



**Italian National Institute of Statistics  
Central Directorate for Statistics on Social Institutions Surveys  
Health Service  
Mortality by Cause Unit**

**"Review of the existing information about death certification practices, certificate structures and training tools for certification of causes of death in Europe"**

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## **Abstract\***

The project “Preparation of an EU training package on certification of causes of death” is included in the Community Statistical Programme 2003-2007; it is part of the work on establishing Europe-wide comparable data on public health and on its determinants. The project focuses on preparing a basic common training package on good death certification procedures for physicians following the indications reported in the WHO “International Statistical Classification of Diseases and Health Related Problems, tenth revision”.

The present publication is part of the requested outputs for the project and it is intended as a basis for developing the training package itself. It contains data derived from a survey conducted to investigate on death certification practices in forty European countries and a review of the world-wide existing training tools for the certification of causes of death (manuals, e-learning tools, leaflets).

The results of this work and the consequent strategies in developing the training package have been presented at the “Eurostat task force on causes of death” on May 2003.

## **Riassunto\***

Il progetto “Preparazione di un pacchetto formativo sulla certificazione delle cause di morte” fa parte programma statistico comunitario 2003-2007; è parte di un impegno per il miglioramento della comparabilità a livello europeo dei dati statistici di salute pubblica e dei suoi determinanti. Il progetto si rivolge ai medici certificatori delle cause di morte offrendo un pacchetto formativo comune per l’Europa volto al miglioramento della qualità ed alla armonizzazione delle procedure di certificazione, seguendo le indicazioni riportate nella “Classificazione Statistica Internazionale delle Malattie e dei problemi sanitari Correlati, decima revisione” pubblicata dall’OMS.

Il presente lavoro è parte integrante dei prodotti richiesti nell’ambito del progetto ed è intesa come base conoscitiva a partire dalla quale sviluppare il pacchetto formativo stesso. Esso contiene dati derivati da una indagine svolta *ad hoc* sulle pratiche di certificazione in quaranta paesi europei ed una rassegna degli strumenti formativi esistenti a livello mondiale per la certificazione delle cause di morte (manuali, software per l’e-learning, brochures).

I risultati del presente lavoro e le strategie conseguenti per affrontare la realizzazione del pacchetto formativo richiesto sono stati presentati alla “task force di Eurostat sulle cause di morte” nel Maggio 2003.

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\* - Technical report - Project “Preparation of an EU training package on certification of causes of Death”. Eurostat-Istat contract number 200235100007

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# 1 Introduction

Istat (Italian National Institute of Statistics) has been in charge of leading a project on preparation of an “EU training package on certification of causes of death” since January 2003. The tender was published on the “Official Journal of European Community” in September 2002 (OJ of EC n° 2002/S 170-136139). The contract is expected to last for a total duration of 18 months: from January 16<sup>th</sup> 2003 to July 2004.

This project is included in the Community Statistical Programme 2003-2007; it is part of the work on establishing EU-wide comparable data on public health and on its determinants.

The review of the existing information about certification practices and certificates structures, training tools for certification of causes of death (manuals, software, leaflets) and the results of the undertaken survey will be presented during the Technical Group Meeting (Luxembourg - May 15-16<sup>th</sup> 2003) to all participants (representatives of the Commission services, of the EU Member States, EEA/EFTA countries, Acceding and Candidates countries, international organisations ).

## 1.1 Background

### 1.1.1 *The project on "Quality and comparability improvement of European causes of death statistics"*

During 1999, a project on "Quality and comparability improvement of European causes of death statistics" has been undertaken within the context of the European Commission and in a double framework: an agreement of the DG Sanco Health Monitoring Program and the Eurostat Task Force on causes of death.

This project lasted two and a half years, from January 1999 to July 2001. It involved experts from the 15 European Union Member States and 2 EFTA countries (Iceland and Norway). In order to collect information, a questionnaire was submitted to all member states and the results were published in the “Final Report” of the project in July 2001.

The main objectives reached with the project on “Quality and comparability improvement of European causes of death statistics” were, as regards the “Certification Practices”, a complete investigation on causes of death certification practices among Member States and a concrete European set of recommendations for harmonisation, as regards the “Comparability of European Causes of Death Statistics”, the implementation of an international database on causes of death statistics and scientific documents.

This was the result of a long process begun with some previous undertakings in the context of the Task Force on Causes of Death (TF on CoD).

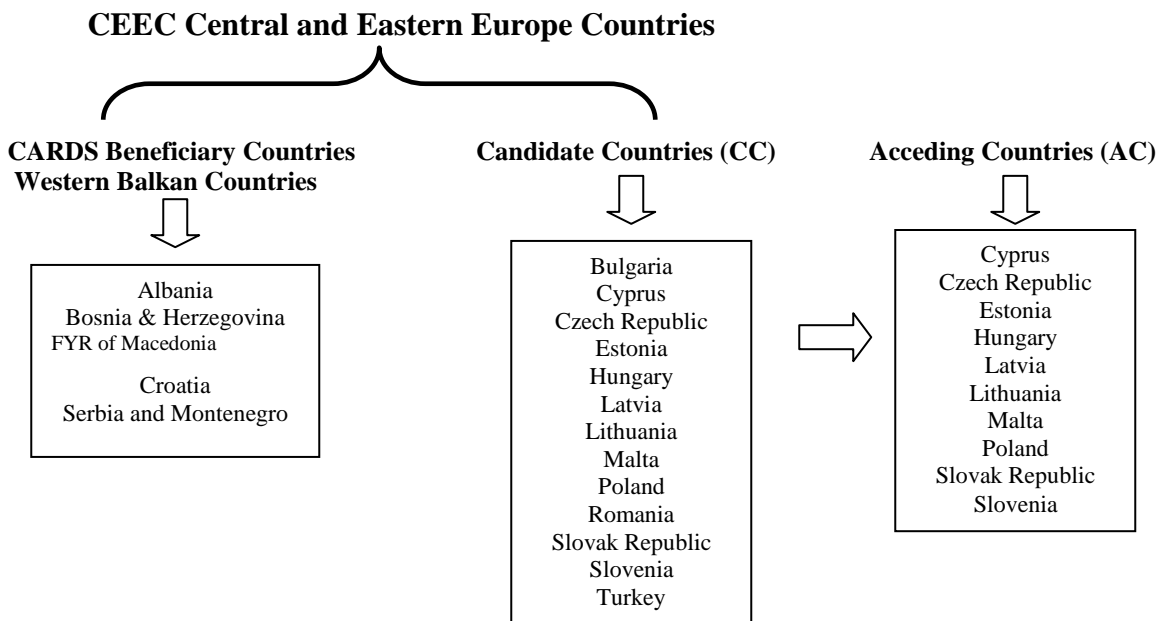
### 1.1.2 *Task Force on Causes of Death and the new partnership on Health Statistics*

As regards the activity of the TF on CoD, since 1997 to 2002, the main work in developing health statistics at the EU level (Leadership Group Health Statistics - LEG Health Eurostat) has been taken forward by three Task Forces covering the same three specific domains of health statistics, cause of death statistics, health surveys including disability and morbidity statistics, and health care statistics. Since 2003, a new ‘Partnership Health’ between Eurostat and Member States has been formed. The old Task Force on Causes of Death (8-9 experts) was replaced from a Core Group (5 experts) and a Technical Group (all EU MS and CC Candidate Countries).

A new 'Partnership Health' between Eurostat and Member States has been formed since January 2003. The new organisation includes a coordinating group: the Partnership Health; a Core Group and a Technical Group for each of the three statistical domains: Cause of Death statistics (CoD), Health Surveys, including disability and morbidity statistics (HIS) and Health Care statistics (CARE); and finally *ad hoc* Task Forces as required.

This revised form of partnership has been made necessary because, since 2003, all **EU 15 Member States**, **EEA/EFTA**<sup>1</sup> (European Economic Area / European Free Trade Association) countries and **CEEC**<sup>2</sup> (Central and Eastern Europe Countries: Candidate Countries and Western Balkan Countries or CARDS Countries) (Figure 1.1) have been involved in the Community Programme on Public Health.

Figure 1.1 - Terminology relating to the Candidate, Acceding and CARDS countries



### 1.1.3 The need of preparing a basic common training package on good certification procedures

After the conclusion of the project on “Quality and comparability improvement of European causes of death statistics”, the main task was the implementation of the recommendations and the study of a methodology to follow-up the implementation.

One of the recommendations was to improve awareness and training of certifiers (mainly physicians) on good practices for certification of CoD.

The present action will therefore focus on preparing a basic common training package on good certification procedures. With this aim, Istat is in charge of leading the Eurostat project called: “EU Training package on certification of causes of death”.

These products will be addressed to medical teachers, physicians, including general practitioners, hospital doctors and specialists such as pathologists and toxicologists.

<sup>1</sup> EEA - European Economic area: Iceland, Norway, Liechtenstein;

EFTA - European Free Trade Association : Iceland, Norway, Liechtenstein and Switzerland.

