

DIFFERENCES IN THE CODING OF INJURY DEATHS IN ENGLAND AND WALES AND THE UNITED STATES.

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All deaths registered in England and Wales are processed centrally at the Office of Population, Censuses and Surveys (OPCS) which produces national mortality statistics¹. Until the end of 1992 coding was done by cause coders trained in OPCS to use ICD-9 codes and rules¹. From the beginning of 1993 the coding was done using an automated cause coding system (ACCS) which includes the software (MICAR, ACME & TRANSAX) developed by NCHS for processing US mortality data^{2,3,4}. Despite the fact that this software also embodies the codes and rules of ICD-9, our mortality statistics for 1993 showed large, unexpected falls in deaths due to external causes. These were particularly marked in suicides, injuries of undetermined intent, and motor vehicle traffic accidents (MVTAs)⁵.

Nearly all external cause deaths in E&W are certified following a coroner's inquest which delivers a legal verdict (Fig 1 and Table 1)^{6,7}. Comparisons of OPCS data for 1993 with independently collected figures indicated that the apparent falls in the number of deaths coded to suicide were greater than those seen in suicide verdicts by coroners reported to the Home Office (Fig 2)⁸, and that OPCS deaths from MVTAs had fallen more than road deaths published by the Department of

¹ Please note, from the 1 April 1996 OPCS will merge with the Central Statistical Office to form the new Office for National Statistics, ONS.

Transport⁹ for comparable periods. Suicide and MVTAs are the focus of considerable public health attention in England and Wales. Mortality rates which are comparable from year to year are essential for monitoring public health and assessing the impact of changes in policy on risk. It appeared that there must be significant differences in the coding of underlying cause of death (UCD) by ACCS compared to previous practice in England and Wales, and that this produced statistics for deaths from external causes which were not comparable to earlier years. We have investigated the differences in coding which gave rise to these artefacts by using the multiple cause codes and verdict (manner of death) codes produced by ACCS and stored in the OPCS mortality database, to select certificates which were then independently coded by nosologists in E&W and the USA.

Methods

Information on deaths occurring since January 1993 is held in a dynamic database which is continually updated and corrected. The 'uncorrected' data presented here are what was on the database at the end of May 1995. 'Corrected' data refers to the database in January 1996. Using the uncorrected data, we cross tabulated verdict by underlying cause of death, to identify and attempt to quantify discrepancies between these variables. We then identified all deaths which occurred in 1993 for which either 1) there was a manner of death (verdict) which was not natural (accident, suicide, homicide etc) or 2) there was a code in the multiple cause fields for any injury or external cause, and 3) the underlying cause from ACCS was not an external cause (Ecode).

We copied the original cause text, and other information from the database as well as from stored copies of the coroners descriptions of 'how the accident occurred' (page B of coroners form 99: see appendix a). After eliminating virtually identical certificates, we sorted these into groups by causes mentioned. From these, we selected a sample to represent the whole range of injuries and external causes found, and of

the amount and quality of information available from the certificates. This sample was **not** representative of the numbers of such deaths on the database. Using these extracts, OPCS cause coders coded these deaths, as they would have done before automation and without knowledge of the ACCS codes.

This identified a range of deaths which would have been coded to external causes by the coders, but were given natural underlying causes by ACCS. We then tried to ascertain the reasons for the differences. Some errors in the operation of the system were identified, which resulted in incomplete or different information being available to MICAR and ACME. However, we also identified a range of deaths in which a different underlying cause was selected manually than automatically, from identical input information. A sample of 60 of these death certificates was selected to illustrate the types of certificates in which there appeared to be differences in how the underlying cause was selected. These were then coded independently by nosologists at NCHS, North Carolina, according to their standard procedure. The results were compared with the coding produced by the OPCS automated system and cause coders. Coders in both countries stated what rules they applied in each case.

Results

Table 2 shows the cross tabulation of verdict by cause. 6,569 deaths with an UCD in the range E800-E999 did not have a verdict. This is because deaths coded manually by cause coders did not always have the verdict entered on the database in initial processing (this has been corrected). The diagonal figures in bold show agreement between verdict and cause. There is never exact equivalence between open verdicts and deaths from injury of undetermined intent. In most years about 75% of open verdicts are coded to this range, and the remainder mostly to various natural causes or unknown cause (7999). No other verdict may be coded to this range (OPCS internal coding manual). This leaves a minimum of 1,770 and a maximum of 2,307 deaths for which UCD

did not agree with verdict out of a total of 15,615 deaths with a verdict on the database at that time.

