vital records

# The International Classification of Diseases: A Key for Deciphering Death Certificates George G. Morgan looks at one type of medical coding that can assist you in your research

E ARE ALL FAMILIAR WITH DOCTORS AND LAB technicians entering codes onto forms and into databases to indicate the procedures which they have performed. That coding facilitates insurance claims processing and billing.

Governments and medical professionals have long been interested in diseases and mortality. In the US, for example, the federal government included a mortality schedule in the 1850, 1860, 1870, 1880, and 1885 censuses. Its purpose was to enumerate individuals who had died in the 12 months prior to Census Day and their causes of death. The government and physicians were interested in the health of the population and any epidemiological trends that might be recognized. The federal government used the mortality schedules to gather statistical information for analysis.

While medical coding might seem like a more modern activity, you might be surprised to learn that it has been done for more than 150 years in some countries. It also is becoming more universal around the world.

You will be pleased to know that one particular type of medical coding can help with your genealogical research and analysis.

### Introducing the ICD

The International Classification of Diseases, or ICD, has become the international standard diagnostic tool for tracing and analyzing causes of death. (The ICD is more formally known as the International Statistical Classification of Diseases and Related Health Problems.) It uses codes to designate each specific cause of death.

Be aware, however, that what you may have considered a meaningless code notation on a death certificate is actually an ICD code. This can be helpful when the physician's handwriting is illegible. It can be particularly valuable when compiling a family medical genealogy.

The development of the ICD began in London in 1860 with Florence Nightingale, the English reformer, statistician, and founder of modern nursing. While attending a statistical conference there, she proposed a model for collecting hospital data concerning diseases and causes of mortality. French physician Jacques Bertillon introduced the *Bertillon Classification of Causes of Death* (BCCD) in 1893. The system was adopted by a number of countries and was further revised, and in 1898, the American Public Health Association recommended that the classification system be used in the United States, Canada, and Mexico.

Since that time, use of the ICD has expanded and has been revised and expanded. Responsibility for the review and revisions has changed over time. The World Health Organization (WHO) assumed responsibility in 1948 for preparing and publishing the revisions to the ICD every ten years, and it published revisions in 1957 and 1969. Typically, a revision is released with an effective date for beginning its use and a date when full compliance is expected. The ICDs for each of the revisions can be found at www.wolfbane.com/icd/index.html.

## The ICD Coding System

The ICD uses numeric, and later alpha-numeric, codes assigned to causes of death. A code is to be entered on every death certificate to indicate the primary cause of death. In some cases, a code may also be entered to indicate a significant secondary cause.

The first revision of the ICD was published in 1900 and included 1-3 digit codes for 191 causes of death. Figure 1 shows a portion of that ICD.

1	Small-pox: Vaccinated	050 Scarlet fever 051 Streptococcal sore throat
2	Small-pox: Vaccinated	051 Streptococcal sore throat 052 Erysipelas
-		052 Erysipelas 053 Septicaemia and pyaemia
3	Small-pox: Doubtful	053.0 Streptococcus
4	Cow-pox and other effects of vaccination	
5	Chicken-pox	053.1 Staphylococcus 053.2 Pneumococcus
6	Measles (Morbilli)	053.3 Other specified organism
7	German measles	053.4 Organism unspecified
8	Scarlet fever	053.4 Organism unspecified
•	Typhus	055 Diphtheria
10	Plague	056 Whooping cough
11	Relapsing fever	056.0 Without mention of pneumonia
12	Influenza	056.1 With pneumonia
13	Whooping cough	057 Meningococcal infections
14	Mumps	057.0 Meningococcal meningitis
15	Diphtheria	057.1 Acute and unspecified meningococcaemia
16	Cerebro-spinal fever	057.2 Chronic meningococcaemia
17	Pyrexia (origin uncertain)	057.3 Other forms of meningococcal infection
18	Enteric fever	058 Plague
19	Asiatic cholera	058.0 Bubonic
20	Diarrhoea due to food	058.1 Pneumonic
21	Infective enteritis, Epidemic diarrhoea	058.2 Other
22	Diarrhoea (not otherwise defined)	059 Tularaemia
23	Dysentery	060 Leprosy
4	Tetanus	060.0 Lepromatous leprosy
		060.1 Neuroleprosy
25	Malaria	060.2 Mixed
26	Rabies, Hydrophobia	060.3 Unspecified
27	Glanders	061 Tetanus
28	Anthrax (Splenic fever)	062 Anthrax