<sup>2</sup> CEEC - Central and Eastern Europe Countries:

**10 Acceding Countries AC (Countries, after enlargement negotiated in December 2002, formerly Candidate Countries)** Cyprus; Czech Republic; Estonia; Hungary; Latvia; Lithuania; Malta; Poland; Slovak Republic; Slovenia;

**3 Candidate Countries CC (not included in the enlargement)**, Bulgaria; Romania; Turkey;

**5 Western Balkan countries or "CARDS" countries - Community Assistance for Reconstruction, Development and Stability:** Albania; Croatia; FYR Macedonia; Bosnia Herzegovina; Serbia and Montenegro.

### *1.1.4 Health care and human resources*

In order to give an overview of the human resources involved in the Health Care System of each country, in particular considering the target of the manual, physicians, general practitioners, hospital doctors and specialists, we present a table with a set of indicators referred to the countries included in the project, which has been downloaded from the Eurostat Data Base Regio-New Cronos, Health and Safety (where available) and, from the WHO HFADB (Health For All database, group “Health Care Resources”)<sup>3</sup> in order to better complete the info collection.

Data available refer only to the Country and not to regions (within a country); therefore we provide info for Belgium and not for Belgium-French Community and Belgium-Flemish Community, for United Kingdom and not for UK-England-Wales, UK-Scotland and UK-Northern Ireland, for Spain and not for Spain-Catalonia. Furthermore, data from Eurostat data base are not available for CARDS countries.

The choice of these indicators has been done to emphasize some aspects related to the aim of the project. The year of reference for data comparisons is 1999, as it has only a few number of missing values.

The indicators selected are:

- physicians per 100,000 inhabitants;
- number of physicians, physical persons (PP);
- % of physicians working in hospitals;
- general practitioners (PP) per 100,000;
- number of general practitioners (PP);
- physicians graduated/100,000;
- number physicians graduated in given year.

| The indicators values are shown in the following table (Table\_1.1).

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<sup>3</sup> The **European Health For All database** (HFA) provides easy and rapid access to a wide range of basic health statistics for the 51 Member States of the WHO European Region.

The data are submitted by European Member States to the Regional Office or collected from other international organizations or other sources.



Table 1.1 - Health care and human resource: some indicators in European Countries from Eurostat Database Regio New Cronos and WHO - HFA DB<sup>4</sup> - Year 1999

Country	Physicians per 100,000 inhabitants (a)	Number of physicians, physical persons (PP) (a)	% of physicians working in hospitals (b)	General practitioners (PP) per 100,000 (b)	Number of general practitioners (PP) (b)	Physicians graduated/100,000 (b)	Number physicians graduated in given year (b)
Albania	-	-	46.40	46.15	1,557	4.54	153
Austria	299.70	24,223	-	131.30	10,625	14.46	1,170
Belgium	404.70	41,331	-	136.26	13,833	11.56	1,174
Bosnia-Herzegovina	143.82	5,388	49.35	25.36	950	-	-
Bulgaria	343.40	28,261	34.40	-	-	-	-
Croatia	229.27	10,436	53.23	68.03	3,098	10.89	496
Cyprus	234.50	1,762	-	-	-	-	-
Czech Republic	355.90	36,616	25.90	68.19	7,012	8.50	874
Denmark	317.00	16,844	67.65	64.28	3,419	8.59	457
Estonia	306.20	4,426	46.54	57.35	789	4.43	61
Finland	306.10	15,794	51.70	163.55	8,448	6.74	348
France	327.60	193,200	33.20	162.44	95,229	6.54	3,836
Germany	354.90	291,171	37.74	-	84,539	10.24	8,406
Greece	438.40	46,124	-	-	-	-	-
Hungary	314.90	31,775	32.47	65.85	6,741	9.08	930
Iceland	340.20	938	63.00	-	-	13.62	38
Ireland	226.80	8,469	-	44.84	1,679	14.13	529
Italy	588.90	339,264	-	94.26	54,337	-	-
Latvia	318.50	7,770	-	33.51	801	6.82	163
Lithuania	393.60	14,578	44.00	73.55	2,592	8.85	312
Luxembourg	312.70	1,342	-	83.01	359	-	-
Malta	263.70	998	-	-	-	-	-
Netherlands	310.80	4,8987	-	48.72	7,704	10.25	1,621
Norway	280.40	12,464	55.00	79.05	3,527	-	-
Poland	226.40	87,524	-	-	-	-	-
Portugal	318.20	31,758	-	58.38	5,831	5.57	556
Republic of Macedonia	220.56	4,449	32.40	91.71	-	7.73	156
Romania	191.10	42,975	50.70	-	-	24.13	5,419
Serbia and Montenegro	213.17	22,659	36.25	-	-	8.81	936
Slovak Republic	332.20	17,916	60.10	44.39	239	10.97	592
Slovenia	215.00	4,254	52.80	45.03	890	6.88	136
Spain	444.00	174,916	-	-	-	10.91	4,325
Sweden	287.20	25,428	-	-	-	-	-
Switzerland	191.20	13,622	43.00	64.49	4,622	11.47	822
Turkey	124.60	81,988	-	70.15	45,134	7.79	5,009
United Kingdom	175.80	104,417	65.80	60.43	35,954	-	-
<b>EUROPE</b>	<b>363.30</b>	<b>1,363,268</b>	<b>-</b>	<b>64.99</b>	<b>-</b>	<b>11.11</b>	<b>-</b>

(a) Data from Eurostat Database Regio-New Cronos, except for Albania, Bosnia & Herzegovina, FYR of Macedonia, Croatia, Serbia and Montenegro whose data come from WHO DB HFA.

(b) Data from WHO DB HFA.

As shown in Table 1.1, the highest rate of physicians per 100,000 inhabitants is in Italy (588.90), and values over the European average are in Spain (444.0), Greece (438.40), Belgium (404.70) and Lithuania (393.60). The Central Eastern European Countries present a lower rate, less than 300 per 100,000. The lowest rate is in Turkey (124.60 per 100,000).

The countries with the highest percentage of physicians working in hospital are Denmark and United Kingdom for EU Member States (respectively 67.65 and 65.80), Iceland as EFTA country (63) and

<sup>4</sup> Since recording and handling systems and practices for health data vary between countries, so do the availability and accuracy of data reported to WHO. The comparability of data between countries is also limited, owing to differences in definitions and recording practices and/or time periods. Comparisons between countries and their interpretation should thus be made with caution.

Slovak Republic for the CEEC countries (60.1). For the other countries, the percentage of Hospital doctors is lower.

As regards the indicator “General practitioners per 100,000”, the average value for Europe is 64.99. The highest values for this indicator are observed for EU Member States (with the exception of the Republic of Macedonia) and Lithuania for CEEC countries.

Finland, France, Austria and Belgium have the highest values among the EU Member States (respectively 163.55, 162.44, 131.30, 136.26 per 100,000) while, among CEEC countries, the Republic of Macedonia and Lithuania have a rate of general practitioners out of population per 100,000 respectively of 91.71 and 73.55.

Among the EU MS, Denmark, Ireland, Netherlands, Portugal, Switzerland and United Kingdom have a rate of general practitioners lower than the European average.

The rate of “Physicians graduated per 100,000” assumes values near the European average value (11.11) in most of the countries with the exception of Romania. The rate of graduated physicians out of 100,000 inhabitants is, in this country, 24.13 per 100,000. Among the EU MS the country with the highest rate is Ireland (14.13).

### *1.1.5 Istat background on causes of death certification and coding practices*

During last years, Istat researchers in charge of the following causes of death vital statistics in Italy, have been involved in a complex process of reengineering to conform all procedures to a new computerised system of recording, check and coding.

At the same time we reengineered the whole data production process (from collection to coding and dissemination) and we aim to start in Italy a new program to make physicians aware about the importance to improve quality of certification. We are planning to collaborate with some Universities and introduce some special training modules directed to the Medicine University students. We have already introduced, on the back of the death form, instructions on how to fill death certificate in a correct and synthetic way. The certification guidelines have been decided in agreement with the Ministry of Health and some forensic physicians.

A study on certification quality at regional level is ongoing, in order to have an idea on how training can be better addressed at local level.

Since deaths occurred in 1995, Istat have been coding causes of death by means of the MICAR-ACME, which is a software for automated coding and currently used in the United States since the Seventies and developed by NCHS (National Centre for Health Statistics).

The automated coding allows the improving of the entire process of data production for the following reasons: it improves the consistency of mortality data by cause; it increases the comparability with other countries that already use automated coding; it eliminates errors occurring during data entry. Moreover, data entry of every pathology reported by certifiers on death certificates improves the knowledge of the entire morbidity-mortality process (“La nuova indagine sulle cause di morte”, ISTAT, Metodi e norme n°8, 2001, English version of the manuscript in preparation).

A product created during this reengineering phase is a new Data Base, which is developed in Oracle environment, to do query and cross tables download on the basis of our mortality data time series (from 1980 to 1999 – update is planned every year). This DB, already available for our Intranet connection, will be provided also on WEB in a short while.

At present, Istat researchers are involved with the implementation in Italy of the ICD10 revision of the International Classification of Diseases. At this time an improvement of medical terms dictionary management is going on by means of an Oracle data base.

## 2 Objectives

Actions concern the preparation of an “EU training package on Certification of Causes of Death (CoD) statistics and have to be carried out with a tight co-operation and collaboration with the Member States statistical authorities in charge of the CoD certification and of training certifying physicians, with the Members of the Task Force, the Core Group and the Technical Group “Causes of Death Statistics”, respectively.

