrenal gland	Retroperitoneum Jejunum and ileum Other distant involvement
DISTANT, LYMPH NODES		

LARYNX (Excluding cartilage) (T–C32.0–C32.2, C32.8–C32.9; 161.0–161.2, 161.8–161.9)		
IN–SITU	Non–invasive	
LOCALIZED	Tumour limited to one area within a region Supraglottic region: Laryngeal (posterior) surface of epiglottis Arytenoid Aryepiglottic fold Ventricular band (false vocal cord, vestibula fold) Ventricular cavity Glottic region: Vocal cord, one side Commissure Subglottic region on one side Tumour extends to adjacent area(s) within a region Supraglottic region More than one of the above areas	Glottic region (normal mobility) Cord and commissure Both vocal cords Subglottic region on both sides Glottic region: Fixation of cord(s) Tumour involves adjacent region(s) Supraglottic region Glottic region (with or without fixation) Subglottic region Involves intrinsic muscle(s): aryepiglottic, arytenoid, cricothyroid, thyroepiglottic, thyroarytenoid, vocalis Localized, NOS
REGIONAL, DIRECT EXTENSION	Pyriform sinus Postcricoid area Hypopharynx, NOS Vallecula	Base of tongue from laryngeal surface of epiglottis Extends into cricoid and/or thyroid cartilage
REGIONAL, LYMPH NODES	Internal jugular: subdigastric Anterior deep cervical: prelaryngeal, pretracheal, laterotracheal (recurrent)	Cervical, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Extrinsic muscle(s): omohyoid, sternohyoid, sternothyroid, thyrohyoid (strap muscles) Soft tissues of neck Thyroid	Skin Trachea Upper oesophagus Other distant involvement
DISTANT, LYMPH NODES	Superclavicular Submandibular	Other distant nodes

BRONCHUS AND LUNG (Excluding carina) (T–C34.0–C34.3, C34.8–C34.9; 162.2–162.5,162.8–162.9)		
IN–SITU	Non–invasive	
LOCALIZED	Single tumour 2 cm from carina and confined to one lung and/or main stem bronchus Single tumour of any size <2 cm from carina and confined to one lung or main stem bronchus	Multiple masses confined to one lung and/or main stem bronchus Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Pleura, visceral/NOS Pericardium, parietal, NOS Pulmonary ligament Involves: carina, trachea, oeso-phagus Involves nerve(s) Recurrent laryngeal: vagus; phrenic	Cervical symphatetic (Horner's syndrome) Major blood vessel(s) Pulmonary artery or vein Azygos vein Superior vena cava Extrapulmonary mediastinal extension, NOS
REGIONAL, LYMPH NODES	Intrapulmonary Hilar (bronchial; parabronchial; pulmonary root) Subcarinal; carinal	Mediastinal (paratracheobronchial; paratracheal; pericardial; para–oesophageal; para–aortic–above the diaphragm)
DISTANT, DIRECT EXTENSION OR METASTASIS	Brachial plexus from superior sulcus or Pancoast tumour Lung and/or main stem bronchus, contralateral Visceral pericardium; heart Pleura, parietal Extension to: rib, sternum, vertebra	Chest (thoracic) wall; skeletal muscle and skin, chest Diaphragm Abdominal organs and/ or other distant involvements
DISTANT, LYMPH NODES	Contralateral hilar or mediastinal or bilateral Supraclavicular (transverse cervical)	Scalene Cervical, NOS Other distant nodes

BONE (T–C40.0–C40.3, C40.8–C40.9, C41.0–C41.4, C41.8–C41.9; 170.0–170.9)		
LOCALIZED	Confined to bone Tumour has broken through periosteum but not beyond	Abnormal configuration of bone Localized, NOS
REGIONAL, DIRECT EXTENSION	Surrounding tissues, including skeletal muscle(s)	Adjacent bone
REGIONAL, LYMPH NODES	First chain of nodes involved in the area of the tumour	
DISTANT, DIRECT EXTENSION OR METASTASIS	Skin	Other distant involvement
DISTANT, LYMPH NODES		

MALIGNANT MELANOMA, SKIN (T–C44.0–C44.7, C51.0–C51.2, C51.8–C51.9, C60.0–C60.1, C60.8–C60.9; 173.0–173.7, 184.1–184.4, 187.1–187.2, 187.4 HISTOLOGY: 8720 – 8790)		
IN–SITU	Intraepidermal (Clark's level 1)	
LOCALIZED	Invasion of papillary dermis (Clark's level 2) or thickness/depth of invasion 0.75 mm Invasion of papillary–reticular dermal interface (Clark's level 3) or thickness/depth of invasion of 0.76 – 1.50 mm	Invasion of reticular dermis (Clark's level 4) or thickness/depth of invasion >1.50 mm Subcutaneous tissue (through entire dermis) (Clark's level 5) Localized, NOS; confined to skin/dermis, NOS
REGIONAL	Satellite nodule(s) within immediate area (2 cm from the primary lesion) Intransit metastasis directed toward regional lymph nodes (including satellite nodule(s) 2 cm from the primary lesion)	Note: 1. Skin ulceration does not alter classification 2. Clark's level takes precedence over thickness or depth of invasion in case of discrepancy
REGIONAL, LYMPH NODES (by primary site)		
Parotid: preauricular, infra–auricular Forehead; temporal region; malar region Lateral half of eyelids; outer canthus Anterior half of ear	Submandibular (submaxillary) Midline, forehead Inner canthus Medial half of eyelids Nose	Cervical Occipital scalp, posterior ear Head and neck tumours, any location Scapula above transverse line
Supraclavicular (transverse cervical) Chest wall, anterior and posterior Neck	Axillary Arm, hand, shoulder Chest wall, anterior and posterior Scapula (upper back), below transverse line	Epitrochlear Hand, forearm
Superficial inguinal Lumbar region (lower back) Abdominal wall, anterior and posterior Perineum and perianal region	Femoral Lower extremities (excluding heel) Perineum Perianal region	Popliteal Heel, posterior leg
DISTANT, DIRECT EXTENSION OR METASTASIS	Underlying cartilage, bone, muscle	Metastatic (generalized) skin lesions Other distant involvement
DISTANT, LYMPH NODES	Other than above	

BREAST (T-C50.0-C50.9; 174.0-174.9 (Female), C50.0-C50.9; 175.9 (Male))		
IN-SITU	Non-infiltrating; intraductal without infiltration	
LOCALIZED	Confined to breast, including nipple and/or areola	Note: Skin changes such as dimpling, tethering, attachment, induration and thickening or Paget's disease of nipple do not alter the classification.
REGIONAL, DIRECT EXTENSION	Invasion of subcutaneous tissue Skin infiltration of primary breast Skin oedema, peau d'orange, 'pigskin' En curraise, lenticular nodules Inflammation of skin, erythema	Ulceration of skin of breast Satellite nodules in skin of primary breast Pectoral fascia or pectoral muscle involvement Invasion of (or fixation to) chest wall, ribs, intercostal or serratus anterior muscles
REGIONAL, LYMPH NODES	Axillary: low (adjacent to tail of breast) mid (central, interpectoral, Rotter's node) high (subclavicular, axillary vein nodes, apical)	Internal mammary (parasternal) Nodules in axillary fat
DISTANT, DIRECT EXTENSION OR METASTASIS	Skin over sternum, upper abdomen, contralateral axilla or breast Satellite nodule(s) in skin other than primary breast	Breast, contralateral Other distant involvement
DISTANT, LYMPH NODES	Infraclavicular Supraclavicular Cervical, NOS	Axillary and/or internal mammary, contralateral Other distant nodes