LEFT: Figure 1 – A portion of ICD Revision 1 (From Wolfbane Cybernetic Ltd.) RIGHT: A portion of the 1948 ICD Revision 6 began using three- and four-digit codes with decimal points to indicate sub-code. (From Wolfbane Cybernetic Ltd.)

Revision 2, published in 1908, expanded the list and added alphabetic characters designating more granular subsets of specific code categories. For example, Code 9 represented several diseases in the throat, specifically: 9A – Diphtheria; 9B – Membranous laryngitis; and 9C – Croup. Tonsillitis, however, is listed as 100A.

The use of additional coding was added to further differentiate subsets of a disease. The ICD Revision 5 of 1938 defined cancers and non-cancerous tumors in

45	· · · · · · · · · · · · · · · · · · ·
45a	Cancer of the lips
45b	Cancer of the tongue
15c	Cancer of other or unspecified parts of buccal cavity and pharynx
16	· · · ·
46a	Cancer of the oesophagus
46b	Cancer of the stomach and ducdenum
46c	Cancer of the intestines other than duodenum or rectum
46d	Cancer of the rectum
46e	Cancer of the liver and biliary passages
46f	Cancer of the pancreas
46g	Cancer of the peritoneum
46h	Cancer of other or unspecified digestive organs
47	
47a	Cancer of the larynx and trachea
47b	Cancer of the lung and pleura
47c	Cancer of unspecified respiratory organs
48	entropy of with posterior and and a state
48a	Cancer of the uterus specified as cancer of cervix
485	Other or unspecified cancer of the uterus
49	Cancer of other female genital organs
50	Cancer of the breast
51	
51a	Cancer of the scrotum
516	Cancer of the prostate
51c	Cancer of other or unspecified male genital organs
52	Cancer of the urinary organs
53	Cancer of the skin (scrotum excepted)
54	Called of the skin (scrotter excepted)
54a	Glioma (not specified as benign)
54b	Sarcoma
54c	Other or unspecified forms of cancer of the brain and other parts of the nervous system
55	other of despectited forms of cancer of the brain and other parts of the nervous system
55a	Cancer of the adrenal glands
55b	Cancer of the bones
55c	Cancer of the thyroid gland
55d	
55d(1	) Cancer of the nose or nasal cavity
55d(2	Cancer of other unspecified organs

Figure 2 – The 1938 ICD Revision 5 shows codes and sub-codes for cancerous diseases. (From Wolfbane Cybernetic Ltd.)

Codes 45 through 57 and subcodes. Figure 2 shows the ICD codes for a portion of those cancers.

Revision 6 in 1948 produced two versions of the ICD. One uses three-digit codes, and expands on those with the addition of more codes using an alphabetic prefix letter of E, N, or Y.

The other version of Revision 6 employs a new format. Three digit codes are used to define a high level category, with four-digit sub-codes to designate specific causes consisting of three number digits, a period (or dot), and a number to represent a subcategory. This replaced the use of a, b, c and (1), (2), etc. to designate a subcategory. Prefix letters E, N, or Y are also used with some numeric codes.

You get the idea by now that the coding varies by time period. In addition, the ICD publications issued lists for use in tabulating the types of mortality beginning in Revision 6 1948, and separate

#### vital records

ICDs for Oncology were published in 1975, 1990, and 2000. These will probably be of little use in your genealogy work, but are interesting to read.

