WHO Application of ICD-10 for low-resource settings initial cause of death collection

The Startup Mortality List (ICD-10-SMoL)

V2.0

World Health Organization

V1.01: corrected numbering: 5-75 is now "Diseases of skin and subcutaneous tissue" (formerly 5-76; 5-75 was missing); 5-76 is "Diseases of the musculoskeletal system and connective tissue" (formerly duplicate 5-77)
V1.02: reinstated missing codes for 'syphilis' and 'other sexually transmitted diseases'
V1.03: edited main title, aligned death certificate form with the 2016 update of ICD-10, and variables accordingly
V2.0: added code 5-87.9 for 'Other and unspecified disorders relating to length of gestation and fetal growth'; removed code 5-102.3 for 'food poisoning'; clarified coding of 'cardiac arrest' in 5-95,'Signs and symptoms'; clarified exclusions regarding neoplasms and cancer; added code references to ICD-10; added list of rules; update death certificate form to full 2016 format.

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Introduction

The SMoL has been designed to be in line with the ICD, and informs setting public health priorities and tracking progress towards national and international targets and goals such as the post-2015 health and development agenda. This list is designed to be a first step towards standardized reporting of causes of death.

Countries lacking the capacities to code to ICD 3- or 4-digits should use the Startup Mortality List. Wherever capacity exists or completeness of reporting is sufficient, the full ICD should be used, ideally in combination with electronic coding tools.

The Structure

The SMoL is based on the ICD general mortality special tabulation list, but it includes categories for maternal and perinatal deaths, and some detail proven useful in GBD. Added detail includes: leprosy; syphilis; dengue; hepatitis B; confirmed tuberculosis; confirmed malaria; benign neoplasms; alcohol; other substance abuse; liver cirrhosis; obstructed labour; maternal haemorrhage; maternal sepsis, prematurity; low birth weight; few malformations; poisoning: alcohol, drug, food. Some of the additions are optional. Atherosclerosis has been removed as it is redistributed in all statistics. Users are free to add additional detail as long as that detail allocated within the framework provided by the categories of this simple mortality

Instructions in the SML instruct what to include or exclude in certain categories. These instructions are indicated by the terms “includes” or “excludes”.

Use of the SMoL

The cause(s) of death are reported on a standard WHO medical certificate of cause of death. The underlying cause is coded with the SMoL. Reported causes, age, sex, location and the code of the underlying cause of death are recorded for every individual case. For cases where more than one cause of death is reported, the SMoL selection rules will help to identify the single underlying cause in a way that is compatible with ICD.