CERVIX UTERI (T-C50.0-C50.1, C53.8-C53.9; 180.0-180.1, 180.8-180.9)		
IN SITU	Non-invasive, pre-invasive, intraepithelial (FIGO Stage 0)	
LOCALIZED	Minimal stromal invasion: "microinvasion"	Invasive cancer confined to cervix (FIGO Stage I)
REGIONAL, DIRECT EXTENSION	Extension to corpus uteri Extension to upper 2/3 of vaginal wall, including fornices and vagina, NOS Parametrium Ligaments: broad, uterosacral, cardina (FIGO Stage II)	Extension to lower third of vaginal wall Pelvic wall(s) (FIGO Stage III) Rectal and/or bladder wall (excluding mucosa) Bullous oedema of bladder mucosa Cul de sac (rectouterine pouch)
REGIONAL, LYMPH NODES	Hypogatric Iliac (common, internal, external) Parametrial/pelvic, NOS	Sacral (laterosacral, presacral, sacral promontory, uterosacral) Obturator Paracervical
DISTANT, DIRECT EXTENSION OR METASTASIS	Bladder mucosa Rectal mucosa Sigmoid colon Small intestine "Frozen pelvis"	Other distant involvement (FIGO Stage IV) Ureter Urethra Vulva Ovary/fallopian tube
DISTANT, LYMPH NODES	Aortic (para-aortic, periaortic, lumbar)	Inguinal Other distant nodes

CORPUS UTERI (T-C54.0-C54.3, C54.8-C54.9; 182.0-182.1, 182.8)		
IN-SITU	Pre-invasive; non-invasive	
LOCALIZED	Invasive cancer confined to endometrium Invasion of myometrium/serosa (perimetrium)	Invasive cancer confined to corpus clinically Localized, NOS
REGIONAL, DIRECT EXTENSION	Cervix uteri, including endocervix Parametrium Ligaments: broad, round, uterosacral Pelvic wall(s)	Ovary and/or fallopian tube(s) Rectal and/or bladder wall (excluding mucosa)
REGIONAL, LYMPH NODES	Hypogastric Iliac (common, internal, external) Obturator Paracervical Parametrial/pelvic NOS	Sacral (laterosacral, sacral promontory, uterosacral) Superficial inguinal Lateral aortic, preaortic
DISTANT, DIRECT EXTENSION OR METASTASIS	Vagina Vulva Cul de sac (rectouterine pouch) Rectum or bladder mucosa Ureter	Sigmoid colon Small intestine Serosa of abdominal organs "Frozen pelvis" Other distant involvement
DISTANT, LYMPH NODES		

OVARY (T-C56.9; 183.0)		
LOCALIZED	Confined to ovarian tissue – one ovary, or if not specified to be metastatic, both ovaries	Localized, NOS
REGIONAL, DIRECT EXTENSION	Peritoneum (pelvic; immediately adjacent, not implants) Broad ligament, ipsilateral	Moesovarium, ipsilateral Fallopian tube, ipsilateral Adnexa, ipsilateral
REGIONAL, LYMPH NODES	Aortic (lateral and preaortic) Hypogastric Iliac (common, internal, external)	Obturator Retroperitoenal/pelvic, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Sigmoid Omentum Cul de sac (rectouterine pouch) Uterus Rectosigmoid, rectum Small intestine Bladder, ureter	Implants on ovary, fallopian tube, cul de sac (rectoouterine pouch), peritoneum, omentum Metastatic to contralateral ovary and/or fallopian tube Other distant involvement
DISTANT, LYMPH NODES	Inguinal	Other distant nodes

PROSTATE (T-C61.9; 185.9)		
IN-SITU	Non-invasive	
LOCALIZED	Confined to prostatic capsule (intra-capsular) Invasion of prostatic capsule or prostatic urethra	Localized, NOS
REGIONAL, DIRECT EXTENSION	Extension to: Periprostatic tissues Seminal vesicle(s) Through prostatic capsule, including "fixation"	Extension to : Rectovesical (Denonviller's) fascia; Bladder; Rectum; Extraprostatic urethra (membranous urethra)
REGIONAL, LYMPH NODES	Hypogastric Iliac (common, internal, external) Obturator	Periprostatic/pelvic, NOS Sacral (lateral sacral, sacral promontory, presacral)
DISTANT, DIRECT EXTENSION OR METASTASIS	Skeletal muscles: levator ani Pelvic bone Pelvic wall Ureter Sigmoid colon Penis	"Frozen pelvis" Other distant involvement
DISTANT, LYMPH NODES	Aortic (para-aortic, periaortic, lumbar) Inguinal	Other distant nodes

TESTIS (T-C62.0-C62.1, C62-9; 186.0, 186.9)		
IN-SITU	Non-invasive, intratubular	
LOCALIZED	Confined to tunica albuginea (encapsulated tumour) Tunica vaginalis involved	Localized, NOS
REGIONAL, DIRECT EXTENSION	Epididymis Scrotum, ipsilateral	Spermatic cord, ipsilateral Vas deferens
REGIONAL, LYMPH NODES	Aortic, below level of renal arteries External iliac	Retroperitoneal/pelvic, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Ulceration of scrotum Scrotum, contralateral Testis, bilateral Penis Kidney	Adrenal gland Retroperitoneum Other distant involvement
DISTANT, LYMPH NODES	Inguinal	Other distant nodes

SKIN OF PENIS (T-C60.0-C60.1, C60.8-C60.9; 187.1, 187.2, 187.4)		
IN-SITU	Non-invasive (Bowen's disease)	
LOCALIZED	Invasive cancer confined to skin of penis, prepuce,and/or glans	Localized, NOS
REGIONAL, DIRECT EXTENSION	Corpus cavernosum Urethra	Satellite nodule(s) on prepuce or glans Skin: pubic, scrotal, abdominal, perineum
REGIONAL, LYMPH NODES	External iliac Internal iliac (hypogastric)	Superficial inguinal Deep inguinal: Rosenmuller's or Cloquet's node
DISTANT, DIRECT EXTENSION OR METASTASIS	Testis	Other distant involvement
DISTANT, LYMPH NODE	Note: Malignant melanoma of the penis is classified according to the staging scheme for melanoma	

BLADDER (T-C67.0-C67.6, C67.8-C67.9; 188.0-188.6,188.8-188.9)		
IN-SITU	Non-invasive; intraepithelial	
LOCALIZED	Confined to mucosa Submucosa (subepithelial connective tissue; tunica propria; lamina propria) invaded Superficial muscle (less than 1/2 through muscle coat)	Deep muscle (half-way or more through muscle coat) Localized, NOS; no detailed information of above
REGIONAL, DIRECT EXTENSION	Invasion of perivesical fat Invasion of (through) serosa; peritoneum Surrounding connective tissue (including periprostatic tissue); adjacent tissue, NOS Extension to: Prostate (including prostatic urethra); Ureter; vas deferens; Seminal vesicle; Rectovesical (Denonvillier's) fascia	Rectum, male; Parametrium and uterus, in female Bladder is "fixed" Vagina Pubic bone Urethra, female
REGIONAL, LYMPH NODES	Perivesical Hypogastric Iliac (common, internal, external) Obturator	Sacral (laterosacral, presacral, sacral promontory) Pelvic, NOS; regional, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Tumour fixed to (invading) pelvic wall Bones, excluding pubic bone Sigmoid	Other distant involvement Abdominal wall Rectum, female
DISTANT, LYMPH NODES	Aortic (para-aortic, periaortic, lumbar) Inguinal	Inguinal Other distant nodes