## How Do I Use ICD Codes in Genealogy?

A death certificate contains a vast amount of information. Some of that is primary information, recording data from the same time as the death. Some data is secondary in nature, having usually been provided by an informant who may or may not have known the correct information.

Among the primary information on the certificate is a signed statement by the attending physician attesting to how long the deceased had been in the doctor's care, the date and time of death, and the cause(s) of death.

The ICD was typically added by a clerk who processed the document in an official capacity. The clerk used the current version of the ICD in effect at the time of the death. The ICD code was then used by a governmental agency to statistically attribute the death to a specific, appropriate category/subcategory of causes.

You will use a similar process to learn how the cause of death was ascribed.

- Start by examining the death certificate to determine the date of death.
- Next, visit Wolfbane Cybernetic Ltd.'s ICD page at www.wolfbane.com/icd /index.html, and select the Revision for the most recent year prior to the date of death.
- 3. Open the ICD and review the list of codes and/or descriptions.
  - If the ICD code is listed on the death certificate, you can easily find it on the list.
  - If the ICD code is not apparent on the certificate, remember that it may be written anywhere on the document.
  - If you can read the physician's handwriting, you may be able to use the Find function in your browser to locate the text of any ICD codes.

Let's look at several death certificates using this method to see how the ICDs were listed.

Figure 4 shows the death certificate of Alice May Morgan who died on 15 May 1914 in Vermont. The cause of death listed is "prematurity, convulsions" and the clerk entered a code of 151(1). Consulting the 1909 ICD, you will see the code for "Premature birth" is actually 151A. While the clerk made an error, the written cause of mortality and the code are in agreement.

alie millebuly, the

Alice May Morgan's death certificate from 1914. (From FamilySearch.org)

Figure 5 shows the death certificate of Caroline Alice Carter who died on 26 June 1917 from cancer of the liver. The ICD code 40 is handwritten and circled. The 1909 ICD lists Code 40 as "Cancer of the stomach, liver, etc." and is in agreement.

Casurell 1 ( RECE 22 of torran ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	STATE CERTIFICATE OF DEATH 321 5.5209		
me me Citaline alice (	Parter 1/3/2		
PERSONAL AND STATISTICAL PARTICULARS	MEDICAL CERTIFICATE OF SEATH		
franke confine and and and and	ALTE OF DELTH		
DATE OF DETTO Que 23 ST			
ADE 63 10 9 10000	Set int on ball does		
accurations with a farmer	The CAREE OF DELTHY WE IN RECEIPT		
prinske biel d'unt	1.10		
EDUCATIONAL ATTAINMENTS			
Burly Jok, Oracule MC	age		
Marian Hilter Whitefield	m R. F. warnen Ro		
of participant Commen Conty he	June 28 mill and Theorement Here		
a of momen lafting Briggs	<ul> <li>Where the Descent Corumn Dearm, or, in deaths from Version Coruma, simulation (1) Waining the International (2) whether Accessive as, by Persional, or Howerman, LINETE OF MEMORY and (2) whether Accessive and the Internation Corumnition of Memory and Corumnition of</li></ul>		
Winness Conserve County			
THE ABOVE IS TRUE TO THE BEST OF BY KEDDREDGE	Where was discuss contracted.     H exit of prints of dealed.     Prover or     end resolution.		
mabaue ne	PLACE OF BEESEN OR RESERVEN BATE OF BURNEL		
- Jun 28 17 78. 7. Warry	metrane undertak metrane to.		