The product already realised and to be realised are the following:

- A **Technical Report** containing a review of the existing information about certification practices and certificates structures in EU countries, EEA, EFTA and CEEC countries, a review of the existing training tools for certification of causes of death (manuals, leaflets, instructions) and the presentation of the result of the survey on Training Practices in EU countries, EEA, EFTA and CEEC countries.
  - An **EU training package** that should cover:
    - 1) a **basic EU manual on certification** (in English and French language) covering in a systematic way every significant information on certification and detailed guidance on how to certify a death according to the best practice.

The manual will follow the WHO guidelines and EUROSTAT TF on CoD recommendations. The manual should be as complete as possible, based on information from the various EU Member States and EEA/EFTA and CEEC countries and intended to be used as a common standard in Europe.

Strong emphasis will be posed on the importance of good certification practices, described as a fundamental step in the informative flux on causes of death, as well as on the efforts done at national and international level at EUROSTAT for the harmonization of mortality statistics methodology in Europe.
    - 2) a **Web-based training tool** (in English language), to be used in combination with the EU manual and the basic information leaflet and established in order to train those people who are or will be responsible for filling in the death certificate. The training tool should be established so that it could be used in training and continuous professional development of every relevant medical staff. Therefore, target groups for the training tool are mainly: medical teachers, physicians, including general practitioners, hospital doctors and specialists such as pathologists and toxicologists.

The objective is to prepare a common standard EU web-based training course tool based on the guidelines and procedures for good quality death certification. The software will be realized in English with the use of standard products as requested in the call for tender; it will be available for use (and downloading) in the (from the) internet. The software will be designed so that translations in languages other than English will be facilitated by an easy access and editing of texts. The software has to be considered as an integration to the paper manual in order to allow students to acquire skills in the proper completion of death certificates either at basic or at advanced level.
    - 3) a **basic information leaflet** (in English and French language), covering the main information on good certification procedures in a practical and condensed form. The objective is to prepare a common ‘standard’ EU leaflet, which could be, then afterwards, if needed, further adapted to the specific needs of the different countries.

The work programme comprises the following activities:

- A. Updating, completion and evaluation of the information needed;
- B. Preparation of an EU manual on certification;

## C. Preparation of a training tool and of an information leaflet.

The aim of this report is to document all the activities undertaken and the results obtained in the first phase of the project (Activity A). The activity consisted in an updating and completing the information on quality and comparability of CoD, in particular of the information on certification documents and procedures and on the existing training tools and information leaflets in the EU countries, EEA, EFTA and CEEC countries.

In order to concentrate our efforts on the certification and training practices (the aim of the manual we have to prepare) we decided to submit to each of the above mentioned countries a "Set of Questions" (51 questions), which have been selected and revised from the questionnaire of the project "Quality and comparability improvement of European causes of death statistics" (182 questions) (see Sections 4, 5)

### **2.1**        ***Participants***

As we emphasized in a previous paragraph, the aim of the project is the creation of training tools - a manual and an electronic tool - and an information leaflet on causes of death certification practices in the **EU** (European Union) Member States, **EEA/EFTA** (European Economic Area / European Free Trade Association) countries and **CEEC** (Central and Eastern Europe Countries: Candidate Countries and Western Balkan Countries or CARDS Countries).

With this objective, we had established a contact with all European Union Countries and in two EFTA Member States, already interviewed during the 1999 project on "Quality and comparability improvement of European causes of death statistics", in EFTA countries never contacted and in all CEEC countries. A scheme with the network of experts from 40 countries/regions is shown in Table 2.1.

Table 2.1 - The network of experts from 40 European countries and regions

<b>Experts</b>	<b>Countries</b>	<b>Institutions</b>
Margarita Caçi, Nurie Caushi	Albania	INSTAT - National Institute of Statistics, Ministry of Health - (stat.dept)
Barbara Leitner and Monika Hackl	Austria	Statistics Austria
Peter Hooft	Belgium (Flemish speaking Community)	Ministry of Flanders - Directorate general of health
Linda Crapanzano and Yvo Pirenne	Belgium (French speaking Community)	DG SANTE - Antenne de Liège
<a href="mailto:bhas@bih.net.ba">bhas@bih.net.ba</a>	Bosnia-Herzegovina	Bosnia & Herzegovina Agency for Statistics Management Board
Finka Denkova	Bulgaria	National Statistical Institute
Ivana Bursic, Urelja Rodin, MD, MSc; Branimir Tomic, MD, MPH	Croatia	Central Bureau of Statistics (Division of Population) and Croatian Public Health Institute
Loukia Makri	Cyprus	Statistical Service of Cyprus
Mgr.Terezie Kretschmerova	Czech Republic	Czech Statistical Office
Laila Christensen	Denmark	National Board of Health
Marika Väli, Gleb Denissov	Estonia	Statistical Office of Estonia
Helena Korpi	Finland	Statistics Finland
Gerard Pavillon, Eric Jougla	France	INSERM – CépiDc
Torsten Schelhase, Christiane Rosenow	Germany	Federal Statistical Office
Chara Zikou	Greece	National Statistical Service of Greece
Monika Bene	Hungary	Hungarian Central Statistical Office (HCSO)
Ólöf Garðarsdóttir	Iceland	Statistics Iceland
Mary Heanue	Ireland	Central Statistical Office
Luisa Frova, Simona Cinque	Italy	Istat - National Institute of Statistics
Sniedze Karlsonē	Latvia	Health Statistics and Medical Technology Agency
Liuda Kasparaviciene	Lithuania	Statistics Lithuania, Demographic Statistics Division
Guy Weber	Luxembourg	Ministry of Health of Luxembourg - Directorate of Health
Renzo Pace Ascjak	Malta	Department of Health Information

Table 2.1 - (continued)

<b>Experts</b>	<b>Countries</b>	<b>Institutions</b>
Jan Kardaun	Netherlands	Statistics Netherlands
Finn Gjertsen	Norway	Statistics Norway
Lucyna Nowak	Poland	Central Statistical Office of Poland
Judite Catarino-Morgado	Portugal	Ministry of Health - Directorate general of health
Mira Dojcinovska	Republic of Macedonia	Statistical Office of FYR of Macedonia
Ioana Pertache	Romania	Ministry of Health And Family, National Centre of Health Statistics
Maja Krstic, Dagana Filippi	Serbia and Montenegro	Serbian Ministry of Health and Environment Protection/Federal Statistical Office
Maria Katerinková, Andrea Tomášková	Slovak Republic	Statistical Office of the Slovak Republic
Jožica Šelb Šemerl	Slovenia	Institute of Public Health of Republic Slovenia
Margarita Garcia Ferruelo	Spain	NSI - National Statistics Institute
Rosa Gispert, Anna Puigdefàbregas	Spain-Catalonia	Department of Health and Social Security
Lars Age Johansson, Annika Edberg	Sweden	National Board of Health and Welfare
Christoph Junker	Switzerland	Federal Statistical Office
Sengul Arslan, Nevin Uysal Mehtap Kartal	Turkey	National Institute of Statistics Ministry of Health
Lois Cook, Cleone Rooney	UK-England-Wales	ONS - Office for National Statistics
Graham Jackson	UK-Scotland	General Register Office for Scotland
Gillian Fegan and Sean Flood	UK-Northern Ireland	NISRA and GRO

### 3 Organisation

The organisation of the Project has been based around a co-ordination team in Istat and a Steering Board (SB) composed by experts from European Countries.

The Istat co-ordination team is composed by experts from ‘Mortality by Cause Unit’, Health Statistics Service, Department of Social Statistics, Italy. This Unit is in charge of collecting, coding and processing all deaths and related causes, at national level.

The co-ordination team was set-up with Monica Pace as Project Leader, responsible for the coordination of every activity related to the development of the training manual and of the web-based tool; Silvia Bruzzone as responsible for the general co-ordination and for the info collection on certification practices in European Countries as well; Luisa Frova as responsible for the co-ordination of the updating survey and processing of the information on certification documents and procedures and Head of Mortality by Cause Unit; Stefano Marchetti as responsible for the co-ordination of the activities related to the development of the web-based training tool, and Roberta Criallesi as Head of Istat Health Statistics Section.

Other people of the Mortality by Cause Unit have been regularly involved in the project as assistant researchers: Simona Cinque for the whole editing of this report and for contributing to the activities related to the training manuals revision; Gennaro Di Fraia for contributing to the activities related to the web-based training tool revision; Francesco Grippo for contributing to the creation of Chapter 6, Annex-B and the activities related to the questionnaire preparation; Marilena Pappagallo for contributing to the realization of Chapter 5 and the activities related to elaboration of the answers of the survey; Simona Pennazza for the creation of Annex C and the activities related to certificate collection and preliminary data on certification practices; Silvana Sola for contributing to completion of survey questionnaires that have been sent to EU member States.

A special thank is for Antonella Ciccarese, for her support as organization secretary for the meetings and administrative secretary for the project.