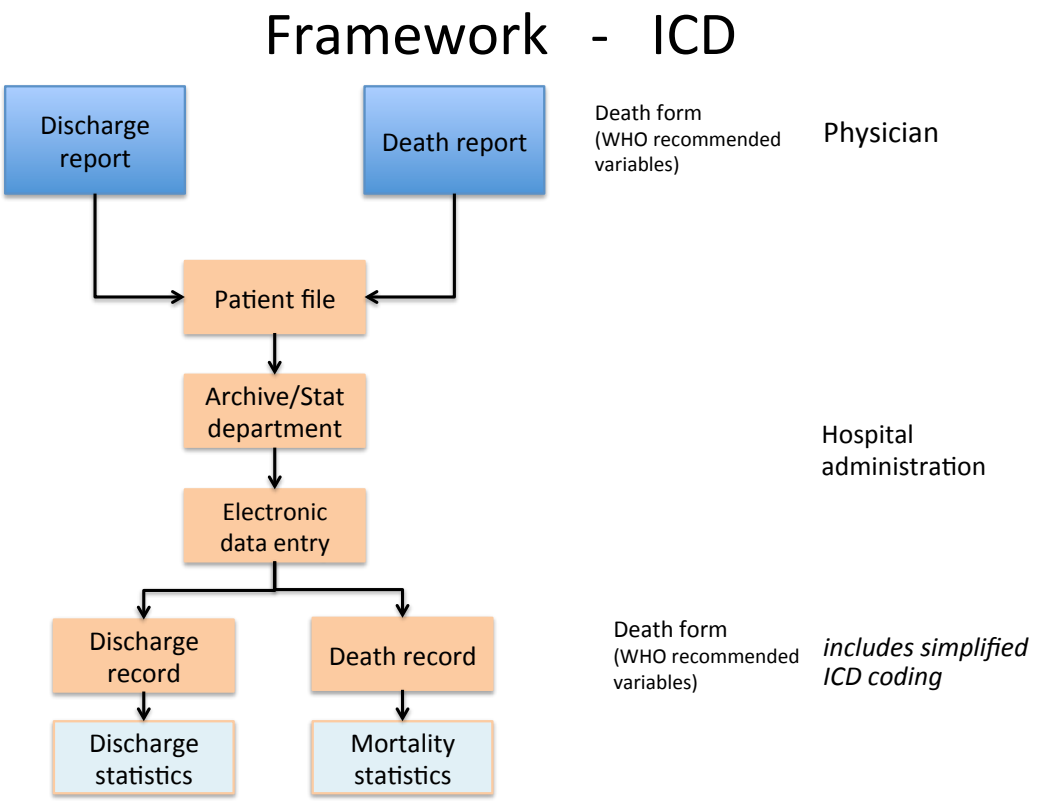
Prerequisites

Implement the WHO medical certificate of cause of death.

Physicians are trained in filling in the WHO medical certificate of cause of death.

Ideally, a list of causes reported on local death records is compiled (local index or dictionary) and linked to the SMoL. A coding specialist and a separate ICD correspondence list will help to pre-code the local list of terms with the help of the ICD index.

The workflow for collection of cause of death information is not different from the one for formulating and archiving a hospital discharge report.



Deaths in the Hospital System

Health care facilities, especially hospitals, are critical sources of data on mortality by age, sex and cause. These statistics are important markers of quality of hospital care and provide essential inputs for national and subnational health policy and planning. Facility-based mortality statistics should be seen as part of the backbone of a country system of continuous mortality data collection and as key elements of the civil registration and vital statistics (CRVS) system, for example, through notification of deaths and associated characteristics to civil registries.

Hospitals should routinely report diagnoses and deaths for administration and quality assurance purposes. Physicians should be assigned responsibility for certifying deaths and in particular their causes. They should have the training and skills necessary to do so in accordance with global standards, namely the International Classification of Diseases (ICD). Every death can be seen by a physician and has been diagnosed during the stay in the hospital. In addition, the health care system can link to other sources of mortality data, for example mortuary data. Thus, hospital reporting is a good starting point for the collection of statistics on mortality, including causes of death.

Investments

Time, money and personnel are necessary for:

1. **Planning**, national coordination, and ongoing monitoring of the mortality collection system
2. **Sharing Information** about the strategy, the project and its progress with stakeholders and involved parties
3. **Building an infrastructure** that has at least one electronic data collection point per facility
4. **Establishing a process** and an infrastructure that makes sure the reported **information is forwarded** to the subnational and national level.
5. **Ensuring** that data collection and management **personnel** can input data and keep the system functioning at local, subnational and national level
6. **Conducting training** and refresher courses for managers, physicians, data personnel and other involved parties; material needs to be adapted and translated
7. **Analyzing** the data and dissemination of the information
8. **Piloting** tools, training, and workflows
9. **Establishing** and running a national **centre of excellence** that can provide technical support

Implementing a simple system

Implementing a simple system for collection of mortality and causes of death information should be done with scalability and sustainability in mind, in terms of the level of cause specific detail, completeness and timeliness of hospital reporting, and mechanisms for dealing with deaths that occur outside the hospital.

Some specific aspects that relate to the implementation of a simple system for collection of causes of death are mentioned here:

1. Even in settings where physicians are not always available to ensure medical certification of cause of death, all deaths occurring in hospitals and other health facilities should be reported by age, sex, date of death and location (see also Annex for additional variables).
2. It is essential to be clear that the initial hospital admission diagnosis is not identical with the eventual cause of death. Causes of death must always be reported and stored separately from information on the initial diagnosis and treatments received.
3. Reporting forms for causes of death – whether electronic or in paper – should be in line with ICD standards. In such way, the system can be expanded at later stages without troubling the physicians. Also preexisting training material can be easily reused.
4. A startup list of causes of death (see Annex – Startup Mortality List) can deliver data in a timely manner and keep the burden of implementing a coding system low in new mortality systems. This list is fully compatible with ICD, so that expansion into more detail at a later stage is easily possible. This compatibility also facilitates comparison of so collected data with other sources.
5. Training of physicians is critical to success. The physicians need to understand the concept of underlying cause of death, the notion of the sequence of events that lead to death, and the importance of reporting complete diagnoses. Good input from certifying physicians at the beginning will result in useful data and simplify the task for statistical coders.
6. The coders need to be able to transform the reported terms into statistical ICD codes; a local index containing all terms that are usually reported will facilitate this task, in conjunction with a set of simplified coding instructions and related training. Later, there may be expansion to centralized coding and use of automated systems.
7. Data analysis and reporting back to the originators allow for quality assurance and motivate the physicians to provide good quality input to the system.