From these deaths, some were found to be due to errors in the computer systems or interfaces. For example, the 14 deaths coded to homicide with a verdict of suicide were due to an error in MICAR, which has since been corrected (Donna Glenn, NCHS, RTP personal communication). About 30 were found to have a verdict code of accident or suicide in error without having had an inquest. The reason for this is not clear, but it does not happen in current processing. Twenty of the 25 deaths coded to accident with a homicide verdict were found to have been coded correctly. These were motor vehicle collisions in which a driver was found guilty of manslaughter or reckless driving. ICD-9 codes all motor vehicle incidents to the accidental range¹. From the remainder we extracted all the suicide, homicide, and open verdicts coded outside their ranges, and a sample of the accidents.

Manual coding in OPCS resulted in all the remaining suicide verdicts being coded to E950-E959, and all the remaining homicides to E960-E969 but only a quarter of the open verdicts were re-coded to E980-E989, most of the rest being 7999 (unknown cause).

Table 3 compares the coding of 37 certificates with a mention of suicide, homicide, undetermined or accidents not involving motor vehicles by E&W coders with coding in the USA and by the OPCS ACCS. Coders in the USA coded fewer of the sample to external causes as UCD, with 12 of the 37 going to natural causes. Coding by ACCS was very similar to US practice in this respect. The natural causes selected were predominantly vague conditions or terminal events, such as heart failure, or cardiorespiratory arrest. There was a much larger number coded to undetermined in the USA, with correspondingly fewer to suicide, or accident. ACCS was between US and E&W practice in this respect. Seven of the 23 certificates coded to MVTAs in E&W were coded to natural causes in the USA, and none to any external cause other

than MVTA. ACCS coding was similar, except that 1 death was coded to another E-code (Table 4).

Appendix b gives details of 8 certificates coded differently in the USA and E&W, which illustrate the reasons for the differences. The first thing to note about the certificates that were coded differently is that they are badly completed. Properly completed certificates which follow WHO guidelines are easy to code because:

the underlying cause is written on the last completed line of part I of the death certificate

the condition or event selected from the last completed line can cause all of the sequence of conditions listed in the lines above it

and so, the WHO general principal can be applied to select the underlying cause unequivocally.

When the certificate is badly completed, the WHO selection and modification rules have to be used. Differences in the interpretation and application of the rules between coders can give rise to artefactual differences in statistics. The examples in appendix b show several basic errors in certification, such as:

only a mode of dying in part I, for example cardiac arrest in certificates 3 and 4 and organ failure in certificates 1 and 6. The condition or event which led to this terminal event is often mentioned in part II or elsewhere on the certificate. However it is not always possible to select the initiating event with certainty.

unacceptable sequences, for example a fracture causing ischaemic heart disease in certificate 7.

two causes on one line, with no sequence indicated. In certificate 1, heart and liver failure are listed on line Ia. There is no acceptable sequence given which would lead to the first mentioned condition, heart failure, which is therefore selected as the UCD in the USA. If the two conditions had been written in reverse order, the UCD in both countries would have been the overdose.

These data show that underlying cause is selected differently in E&W and the USA when selection rules have to be applied to overcome poor certification. In particular, verdict is given more weight than the likelihood of a sequence or the WHO rules in selecting the underlying cause of deaths certified after inquest in E&W. This alone appears to account for every instance in which a different condition on the certificate was selected as the underlying cause. In addition, when the same condition is selected, as in certificate 2, the precise code assigned to indicate intent is different. 'Killed himself' is taken as suicide in E&W but as undetermined intent in the USA.

Discussion

Poor quality death certification can affect the coding and so the statistics for all causes of death. There are, however, additional problems with certification and coding that are specific to external causes of death. Coding these deaths requires information on the nature and site of injury, details of the event in which the injury was sustained and the intent behind that event. The way in which this information is collected varies from country to country, depending on their legal and medical systems. The processes surrounding investigation and certification of injury deaths probably differ more than the medical certification of most lethal diseases.

