

## Cause of Death Text and Codes

A description of the cause of death is obtained from the medical certificate of the cause of death, and codes are allocated, as explained on another page [Death Certificates and Coding the Causes of Death](#). This page describes how the cause of death text and codes are held in the National Records of Scotland (NRS) statistical database.

The cause of death text is held in the statistical database only for deaths which were registered with effect from 1 January 1996. Earlier years' records have 'missing' values in all the 'cause of death text' fields. The information held for 1996 to 1998 (inclusive) reflects the fact that, at that time, Part I had only three lines (the fourth line in Part I was introduced at the start of 1999).

Cause of death codes are held in all the statistical records of deaths, which go back to the beginning of 1974. The maximum number of such codes which the system can hold for any given death was raised from the start of 1996.

### NRS statistical database fields containing the cause of death text

The 'original cause of death' text is the cause of death text that was entered when the death was first registered. It is held in five fields: the first four contain the text that was entered on lines (a) to (d) of Part I of the medical certificate of the cause of death; the final field contains the text that was entered in Part II. The information held here is taken from the original record of the registration of the death, as it was received from the registration office. The content of these fields never changes.

The NRS statistical database also holds what is described as the 'amended cause of death' text in five fields (again, there is a separate field for each line of Part I and for Part II). When the statistical record for the death is created, the content of these fields is identical to that of the original cause of death text fields, as the only information that NRS has at that time is what was supplied in the original registration of the death. However, subsequently, the content of these fields may be amended as and when NRS Vital Events receives further information about individual deaths. These fields' values take account of additions and revisions as a result of (e.g.):

- amendments to the publicly-available cause of death, as recorded in the Register of Corrections etc;
- other changes, which may not be made to the publicly-available record of the cause of death, following NRS Vital Events receiving other information, which was provided solely for statistical purposes - such as:
  - responses to enquiries, made to the doctors who certified the deaths, seeking (e.g.) further details that are needed to enable a more accurate statistical classification of the cause of death;
  - information supplied by pathologists in respect of drug-related deaths;
  - individual statistical records of homicides and road accident deaths, supplied by the Scottish Government's Justice and Transport statistical units;

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- the views of Crown Office / Procurators Fiscal on traumatic and suspicious deaths - for example, were they due to accidents, assault or intentional self-harm; and
- the correction of any typing errors and spelling mistakes etc that are spotted by NRS Vital Events staff.

NRS's coding of the cause of death is based on the information which is held in the amended cause of death text fields.

### **NRS statistical database fields containing cause of death codes**

A field (called "icdcud") contains the underlying cause of death code, based on the amended cause of death text. This is almost always the code that is used for analysis. Further information can be found in the [underlying cause of death codes](#) document.

Separate fields (called 'icdrd0' to 'icdrd9') contain individual codes for up to ten causes of death, based on all the information that is in the amended cause of death text. Usually, one of these ten fields will contain the same value as the underlying cause of death code but that is not always the case (for example, because the rules for determining the code for the underlying cause of death may state that, when two particular codes appear together, the result is that a third code should be allocated for the underlying cause of death). Any other values in these fields will be codes for 'contributory factors'. diseases or injuries, none of which was the underlying cause of the death, but each of which will have contributed in some way to the occurrence of the death (e.g. by hastening it).

The first of the individual cause of death code fields (i.e. "icdrd0") should always have a value, the next usually has a value, and thereafter their frequency of use declines, and the proportion of cases with missing values rises. For example, when over 80,000 records for deaths in 2008 and part of 2009 were examined, all of them had a ("non-missing") value in the first individual cause of death code field, 76% had a value in the second such field, 46% had a value in the third, 21% had a value in the fourth, 8% had a value in the fifth, 3% had a value in the sixth, 1% had a value in the seventh, 0.4% had a value in the eighth, 0.07% had a value in the ninth, and 0.02% had a value in the tenth.

The first four of the individual cause of death code fields have all been used since 1974. For example, in 1995, when 60,500 deaths were registered, all of them had a ("non-missing") value in the first such field, 47,828 records had a value in the second, 23,947 records had a value in the third, and 8,181 records had a value in the fourth. However, the other six individual cause of death code fields have only been used with effect from 1996, so their values are missing on every record for 1995 and earlier years. In addition, because most deaths do not have many causes, these six fields have non-missing values for only small percentages of cases for 1996 onwards (as was shown earlier).

The order of the codes in the ten individual cause of death code fields does not have any significance for the purpose of analysis of the data (in fact, it can change from year to year). For example:

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- the first of the ten fields often contains the same value as the underlying cause field - but that is not always the case;
- in general, the underlying cause code is not the same as the code which appears in the last of the ten fields which has a non-missing value (it may do so sometimes, of course - for example, if only the first of the ten fields has a non-missing value).
- whether or not the codes in the remaining nine fields are in ascending alphanumeric order varies markedly between the years:

The changes in the order of the codes in the ten fields are due to (for example) the introduction of:

- the American software which codes the causes of death (in 1996);
- ICD-10 coding (in 2000); and
- a new release of the software part-way through 2006.

The database also has a field (called "icdoucd") which contains an underlying cause of death code which is based on the original cause of death text. This field is very seldom used for analysis: its main purpose is to permit assessment of the number of cases for which the coding of the underlying cause of death changes as a result of information which NRS Vital Events receives subsequently, and of the extent of such changes.

The database does not have any individual cause of death code fields which are based on the original cause of death text. There are some other 'cause of death' fields, but they are not used for analysis because they are merely codes that the automatic coding software produces at an intermediate stage in the coding process (their values are missing for every death registered in 1995 and earlier years).