Caroline Alice Carter's death certificate from 1917. (From Ancestry.com)

The death certificate for Brisco Holder, who died on 17 May 1949, shows cause of death as "Pulmonary Tuberculosis". Where is the ICD? The form asks for it to be entered in Field 18, but that is blank. There are actually two ICD codes shown, both listed elsewhere. Code 13 in the 1948 ICD, entered in Field 21c, represents "Late effects of tuberculosis of bones and joints." Code 002 (for this there is no X suffix in the ICD) represents "Pulmonary tuberculosis". This example shows that you may need to look elsewhere on the certificate to find an ICD

HUED MAY 2	7 1040	THE DIVISION	OF HE	ALTH OF MISSOUR	1	
	34770	31	8 .	CATE OF DEA		4000
BIRTH NO.				RIMARY RED. DIST. P		CONTRACTOR OF CONT
L PLACE OF DEA	тн		: .	2. USUAL, RESIDE	b. COUNTY	if lasticution: rasidones befor advolution
b. CITY (U petatie and OR TOWN St.	Louis, Mo.	Compating STAY 6	IGTH OF	OR	BOUTI Tale librit, write RURAL and she	vermining) //
d. FULL NAME OF ON HOSPITAL OR INSTITUTION	Louis Cit	y Hospital #1.	ar location)	d. STREET	Walnut. Street	5- 0
1. NAME OF DECEASED (Trease Print)	a. (First)	B. (Middle BRISCO HOLI	Sec.	c. (Last)	OF	(Day) (Day) (Year)
	COLOR OR RACE			A DATE OF BIRTH	9. AGE (Is your   #	
IOn. LISUAL OCCUPATIO	16 ecilize htad of a set	ID. KIND OF BUSINES		II. BARTHPLACE (Boss of	the second se	12. CITIZEN OF WHA
3a. FATHER'S HANE		135. NOTHER'	S MATOEN		14. NAME OF HUSBAND OR	WIFE
Greenberry	Halden			nknown		
IS. WAS DECEASED EVE	R IN U.S. ARMED	FORCEST / 16. SOCIAL S	SECURITY	17. INFORMANT'S	SIGNATURE OR NAME pital, Record	ADDRESS
IS CAUSE OF DEATH		ME	DICANO	ERTIFICATION	Land	I INTERVAL BETWEEN
Enter only employee per inter for (a), (b), and (c)	I, DISEASE OR C	UNG TO DEATH *(A)	Vi	emoury	Tabaseula	ONSET AND DEATH
"This does not meen the mode of dying, such	ANTECEDENT C			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Caracer
as heart failure, asthenia, alc. It mount the dis-	rise to the shore. the underlying co	ur, (r any, status DUE TO (I anun (a) stating bas last,	···. *	$\mathbf{r} (\mathbf{r}^* (\mathbf{f}), \mathbf{f}) = \mathbf{r}$		
case, tajuen, or complica- tion which coused doeth.		FICANT CONDITIONS -	•		•	
THE DATE OF OPERA-		DINGS OF OPERATION	•••	A the second sec		YES DE AUTOPSYT
EIA. ACCIDENT SUICIDE HOMICIDE	tilgeelitrt	21b. PLACE OF INJURY to g.	. in or about blig. oto.)	Ic. (CITY, TOWN, OR T	OWNSHIP) (COUNT	n BITATO
IId. TIME (Manh) OF INJURY	. (Dur) (Year)	EGent Zie. INJURY OC WHILEAT NOT WORK AT		211. HOW DID INJURY C	CCURT	M2:X.
22. I hereby certifuel	17/29ttended	the deceased from	4/4/49	2:3000 from the	5/17/4919, that .	I last saw the deceased stated above.
alive on 571		(Degre	or sittle)	State of the second		
The SIGNATURE	wany	when the M	AU	1515 L	afavette Ave	15/17/49
Geree 618	1240. DATE 5-24-19	149% Memor	18.000	Y OR CREMATORY	St. J. LOUIS, CH	(State)

Brisco Holder's death certificate from 1949. (From the Missouri Digital Heritage website at https://s1.sos.mo.gov/records/archives/archives/b/deathcertificates/)