Even the coding of the injuries varies between these two countries. In the USA these conditions appear only in the multiple cause codes, but in E&W a single nature of injury code is derived for each death following WHO guidelines¹, and published routinely as 'secondary

cause'^{7,10}. There were two additional questions on the E&W coroners certificates until 1992, asking for a list of injuries, and of parts of the body injured. The amount of detail available on injuries appears to have fallen since the introduction of the new forms, and we are investigating this.

Accurate coding of the external underlying cause (E-code) of these deaths requires information about how injuries were sustained, for example in a motor vehicle accident on the highway or in a fall down stairs at home, and about the intent (verdict or manner of death). This information is not often written in the cause part of the death certificate, but is obtained from additional questions which may be included on all death certificates (USA)¹¹ or special coroner's certificates (E&W: appendix a). Because these external causes appear outside the cause section, it is difficult to apply the WHO ICD-9 mortality selection rules to them directly. In the USA the rules are applied as far as possible to the injuries and external causes mentioned on the certificate, as to other diseases or conditions. If an injury is certified as initiating the sequence leading to death, and this sequence is an acceptable one, then a link is made to the external cause of this injury which becomes the underlying cause, wherever it is mentioned on the certificate. This is illustrated in the following certificates:

A: Ia. cerebral contusion

b. fractured skull

c.

II

How injury occurred: pedestrian crossing road struck by motor vehicle

manner of death; accidental

UCD **E8147** (motor vehicle traffic accident involving collision with pedestrian - pedestrian killed).

B: Ia. cardiac arrest

- b. haemorrhagic shock
- c. multiple injuries of chest and abdomen

II

How injury occurred: driver of car in collision with train
manner of death: accident

UCD E8100

In addition, the WHO selection and modification rules may be used to select an injury from part II if there is an unequivocal sequence. For example, 'tylenol (paracetamol) poisoning' in part II could be assumed to have caused 'liver failure' but not 'heart failure' (see certificate 1 in appendix b).

In England and Wales all deaths involving injury or external causes must by law be referred to the coroner, who is a legal officer. Nearly all are certified by coroners following an inquest at which a legal verdict is delivered, usually by a jury (Table 1). No homicides or injuries of undetermined intent are certified without an inquest, and virtually no suicides. Only 7% of external cause deaths are certified without a legal inquest. Of these, 70% are due to accidental falls and fractures (E880-E888), mainly in the elderly. The very small number of MVTAs certified without inquest were all coded to 'late effects'. It appears that the only circumstances in which coroners do not hold an inquest on an injury death referred to them is when the intent is definitely accidental, and the type of accident is considered 'minor', or occurred a long time before the death.

Until 1993 the coroner's certificates, unlike the medical certificate of cause of death, were not laid out in the internationally recommended format. The cause of death could be written in any style or format and was usually copied directly from the pathologists' report of the post mortem carried out before the inquest. The information on any one coroner's certificate after inquest effectively comes from two different certifiers: the pathologist for the diseases and injuries; and the coroner for the verdict and circumstances of how

the injury was sustained based on the findings of the legal inquest which is usually held after the post mortem. This may lie behind the obvious conflicts between the certified cause(s) and the legal verdict seen in some of these certificates, eg certificate 5, an accidental death apparently due to bronchopneumonia. WHO recommends that the certifier's opinion as to the cause be respected unless there is very good reason to overrule it¹. However, it is very difficult to know what the certifier meant when the verdict contradicts the certified cause.

Because of the non-standard certification of these deaths, OPCS coders used the coroner's legal verdict as a guide to which of the causes mentioned he regarded as having led directly to the death. Certificate 7 in appendix b is a clear example of different coding because of the different weight given to verdict. The USA do not accept the sequence of fractured neck of femur causing ischaemic heart disease, and select the latter (ICD-9 4149) as the underlying cause. If the verdict in this case had been 'natural causes', then the death would have been coded to 4149 in E&W as well. This was the reason for virtually all the examples in which an external cause was selected in E&W and a natural cause in the USA as shown in appendix b.