Materials

A set of materials is made available in support of designing the process and conducting training:

1. **Short list of causes** of death that is in line with ICD has been designed by WHO
2. Simple **coding instructions**
3. Instructions for creation a **local or national index**
4. **Training material** for physicians
5. **A template plan for** designing and **rollout** of ICD and cause of death data collection in hospitals.

Appendix 1 Minimum Variables for Cause of Death Collection

Even in settings where physicians are not always available to ensure medical certification of cause of death, all deaths occurring in hospitals and other health facilities should be reported by age, sex, date of death and location.

In case the data collection is expanded to serve also for purposes of civil registration, the dataset recommended by the UN Statistical Division should be included.

In a second implementation step also the optional additional variables about the circumstances of the death may be collected, where possible. They allow for data edits and provide epidemiologically relevant information for maternal and perinatal cases.

Dead on arrival cases should not be included in the data collection.

Minimum Hospital Dataset

Variables that need to be collected for cause of death information are:

1. Hospital ID
2. Case ID
3. Age (for neonates in hours, infants in months, children and adults in completed years)
4. Sex (male, female, undefined)
5. Causes of death (see detail below)
6. Reason for admission to the hospital after assessment
7. Pregnancy status (pregnant, intrapartum/delivery, puerperium, none)
8. Foetal death (yes /no)

International Medical Certificate of Cause of Death

Causes of death should be collected using the international form of medical causes of death wherever possible.

At the core there is the reporting of the sequence of cause of death.

The additional detail on surgery, autopsy, external cause, perinatal and maternal aspects improves the quality of coding, and can also be used by existing automated coding tools. WHO recognizes that not all data may be able to be collected in emerging systems. Hospital records usually will have that information, because this information is also retained for medical purposes.

Please find the form on the next page.

Medical certificate of cause of death form

Administrative Data (can be further specified by country)																
Sex	☐ Female				☐ Male				☐ Unknown							
Date of birth	D	D	M	M	Y	Y	Y	Y	Date of death	D	D	M	M	Y	Y	Y	Y

***Frame A*: Medical data: Part 1 and 2**				
1 Report disease or condition directly leading to death on line a Report chain of events in due to order (if applicable) State the underlying cause on the lowest used line			Cause of death	Time interval from onset to death
		a		
		b	Due to:	
		c	Due to:	
		d	Due to:	
2 Other significant conditions contributing to death (time intervals can be included in brackets after the condition)				

***Frame B*: Other medical data**																
Was **surgery** performed within the last 4 weeks?	☐ Yes	☐ No	☐ Unknown													
If yes please specify date of surgery	D	D	M	M	Y	Y	Y	Y								
If yes please specify reason for surgery (disease or condition)																
Was an autopsy requested?	☐ Yes	☐ No	☐ Unknown													
If yes were the findings used in the certification?	☐ Yes	☐ No	☐ Unknown													
Manner of death:																
☐ Disease	☐ Assault	☐ Could not be determined														
☐ Accident	☐ Legal intervention	☐ Pending investigation														
☐ Intentional self harm	☐ War	☐ Unknown														
If external cause or poisoning:	Date of injury	D	D	M	M	Y	Y	Y	Y							
Please describe how external cause occurred (If poisoning please specify poisoning agent)																
Place of occurrence of the external cause:																
☐ At home	☐ Residential institution	☐ School, other institution, public administrative area	☐ Sports and athletics area													
☐ Street and highway	☐ Trade and service area	☐ Industrial and construction area	☐ Farm													
☐ Other place (please specify):	☐ Unknown															
Fetal or infant Death																
Multiple pregnancy	☐ Yes	☐ No	☐ Unknown													
Stillborn?	☐ Yes	☐ No	☐ Unknown													
If death within 24h specify number of hours survived			Birth weight (in grams)													
Number of completed weeks of pregnancy			Age of mother (years)													
If death was perinatal, please state conditions of mother that affected the fetus and newborn																
For women, was the deceased pregnant?	☐ Yes	☐ No	☐ Unknown													
☐ At time of death	☐ Within 42 days before the death															
☐ Between 43 days up to 1 year before death	☐ Unknown															
Did the pregnancy contribute to the death?	☐ Yes	☐ No	☐ Unknown													