KIDNEY (RENAL) PARENCHYMA (T–C64.9; 189.0)		
IN–SITU		
LOCALIZED	Tumour confined to kidney cortex or kidney medulla Invasion of renal pelvis or calyces	Localized, NOS
REGIONAL, DIRECT EXTENSION	Perirenal tissue (fat) Renal (Gerota's) fascia Retroperitoneal soft tissues (retroperitoneal space) *Blood vessels*: perirenal veins, extrarenal portion of renal vein, aorta, renal artery, hilar blood vessels, vena cava Adrenal gland, ipsilateral	Ureter, including implant(s), ipsilateral Peritoneum Diaphragm Tail of pancreas Ascending colon from right kidney Descending colon from left kidney Duodenum from right kidney
REGIONAL, LYMPH NODES	Hilar (small nodes at renal pelvis)	Lateral aortic (retroperitoneal)
DISTANT, DIRECT EXTENSION OR METASTASIS	Kidney, bilateral Ureter, contralateral Adrenal gland, contralateral Ribs	Stomach Spleen Liver Other distant involvement
DISTANT, LYMPH NODES		

RENAL (KIDNEY) PELVIS (T–C65.9; 189.1)		
IN–SITU	Non–invasive; intraepithelial	
LOCALIZED	*Invasive cancer confined to:* submucosa musculature	Localized, NOS
REGIONAL, DIRECT EXTENSION	Peripelvic tissue Retroperitoneal soft tissue (retroperitoneal space) Major blood vessel(s): aorta, renal artery or vein, vena cava	Ureter, including implants Kidney parenchyma Adrenal gland Duodenum from right renal pelvis
REGIONAL, LYMPH NODES	Hilar (renal hilus)	Lateral aortic (retroperitoneal)
DISTANT, DIRECT EXTENSION OR METASTASIS	Bladder Spleen Pancreas	Liver Descending colon Other distant involvement
DISTANT, LYMPH NODES		

URETER (T–C66.9; 189.2)		
IN–SITU		
LOCALIZED	*Invasive cancer confined to:* submucosa; musculature	Localized, NOS
REGIONAL, DIRECT EXTENSION	Periurethral tissue Retroperitoneal soft tissue (retroperitoneal space) Psoas muscle Implant(s) distal in ureter Bladder	Kidney, ipsilateral Duodenum from right ureter Ascending colon from right ureter Descending colon from left ureter
REGIONAL, LYMPH NODES	Periureteral Hypogastricc Iliac (common, internal, external)	Lateral aortic Retroperitoneal/pelvic, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Uterus Pancreas	Implants in bladder Prostate Other distant involvement
DISTANT, LYMPH NODES		

THYROID GLAND (T–C73.9; 193.9)		
IN–SITU	Non–invasive	
LOCALIZED	Confined to one lobe and/or isthmus Involves both lobes or thyroid gland capsule	Multiple foci but confined to thyroid gland Through capsule of gland, but not beyond Localized, NOS
REGIONAL, DIRECT EXTENSION	Pericapsular tissues Strap muscle(s): sternothyroid, omohyoid, sternohyoid Nerve(s): recurrent laryngeal, vagus Major blood vessel(s): carotid artery, thyroid artery or vein, jugular vein Soft tissues of neck	Oesophagus Larynx, including thyroid and cricoid cartilages Sternocleidomastoid muscle tumour is described as "fixed to adjacent tissues"
REGIONAL, LYMPH NODES	Anterior deep cervical: prelaryngeal, pretracheal , laterotracheal (recurrent) Internal jugular: subdigastric	Retropharyngeal Cervical, NOS
DISTANT, DIRECT EXTENSION OR METASTASIS	Trachea Mediastinal tissues Skeletal muscle, other than strap muscles and sternocleidomastoid	Bone Other distant involvement
DISTANT, LYMPH NODES	Submandibular (submaxillary) Submental	Other distant nodes

LYMPH NODES AND LYMPHOID TISSUE (T – C02.4, C09.8–C09.9, C11.1, C14.2, C37.9, C42.2, C77.0–C77.9; 196.0–196.9,141.6, 146.0, 147.1, 149.1, 164.0, 169.2) Histology: 959, 969, 968; 959, 969, 975		
STAGE I (LOCALIZED)	Confined to one lymphatic region above or below the diaphragm	
STAGE II (REGIONAL)	Involvement of more than one lymphatic region on only one side of the diaphragm	
STAGE III (DISTANT)	Involvement of lymphatic regions on both sides of the diaphragm	
STAGE IV (DISTANT)	Bone Bone marrow Lung and/or pleura Liver Kidney	Gastrointestinal tract (but not primary G.I.) Skin lesions or subcutaenous nodules (but not primary skin)
SYSTEMIC SYMPTOMS:	Night sweats Unexplained fever	Pruritis Unexplained weight loss
NOTE: Lymphoid tissue includes spleen, lingual and palatine tonsils, adenoids (pharyngeal tonsils), thymus and Waldeyer's ring, NOS.		

HODGKIN'S DISEASE AND NON-HODGKIN'S LYMPHOMA** Histology: 9590–9595, 9650–9698, 9702–9714; 959–969, 975 (Applicable to all primary site codes)		
STAGE I (LOCALIZED)	Confined to one lymphatic region above or below the diaphragm or Confined to a single extranodal organ or site	
STAGE II (REGIONAL)	Involvement of more than one lymphatic region on only-**one side** of the diaphragm or Involvement of an **extranodal organ** or site with (1) direct extension to adjacent organs or tissues, or (2) involvement of one or more lymphatic regions on the same side of the diaphragm, or (3) both (1) and (2)	
STAGE III (DISTANT)	Involvement of lymphatic regions on **both sides** ofthe diaphragm, or Involvement of an **extranodal organ or site with** involvement of lymphatic regions on **opposite or both sides** of the diaphragm	
STAGE IV (DISTANT)	**Diffuse or disseminated involvement** of one or more metastatic sites with or without associated lymph node enlargment Bone Bone marrow Liver	Kidney Skin lesions or subcutaneous nodules Gastrointestinal tract Lung and/or pleura Brain Eye
SYSTEMIC SYMPTOMS:	Night sweats Unexplained fever	Pruritis Unexplained weight loss
** An alternative scheme for ONLY those hospitals wishing to stage lymphoma of extranodal sites.		

Appendix 4.2
Instructions for abstracting extent of disease and diagnostic procedures:
BRONCHUS AND LUNG

I. **History and physical examination**

Record significant findings from:

- Palpation of secondary masses
- Palpation of accessible lymph nodes

Record the presence of:

- Superior vena cava syndrome
- Horner's syndrome
- Recurrent laryngeal nerve paralysis (hoarseness)
- Pancoast syndrome

II. **X-rays, scans and other imaging techniques**

Record significant findings from:

- Chest x-ray
- Tomograms, planograms
- Bone survey
- Angiogram
- Brain scan
- Bone scan
- Liver/spleen scan

Significant findings of chest x-rays are:

- Hilar mass
- Mediastinal mass

Indicate whether masses are stated to be nodes or questionable nodes.

If no mention of a hilar or mediastinal mass or no information, record not specified (N/S)

Record other significant findings:

- Atelectasis
- Obstructive pneumonitis
- Pleural effusion

III. **Endoscopic and manipulative procedures**

Specifically identify:

- Bronchoscopy
- Laryngoscopy
- Mediastinoscopy (Note if hilar and/or mediastinal nodes are positive or negative)

IV. **Report highest class (I–V) from each source:**

- Sputum
- Pleural fluid (thoracentesis)
- Bronchial washings or brushings
- Ascitic fluid (paracentesis)

V. **Operative procedures**

A. Record information as to whether just the tumour was excised or the entire site, with details as to exactly what was removed.