#### **The correspondent network**

*The Steering Board (SB)* was constituted from experts from 5 countries:

<b>Monika Bene</b>	Hungary	HCSO	Hungarian Central Statistical Office
<b>Lois Cook</b>	United Kingdom	ONS	Office for National Statistics
<b>Mary Heanue</b>	Ireland	CSO	Central Statistical Office
<b>Gerard Pavillon</b>	France	INSERM	Centre d'épidémiologie sur le causes médicales de décès
<b>Eric Jougl</b>	France	INSERM	Centre d'épidémiologie sur le causes médicales de décès
<b>Jacques Bonte</b>	Netherlands		Expert privé

#### *Other experts involved*

**Lars Age Johansson** Sweden National Board of Health and Welfare

#### *Eurostat correspondent*

**Marleen De Smedt** Eurostat Head of Unit E3 "Education, health and other social domains"  
**Didier Dupré** Eurostat Unit E3 "Education, health and other social domains"

#### **The meetings**

The co-ordination team and the Steering Board decided to plan periodic face to face meetings and teleconferences to decide actions to undertake.

Meetings organisation (travels and hotel reservations) was managed directly by the Istat co-ordination team.

The first Steering Board (SB) meeting was held in Rome (4th -5th March 2003) with the following participants:

**IRELAND**

Mary Heanue CSO

**UNITED KINGDOM**

Lois Cook ONS

**FRANCE**

Gerard Pavillon INSERM

Eric Jouglu INSERM

**HUNGARY**

Monika Bene HCSO

Jacques Bonte Expert privé

Roberta Crialesi ISTAT

Luisa Frova ISTAT

Silvia Bruzzone ISTAT

Stefano Marchetti ISTAT

Simona Cinque ISTAT

Simona Pennazza ISTAT

Antonella Ciccarese ISTAT

Monica Pace ISTAT

Francesco Grippo ISTAT

During the first SB meeting, the dates of future communications (until January 2004), within and outside the SB were planned as follows:

**May 28<sup>th</sup> 2003** Teleconference with the SB: 11 a.m. Central European time (duration: 1 hour)

**July 2<sup>nd</sup> 2003** Teleconference with the SB: 11 a.m. Central European time (duration: 1 hour)

**September 16<sup>th</sup> 2003** Teleconference with the SB: 11 a.m. Central European time (duration: 1 hour)

**November 6<sup>th</sup> -7<sup>th</sup> 2003** SB Meeting in Rome

**January 13<sup>th</sup> 2004** Teleconference with the SB: 11 a.m. Central European time (duration: 1 hour)



## 4 Materials

### 4.1 *The questionnaire*

As emphasized in paragraph 1.1.1, the project on "Quality and comparability improvement of European causes of death statistics" involved experts from the 15 European Union Member States and 2 EFTA countries (Iceland and Norway). The main objective reached with this project was a concrete European set of recommendations for harmonisations, as regards the "Comparability of European Causes of Death Statistics".

In order to collect information, a questionnaire was submitted to every member state. This was the result of a long process begun with some previous undertakings in the context of the Task Force on Causes of Death.

To concentrate our efforts on the certification and training practices (the aim of the manual we have to prepare) we decided to ask to each of the expert of the above mentioned network (Table 2.1) a "Set of Questions" (51 questions). Forty nine questions have been selected from Part I of the questionnaire of the project "Quality and comparability improvement of European causes of death statistics" (182 questions), whilst two questions have been prepared 'ad hoc' for our purposes.

The aim was to have a general overview of the structure of death certificates in different countries, of who is in charge of completing death certificate, of training practices and of causes of death that are typically more affected by a lack of information.

The questionnaire of this project is composed of five sections covering the different stages of the certification process:

- General death certificate;
- Infant death certificate;
- Certifiers training practices;
- Query practices;
- Coverage and ill-defined conditions.

To facilitate the coding procedures of the answers, to reduce completion errors and to facilitate the elaboration of final dataset an Excel version has been provided. Questions have been structured with close answers, multiple choice answers and open answers.

### 4.2 *Eurostat recommendations*

The recommendations, which total 39, concern the different stages of death certification. They are classified under 8 items aiming to follow the certification process (see Annex A):

- 1- Coverage;
- 2- Confidentiality;
- 3- Organisation of the Causes of Death Statistics Offices;
- 4- Infant causes of death certification;
- 5- General causes of death certification;
- 6- Query practices;
- 7- Training practices;
- 8- European collection of mortality statistics.

The recommendations come from the FINAL REPORT on "Comparability and Quality Improvement of European Causes of Death Statistics" and are based on the results of the 1999 survey (full questionnaire) and on the discussions in two specific meetings: a Steering group meeting in Lisbon (April 2000) and a Plenary Group meeting in Barcelona (November 2000).

These recommendations consist of scientific guidelines. They have been proposed by experts who have a legitimate scientific point of view on causes of death statistics, but who do not act as the official representative of their country. They are naturally thought of within the context of European countries varied situations, but they do not take into account all administrative and political constraints.

## **PARTICIPANTS TO THE GROUPS**

<b>Group 1 General and infant death certificates</b>	<b>Group 2 Query practices / Coverage and ill-defined conditions</b>	<b>Group 3 Training practices / Confidentiality practices</b>
Susan Cole UK Scotland	Renzo Asciak Malta	Eric Jouglu France
Finn Gjertsen Norway	Judite Catarino Portugal	Cleone Rooney UK England
Peter Hooft Belgium	Mary Heanue Ireland	Gloria Perez (second part) Spain-Catalonia
Gloria Perez Spain-Catalonia	Lars Johansson Sweden	Jacques Bonte EU Eurostat
Christiane Rosenow Germany	Antoine Niyonsenga France	Richard Gisser Austria
Florence Rossollin France	G�rard Pavillon France	Silvia Bruzzone Italy
Mady Roulleaux Luxembourg	Giselle Renaud France	Hilkka Ahonen Finland
Chara Zikou Greece		Tanya Vandepoorter France
<i>Reporters: Susan Cole, Florence Rossollin</i>	<i>Reporters: Lars Johansson, G�rard Pavillon</i>	<i>Reporters: Cleo Rooney, Eric Jouglu</i>

### **4.3 Data base of existing training tools**

Three categories of training tools have been identified : i) manuals, handbooks, booklets; ii) web-based training tools; iii) concise leaflets and instructions. The paper material (i, iii) has been gathered by contacts with several countries from all over the world, or downloaded from various web-sites. The web-based resources for training (ii) were permanently bookmarked when reached by means of specialised internet search-engines.

The main features, peculiarities and strong points are reported there for every analysed training tool.

### **4.4 Data base of published studies**

Common mistakes in death certification and their impact on mortality statistics have been extensively studied worldwide. Istat has collected published studies on the quality of certification in a database in order to have a complete overview of problems in death certificate completion for the purposes of the training manual and software. The main source of information was the free internet database PubMed ([www.pubmed.com](http://www.pubmed.com)). Keywords used in the interrogation were “death certificate” plus one of the following: “mortality”, “completion”, and “training”. Furthermore, several papers have been selected from the published database of C piD-Inserm final report “Comparability and quality improvement of European causes of death statistics” (2001). The complete list of 340 studies available in the database is shown in Annex B.

### **4.5 The Death certificates data base and the international medical certificate of cause of death recommended by the WHO**

In order to create a useful guide at an international level we need to evaluate inter-country differences and homologies as regard to all countries death certificate form.

This evaluation is the first step to reach a progressive standardization and comparability in death certificate structure all over the world.

For this reason, we decided to ask each country to send us the death certificate and some notes about certification flow. By using these data we decided to create a database (see Annex C).

A database on death certificates provides a large source of information for every researcher and institution and is the basic material for any project about possible changes, addition and deflections of the document on the basis of an international view, in order to adapt it to its own situation and to

understand if there is a missing or wrong stage that could be against a fluency of certification practices and of mortality statistics survey.

## **5 Responses from the countries participating to the project**

The questionnaires have been sent to 40 countries/regions (EU Member States, EEA/EFTA and CEEC countries) at the beginning of April 2003.

Unfortunately, due to the strict timetable of this first part of the project, the countries involved had a very short time to fill up and send back the questionnaire (deadline 14 April).

Those countries/regions, who answered to the questionnaire of preceding Eurostat project in 1999 (15 European Union Member States and 2 EFTA countries (Iceland and Norway)) needed a 2003 updating and therefore, a pre-completed version has been sent (questionnaires sent to 20 countries/regions).

37 out of 40 questionnaire came back (Albania, Austria, Belgium (Flemish speaking Community), Belgium (French speaking Community), Bulgaria, Croatia, Czech Republic, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Republic of Macedonia, Romania, Slovak Republic, Slovenia, Spain, Spain-Catalonia, Sweden, Switzerland, Turkey, UK-England-Wales, UK-Northern Ireland, UK-Scotland) (see Table 5.1).

Unfortunately three countries (Bosnia-Herzegovina, Poland and Serbia Montenegro) have been excluded from the results because of lack of information.