Minimum Statistical Dataset recommended for Civil Registration (United Nations Statistical Division - UNSD)

This detail is the minimum mortality dataset to be collected for statistical purposes in civil registration recommended by the United Nations Statistical Division. Many will be also routinely collected as part of the facility or community cause of death collection. WHO recognizes that not all data may be able to be collected in emerging systems.

For all deaths:

(i)Characteristic of the event

1. Date of occurrence
2. Place of occurrence
3. Place of registration
4. Cause of death
5. Certifier

(ii) Characteristics of the decedent

1. Date of birth
2. Sex
3. Marital status
4. Place of usual residence
5. Place of usual residence of the mother (for deaths under one year of age)

For foetal deaths add the following:

(iii) Characteristics of the mother

1. Date of birth
2. Date of last previous live birth
3. Previous live births
4. Previous stillbirths
5. Previous abortions
6. Date of marriage
7. Place of usual residence

(iv) Characteristics of the father

1. Date of birth
2. Place of usual residence

Appendix 2 – ICD-10 Startup Mortality List (ICD-SMoL)

For neonatal and maternal cases, look up the neonatal and maternal section first.
Follow the exclusions at the beginning of the sections. Injuries are coded to the originating external cause.

Note: There is no reference to chapter 19 of ICD-10, because in single cause tabulation the external cause is tabulated, and not the injury.

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
ICD-10 chapter 1		**Certain infectious and parasitic diseases**		**excludes** respiratory infections not listed here
	5-1	Cholera		
	5-2	Typhoid and paratyphoid		
	5-3	Other and unspecified diarrhoeal diseases		**includes** gastroenteritis, other foodborne infections
	5-4	Tuberculosis		**excludes** HIV disease, with tuberculosis
	5-4.1		Respiratory tuberculosis, confirmed bacteriologically or histologically	
	5-4.9		Other tuberculosis	
	5-5	Plague		
	5-6	Leprosy		
	5-7	Tetanus		
	5-8	Diphtheria		
	5-9	Whooping cough		
	5-10	Meningococcal infection		**includes** meningococcal meningitis, **excludes** unspecified meningitis (see nervous section)
	5-11	Septicaemia		
	5-12	Infections with a predominantly sexual mode of transmission		
	5-12.1		Syphilis	
	5-12.9		Other and unspecified infections with a predominantly sexual mode of transmission	
	5-13	Acute poliomyelitis		
	5-14	Rabies		

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
	5-15	Dengue		
	5-16	Yellow fever		
	5-17	Other viral haemorrhagic fevers		
	5-18	Measles		
	5-19	Viral hepatitis		
	5-19.1		Hepatitis B	
	5-19.8		Other viral hepatitis	
	5-19.9		Unspecified viral hepatitis	
	5-20	Human immunodeficiency virus [HIV] disease		
	5-20.1		HIV disease with tuberculosis	
	5-20.2		Other and unspecified HIV disease	
	5-21	Malaria		
	5-21.1		Malaria, parasitologically confirmed	
	5-21.9		other and unspecified malaria	
	5-22	Leishmaniasis		
	5-23	Trypanosomiasis		
	5-24	Schistosomiasis		
	5-25	Other and unspecified infectious diseases		
ICD-10 chapter 2		**Neoplasms**		**includes** all neoplasms of all organ systems, including cancer
	5-26	Malignant neoplasm of lip, oral cavity and pharynx		
	5-27	Malignant neoplasm of Oesophagus		
	5-28	Malignant neoplasm of stomach		
	5-29	Malignant neoplasm of colon, rectum and anus		
	5-30	Malignant neoplasm of liver and intrahepatic bile ducts		
	5-31	Malignant neoplasm of pancreas		
	5-32	Malignant neoplasm of larynx		
	5-33	Malignant neoplasm of trachea, bronchus and lung		
	5-34	Malignant melanoma of skin		
	5-35	Malignant neoplasm of breast		
	5-36	Malignant neoplasm of cervix		