Local tumour destruction:

- Cryosurgery
- Electrocautery
- Fulguration

Laser surgery – specify if the tumour is vaporized with no pathology specimen, or if there is a pathology specimen.

Local excision or limited resection:

- Wedge resection
- Segmental resection
- Lingulectomy
- Sleeve resection
- Partial lobectomy

Resection of primary site (specify type of resection)

- Lobectomy
- Bilobectomy

Radical Lobectomy
Partial pneumonectomy
Complete pneumonectomy
Total pneumonectomy
Standard pneumonectomy
Radical pneumonectomy
Extended radical pneumonectomy

B. Specifically identify organs and tissues removed to verify surgical procedure, i.e.:

Lung (specify side and portion)
Parietal pleural
Pericardium
Diaphragm
Chest wall
Rib

C. Indicate whether or not lymph nodes were removed and specify their location.

D. Indicate whether removal of rib was incidental.

VI. Pathology reports (including autopsy)

Record histology, multifocal tumours, size of primary tumour, direct extension of tumour, lymph nodes and distant sites.

Determine whether primary site is lung or main stem bronchus. If the primary is in the lung (or segmental bronchi), specify lobe(s) involved.

Record reports of bone marrow aspiration and/or biopsy.

VII. Site-specific details

A. Description of tumour in lung(s) and main stem bronchus:

1. Lobes involved; include mention of contiguous tumour where tumour crosses major fissure:
   - Right (specify if upper, middle or lower lobe)
   - Left (specify upper, lower lobe or lingula)
2. Main stem bronchus involved. Recorded relationship of tumour margin to carina (e.g. distance in cm.)
3. "Localized" or "hilar region of lung" without further details should be so recorded if this is the only information available.

B. Direct extension of tumour

Specifically identify:

- Pleura (specify visceral, parietal, NOS)
- Pericardium (specify visceral, parietal, NOS)
- Pulmonary ligament
- Atelectasis/obstructive pneumonitis (specify how much of lung is involved)
- Pleural effusion (specify with, without, or NOS)
- Major blood vessels (specify pulmonary artery or vein, superior vena cava or others)
- Nerves [specify recurrent laryngeal nerve, vagus, phrenic (fixed diaphragm), cervical sympathetic nerves]

If the only statement is extrapulmonary mediastinal involvement, record this.

Carina
Trachea
Oesophagus
Extrapulmonary mediastinum or NOS
Brachial plexus from superior sulcus or Pancoast tumour
Contralateral lung
Heart
Adjacent rib
Sternum
Chest (thoracic) wall
Skeletal muscle
Skin of chest
Superior sulcus (Pancoast) tumour
Brachial plexus
Vertebra
Diaphragm
Abdominal organs

Specify other organs or tissues involved by direct extension

C. Lymph nodes

1. Specifically identify:

Intrapulmonary
Intralobar
Hilar:
Bronchial
Parabronchial
Pulmonary root
Subcarinal, carinal
Extrapulmonary

Mediastinal:
Paratracheal
Paratracheobronchial
Paraoesophageal
Pericardial
Para–aortic

Other lymph nodes: (Distant lymph nodes)
Contralateralhilar or mediastinal (including bilateral)
Supraclavicular (transverse cervical)
Scalene
Cervical, NOS

2. Specify any other lymph nodes mentioned.

3. Record statements such as "Regional node(s)" or "Distant node(s)"

4. Specify if ipsilateral, contralateral or bilateral.

D. Metastasis (discontinuous involvement)

1. Specifically identify:

Implants in thoracic cavity; implants on pleura
Implants in contralateral lung
Liver
Adrenal gland(s)
Bone
Brain

2. Specify any other metastatic site(s).

3. Generalized metastases, carcinomatosis, or "distant metastasis" should be recorded if this is the only information available.

Instructions for abstracting extent of disease.

BREAST (Male and Female)

I. History and physical examination

Record description of palpation of:

- Both breasts and axilla
- Bilateral lymph nodes (specifically axillary, cervical and supraclavicular)

(see VII A and B for site-specific details)

II. X-rays, scans and other imaging techniques

Pertinent radiographic reports are:

- Mammography (both breasts)
- Xerography (both breasts)
- Thermography (both breasts)
- Chest x-ray
- Skull x-ray
- Bone survey
- Angiography
- Lymphography
- Bone scan
- Brain scan
- Liver/spleen scan

III. Endoscopic and manipulative procedures

For breast, these procedures would be done only for distant metastasis.

IV. Cytology reports

Record the highest class (I-V) from each source

- Ductal fluid
- Aspirated tumor cells
- Ulceration/inflammation of skin of breast, including areola
- Ascitic fluid (paracentesis)
- Pleural fluid (thoracentesis)

V. Operative reports

A. Record the information about exact-ly what was removed: was it only the tumour which was excised ? Was the entire primary site removed?

Less than total mastectomy (specify type of resection):

- Excisional biopsy
- Segmental resection
- Lumpectomy
- Quadrantectomy
- Tylectomy
- Wedge resection
- Nipple resection
- Partial mastectomy
- Excisional biopsy
- Subtotal mastectomy

Subcutaneous mastectomy or more (specify type of resection):

- Simple
- Total
- Modified radical
- Radical
- Extended radical

Specifically identify organs and tissues removed to verify the surgical procedure such as all or part of the pectoralis major muscle.

B. Indicate whether or not axillary and/or mammary lymph nodes were dissected, and specify their location.

C. Definitions:

Halsted: Developed radical mastectomy, i.e. en bloc dissection of entire breast and skin together with pectoralis major and minor muscles and contents of axilla.

Patey and Dyson: Modified radical mastectomy, i.e. removal of breast, pectoralis minor axillary contents, but leaving the pectoralis major intact.

Urban: Extended radical mastectomy, i.e. radical mastectomy plus excision of internal mammary nodes.

VI. Pathology reports (including autopsy)

Record histology, multiple tumours, size, location, direct extension of tumour, lymph nodes and distant sites.

Record reports of bone marrow aspiration and/or biopsy.

(See VII A and C for site–specific details)

VII. Detailed evaluation

A. Location

No primary found

Upper outer quadrant (UOQ), including axillary tail tumours

Upper inner quadrant (UIQ)

Lower outer quadrant (LOQ)

Lower inner quadrant (LIQ)

Upper half, upper midline

Lower half, inner midline

Outer (lateral) half, outer midline

Inner (medial) half, inner midline

Central (subareolar)

More than one tumour mass in the same breast

Diffuse

Laterality and location may be combined, i.e. RUIQ for right upper inner quadrant.

Location may also be described in "o'clock" terms, i.e. "2 o'clock", "5 o' clock", etc.

B. Size of Primary of Tumour

Record the size as stated in the pathological report. If none, check the operative report or, lastly, the physical examination.

If multiple masses are present, record the size of the largest.

C. Clinical evaluation of the primary tumour

1. Within the breast
   - Freely movable
   - Mobile
   - Nonfixed
   - Well circumscribed
   - Fixed within the breast

2. Nipple and areola
   - Attachment to nipple and/or areola
   - Induration of nipple
   - Retraction of nipple (not to be confused with inversion which is a congenital condition, usually bilateral)
   - Paget's disease of nipple

3. Overlying skin
   - Dimpling
   - Retraction of skin
   - Tethering
   - (these are considered to be due to shortening of Cooper's ligaments).
   - Adherence to skin
   - Attachment of skin
   - Induration or thickening of skin of breast
   - Fixation to skin (complete or incomplete)
   - (these imply direct extension to skin).
   - Specify presence and location of adjacent skin including satellite nodules in adjacent skin (e.g. over the sternum, upper abdomen or axilla).