Table 5.1 – Countries enrolled in the project and information available

Country/Region	Questionnaire Update 2003	Questionnaire 1999	Death certificate form available	Information available for the Technical Report
Albania	Yes	Not interviewed	Yes	2003 survey
Austria	Yes	Yes	Yes	2003 survey
Belgium (Flemish)	Yes	Yes	Yes	2003 survey
Belgium (French)	Yes	Not answered	-	2003 survey
Bosnia-Herzegovina		Not interviewed	-	Not available
Bulgaria	Yes	Not interviewed	-	2003 survey
Croatia	Yes	Not interviewed	Yes	2003 survey
Cyprus	Yes	Not interviewed	-	2003 survey
Czech Republic	Yes	Not interviewed	Yes	2003 survey
Denmark	Yes	Yes	-	2003 survey
Estonia	Yes	Not interviewed	-	2003 survey
Finland	Yes	Yes	Yes	2003 survey
France	Yes	Yes	Yes	2003 survey
Germany	Yes	Yes	Yes	2003 survey
Greece	Yes	Yes	-	2003 survey
Hungary	Yes	Not interviewed	Yes	2003 survey
Iceland	Yes	Yes	-	2003 survey
Ireland	Yes	Yes	Yes	2003 survey
Italy	Yes	Yes	Yes	2003 survey
Latvia	Yes	Not interviewed	-	2003 survey
Lithuania	Yes	Not interviewed	Yes	2003 survey
Luxembourg	Yes	Yes	Yes	2003 survey
Malta	Yes	Not interviewed	Yes	2003 survey
Netherlands	Yes	Yes	-	2003 survey
Norway	Yes	Yes	Yes	2003 survey
Poland		Not interviewed	-	Not available
Portugal	Yes	Yes	-	2003 survey
Republic of Macedonia	Yes	Not interviewed	Yes	2003 survey
Romania	Yes	Not interviewed	Yes	2003 survey
Serbia Montenegro		Not interviewed	-	Not available
Slovak Republic	Yes	Not interviewed	Yes	2003 survey
Slovenia	Yes	Not interviewed	Yes	2003 survey
Spain	Yes	Yes	Yes	2003 survey
Spain-Catalonia	Yes	Yes	-	2003 survey
Sweden	Yes	Yes	Yes	2003 survey
Switzerland	Yes	Not interviewed	-	2003 survey
Turkey	Yes	Not interviewed	-	2003 survey
UK-England-Wales	Yes	Yes	Yes	2003 survey
UK-Scotland	Yes	Yes	-	2003 survey
UK-Northern Ireland	Yes	Yes	-	2003 survey

## 5.1 *Medical Part of Death certificate: structure and additional information collected*

### 5.1.1 *The structure*

The preparation of an EU manual on Certification of Causes of Death cannot overlook to take into account differences that can be found on the death certificate forms among different countries. In fact, certification practices are strictly related to the number of lines available and, as a consequence, on the chance of correctly describe the ‘entire fatal process that has led to death’ and ‘other significant conditions contributing to death’.

The WHO death certificate form (4 lines to describe the causes of death and 1 line to describe other significant conditions contributing to death) is adopted by twelve countries/regions: Belgium (Flemish and French speaking Communities), Estonia, France, Hungary, Iceland, Lithuania,

Portugal, Republic of Macedonia, Romania, Sweden and UK-Scotland. Albania and Denmark also have 4 lines, but in Albania there is not the item on ‘other significant conditions’ form while for Denmark the information on this item is missing (see Table 5.2).

Only four countries have less than 3 lines (Austria, Luxembourg, Switzerland and Turkey), the other countries/regions not mentioned above have 3 lines available to describe the causes of death.

Almost every country, with the exception of Turkey and Albania, have the item on “Other significant conditions contributing to death”. Nevertheless, many countries/regions (19 out of 37) believe that the role of Part II of the certificate, or an item on other significant conditions contributing to the death, is not well understood by physicians and, in some cases, they repeat what they have written in Part I.

Table 5.2 – Number of lines available on death certificate to describe the causes of death

Country	Less than 3 lines	3 lines	4 lines	Other significant conditions contributing to death
<b>Albania</b>			Yes	No
<b>Austria</b>	Yes*			Yes*
<b>Belgium (Flemish)</b>			Yes	Yes
<b>Belgium (French)</b>			Yes	Yes
Bosnia Herzegovina				
<b>Bulgaria</b>	-	-	-	-
<b>Croatia</b>		Yes		Yes
<b>Cyprus</b>		Yes		Yes
<b>Czech Republic</b>		Yes		Yes
<b>Denmark</b>			Yes	n.i
<b>Estonia</b>			Yes	Yes
<b>Finland</b>		Yes		Yes
<b>France</b>			Yes	Yes
<b>Germany</b>		Yes*		Yes
<b>Greece</b>		Yes		Yes
<b>Hungary</b>			Yes	Yes
<b>Iceland</b>			Yes	Yes
<b>Ireland</b>		Yes		Yes
<b>Italy</b>		Yes		Yes
<b>Latvia</b>		Yes		Yes
<b>Lithuania</b>			Yes	Yes
<b>Luxembourg</b>	Yes*			Yes*
<b>Malta</b>		Yes		Yes
<b>Netherlands</b>		Yes		Yes
<b>Norway</b>		Yes		Yes
Poland				
<b>Portugal</b>			Yes	Yes
<b>Republic of Macedonia</b>			Yes	Yes
<b>Romania</b>			Yes	Yes
Serbia Montenegro				
<b>Slovak Republic</b>		Yes		Yes
<b>Slovenia</b>		Yes		Yes
<b>Spain</b>		Yes		Yes
<b>Spain-Catalonia</b>		Yes		Yes
<b>Sweden</b>			Yes	Yes
<b>Switzerland</b>	Yes			Yes
<b>Turkey</b>	Yes			No
<b>UK-England-Wales</b>		Yes		Yes
<b>UK-Scotland</b>			Yes	Yes
<b>UK-Northern Ireland</b>	n.i	n.i	n.i	n.i

\*information available from the death certificate form.

### 5.1.2 Additional information

The formulation of the question 1.38 “What is the additional information collected in your death certificate?” has changed from the previous survey (stating in 1999 as follow: “What is the

*additional systematic medical information available in the final individual mortality file and from what source?*). Actually the original formulation did not satisfy the aims of this project, that is the certifiers point of view.

Unfortunately, sometimes some differences between death certificate forms (where available) and answers given by the experts (to the 2003 questionnaire) have been found, and this might have happened as a consequence of a misunderstanding of the new formulation of the question. Therefore, in Table 5.3 we decided to show the answers of the questions 1.38 and 1.33 (Autopsy) of the 2003 questionnaire (in bold) and to add information aroused from the death certificate forms where available (marked with an asterisk).

Almost every country/region has a question on the death certificate on autopsy (except Albania, Cyprus, Greece, Ireland, Malta, Romania, Spain and Spain-Catalonia). There is a general agreement (about 80% of the experts) on the importance of collecting more information about autopsies in the death certificate such as ‘autopsy done’, ‘legal autopsy’, ‘autopsy made in hospital’ and ‘autopsy used for certification’.

Medical additional information systematically inquired is: accident place (26 countries/regions), occupational accident/disease (21 countries/regions), pregnancy (10 countries/regions) and recent surgery (9 countries/regions). A specific question on smoking habits is never done, and other risks factors, such as drug addiction, alcohol abuse or diabetes are sometimes investigated.

Sometimes, also ‘place of death’ (hospital, home...), ‘date of accident’ (or interval between date of accident and death), ‘the certifier’ (whether physician or not), ‘medical treatment from the illness he/she died’ are collected.

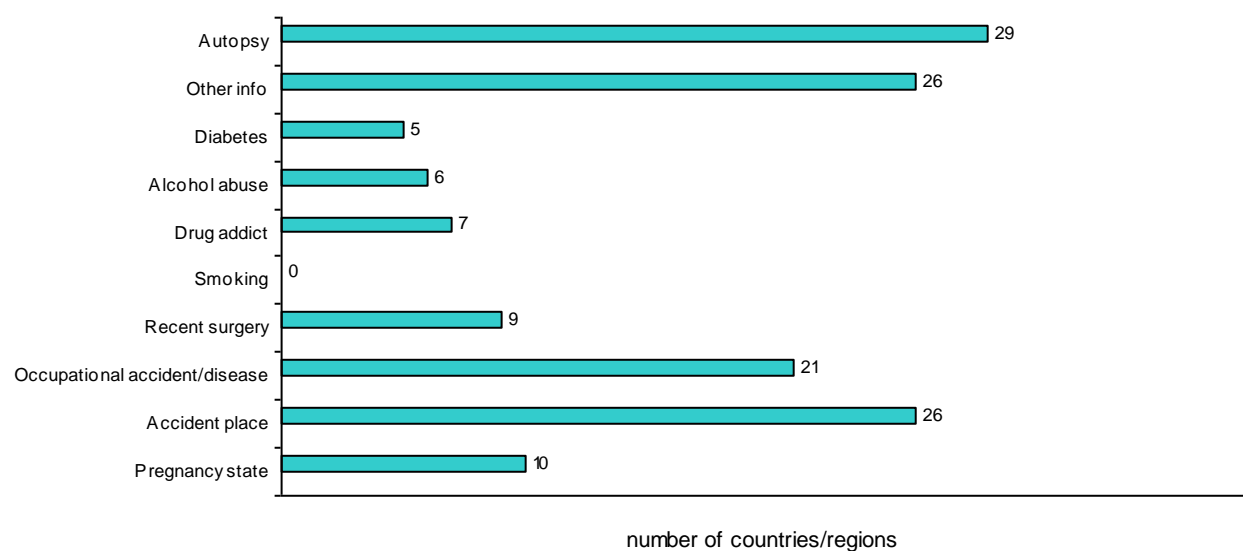
Table 5.3 – Additional information available on the death certificate