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
		uteri		
	5-37	Malignant neoplasm of other and unspecified parts of uterus		
	5-38	Malignant neoplasm of ovary		
	5-39	Malignant neoplasm of prostate		
	5-40	Malignant neoplasm of bladder		
	5-41	Malignant neoplasm of meninges, brain and other parts of central nervous system		
	5-42	Non-Hodgkin lymphoma		
	5-43	Multiple myeloma and malignant plasma cell neoplasms		
	5-44	Leukaemia		
	5-45	Other and unspecified malignant neoplasms		
	5-46	Benign neoplasms		
ICD-10 chapter 3		**Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism**		**excludes** neoplasms and cancers
	5-47	Anaemias		
	5-48	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism		
ICD-10 chapter 4		**Endocrine, nutritional and metabolic diseases**		**excludes** neoplasms and cancers
	5-49	Diabetes mellitus		
	5-50	Protein-energy malnutrition		
	5-51	Other and unspecified endocrine, nutritional and metabolic diseases		
ICD-10 chapter 5		**Mental and behavioural disorders**		
	5-52	Alcohol use disorders		
	5-53	Drug use disorders		
	5-54	Other mental and behavioural disorders		

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
ICD-10 chapter 6		**Diseases of the nervous system**		**excludes** neoplasms and cancers
	5-55	Meningitis		
	5-56	Alzheimer's disease, dementias		
	5-57	Other diseases of the nervous system		
ICD-10 chapter 7	**5-58**	**Diseases of the eye and adnexa**		**excludes** neoplasms and cancers
ICD-10 chapter 8	**5-59**	**Diseases of the ear and mastoid process**		**excludes** neoplasms and cancers
ICD-10 chapter 9		**Diseases of the circulatory system**		**excludes** neoplasms, cancers and cardiac arrest (I46)
	5-60	Acute rheumatic fever and chronic rheumatic heart diseases		
	5-61	Hypertensive heart diseases		
	5-62	Ischaemic heart diseases		**includes** myocardial infarction
	5-63	Other heart diseases		
	5-64	Cerebrovascular diseases		
	5-65	Other and unspecified diseases of the circulatory system		
ICD-10 chapter 10		**Diseases of the respiratory system**		**excludes** neoplasms and cancers
	5-66	Influenza		
	5-67	Pneumonia		
	5-68	Other acute lower respiratory infections		**excludes** infections specified in the infectious disease section
	5-69	Chronic lower respiratory diseases		**includes** chronic obstructive lung disease, asthma
	5-70	Other and unspecified diseases of the respiratory system		

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
ICD-10 chapter 11		**Diseases of the digestive system**		**excludes** neoplasms and cancers
	5-71	Gastric and duodenal ulcer		
	5-72	Appendicitis		
	5-73	Liver cirrhosis		
	5-74	Other diseases of the digestive system		
ICD-10 chapter 12	**5-75**	**Diseases of the skin and subcutaneous tissue**		**excludes** neoplasms and cancers, melanoma of skin
ICD-10 chapter 13	**5-76**	**Diseases of the musculoskeletal system and connective tissue**		**excludes** neoplasms and cancers
ICD-10 chapter 14		**Diseases of the genitourinary system**		**excludes** neoplasms and cancers
	5-77	Glomerular and renal tubulo-interstitial diseases		**includes** pyelonephritis
	5-78	Other and unspecified diseases of the genitourinary system		**includes** urinary tract infection, **excludes** pyelonephritis
ICD-10 chapter 15		**Pregnancy, childbirth and the puerperium**		**excludes** tetanus, external causes
	5-79	Pregnancy with abortive outcome		
	5-80	Maternal hypertensive disorders		
	5-81	Obstructed labour		
	5-82	Maternal haemorrhage		
	5-83	Maternal sepsis		
	5-84	Other direct obstetric deaths		**excludes** tetanus
	5-85	Indirect obstetric deaths		