4. Deeper structures
   - Fixation or attachment to pectoral muscleor fascia
   - Deep fixation to chest wall, intercostal muscles, serratus anterio muscle and/or ribs.

5. "Inflammatory carcinoma"
   - Not all breast cancers with inflammation are considered inflammatory. Only when a specific diagnosis of "inflammatory carcinoma" is made should it be so recorded.

6. Preoperative oedema of the ipsilateral arm is indicative of poor axillary lymph node drainage from possible involvement, and should be recorded.

D. Pathological evaluation

1. Depth of invasion:
   - In–situ only, intraductal, non–infiltrating
   - Infiltrating, invasive

2. Extension to tissue such as:
   - Nipple and/or areola
     (Record the presence of Paget's disease of the nipple and indicate whether or not there is associated cancer).
   - Skin of breast (dermal lymphatics)
   - Subcutaneous tissue
   - Adjacent skin (upper abdomen, axilla)
   - Pectoral fascia
   - Pectoral muscle
   - Chest wall
   - Intercostal muscles
   - Serratus anterior muscle
   - Ribs

3. Record metastatic nodule(s) within the breast. This is considered as localized spread by way of the lymphatic system.

E. Lymph nodes

1. Specifically identify:
   - Low axillary, including external mammary (adjacent to tail of breast)
   - Mid–axillary (including central, interpectoral, Rotter's node)
   - High axillary (including subclavicular and axillary vein nodes)
   - If terms such as "Level 1" or "level 3" are used, determine which corresponds to "low" or "high"
   - Internal mammary (parasternal)
   - Record "nodules(s) in axillary fat".
   - This is considered regional spread by way of the lymphatic system (probable lymph node(s) whose configuration has been obliterated by tumour.
   - "Axillary nodes" or "Regional nodes" should be so recorded if this is the only information available.
   - Supraclavicular (specify if homolateral or contralateral)
   - Infraclavicular (specify if homolateral or contralateral)
   - Cervical
   - Contralateral axillary
   - Contralateral internal mammary

2. Indicate if there is fixation of axillary nodes.
3. Record pretreatment oedema of the arm.
4. Specify any other lymph nodes mentioned
5. "Distant nodes" should be so recorded if this is the only information available.

F. Metastasis (discontinuous involvement)

1. Specifically look for:
   - Bone, other than adjacent rib
   - Opposite breast parenchyma
   - Lung: implants on pleura
   - Implants in thoracic cavity
   - Implants on peritoneum
   - Ovary
   - Adrenal
   - Liver
   - Brain
   - Skin including nodules (specify location)

2. Specify any other metastatic site(s).

3. Generalized metastasis, carcinomatosis, or "distant metastasis" should be so recorded if this is the only available information.

Instructions for abstracting extent of disease.

CERVIX UTERI

I. **History and physical examination**

Record significant findings from:

Pelvic examination, including bimanual examination of pelvic lymph nodes

Examination at dilatation and curettage (D & C)

Palpation of abdomen

Palpation of accessible lymph nodes

Palpation of secondary masses

If clinically there is no detectable cancer, state this.

Enlargement of the uterine cavity is measured with a sound from the external os. Record sounding in centimeters. If the exact size is not given, record any statement of enlarged uterine cavity.

II. **X-rays, scans, and other imaging techniques**

Record significant findings from:

Lymphangiogram

Hysterosalpingogram

Pelvic x-ray (scout film)

Pyelogram (intravenous or retrograde)

Chest x-ray

Bone survey

Bone scan

Liver/spleen scan

Brain scan

III. **Endoscopic and manipulative procedures**

Specifically identify:

Colposcopy

Culdoscopy

Cystoscopy

Hysteroscopy

Laparoscopy

Peritoneoscopy

Proctosigmoidoscopy

IV. **Cytology reports**

Report the highest class (I–V) from each source.

Cervical (Pap test, vibra, Gravelee jet washer)

Ascitic fluid (paracentesis)

Pleural fluid (thoracentesis)

V. **Operative procedures**

A. Record information as to whether just the tumour was excised or the entire primary site with details as to exactly what was removed.

Local tumour destruction:

Cryosurgery

Electrocautery

Fulguration

Laser surgery: specify if the tumour is vaporized with no pathology specimen, or if there is a pathology specimen.

Local excision:

Cervix uteri

Conization

Excisional biopsy

Trachelectomy

Amputation of cervix

Endocervical curettage (*in-situ* only)

Corpus uteri

D & C (in situ-only)

Polypectomy

Myomectomy

Simple excision

Resection of primary site (specify type of resection):

Simple hysterectomy

Panhystectomy

Total hysterectomy

Modified radical or extended hysterectomy
Radical hysterectomy
Wertheim (Cervix uteri)
Pelvic exenteration (specify anterior, posterior or total)

B. Specifically identify organs and tissues removed to verify surgical procedure such as :

Both corpus and cervix uteri
a. Without tubes and ovaries
b. With tubes and ovaries
Vaginal cuff (specify if just upper 1/3 or more is removed)
Parametrial/paravaginal tissues
Bladder
Distal ureters
Rectum and rectosigmoid
Appendix
Lymph nodes

C. Specify whether or not para-aortic and/or pelvic lymph nodes were removed.

D. Indicate whether removal of appendix was incidental or not.

E. Definitions:

Wertheim's operation: Radical abdominal hysterectomy for cancer of the cervix uteri in which there is as much of the parametrial tissue as possible and a wide margin of the vagina removed with the uterus

VI. Pathology reports (including autopsy)

Record histology, multifocal tumours, size of primary tumour, direct extension of tumour, lymph nodes, and distant sites.
Record reports of bone marrow aspiration and/or biopsy.
(See VII for site-specific details)

VII. Detailed evaluation

A. Direct extension of tumour:

1. Depth of invasion:
   In-situ: Intraepithelial
   noninvasive
   preinvasive
   minimal stromal invasion "microinvasion"
   Invasive cancer confined to cervix and/or endocervix.

2. Extension beyond the cervix to:
   Corpus uteri
   Body of uterus
   Vaginal wall (specify if tumour involves upper 2/3, lower 1/3 or if not specified)
   Fornices
   Anterior (vesicovaginal) and/or posterior (rectovaginal) septum
   Rectum (specify whether rectal wall or mucosa)
   Bladder (specify whether bladder wall or mucosa
   Parametrium (including uterosacral ligament and non-ovarian adnexae)
   Ligaments: broad, uterosacral, cardinal
   Pelvic wall(s)
   Ureter (specify whether intramural or extramural)
   Hydronephrosis or nonfunctioning kidney (except of other cause)
   Cul-de-sac (retrouterine pouch)
   Urethra
   Intestines (specify segment)
   Vulva
   Ovary and Fallopian tubes

3. If there is no information about extension beyond the cervix state this.

4. If the extension is described in terms of FIGO stages 0-IV, record this.

5. If there is evidence of "bullous oedema" of the bladder, this should be recorded.

6. If "frozen pelvis" is specified, state this.

B. Lymph nodes:

1. Specifically identify:
   Paracervical
   Parametrial

Pelvic, NOS
Iliac (specify common, internal, external, NOS)
Hypogastric
Obturator
Sacral (specify laterosacral, presacral,
Uterosacral or promontory (Gerota's)).
Aortic (specify pre–, para–. peri–aortic, or lumbar).
Retroperitoneal
Inguinal (specify superficial, deep, or NOS)
Supraclavicular, cervical, scalene

2. Specify any other lymph nodes mentioned.

3. Also record statements such as:
"Pelvic node(s)"
"Regional node(s)"
"Distant node(s)"

C. **Metastasis (discontinuous involvement)**

1. Specifically identify:
Metastasis in lung (specify whether solitary or multiple)
Implants on pleura and/or in thoracic cavity
Implant(s) in vagina
Ovary
Liver
Bone
Brain
Peritoneal involvement outside true pelvis

2. Specify any other metastatic site(s).

3. Generalized metastasis, carcinomatosis, or "distant metastasis" should be so recorded if this is the only information available.