Country	Pregnancy state	Accident place	Occupational accident/ disease	Recent surgery	Smoking	Drug addict	Alcohol abuse	Diabetes	Other info	Autopsy
<b>Albania</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>					<b>Yes</b>	<b>Yes*</b>	<b>No</b>
<b>Austria</b>									<b>Yes*</b>	<b>Yes</b>
<b>Belgium (Flemish)</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>						<b>Yes</b>	<b>Yes</b>
<b>Belgium (French)</b>	<b>Yes</b>	<b>Yes</b>								<b>Yes</b>
<b>Bosnia-Herzegovina</b>										
<b>Bulgaria</b>			<b>Yes</b>							<b>Yes</b>
<b>Croatia</b>		<b>Yes</b>	<b>Yes</b>						<b>Yes*</b>	<b>Yes</b>
<b>Cyprus</b>									<b>Yes</b>	<b>No</b>
<b>Czech Republic</b>			<b>Yes*</b>						<b>Yes</b>	<b>Yes</b>
<b>Denmark</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>
<b>Estonia</b>		<b>Yes</b>							<b>Yes</b>	<b>Yes</b>
<b>Finland</b>		<b>Yes</b>	<b>Yes*</b>	<b>Yes</b>					<b>Yes</b>	<b>Yes</b>
<b>France</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>						<b>Yes*</b>	<b>Yes</b>
<b>Germany</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>						<b>Yes*</b>	<b>Yes</b>
<b>Greece</b>										<b>No</b>
<b>Hungary</b>		<b>Yes</b>							<b>Yes</b>	<b>Yes</b>
<b>Iceland</b>		<b>Yes</b>		<b>Yes</b>					<b>Yes</b>	<b>No</b>
<b>Ireland</b>	<b>Yes</b>								<b>Yes*</b>	<b>No</b>
<b>Italy</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>						<b>Yes</b>	<b>Yes</b>
<b>Latvia</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Lithuania</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes*</b>	<b>Yes</b>
<b>Luxembourg</b>		<b>Yes</b>	<b>Yes</b>				<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Malta</b>		<b>Yes</b>							<b>Yes*</b>	<b>No</b>
<b>Netherlands</b>		<b>Yes</b>								<b>Yes</b>
<b>Norway</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>			<b>Yes*</b>	<b>Yes</b>
<b>Poland</b>										
<b>Portugal</b>		<b>Yes</b>	<b>Yes</b>						<b>Yes*</b>	<b>Yes</b>
<b>Republic of Macedonia</b>									<b>Yes*</b>	<b>Yes</b>
<b>Romania</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>
<b>Serbia Montenegro</b>										
<b>Slovak Republic</b>			<b>Yes</b>			<b>Yes</b>				<b>Yes</b>
<b>Slovenia</b>		<b>Yes</b>	<b>Yes</b>						<b>Yes</b>	<b>Yes</b>
<b>Spain</b>		<b>Yes</b>								<b>No</b>
<b>Spain-Catalonia</b>		<b>Yes</b>								<b>No</b>
<b>Sweden</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>
<b>Switzerland</b>									<b>Yes</b>	<b>Yes</b>
<b>Turkey</b>										<b>Yes</b>
<b>UK-England-Wales</b>		<b>Yes</b>	<b>Yes</b>							<b>Yes</b>
<b>UK-Scotland</b>	<b>Yes</b>									<b>Yes</b>
<b>UK-Northern Ireland</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>						<b>Yes</b>

\*information available from the death certificate form.



**Figure 5.1– Additional information available on the death certificate**



## 5.2 *Infant death certificate*

### 5.2.1 *Specific infant death certificate*

23 out of 37 countries/regions declared to have a specific infant death certificate, nevertheless 7 countries (Austria, Ireland, Romania, Spain-Catalonia, Switzerland, UK-Scotland and UK-Northern Ireland) use a certificate only for stillbirth, which is not considered as certificate for infant deaths in this study (and in the previous Eurostat project). Therefore, 16 countries have a specific infant death certificate (see Table 5.4). Among these, Croatia, Estonia, Hungary, Latvia and Lithuania refer to perinatal period; Finland, France, Portugal, UK-England-Wales refer to neonatal period and Albania, Belgium (Flemish and French speaking Communities), Italy and Netherlands refer to infant period; Luxembourg and Spain refer to other periods, respectively ‘stillbirth+10 days’ and ‘stillbirth+24 hours’.

A wide range of definitions is still used for infant age periods among countries, mainly for stillbirth, where the minimum period of gestation varies from 0 (Turkey) to 196 days (6 countries) and, for perinatal period that varies from 154/196 days of gestation to 6/7 days of life. Some countries adopt a definition for stillbirth that takes into account the weight of the foetus.

Definitions are more homogeneous for neonatal and infant ages. In fact, neonatal varies from 27 to 28 days and infant varies from 364 to 365 days. Dissimilarities in neonatal and infant definitions are very likely due to differences in definition of temporal interval (upper bound open or closed).

In order to have an overview of the different definitions adopted by countries and better understand the complexity of this subject (statistical definitions are related to administrative and political constraints within a country).

### 5.2.2 *Layout of the certificate*

With reference to the International WHO recommendations, 10 countries adopt two parts (one for the mother and one for the infant) to certify infant deaths (Croatia, Estonia, Finland, France, Hungary, Latvia, Lithuania, Romania, Spain, UK-England-Wales). Italy, Luxembourg and Netherlands and UK-Scotland use a ‘one part presentation’ as in the general death certificate. Belgium (both Flemish

and French speaking Communities) and Portugal use of a combination of the two ways of presentation.

Table 5.4 – Specific infant death certificate

Country	Infant certificate	If yes: period concerned					Death certificate layout <sup>(a)</sup>
		Stillbirth	Perinatal	Neonatal	Infant	Other	
<b>Albania</b>	<b>Yes</b>				<b>X</b>		<b>1</b>
<b>Austria</b>	<b>Yes</b>	<b>X</b>					<b>1</b>
<b>Belgium (Flemish)</b>	<b>Yes</b>				<b>X</b>		<b>3</b>
<b>Belgium (French)</b>	<b>Yes</b>				<b>X</b>		<b>3</b>
Bosnia Herzegovina							
<b>Bulgaria</b>	<b>No</b>						
<b>Croatia</b>	<b>Yes</b>		<b>X</b>				<b>2</b>
<b>Cyprus</b>	<b>No</b>						
<b>Czech Republic</b>	<b>No</b>						
<b>Denmark</b>	<b>No</b>						
<b>Estonia</b>	<b>Yes</b>		<b>X</b>				<b>2</b>
<b>Finland</b>	<b>Yes</b>	<b>X</b>		<b>X</b>			<b>2</b>
<b>France</b>	<b>Yes</b>			<b>X</b>			<b>2</b>
<b>Germany</b>	<b>No<sup>#</sup></b>						
<b>Greece</b>	<b>No</b>						
<b>Hungary</b>	<b>Yes</b>		<b>X</b>				<b>2</b>
<b>Iceland</b>	<b>No</b>						
<b>Ireland</b>	<b>Yes</b>	<b>X</b>					
<b>Italy</b>	<b>Yes</b>				<b>X</b>		<b>1</b>
<b>Latvia</b>	<b>Yes</b>		<b>X</b>				<b>2</b>
<b>Lithuania</b>	<b>Yes</b>		<b>X</b>				<b>2</b>
<b>Luxembourg</b>	<b>Yes</b>					<b>X<sup>(b)</sup></b>	<b>1</b>
<b>Malta</b>	<b>No</b>						
<b>Netherlands</b>	<b>Yes</b>				<b>X</b>		<b>1</b>
<b>Norway</b>	<b>No</b>						
Poland							
<b>Portugal</b>	<b>Yes</b>			<b>X</b>			<b>3</b>
<b>Republic of Macedonia</b>	<b>No</b>						
<b>Romania</b>	<b>Yes</b>	<b>X</b>					<b>2</b>
Serbia Montenegro							
<b>Slovak Republic</b>	<b>No</b>						
<b>Slovenia</b>	<b>No</b>						
<b>Spain</b>	<b>Yes</b>					<b>X<sup>(c)</sup></b>	<b>2</b>
<b>Spain-Catalonia</b>	<b>Yes</b>	<b>X</b>					<b>n.i.</b>
<b>Sweden</b>	<b>No</b>						
<b>Switzerland</b>	<b>Yes</b>	<b>X</b>					<b>n.i.</b>
<b>Turkey</b>	<b>No</b>						
<b>UK-England-Wales</b>	<b>Yes</b>			<b>X</b>			<b>2</b>
<b>UK-Scotland</b>	<b>Yes</b>	<b>X</b>					<b>1</b>
<b>UK-Northern Ireland</b>	<b>Yes</b>	<b>X</b>					<b>n.i.</b>