In most States, these deaths are certified using the normal death certificate which includes a tick box for manner of death and a section on 'how injury occurred'. The whole certificate will be completed either by the decedent's doctor or by the medical examiner or coroner, depending on the laws of the State. This is likely to lead to greater agreement between manner of death and underlying cause. However, special research would be needed to investigate this because manner of death is not routinely computerised in the USA. In both automated and manual coding in the USA, the manner of death affects the precise E-code assigned to a mentioned cause, but not the selection of the underlying cause. For example the open verdict in certificate one converts the poisoning code from accidental (E8502), the MICAR default, to undetermined (E9800), but does not affect the

underlying cause. Even here there are differences between these countries. In the US, certificate 2 is coded to undetermined, whereas it is suicide in E&W. Despite this, E&W have more deaths coded to the undetermined range than is the case in many countries^{12,13}. This apparent paradox is due to differences in who can certify these deaths and how. The statement 'killed himself' was assumed in the US to have been written by the certifying doctor, and to indicate that the act was self inflicted, but not to give any proof of intent. If the certifier had ticked the suicide box on the US certificate, the death would have been coded as in E&W. In E&W this phrase can only come from the text of the coroner's legal verdict. Coroners require proof beyond a reasonable doubt to give verdict of suicide or 'killed himself'/'took his own life' etc. If sufficient evidence is not available the verdict is 'open'. Because of this, all these phrases in the verdict are coded to suicide. Most, but not all, 'open verdicts' which are coded to undetermined injury are 'open' as to whether the death was suicide or accident, rather than any other potential intent. In addition deaths registered when an inquest is adjourned for further legal proceedings, for which no verdict is available until the legal processes are complete, are coded temporarily to E9888. This code is amended whenever final information is received. Annual mortality statistics by cause usually include 250-450 deaths each year for which final information has not is not available in time for publication. These are identified in the relevant tables^{7,10}. Corrected figures for verdicts received late are published the following year in an appendix to the publication on deaths from injury and poisoning. Most of these are eventually assigned to homicide (see table 1)^{7,14}.

Implications for mortality statistics in England and & Wales

Though the coroner's certificates are now in the format recommended by WHO, we still find that there are often conflicts between the certified causes and the verdict, and information from outside the cause section is still essential for coding. In order to produce data comparable to past years for use in monitoring time trends, we have had to go back to coding these certificates manually, using the

verdict as before. The effect of these corrections is illustrated in Figure 2, where the corrected OPCS figures are closer to the Home Office verdicts than the original data was. We have begun a project to educate coroners and pathologists to improve the quality of certification. If we are successful at this, it may be possible to bring the coding of these deaths closer into line with internationally recommended practice in future. We have also started a program to improve the quality of the coded data. New checks we have introduced are validation of certification (coroner, with or without inquest, or doctor) against cause, and verdict against both certification and cause. We plan to compare our data with independent sources such as Home Office and Dept of Transport figures in more detail in the future.

Implications for the ICE on Injury

The results of this study cannot be used to adjust comparisons between these countries for several reasons. This comparison was not based on a statistically representative sample of potential injury deaths in E&W, or even of those for which the coding differed in the two countries; we have looked only at discrepancies in one direction; there may be other deaths which would be coded to external causes in the USA and to natural causes in E&W. In addition, it does not say anything about the accuracy of the coding of US certificates, which were not examined. It is likely that the coding developed in the USA and the software which incorporates it is adapted to the certification practice seen there.

However, this study does show that there are real differences in the coding of UCD which may bias comparisons of injury deaths. These are not minor discrepancies in 4th digit codes, but in broad groups of causes such as MVTAs, suicides, or even external or natural causes. The coding reflects underlying differences in medico-legal requirements and in certification practice as well as in interpretation of ICD-9 rules. The ICE on injury is an excellent forum for further research to clarify and quantify these differences.

Further studies of coding differences, extending these to several countries are recommended including coding a representative sample from each country by a single reference centre to quantify variation in local coding; and having a sample of typical histories certified in several countries, then coded locally and centrally to separate the effects of certification and of coding¹⁵. Causes of particular interest were discussed at the ICE meeting in Melbourne. These include drowning¹³, adverse effects of medical and surgical treatment¹², poisoning by drugs and medicaments, and injury of undetermined intent.

In exploring the changes in our data, the usefulness of both internal (verdict by cause) and external (Home office, Dept of Transport) checks on cause of death data was clear. International comparisons of mortality statistics with independent sources of data on injury deaths (eg justice or transport department statistics) would increase our understanding of the reliability and comparability of mortality statistics. In countries which code and store verdict or manner of death, comparisons of deaths assigned to various categories by ICD code and by verdict would also be useful.