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
ICD-10 chapter 16		**Certain conditions originating in the perinatal period**		**excludes** tetanus, external causes, malformations, neoplasms, cancers, endocrine diseases (e.g. diabetes mellitus)
	5-86	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery		
	5-87	Disorders relating to length of gestation and fetal growth		
	5-87.1		Prematurity	
	5-87.2		Low birth weight	
	5-87.9		Other and unspecified disorders relating to length of gestation and fetal growth	
	5-88	Birth trauma		
	5-89	Intrauterine hypoxia and birth asphyxia		
	5-90	Other and unspecified perinatal conditions		
ICD-10 chapter 17		**Congenital malformations, deformations and chromosomal abnormalities**		
	5-91	Congenital hydrocephalus and spina bifida		
	5-92	Congenital malformations of the heart		
	5-93	Down syndrome and other chromosomal abnormalities		
	5-94	Other and unspecified congenital malformations		
ICD-10 chapter 18	**5-95**	**Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified**		**includes** cause of death not specified, or when only 'respiratory arrest' or 'cardiac arrest' is reported

Reference to ICD-10 chapter	Code	Cause of death	Optional subcategory	Coding hints
ICD-10 chapter 20		**External causes of morbidity and mortality**		
	5-96	Road traffic accidents		
	5-97	other transport accidents		
	5-98	Falls		
	5-99	Accidental drowning and submersion		
	5-100	Exposure to smoke, fire and flames		
	5-101	Exposure to forces of nature		**includes** earthquake, tsunami, storm and flood
	5-102	Accidental poisoning by and exposure to noxious substances		**includes** noxious substances eaten as food **excludes** foodborne infections (see infectious diseases)
	5-102.1		Alcohol poisoning	
	5-102.2		Drug poisoning	
	5-102.9		Other and unspecified poisoning	
	5-103	Intentional self-harm		
	5-104	Assault		
	5-105	Conflict and war		
	5-106	Other and unspecified external causes		

Appendix 3 – Correspondence table ICD-10 to Startup Mortality List (ICD-SMoL)

SMoL Code	ICD-10 code
5-1	A00
5-2	A01
5-3	A02-A09
5-4	A15-A19
5-4.1	A15-A16
5-4.9	A17-A19
5-5	A20
5-6	A30
5-7	A33-A35
5-8	A36
5-9	A37
5-10	A39
5-11	A40-A41
5-12	A50-A64
5-12.1	A50-A53
5-12.9	A54-A64
5-13	A80
5-14	A82
5-15	A90-A91
5-16	A95
5-17	A92-A94
5-18	B05
5-19	B15-B19
5-19.1	B16
5-19.8	B15, B17-B18
5-19.9	B19
5-20	B20-B24
5-20.1	B20
5-20.2	B21-B24
5-21	B50-B54
5-21.1	B50-B53
5-21.9	B54
5-22	B55
5-23	B56-B57

SMoL Code	ICD-10 code
5-24	B65
5-25	A21-A32, A38, A42-A49, A65-A79, A81, A83-A89, B00-B04, B06-B09, B25-B49, B58-B64, B66-B99
5-26	C00-C14
5-27	C15
5-28	C16
5-29	C18-C21
5-30	C22
5-31	C25
5-32	C32
5-33	C33-C34
5-34	C43
5-35	C50
5-36	C53
5-37	C54-C55
5-38	C56
5-39	C61
5-40	C67
5-41	C70-C72
5-42	C82-C85
5-43	C90
5-44	C91-C95
5-45	C17, C23-C24, C26-C31, C37-C41, C44-C49, C51-C52, C57-C60, C62-C66, C68-C69, C73-C81, C86-C88, C96-C97
5-46	D00-D48
5-47	D50-D64
5-48	D65-D89
5-49	E10-E14
5-50	E40-E46
5-51	E00-E07, E15-E35, E50-E90
5-52	F10
5-53	F11-F19
5-54	F01-F09, F20-F99
5-55	G00-G03
5-56	G30
5-57	G04-G26, G31-G99
5-58	H00-H59
5-59	H60-H95