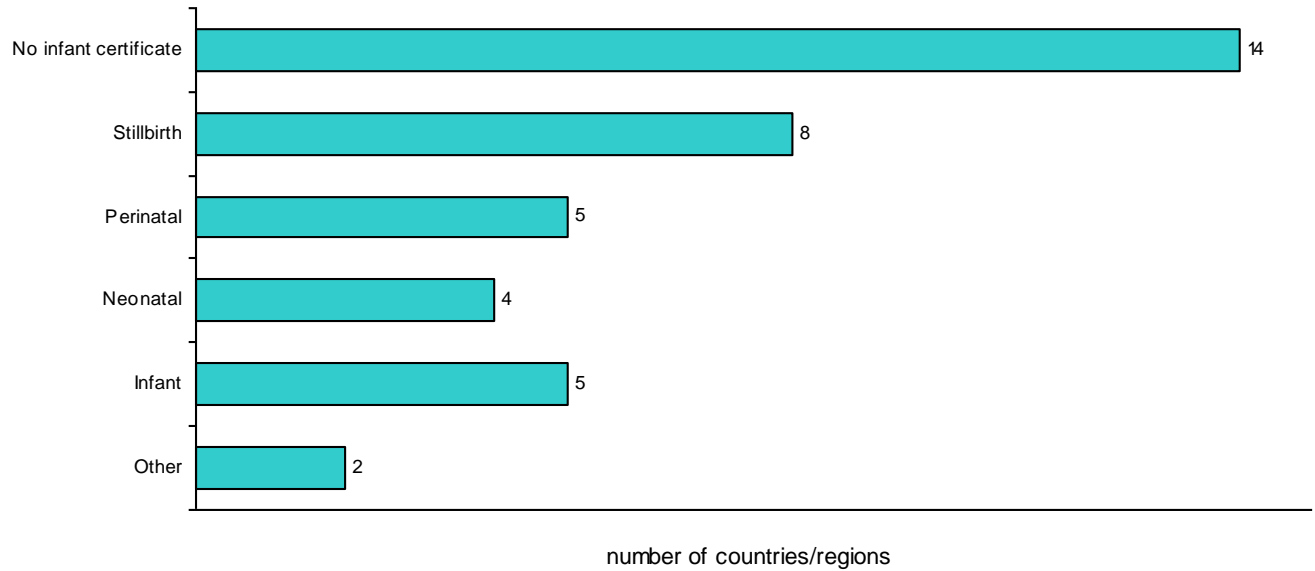
(a) 1 one part, as in the general death certificate; 2: two parts: mother and infant causes of death (WHO recommendation); 3: a combination of the two ways of presentation; n.i: information not available.

(b) Stillbirth+10 days

(c) Stillbirth+24 hours

<sup>#</sup>In Germany, the Land of Brandenburg is the only land still using a specific infant death certificate

Figure 5.2 – Specific infant death certificate



### 5.3 *Who certifies the causes of death*

#### 5.3.1 *Usually*

The certifiers are usually physicians nevertheless their practices varies among countries/regions (young physicians, physicians in charge with the decedent, physician head of the service or forensic physicians). In every country, physicians in charge of the decedent (with the exception of Slovak Republic) and young physicians (with the exception of Bulgaria, Estonia and Latvia) certify the causes of death. In most of the countries/regions the physician head of the service is also involved in the certification. The forensic physicians have been explicitly indicated by 30 countries/regions (see Table 5.5).

Among other people, who are allowed to certify, pathologists, family physicians, medical health officers, emergency physicians, physicians on duty, are also mentioned in the questionnaires.

Non medical people certify in 4 countries only (Croatia, Ireland, Turkey, UK-England-Wales). For example, in Ireland and UK-England-Wales certifiers are also coroners (usually lawyers but sometimes both legally and medically qualified).

In Greece, if there is not a doctor, the registrar or the captain (on a ship) or closest relatives (at a private dwelling) may certify.

Sometimes in Italy medical students certify causes of death.

Table 5.5 – Who certifies the causes of death in different countries/regions

Country	Non medical people	Medical students	Young physicians	Physician in charge with the decedent	Physician head of the service	Forensic physicians	Other people
<b>Albania</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Austria</b>						<b>Yes</b>	<b>Yes</b>
<b>Belgium (Flemish)</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Belgium (French)</b>			<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	
Bosnia-Herzegovina							
<b>Bulgaria</b>				<b>Yes</b>		<b>Yes</b>	
<b>Croatia</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>
<b>Cyprus</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Czech Republic</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Denmark</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>
<b>Estonia</b>				<b>Yes</b>		<b>Yes</b>	<b>Yes</b>
<b>Finland</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>France</b>			<b>Yes</b>	<b>Yes</b>			<b>Yes</b>
<b>Germany</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		
<b>Greece</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Hungary</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Iceland</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Ireland</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Italy</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Latvia</b>				<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Lithuania</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Luxembourg</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>
<b>Malta</b>			<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	
<b>Netherlands</b>			<b>Yes</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>
<b>Norway</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
Poland							
<b>Portugal</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Republic of Macedonia</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Romania</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
Serbia Montenegro							
<b>Slovak Republic</b>			<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	
<b>Slovenia</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Spain</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Spain-Catalonia</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>
<b>Sweden</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Switzerland</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Turkey</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>UK-England-Wales</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>			<b>Yes</b>
<b>UK-Scotland</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>UK-Northern Ireland</b>			<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		

### 5.3.2 And in case of inquiry?

In case of non-natural deaths systematic inquiries (suicides, homicides, ill-defined causes of accidents...) are necessary for Albania, Belgium (Flemish speaking Community), Bulgaria, Croatia, Czech Republic, Cyprus, Estonia, Finland, Greece, Iceland, Ireland, Latvia, Lithuania, Malta, Netherlands, Norway, Republic of Macedonia, Romania, Slovak Republic, Slovenia, Spain, Spain-Catalonia, Sweden, Turkey, UK-England-Wales, UK-Scotland, UK-Northern Ireland (see Table 5.6). In case of inquiry the certification is performed by coroners in Ireland, in UK-Northern Ireland and in UK-England-Wales. In these regions ‘a pathologist or forensic physician may provide the cause of death, but the certificate is filled up by the coroner who is legally qualified’. Police and physicians (or pathologist or forensic officer) are together in charge of completing the death certificate in Czech Republic.

In Ireland, Norway, Republic of Macedonia and Spain the certification of death can be the responsibility of legal professionals and/or physicians.

In Croatia, Cyprus, Greece and Spain-Catalonia forensic physicians always certify the deaths and sometimes in Greece and in Spain-Catalonia, the certifiers are the police and the legal professional, respectively.

In Malta pathologists fill up the death certificate always in collaboration with the magistrate.

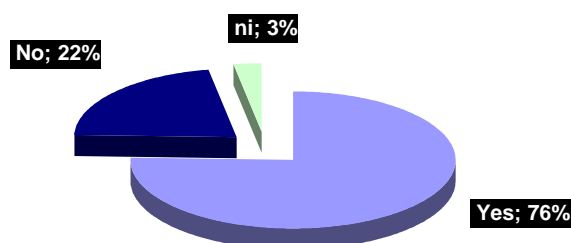
In Turkey, in case of inquiry, either non medical or medical professionals can be involved in the death certification.

In the remaining countries it is the responsibility of physicians or forensic pathologists (in the case of autopsies).

Table 5.6 – **Inquiries in case of non natural deaths (suicides, homicides, ill-defined causes of accidents...) and people in charge of completing death certificates in case of inquiry.**

Country	Systematic inquiry?	In case of inquiry, who is filling the death certificate?				
		Police	Physician	Forensic physician	Legal professionals	Other people
<b>Albania</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Austria</b>	<b>No</b>					
<b>Belgium (Flemish)</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Belgium (French)</b>	<b>No</b>		<b>Yes</b>	<b>Yes</b>		
Bosnia-Herzegovina						
<b>Bulgaria</b>	<b>Yes</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>
<b>Croatia</b>	<b>Yes</b>			<b>Yes</b>		
<b>Cyprus</b>	<b>Yes</b>			<b>Yes</b>		
<b>Czech Republic</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>
<b>Denmark</b>	<b>No</b>			<b>Yes</b>		
<b>Estonia</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		<b>Yes</b>
<b>Finland</b>	<b>Yes</b>			<b>Yes</b>		
<b>France</b>	<b>No</b>		<b>Yes</b>	<b>Yes</b>		
<b>Germany</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>	<b>n.i</b>
<b>Greece</b>	<b>Yes</b>	<b>Yes</b>		<b>Yes</b>		
<b>Hungary</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Iceland</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Ireland</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
<b>Italy</b>	<b>No</b>		<b>Yes</b>	<b>Yes</b>		
<b>Latvia</b>	<b>Yes</b>			<b>Yes</b>		
<b>Lithuania</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Luxembourg</b>	<b>No</b>		<b>Yes</b>	<b>Yes</b>		
<b>Malta</b>	<b>Yes</b>			<b>Yes</b>		<b>Yes</b>
<b>Netherlands</b>	<b>Yes</b>			<b>Yes</b>		
<b>Norway</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
Poland						
<b>Portugal</b>	<b>No</b>		<b>Yes</b>	<b>Yes</b>		
<b>Republic of Macedonia</b>	<b>Yes</b>			<b>Yes</b>	<b>Yes</b>	
<b>Romania</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
Serbia Montenegro						
<b>Slovak Republic</b>	<b>Yes</b>			<b>Yes</b>		
<b>Slovenia</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Spain</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>Spain-Catalonia</b>	<b>Yes</b>			<b>Yes</b>	<b>Yes</b>	
<b>Sweden</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>Switzerland</b>	<b>No</b>					
<b>Turkey</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	
<b>UK-England-Wales</b>	<b>Yes</b>				<b>Yes</b>	
<b>UK-Scotland</b>	<b>Yes</b>		<b>Yes</b>	<b>Yes</b>		
<b>UK-Northern Ireland</b>	<b>Yes</b>					<b>Yes</b>

Figure 5.3 – Systematic inquiries in case of non natural deaths?