In countries which code all the certified causes (multiple cause coding), such as the USA, some additional analyses could be done; the total numbers of deaths for which injury or external causes of interest are mentioned, and the ratio of these mentions to UCD. This gives a measure of the degree of selection occurring in coding, and could be compared across countries.

Acknowledgements

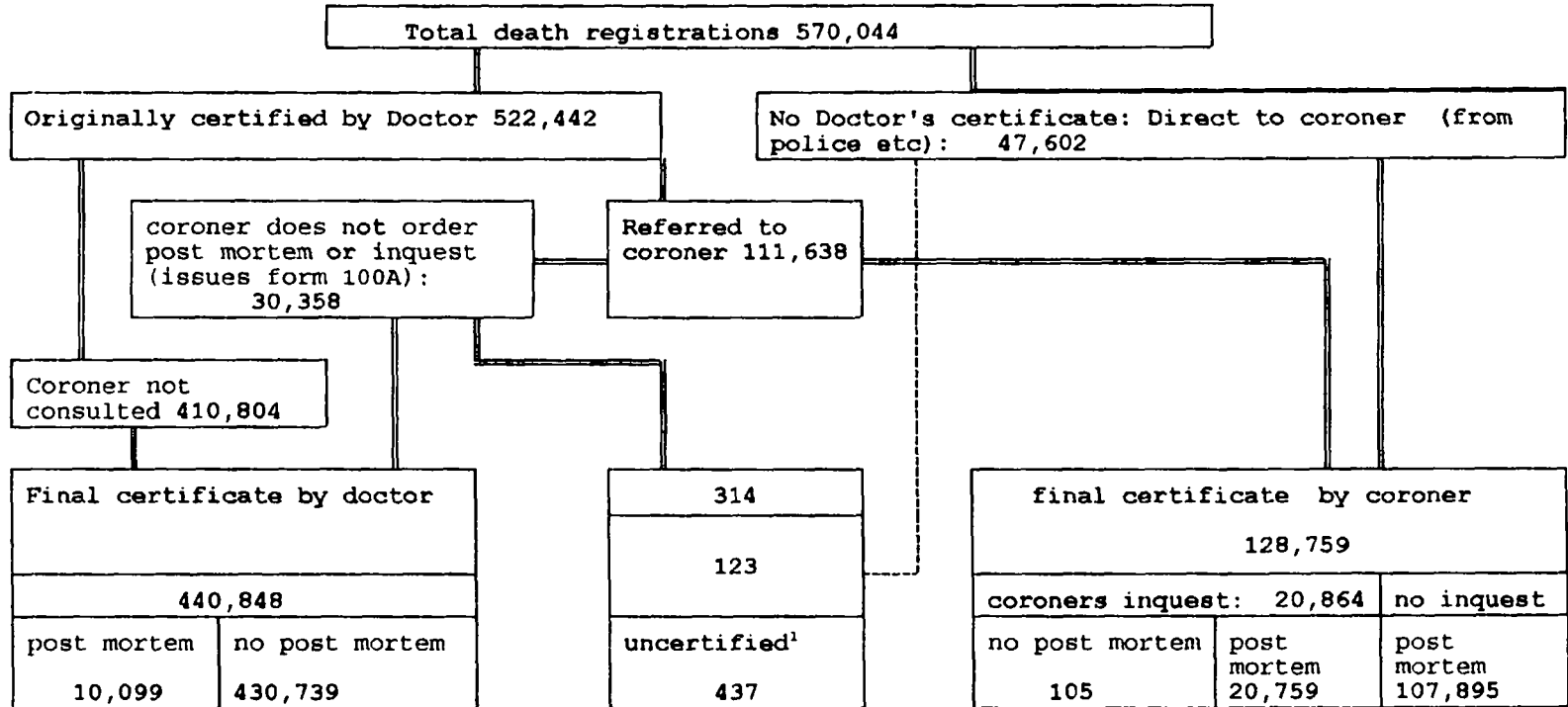
I would like to thank the staff of the London WHO Collaborating Centre for the Classification of diseases for their help in identifying relevant death records for this study and explaining ACCS; the nosologists and coders in NCHS and OPCS for coding the certificates and explaining the coding rules to me; the co-chairs of the ICE on Injury Statistics for inviting me to present this paper in Melbourne, and all the ICE participants for the knowledge and insight they shared.