SMoL Code	ICD-10 code
5-60	I00-I09
5-61	I10-I15
5-62	I20-I25
5-63	I26-I45, I47-I52
5-64	I60-I69
5-65	I70-I99
5-66	J09-J11
5-67	J12-J18
5-68	J20-J22
5-69	J40-J47
5-70	J00-J06, J30-J39, J60-J99
5-71	K25-K27
5-72	K35-K38
5-73	K74
5-74	K00-K23,K28-K31, K40-K73, K75-K93
5-75	L00-L99
5-76	M00-M99
5-77	N00-N16
5-78	N17-N99
5-79	O00-O08
5-80	O10-O11, O13-O16
5-81	O64-O66
5-82	O20, O67, O72
5-83	O85
5-84	O12, O21-O63, O68-O71, O73-O84, O86-O97
5-85	O98-O99
5-86	P00-P04
5-87	P05-P08
5-87.1	P07.2-P07.3
5-87.2	P05, P07.0-P07.1
5-87.9	P08
5-88	P10-P15
5-89	P20-P21
5-90	P37-P96
5-91	Q03, Q05
5-92	Q20-Q24
5-93	Q90-Q99
5-94	Q00-Q02, Q04, Q06-Q18, Q25-Q89
5-95	R00-R99, I46

SMoL Code	ICD-10 code
5-96	V80, V82-V87, V89
5-97	V81, V88, V90-V99
5-98	W00-W20, W30-W31
5-99	W65-W74
5-100	X00-X09
5-101	X30-X39
5-102	X40-X49
5-102.1	X45
5-102.2	X40-X44
5-102.9	X46-X49
5-103	X60-X84
5-104	X85-Y09
5-105	Y35-Y36
5-106	W21-W64, W75-W99, X10-X29, X50-X59, Y10-Y29, Y33-Y34, Y37-Y59

Appendix 4 – SMoL Rules for selection of the single underlying cause of death

The rules are derived from the ones described in ICD-10 Volume 2 with the simplifications possible due to the reduced number of categories of the ICD SMoL.

General rules

SR1 – ***Single cause listed***

When only one condition is reported on the certificate, in Part 1 or Part 2, select this as the underlying cause of death and tick the box in the column "underlying".

SR2 – ***Multiple causes listed***

If there is more than one condition reported in Part 1 usually the lowest used line in 1a-1d will be the underlying cause.

SR3 – ***Multiple causes on the same line***

If there are multiple entries on one line, ask the doctor which is the relevant one. If this is not possible, only enter the first one.

SR4 – ***Implausible sequence***

If the sequence of listed conditions looks strange, (e.g. hypertension causing metastases) refer back to the doctor that completed the certificate for clarification. If this is not possible, code the first line from the top that is plausible.

SR5 – ***Consistency between sex and diagnosis***

If the underlying cause conflicts with the sex of the decedent, then refer back to the doctor. If this is not possible, and the underlying cause is fully incompatible then enter on the lowest line "*Other ill-defined and unspecified causes of mortality*" and chose this as the underlying cause.

SR6 – ***Nonspecific modes of dying***

Do not select modes of dying such as - "cardiac arrest", "heart failure", or "respiratory failure" – as the underlying cause if any other condition is mentioned on the form.

SR7 – ***Selecting precise terms***

If the underlying cause on the lowest used line describes a condition in general terms and another term is reported on the certificate that provides more precise information about the site or nature of this condition, select this more precise term as the underlying cause.

Rules for injuries by external causes

SR8 – ***Accident, poisoning or violence***

If there is an accident, poisoning, or violence mentioned in 1a-1d, then find out the cause of the accident, poisoning or violence and select this as the underlying cause.

NOTE: Do not select the injury, you must add an external cause and if not known put '*unknown external cause*'.

SR9 – ***Suicide***

If in 1a-1d there is a mention of suicide, select this as the underlying cause.

Rules for Maternal deaths

SR10 – ***Mention of a pregnancy condition***

If there is a mention of pregnancy on the form, and the tick box confirms that the pregnancy influenced the death, the underlying cause of death must be from the section *Pregnancy, childbirth and the puerperium*.

SR11 – ***No mention of a pregnancy condition***

If there is a mention of pregnancy on the form, and the tick box confirms that the pregnancy influenced the death, but no pregnancy condition is mentioned on lines 1a-1d, then enter on the lowest line "*Indirect obstetric death*" and choose this as the underlying cause.