Registration Dist. No. 4405 STANDARD CERTII	FICATE OF DEATH 55	002531
	uth Carolina State File No.	1112531
1. PLACE OF DEATH: (a) County York	2. USUAL RESIDENCE: (Where depresed lived. If institution: mating (a) State, S. C. (b) County.	York
aho Rock Hill, S. C. SUKAL Stay: 50 y	(c) City or town TS (II outside corporate limits, write RURAL and ROCK Hill, S. C.	
(d) Full same of hospital or institution: (i) not in hospital or institution, give sever address or location) York County Hospital	(d) Street address (11 rural, give location) 1747 Ebenezer Rd.	
3. NAME OF DECEASED: * (First) b. (Middle (Type or Print) Mary Wils	e (Last) 4. Date of (Most death:	
5. Sex: 6. Color or race: 7. Married, never married, 8. widowed, divorced: (Specify)	Dear One   FCU	.8,1955
10a. Usual occupation: (Cree kind of work does daring most of working life, even if retired) 10b. Kind of busin HOUSEWIfe Domestic	ness 11. Birthplace: (State or foreign course	what country
ISa. Father's name: Joseph M. Wilson Lenora Pat	terson I4. Husband or wife	CL U.S.
15. Was deceased ever in U. S. armed forces? (Tee, me, or maknown) (Il res. give was or dates of service) No.	Watson Barron	Jarron
This does not mean the mode of y is g., much as heart falars. The does to the to (b). The does to the to the does to the the does to the to the does to the the does to the to the does the to the does the to the complication contributing to the does the to the does the to the complication contributing to the does the	RTISICATION	H280
19a. Date of 19b. Major findings of operation:		20. Autopsy?
21a. Accident (Specify) Suicida Home, farm, factory, street, after bldg, etc.)	21c. (Cay, Iowa, or Township) (Com	TES D NO D
21d. Time (Month) (Dey) (Year) (Hour) 21e. Injury occurred of injury:	and any any and any	
22. I hereby certify that I standed the deceased from 1 4- altre on 21 (1,, 19, and that death occurred a 23 (Signature 19,, 19, and that death occurred a 23 (Signature 19,, 19,, 19,, 19,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,, 10,	at (F m., from the causes and on the da	23c Des stand
<u>Hirial</u> 2/10/55 Ebenezer Ce Date rec'd by Registrar's signature:	25. Funeral director	C Address
3-10-5-5-	Bass Funeral Home, Rock	Hill, S. C. From Ma. VSJ

The doctor's handwriting on Mary Wilson Barron's death certificate from 1955 is almost illegible, but the ICD code helps interpret the cause of death. (From Ancestry.com)

code, and that there may be more than one listed.

Mary Wilson Barron died on 8 February 1955 in York County, South Carolina. The physician's handwriting in the Medical Certification area is almost illegible, and no code appears in Field 18 for cause of death. There are two notations on the right side of the Medical Certification area. One of these is the number "4200". The ICD Revision 7 from 1955 is the most recent version, and the four-digit list contains a code 420.0 which represents "Arteriosclerotic heart disease so described". A closer examination of the doctor's handwriting shows "Generalized Arteriosclerosis in the ..." and some other words that this author struggled to interpret. This is another example of the ICD being in another place and, in this case, omitting the decimal in 420.0.

## Record the Information

Use the cause of death associated with the ICD code as you work with the death certificate. You can enter the text of the cause of death in your genealogy database. If your database program allows for the addition of a field or a new fact type, you may also want to begin entering ICD codes. At the least, you can enter it in the notes of the individual as a reference.

You may also want to use the ICD codes to help standardize the causes of death throughout a family line. You can then be more precise and consistent in your documentation. You may want to compile a medical pedigree chart or other report to highlight your family health history.

Now that you have discovered the ICD, spread the word to other genealogists and help them get started using its research strength.

GEORGE G. MORGAN is an internationally recognized genealogy expert who presents across the US and abroad, and who delivers training for genealogical societies and libraries. He is the prolific author of 12 books and hundreds of magazine and online articles. He is co-host of The Genealogy Guys Podcast at http://genealogyguys.com.