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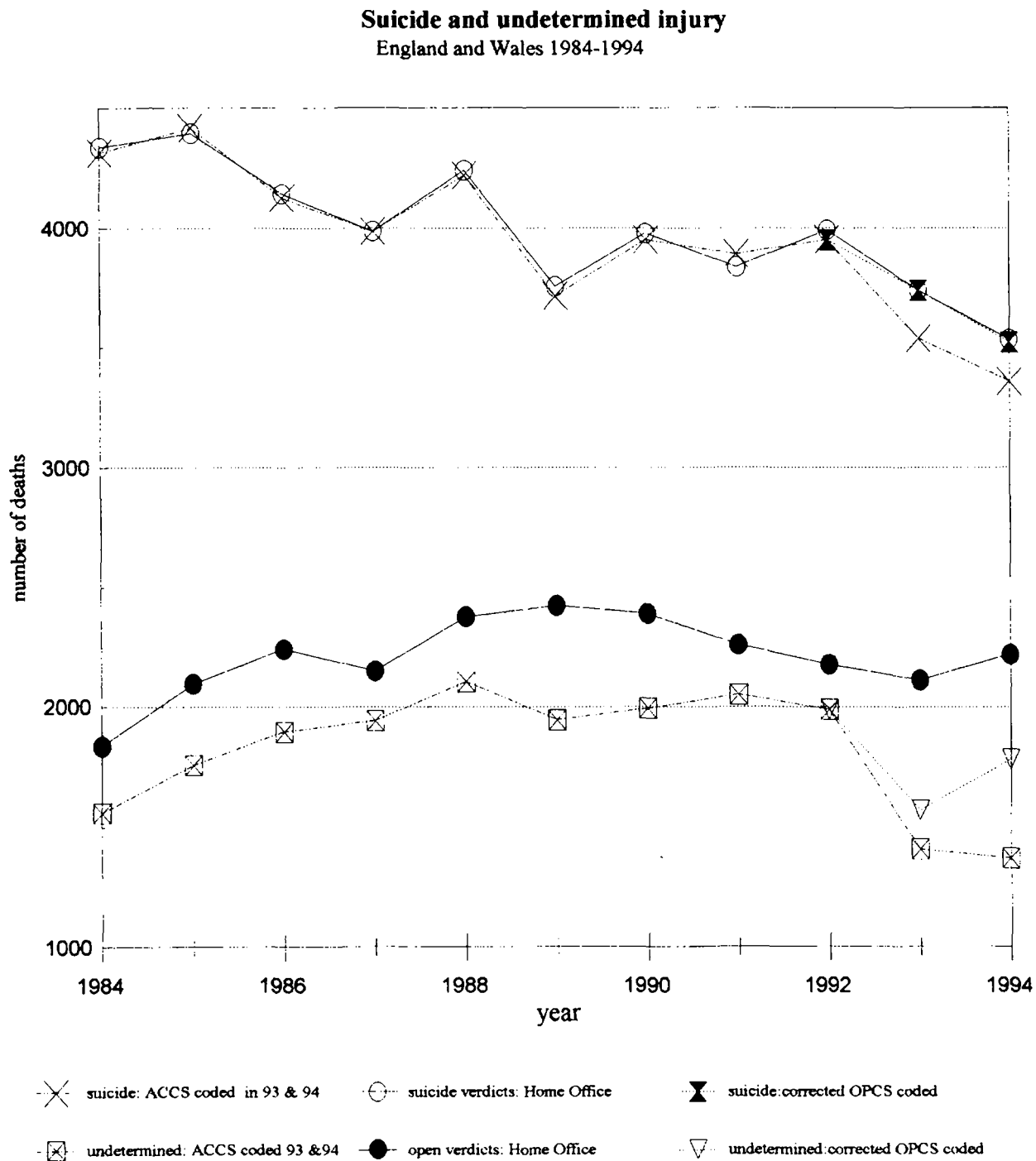
Figure 1. Process of death certification and coroner consultation: all deaths registered in England and Wales in 1991.