Rules for Perinatal deaths

SR12 – ***General rule for UCOD for perinatal deaths***

For neonatal or fetal deaths, the underlying cause of death must be from the section *Certain conditions originating in the perinatal period*, except in cases of external causes and related injuries.

SR13 – ***Mother's condition mentioned as UCOD***

For neonatal or fetal deaths, if there is a mention of a condition of the mother on the lowest used line of 1a-1d, then enter on the lowest line in 1a-1d "*Fetus and newborn affected by maternal factors*" and select this as the underlying cause.

SR14 – ***Low birthweight and prematurity***

For neonatal or fetal deaths, when both low birthweight and prematurity are mentioned, priority is to be given to low birthweight.

Rules for infections

SR15 – ***Infections to be selected as UCOD***

If any of the following infections are mentioned in 1a-1d, select this as the underlying cause, no matter what is written on the lowest used line:

Chagas	Plague
Cholera	Poliomyelitis
Dengue	Rubella
Diphtheria	Scarlet fever
Hepatitis A, B or C, acute or chronic	Tetanus
Leishmaniasis	Trachoma
Leprosy	Smallpox
Malaria	Viral haemorrhagic fever (Ebola)
Measles	Whooping cough
Meningococcal disease	Yellow fever

SR16 - ***Infections to be selected as UCOD except when HIV mentioned***

If any of the following infections are mentioned in 1a-1d, select this as the underlying cause:

Consequences of tuberculosis	Shigelloses
Paratyphoid	Tuberculosis
Salmonella	Typhoid

EXCEPTION: If the line below any of the above mentions HIV, select HIV as the underlying cause.

SR17 – ***HIV and Tuberculosis***

If HIV is mentioned and the line above mentions Tuberculosis, then correct the entry and type "*HIV with Tuberculosis*".

Rules for neoplasms (cancer, tumour)

SR18 – ***General rule for selecting neoplasms as UCOD***

If there is a mention of a cancer in 1a-1d select the cancer as the underlying cause.

EXCEPTION: If the cancer is reported as due to HIV, select HIV as the underlying cause.

Rules for body system specific conditions

SR19 – ***Diabetes mellitus***

If there is a mention of Diabetes mellitus in 1a-1d, select the diabetes mellitus as the underlying cause.

EXCEPTION: If Diabetes is due to pancreatitis, then select pancreatitis as the underlying cause.

SR20 – ***Dehydration and diarrhoeal conditions***

If there is a mention of dehydration in 1a-1d and also mention of any diarrhoeal condition anywhere on the form, add the diarrhoeal condition on the lowest line and select this as the underlying cause.

SR21 – ***Cancer and certain cardiovascular conditions***

If cancer is recorded on the lowest used line and there is mention of either Hypertension, Angina pectoris, Ischemic heart disease or Arteriosclerosis, on any of the lines above the cancer, select either Hypertension, Angina pectoris, Ischemic heart disease or Arteriosclerosis as the underlying cause.

SR22 – ***Influenza***

If there is mention of Influenza in 1a-1d, select Influenza as the underlying cause.

SR23 – ***Pneumonia, Dementia and Mental retardation***

If there is a mention of Pneumonia, Dementia or Mental retardation without anything entered on the line below, ask the doctor, if possible, for the cause of death and enter that in the line below and select it as the underlying cause. If no further information is available, select the mentioned condition as the underlying cause.

SR24 – ***Embolism, Decubitus ulcer, Cystitis, Urinary infection and Cachexia***

If there is a mention of embolism, decubitus ulcer, cystitis, urinary infection or cachexia on the lowest used line (or they are mentioned as the only entry) then ask the doctor, if possible, for the cause of death. Enter that condition and select it as the underlying cause. If no further information is available, select the mentioned condition as the underlying cause.

SR25 – ***Surgery***

If surgery is mentioned on the lowest used line, and a surgical condition is mentioned somewhere on the certificate (e.g. infection, tumour, injury) select the surgical condition as the underlying cause. If the surgical condition is an injury, then check the cause of the injury (ask the doctor, if possible), and add that to the list and select the cause of the injury as the underlying cause.

SR26 – ***Signs and Symptoms***

If a sign or symptom is mentioned in 1a-1d, check with the doctor if there is a more specific condition and enter this condition and select it as the underlying cause. If this is not possible, just select the sign or symptom as the underlying cause.