Appendix 4.3

Definitions of anatomical sites according to the manual for staging of cancer of the American Joint Committee on Cancer Staging (AJCC, 1988)

Lip and oral cavity

The oral cavity extends from the skin-vermilion junction of the lips to the junction of the hard and soft palate above and to the line of the circumvallate papillae below and is divided into the following areas:

Lip C00 (140) The lip begins at the junction of the vermilion border with the skin and includes only that portion of the lip that comes into contact with the opposing lip (the vermilion surface). It is well defined into an upper and lower lip joined at the commissures of the mouth.

Buccal mucosa C06.0 (145.0) Includes all the membrane lining of the inner surface of the cheeks and lips from the line of contact of the opposing lips to the line of attachment of mucosa of the gingiva (upper and lower) and pterygomandibular raphe.

Lower gingiva (lower alveolar ridge) C03.1 (143.1) Includes the alveolar process of the mandible and its covering mucosa, which extends from the line of attachment of the mucosa in the buccal gutter to the line of free mucosa of the floor of the mouth. Posteriorly it extends to the ascending ramus of the mandible.

Upper gingiva (upper alveolar ridge) C03.0 (143.0) Includes the alveolar process of the maxilla and its covering mucosa, which extends from the line of attachment of the mucosa in the upper gingival buccal gutter to the junction of the hard palate. Its posterior margin is the upper end of the pterygopalatine arch.

Retromolar gingiva (retromolar trigone) C06.2 (145.6) Includes the attached mucosa overlying the ascending ramus of the mandible from the level of the posterior surface of the last molar tooth to the apex superiorly, adjacent to the tuberosity of the maxilla.

Floor of the mouth C04 (144) A semilunar space extending from the inner surface of the lower gingiva to the undersurface of the tongue. Its posterior boundary is the base of the anterior pillar of the tonsil. It is divided by the frenulum of the tongue into two sides and it contains the opening of the submaxillary and sublingual salivary glands.

Hard palate C05.0 (145.2) This is the semilunar area between the upper alveolar ridge and the mucous membrane covering the palatine process of the maxillary palatine bones. It extends from the inner surface of the superior alveolar ridge to the posterior edge of the palatine bone.

Anterior two thirds of the tongue (oral tongue) C02.0 – CO2.3 (141.1 – 141.4) The freely mobile portion of the tongue, extending anteriorly from the line of the circumvallate papillae to the undersurface of the tongue at the junction of the floor of the mouth.

Pharynx

The pharynx (including the base of the tongue, soft palate and uvula) is divided into three regions: oropharynx; nasopharynx; and hypopharynx. Each region is further divided into specific sites.

Oropharynx C10 (146) includes:

Base of the tongue C01.9 (141.0)

Soft palate CO5.1 (145.3)

Uvula C05.2 (145.4)

Tonsil C09.9 (146.0) tonsillar fossa C09.0 (146.1) and faucial pillars C09.1 (146.2) and vallecula C10.0 (146.3)

Anterior surface of epiglottis C10.1 (146.4)

Lateral wall of oropharynx C10.2 (146.6)

Posterior wall C10.3 (146.7)

Nasopharynx C11 (147)

Posterosuperior wall extends from the level of the junction of the hard and soft palates to the base of the skull C11.0 (147.0) and C11.1 (147.1).

Lateral wall, including the fossa of Rosenmüller C11.2 (147.2)

Inferior (anterior) wall which consists of the superior surface of the soft palate C11.3 (147.3)

Hypopharynx C13 (148)

Pharyngo-oesophageal junction (post-cricoid region) C13.0 (148.0) extends from the level of the arytenoid cartilages and connecting folds to the inferior border of the cricoid cartilage.

Pyriform sinus C12.9 (148.1) extends from the pharyngo-epi-glottic fold to the upper end of the oesophagus.

Posterior pharyngeal wall C13.2 (148.3) extends from the level of the floor of the vallecula to the level of the crico-arytenoid joints.

Larynx

The division of the larynx is summarized as follows:

Site	Subsite
Supraglottis C32.1 (161.1)	Ventricular bands (false cords)
	Arytenoids Epiglottis (both lingual and laryngeal aspects) Suprahyoid epiglottis Infrahyoid epiglottis Arytenoepiglottic folds
Glottis C32.0 (161.0)	True vocal cords including anterior and posterior commissures
Subglottis C32.2 (161.2)	Subglottis

Maxillary sinus C31.0 (160.2)

Cancer of the maxillary sinus is the most common of the paranasal sinus cancers; it is the only site to which the following classification applies. The ethmoid sinuses and nasal cavity may ultimately be defined similarly with further study. Tumours of the sphenoid and frontal sinuses are so rare as not to warrant staging.

Ohngren's line, a theoretic plane joining the medial canthus of the eye with the angle of the mandible, may be used to divide the maxillary antrum into the anteroinferior portion (the infrastructure) and the superoposterior portion (the suprastructure).

Salivary glands (including parotod, submaxillary, and sublingual)

The major salivary glands include the parotid CO7.9 (142.0), submaxillary CO8.0 (142.1), and sublingual CO8.1 (142.2) glands.

Thyroid Gland

The thyroid gland C73 (193) ordinarily is composed of a right and a left lobe lying adjacent and lateral to the upper trachea and oesophagus. An isthmus connects the two lobes and in some cases a pyramidal lobe is present extending upward anterior to the thyroid cartilage.

Oesophagus

For purposes of classification, staging and reporting of cancer, the oesophagus is divided into four regions:

Cervical oesophagus C15.0 (150.0)

The cervical oesophagus begins at the lower border of the cricoid cartilage and ends at the thoracic inlet (the suprasternal notch), approximately 18 cm from the upper incisor teeth.

Intrathoracic oesophagus C15.1–C15.5 (150.1–150.5)

The upper thoracic portion C15.3 (150.3) extends from the thoracic inlet to the level of the tracheal bifurcation, approximately 24 cm from the upper incisor teeth.

The mid-thoracic portion C15.4 (150.4) is the proximal half of the oesophagus between the tracheal bifurcation and the oesophago-gastric junction. The lower level is approximately 32 cm from the upper incisor teeth.

The lower thoracic portion C15.5 (150.5), 8 cm in length (includes the abdominal oesophagus C15.2 (150.2)), is the distal half of the oesophagus betweeen the tracheal bifurcation and the oesophago-gastric junction, approximately 40 cm from the upper incisor teeth.

Stomach

For staging purposes, the stomach is divided into three anatomical regions:

Upper third: includes the cardiac area C16.0 (151.0) and fundus C16.1 (151.3)

Middle third: includes the bulk of the corpus C16.2 (151.4)

Lower third: includes the antral area C16.3 (151.2) and pylorus C16.4 (151.1)

In order to delimit these regions, the lesser C16.5 (151.5) and greater C16.6 (151.6) curvatures are divided at two equidistant points and these are joined.