Adapted from tables 9 and 10 in OPCS series DH1 no 26⁷

¹ Uncertified deaths: OPCS did receive copies of death certificates for these deaths, which are coded as normal. They are regarded as uncertified for legal purposes for one of the following reasons:
 1) the death is of a member of foreign military services serving on a foreign military base in E&W.
 2) there is no doctor available to give a certificate or the certifying doctor is not legally qualified to do so (must have attended the deceased in his/her last illness and have seen deceased either within 14 days before death or seen the body after death), and the coroner has carried out neither a post mortem nor an inquest.

Fig 2. comparison of numbers of coroners verdicts from the Home Office with numbers of registered deaths coded by OPCS.



OPCS coded data is shown both as originally coded using ACCS and after manual correction of all deaths registered after inquest.

Table 1. Numbers and percentages of registrations of deaths from natural and external causes in England and Wales in 1991 by method of certification.

Underlying cause	ICD9 code	Total	Coroner's Inquest		Coroner: no Inquest		Doctor		Uncertified	
			n	%	n	%	n	%	n	%
Accidents	E800-949	11066	9704	87.69	429	3.88	930	8.40	3	0.03
MVTAs	E810-819	4408	4401	99.84	5	0.11	2	0.05	0	0.00
Falls	E880-889	3381	2431	71.90	267	7.90	683	20.20	0	0.00
Suicide	E950-959	3893	3892	99.97	0	0.00	1	0.00	0	0.00
Homicide*	E960-969	552	552	100.00	0	0.00	0	0.00	0	0.00
legal intervention	E970-979	2	2	100.00	0	0.00	0	0.00	0	0.00
Undetermined*	E980-989	1771	1770	99.95	1	0.05	0	0.00	0	0.00
War	E990-999	2	2	100.00	0	0.00	0	0.00	0	0.00
All external causes	E800-999	17286	15921	92.10	431	2.49	931	5.38	3	0.02
Natural causes	010-799	552758	4943	0.89	107464	19.44	439917	79.59	434	0.01
All causes ¹		570044	20864	3.66	107897	18.93	440848	77.37	437	0.08

* Undetermined includes 140 deaths (coded to E9888) registered during 1991 when an inquest was adjourned for further legal proceedings, and for which no verdict has been received up to April 1993. The 283 'accelerated registrations' for which a verdict was received were all recoded to homicide, and are included as such in the table (adapted from tables 10 and 11 in OPCS series DH1 no 26 and appendix A series DH4 no 17^{6,7}).

Table 2. Verdict by underlying cause of death for deaths which occurred in 1993 as they appeared on the OPCS deaths database in May 1995 before recoding of inquest deaths. Includes only deaths which had either a cause in the range E800-E999 or a verdict, or both.

ICD-9 code	Legal verdict						Verdict wrong for cause
	Natural	Accident	Suicide	Homicide	Open	Verdict Missing ¹	
010-799	4092	1,389	85	8	537	na ²	from 1,482 to 2,019 ³
E800-E949	126	6,403	17	25	87	3,890	255
E950-E959	0	3	1,964	2	0	1,655	5
E960-E969	0	2	14	150	10	343	26
E980-E989	0	0	2	0	796	681	2
Total	4,218	7,698	2,082	185	1432	6,561⁴	from 1,770 to 2,307

¹ during initial processing of 1993 deaths verdict after inquest was not always entered onto the database when deaths were coded manually on line. This has been corrected in current processing and retrospectively. In these data, verdict should always be present if the cause coded automatically.

² Deaths certified without an inquest have no verdict. This includes 99% of deaths from natural causes, see table 1. This table is restricted to deaths with a verdict, an external cause, or both.

³ each year about 75% of deaths with an open verdict after inquest are coded to E980-e989 (injury of undetermined intent). The remainder are coded to 7999 (cause unknown) or to a variety of natural cause codes.

⁴ see note 1

Table 3. Underlying cause of death as coded manually in England and Wales and the USA and by the ACCS for 37 certificates with a mention of self harm and/or poisoning or abuse of drugs.

	E800-E949 accident	E950-E959 suicide	E960-E969 homicide	E980-E989 undetermi ned	304-305 drug abuse	010- 799 natural causes
E&W	16	17	1	1	1	1
ACCS	8	14	2	1	1	11
USA	8	5	1	11	0	12

Table 4. Underlying cause of death as coded manually in England and Wales and the USA and by the ACCS for 23 certificates with a mention of a motor vehicle incident.

	E810- 819 MVTA	OTHER ECODE	010-799 NATURAL CAUSES
E&W	23	0	0
ACCS	14	1	7
USA	15	0	7

Appendix a.

CORONER'S CERTIFICATE AFTER INQUEST
furnished under section 11(7) of the Coroner's Act 1988

To be completed by Registrar	
Register No.	
Entry No.	

To the Registrar of Births and Deaths

Inquest held on _____
at _____
Was a post-mortem held?

PART I PARTICULARS OF DECEASED (Not still born - see separate Form 99A)

1 Date and place of death _____

2 Name and surname _____

3 Sex _____

4 Maiden surname of woman who has married _____

5 Date and place of birth _____

6 Occupation and usual address _____

Cause of death I(a) _____
(b) _____
(c) _____

II _____
Verdict _____

EXAMPLE

PART II VISITING FORCES { *under section 7 of the Visiting Forces Act 1952
The inquest was adjourned on _____ *and has not been resumed

PART III BURIAL/CREMATION †Enter Order for Burial/Certificate E for Cremation

I have issued†
on _____
to _____
of _____

PART IV MARITAL CONDITION etc. All persons aged 16 and over
Insert appropriate number in box. 1 Single 2 Married 3 Widowed 4 Divorced 5 Not Known

Day	Month	Year
<input type="text"/>	<input type="text"/>	<input type="text"/>

If married enter date of birth of surviving spouse

I certify that the findings of the inquest were as above.

Date _____ Signed _____

Name _____

Appointment _____

Jurisdiction _____

*Delete as necessary

Name and surname of deceased

To be completed by Registrar	
District & SD Nos.	
Register No.	
Entry No.	

PART V ACCIDENT OR MISADVENTURE (including deaths from neglect or from anaesthetics)

1. Place where accident occurred†

- | | |
|---------------------------------|--------------------------|
| 0. Home | 5. Street or highway |
| 1. Farm | 6. Public building |
| 2. Mine or quarry | 7. Resident institution |
| 3. Industrial place or premises | 8. Other specified place |
| 4. Place of recreation or sport | 9. Place not known |

2. To be completed for all persons aged 16 and over
When injury was received deceased was†

1. On way to, or from work
2. At work
3. Elsewhere

3. Details of how accident happened:

EXAMPLE

4. If motor vehicle incident, deceased was†

- | | |
|--|--|
| 0. Driver of motor vehicle other than motor cycle | 5. Rider of animal; occupant of animal-drawn vehicle |
| 1. Passenger in motor vehicle other than motor cycle | 6. Pedal cyclist |
| 2. Motor cyclist | 7. Pedestrian |
| 3. Passenger on motor cycle | 8. Other specified person |
| 4. Occupant of tram car | 9. Not known |

5. Interval between injury and death†

1. Less than one year
2. One year or more

†Please insert appropriate number in box

Appendix b. Examples of death certificates for which the underlying cause of death (UCD) was coded differently in the USA and England & Wales.

1.Ia. heart and liver failure
b.
c.

II. took an overdose of paracetamol

Verdict: open

UCD E&W: E9800 **USA:** 4289

2.Ia. carbon monoxide poisoning
b. inhalation of car exhaust
c.

II.

Verdict: killed herself

UCD E&W: E9520 **USA:** E9820

3.Ia. cardiac arrest
b.
c.

II.

Verdict: took her own life while the balance of her mind was disturbed

UCD E&W: E9589 **USA:** 4275

4.Ia. cardiac arrest
b.
c.

II. inhalation of fumes from fire in private dwelling

Verdict: accidental death

UCD E&W: E8913 **USA:** 4275

5.Ia. bronchopneumonia
b.
c.

II.

Details of accident: driver of motor vehicle in collision with another on the highway

Verdict: accidental death

UCD E&W: E8120 **USA:** 485

6.Ia. heart failure
b.
c.

II.

Details of accident; pedestrian struck by motor vehicle
Verdict: manslaughter

UCD E&W: E8147 **USA:** 4289

7.Ia. left ventricular failure
b. ischaemic heart disease
c. fractured neck of femur due to fall in hospital

II.

Verdict: accidental death

UCD E&W: E887 **USA:** 4149

8.Ia. bronchopneumonia
b.
c.

II. accidental overdose of tranquillizers

Verdict:

UCD E&W: E8539 **USA:** 485