Colon and rectum

The colon extends from the terminal ileum to the anal canal, and is divided as follows:

Caecum C18.0 (153.4) and appendix C18.1 (153.5)

Ascending colon C18.2 (153.6)

Hepatic flexure C18.3 ((153.0)

Transverse colon C18.4 (153.1)

Splenic flexure C18.5 (153.7)

Descending colon C18.6 (153.2)

Sigmoid colon C18.7 (153.3)

Rectosigmoid C19.9 (154.0)

Rectum C20.9 (154.1)

Anal canal

The anal canal C21.1 (154.2) extends from the rectum to the perianal skin and is lined by the mucous membrane overlying the internal sphincter, including the transitional epithelium and dentate line, to the junction with the hair-bearing skin.

Liver (including intrahepatic bile ducts)

The liver C22.0 (155.0) is located in the right upper abdominal cavity below the right leaf of the diaphragm. It extends from the fifth rib and midclavicular line on the left side to the inferior costal margin and midaxillarry line on the right side, and is divided into right and left lobes. Two smaller lobes, the quadrate and the caudate, are subdivisions of the undersurface of the right lobe. Between the left and the right lobes is the porta hepatis through which pass the hepatic artery and its major branches, the portal vein, the extrahepatic bile ducts and lymphatic vessels.

Gallbladder

The gallbladder C23.9 (156.0) is a pear-shaped saccular organ located under the liver in the gallbladder fossa. It has three parts: a fundus, a body, and a neck that tapers into the cystic duct.

Extrahepatic bile ducts

Emerging from the transverse fissure of the liver are the right and left hepatic bile ducts C24.0 (156.1), which join to form the common hepatic duct. The cystic duct, which connects to the gallbladder, joins the common hepatic duct to form the common bile duct, which passes behind the first part of the duodenum and then traverses the head of the pancreas until it opens into the second part of the duodenum at the ampulla of Vater.

Ampulla of Vater

A small dilated duct, less than 1.5 cm in length, the ampulla C24.1 (156.2) is formed in most individuals by the union of the terminal segments of the pancreatic and common bile ducts. In 25% of individuals, the ampulla may be difficult to define or non-existent, being the termination of the common duct only, the panceatic duct having its own entrance into the duodenum, adjacent to the ampulla.

Exocrine pancreas

The exocrine pancreas (head C25.0 157-0; body C25.1 157.1; tail C25.2 157.2; duct C25.3 157.3; and pancreas C25.9, 157.9) is a long, coarsely lobulated gland that lies transversely in the long posterior abdomen. It is located retroperitoneally in the concavity of the duodenum on its right end and touching the spleen with its left end or tail.

Lung

The mucosa lining the bronchus is the usual site of origin for carcinoma of the lung (C34.0-C34.9, 162.2-162.9). The trachea, which lies in the anterior mediastinum, divides into the right and left bronchi, which extend into the right and left lungs, respectively, and then further subdivide into the lobar bronchi for the upper, middle, and lower lobes on the right and the upper and lower lobes on the left.

Bone

All bones [C40-41 (170)] of the skeleton.

Soft tissues

A variety of soft tissues can give rise to these sarcomas. The tissues include fibrous connective tissue, fat, smooth or striated muscle, vascular tissue, and peripheral neural tissue, as well as undifferentiated mesenchyme:

Connective, subcutaneous and other soft tissues (C47,C49; 171)

Retroperitoneum (C48.0 158.0)

Mediastinum (C38.1,38.2 164.2–3)

Carcinoma of the skin (excluding eyelid, vulva and penis)

The skin (C44.0, C44.2–42.9, C63.2; 173.0, 173.2–173.9, 187.7 [scrotum]) has two layers, an outer epidermis and the inner dermis. The epidermis consists predominantly of stratified squamous epithelium, the external layer of which is keratinized. The dermis contains dense connective tissue and elastic fibres. Immediately below the dermis is the subcutaneous tissue. The sebaceous and other glands of the skin are found in the dermis and adjacent subcutaneous tissue. All the components of the skin – epidermis, dermis and adnexal structures – can give rise to malignant neoplasms.

Melanoma of the skin (excluding eyelid)

The great majority of melanomas (skin C44, 173; vulva C51, 184.4; penis C60.9, 187.4; scrotum C63.2, 187.7) arise from the pigmented melanocytes located in the basal layer of the epidermis. The tumour often develops from a pre-existing pigmented lesion, although some arise from appparently normal skin.

Breast

The mammary gland (C50; 174,175), situated on the anterior chest wall, is composed of glandular tissue within a dense fibroareolar stroma. The glandular tissue consists of approximately 20 lobes, each of which terminates in a separate excretory duct in the nipple.

Cervix uteri

The cervix (C53, 180) is the lower third of the uterus. It is roughly cylindrical in shape, projects through the upper anterior vaginal wall, and communicates with the vagina through an orifice called the external os. Cancer of the cervix may originate on the vaginal surface or in the canal.

Corpus uteri

The upper two thirds of the uterus above the level of the internal cervical os is called the corpus (C54, 182). The fallopian tubes enter at the upper lateral corners of a pear-shaped body. The portion of the muscular organ that is above a line joining the tubo–uterine orifices is often referred to as the fundus.

Ovary

Ovaries (C56.9, 183.0) are a pair of solid bodies, flattened ovoids 2 to 4 cm in diameter, connected by a peritoneal fold to the broad ligament and by the infundibulopelvic ligament to the lateral wall of the pelvis.

Vagina

The vagina (C52.9, 184.0) extends from the vulva upward to the uterine cervix.

Vulva

The vulva (C51.8,51.9; 184.4) is the anatomical area immediately external to the vagina.

Prostate

Adenocarcinoma of the prostate (C61, 185) usually arises within the true gland and rarely seems to begin in the benign hyperplastic enlargement that occurs around the prostatic urethra in older men. Pathologically, this cancer tends to be multifocal in origin. It is more commonly found in the peripheral posterior portion of the gland and therefore is highly amenable to early detection by rectal examination.

Testis

The testes (C62, 186) are composed of convoluted seminiferous tubules with a stroma containing functional endocrine interstitial cells. Both are encased in a dense barrier capsule, the tunica albuginea, with fibrous septa extending into and separating the testes into lobules. The tubules converge and exit at the mediastinum of the testis into the rete testis and efferent ducts, which join a single duct. This duct, the epididymis, coils outside the upper and lower pole of the testicle, then joins a muscular conduit, the vas deferens, which accompanies the vessels and lymphatic channels of the spermatic cord.

Penis

The penis (prepuce, C60.0,187.1; glans, C60.1,187.2; skin C60.8,60.9;187.4) is composed of three cylindrical masses of cavernous tissue bound together by fibrous tissue. Two masses are lateral and are known as the corpora cavernosa penis. The corpus spongiosum penis is a median mass and contains the greater part of the urethra. The penis is attached to the front and the sides of the pubic arch. The skin covering the penis is thin and loosely connected with the deeper parts of the organ. The skin at the root of the penis is continuous with that over the scrotum and perineum. Distally, the skin becomes folded upon itself to form the prepuce or foreskin.

Urinary bladder

The urinary bladder (C67, 188) consists of three layers: the mucosal and submucosal subepithelial connective tissue, the muscularis, and the serosa (peritoneum covering the superior surface and upper part of the base). In the male, it adjoins the rectum and seminal vesicle posteriorly, the prostate inferiorly, and the pubis and peritoneum anteriorly. In the female, the vagina is located posteriorly and the uterus superiorly. The bladder is extraperitoneal in location.

Kidney

The kidney (C64.9, 189.0) is encased by a fibrous capsule and is surrounded by perirenal fat. The kidney is composed of the cortex (glomeruli, convoluted tubules) and the medulla (Henle's loops, pyramids of converging tubules). Each papilla opens into the minor calices; these in turn unite in the major calices and drain into the renal pelvis. At the hilus are the pelvis, ureter, and renal artery and vein. Gerota's fascia overlies the psoas and quadrants lumborum.

Renal pelvis and ureter

The renal pelvis (C65.9,189.1) and ureter (C66.9, 189.2) form a single unit. The ureteropelvic junction is variable in position and location, but serves as a "landmark" that separates the renal pelvis and the ureter. The renal pelvis and ureter are composed of the following layers: the mucusa, submucosa (lamina propria), and muscularis, which is continuous with a connective tissue adventitial layer. It is in this outer layer that the major blood supply and lymphatics are found.

Urethra

In the male, the urethra (C68.0, 189.3) is divided into anterior, penile (pendulous), and posterior (bulbomembranous and prostate). The urethra consists of mucosa, submucosal stroma, and the surrounding corpus spongiosum. Histologically, the meatal and parameatal urethra are lined by squamous epithelium, the penile and bulbomembranous urethra with pseudostratified or stratified columnar epithelium, and the prostatic utrethra with transitional cell epithelium. The corpora cavernosum is contiguous to the bulbous and penile urethra.

The female urethra is divided into proximal and distal sections. The mucosa is supported on a connective tissue submucosa. The periurethral glands of Skene are concentrated near the meatus but extend along the entire urethra. The urethra is surrounded by a longitudinal layer of smooth muscle that is continuous with the bladder. The distal third of the urethra is contiguous to the vaginal wall. The mucosa of the distal two thirds of the urethra is squamous epithelium; the proximal one third is transitional; and the periurethral glands are lined by pseudostratified and stratified columnar epithelium.

Carcinoma of the eyelid

The eyelid (C44.1, 173.1) is covered externally by epidermis and internally by conjunctiva, which becomes continuous with the conjunctiva that covers the eyeball. Basal cell carcinoma and squamous cell carcinoma arise from the epidermal surface. Sebaceous cell carcinoma arises from the meibomian glands in the tarsus, the glands of Zeis at the lid margin, and the sebaceous glands of the caruncle. Other adnexal carcinomas arise from the sweat glands of Moll and the hair follicles.

Melanoma of the eyelid

The eyelid (C44.1, 173.1) is covered externally by epidermis and internally by conjunctiva, which becomes continuous with the conjunctiva that covers the eyeball.

Carcinoma of the conjunctiva

The conjunctiva (C69.0, 190.3) consists of stratified epithelium that contains mucus-

secreting goblet cells; these cells are most numerous in the fornices. Palpebral conjunctiva lines the eyelid; bulbar conjunctiva covers the eyeball. Conjunctival epithelium merges with that of the cornea at the limbus. It is at this site, particularly at the temporal limbus, that carcinoma is most likely to arise. Conjunctival intraepithelial neoplasia (CIN) embraces all forms of intraepithelial dysplasia, including in situ carcinoma. Mucinous adenocarcinoma is a rare form of adenocarcinoma of the conjunctival goblet cells.

Melanoma of the conjunctiva

(C69.0, 190.3). In addition to mucus-secreting goblet cells within the stratified epithelium, melanocytic cells exist in the basal layer. These are of neuroectodermal origin, and melanocytic tumours may arise from these cells. Melanomas may arise from junctional and compound nevi, from primary acquired melanosis, or de novo. Tumours must be distinguished from non-tumorous pigmentation.

Melanoma of the conjunctiva

The uvea (uveal tract) (C69.4, 69.3; 190.0, 190.6) is the middle layer of the eyeball, situated between the cornea and sclera externally and the retina and its analogues internally. The uveal tract is divided into three regions: iris, ciliary body, and choroid.

Retinoblastoma

The retina (C69.2, 190.5) is composed of neurons and glial cells. The neurons give rise to retinoblastoma, whereas the glial cells give rise to astrocytomas, which in the retina are benign and extremely rare. The retina is limited internally by a membrane that separates it from the vitreous cavity. Externally it is limited by the retinal pigment epithelium and Bruch's membrane, which separate it from the choroid and act as natural barriers to extension of retinal tumours into the choroid. The continuation of the retina with the optic nerve allows direct extension of retinoblastomas into the optic nerve and then to the subarachnoid space. Since the retina has no lymphatics, spread of retinal tumours is either by direct extension into adjacent structures or by distant metastatis through hematogenous routes.

Sarcoma of the orbit

Sarcoma of the orbit (C69.6, 190.1) occurs in the soft tissues and bone of the orbital fossa.

Carcinoma of the lacrimal gland

The lacrimal gland (C69.5, 190.2) lies in a bony excavation that is covered by periosteum. It is located in the lateral orbital wall (the fossa of the lacrimal gland). The smaller palpebral portion projects into the lateral portion of the upper lid between the palpebral fascia and the conjunctiva.

Brain

A variety of tissues within the brain (C71, 191) can give rise to neoplasms. These include astrocytes and other glial cells, meninges (C70.0, 70.9; 192.1), blood vessels, pituitary and pineal cells, and neural elements proper. The major structural sites involved are the various lobes of the cerebral hemispheres; the midline structures, including midbrain, pons, and medulla; and the posterior fossa.

Hodgkin's disease

The major lymphatic structures include groups and chains of lymph nodes, the spleen, and the thymus gland. The digestive system is also an important lymphoid organ that has collections of lymphoid tissue known as Waldeyer's ring in the oropharynx, Peyer's patches in the ileum, and lymphoid nodules in the appendix. Hodgkin's disease can involve almost any organ or tissue, especially the liver, bone marrow, and spleen, in addition to the lymph nodes.

Non-Hodgkin's lymphoma

The major lymphatic structures include groups and chains of lymph nodes, the spleen, thymus, Waldeyer's ring, appendix, and Peyer's patches. Minor lymphoid collections are widely dispersed in other viscera and tissues, such as the bone marrow, liver, skin, bone, lung, pleura, and gonads. Involvement of extranodal sites is more commonly seen in the non-Hodgkin's lymphomas than in Hodgkin's disease.

Nephroblastoma (Wilms' tumour)

Nephroblastomas arise from the kidneys (C64.9, 189.0). These tumours may be bilateral and multiple.

Neuroblastoma

Neuroblastomas usually originate in the adrenal medulla (C74.0,74.1,74.9; 194.0). However, they may be found at any location along the course of the sympathetic chain, from the cervical region to the pelvis. These tumours may be multicentric in origin.

Soft-tissue sarcoma – paediatric

Soft-tissue sarcomas can involve nearly all anatomical sites. In children, these tumours may even affect unusual sites, such as the vagina or extrahepatic bile ducts, which are rarely involved in adults.

Connective, subcutaneous and other soft tissue	C47, C49; 171
Retroperitoneum	C48.0, 158.0
Mediastinum	C38.1,38.2; 164.2,164.3

The primary tumour site should be indicated according to the following notations:

ORB	Orbit
HEA	Head and neck
LIM	Limbs
PEL	Pelvis (including walls, genital tract, and viscera)
ABD	Abdomen (including walls and viscera)
THO	Thorax (including walls, diaphragm, and viscera)
OTH	Other