## 5.4 *Certifiers training practices*

### 5.4.1 *Guidelines in/with death certificate*

One of the simplest and efficient way to help certifier in completing death certificate is to systematically provide guidelines in/with death certificate form.

In many countries/regions guidelines, based on text with general instructions and examples (not always), are provided.

Most of the countries/regions (about 65% of them) believe that the guidelines they use need to be improved. The main reasons are:

- quality and harmonization of data collection;
- to shorten and simplify the existing leaflets;
- to update with the progresses made in this field.

### 5.4.2 *Training students and physicians*

#### **Training courses**

Certification is often taught to medical students (about 67% of countries/regions have declared to have trainings for students). The duration of the training courses is quite short and varies from about half an hour (Netherlands) to four hours (Latvia and Spain-Catalonia). The widespread manner is 2 hours (see Table 5.7).

The percentage where countries/regions have trainings on certification for physicians, is much lower than the training percentage for students, and it is 36%.

Training course teachers have different vocational backgrounds; they generally are forensic pathologists or physicians or come from the Causes of death Offices.

Medical students are usually trained on death certification by physicians, while physicians are usually trained by other physicians or forensic pathologists or by people coming from the Causes of Death Offices.

The most important training contents are:

- importance of mortality statistics;
- descriptive analysis of mortality data;
- explanation of death certificate;
- methodology of filling up death certificate;
- certifying rules;

- definition of underlying cause of death;
- case histories and practical examples.

The methods of training vary according to trainee profiles and the duration of courses.

In some countries, training on certification is usually taught as part of forensic or legal medicine.

In Finland local forensic physicians give continuous training to certifiers.

### **Existing training tools and information leaflets**

More than half of the countries/regions declared to have training tools (see Table 5.8). Generally the tools, similar for students, physicians and teachers, consist of small booklets, guidance or leaflets. Only five countries/regions (Estonia, Italy, Republic of Macedonia, Spain, Spain-Catalonia) provide a training manual. In Italy, the manual is the translation of the OMS guidance "Le certificat médical de la cause de décès", 1980 (IV ed.) edited in 1989 by Emilia-Romagna region, Service of Health Statistics.

More technological tools, such as computer assisted learning and videos, are available in UK-Scotland (both), Spain (interactive software) and in UK-England-Wales (video).

Texts on certification are usually available at Universities (for students and teachers), during workshops or meetings (for physicians). In two cases (Iceland and Spain-Catalonia) the guidance is sent by e-mail, and in Sweden the guidance is used in hospital.

### **The satisfaction**

There is a general agreement among the experts on cause of death statistics about the scarcity of training courses on certification (see Table 5.7).

24 out of 37 countries/regions declared to be unsatisfied by the training courses for students (6 out of 37 did not answer). Regarding training for physicians, all the respondent, except Slovak Republic, agreed that it is inadequate (5 experts did not indicate their opinion).

The most important reasons of dissatisfaction can be resumed in:

- insufficient number of hours;
- lack of experience of teachers involved;
- poor cooperation between statistical offices and trainers;
- irregularity of training courses;
- lack of communication between certifying physicians and death data managers;
- difficulty in motivating training in certification;
- poor training materials.

The major reason given by those countries, where the training courses is adequate for students, is the overload during the medical studies. In Sweden, for example, 'training at this stage is ineffective and should be restricted to the main concepts of "sequence" and "originating cause"'. Finally, the experts of Slovak Republic consider sufficient their training courses both for students and physicians because 'education is being completed with an examination'.

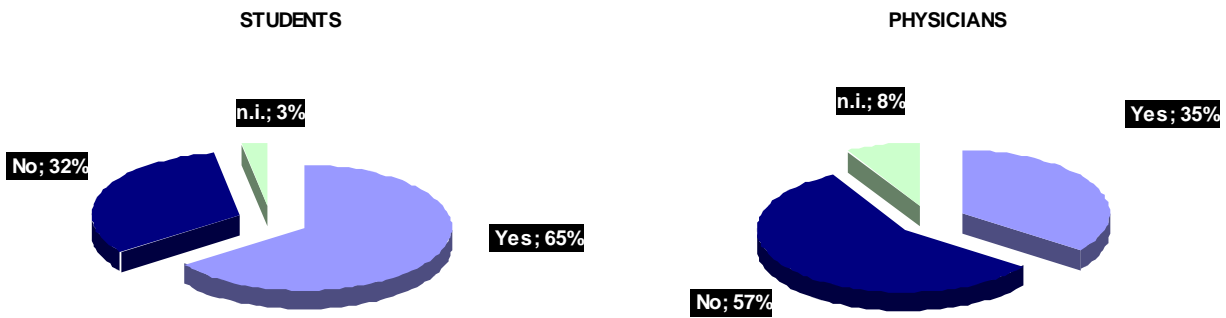
Table 5.7 – Training courses for students and physicians: duration of training and satisfaction

Country	Students			Physicians	
	Training	Duration	Satisfaction	Training	Satisfaction
<b>Albania</b>	No	-	No	Yes	No
<b>Austria</b>	No	-	No	No	No
<b>Belgium (Flemish)</b>	Yes	1 hour	No	No	No
<b>Belgium (French)</b>	No		No	No	No
Bosnia-Herzegovina					
<b>Bulgaria</b>	Yes	n.i	n.i	n.i	n.i
<b>Croatia</b>	Yes	2 hours	No	No	No
<b>Cyprus</b>	No	-	No	No	No
<b>Czech Republic</b>	n.i	n.i	n.i	n.i	n.i
<b>Denmark</b>	Yes	n.i	No	No	No
<b>Estonia</b>	Yes	n.i	No	Yes	No
<b>Finland</b>	Yes	3 hours	No	Yes	No
<b>France</b>	Yes	3 hours	No	No	No
<b>Germany</b>	Yes	1 hour	Yes	No	No
<b>Greece</b>	Yes	1 hour	Yes	No	No
<b>Hungary</b>	No	-	No	No	No
<b>Iceland</b>	Yes	2 hours	Yes	No	No
<b>Ireland</b>	No	-	No	No	No
<b>Italy</b>	Yes	1 hour	No	No	No
<b>Latvia</b>	Yes	4 hours	No	Yes	No
<b>Lithuania</b>	Yes	2 hours	Yes	Yes	No
<b>Luxembourg</b>	No	-	No	No	No
<b>Malta</b>	No	-	n.i	No	n.i
<b>Netherlands</b>	Yes	½ hour	No	No	No
<b>Norway</b>	Yes	2 hours	No	No	No
Poland					
<b>Portugal</b>	Yes	3 hours	No	No	No
<b>Republic of Macedonia</b>	Yes	1.5 hours	No	Yes	No
<b>Romania</b>	Yes	1.5 hours	No	Yes	No
Serbia Montenegro					
<b>Slovak Republic</b>	Yes	3 hours	Yes	Yes	Yes
<b>Slovenia</b>	No	-	No	Yes	No
<b>Spain</b>	No	-	n.i	Yes	No
<b>Spain-Catalonia</b>	Yes	4 hours	No	Yes	No
<b>Sweden</b>	Yes	<2 hours	Yes	No	No
<b>Switzerland</b>	No	-	n.i	n.i	n.i
<b>Turkey</b>	No		n.i	No	n.i
<b>UK-England-Wales</b>	Yes	2 hours	No	Yes	No
<b>UK-Scotland</b>	Yes	1 hour	Yes	Yes	No
<b>UK-Northern Ireland</b>	Yes	2 hours	No	No	No





Graphic 5.4 - Percentage of countries/regions that have or not training courses for students and physicians



### 5.4.3 The opinion on the most useful training time, contents and tools

A number of questions have been settled to investigate among the experts their opinions on the best way and time to train students and physicians on death certification.

Almost all the experts agreed on the following contents that should be included in the training:

- an explanation of causes of death data as a major public health indicator;
- to awaken physicians to the impact of good completion on quality of death statistics;
- an example of useful data;
- the concept of the causes of death sequence and the selection of the initial cause;
- a list of imprecise causes to avoid;
- an example of wrong certification;
- examples presentation;
- the problem of contributory causes;
- practical training of the real case studies;
- very basic knowledge of ICD.

Both students and physicians trainings should conciliate theory and practice and should have a feedback on the correct way of certifying.

The contents mentioned above should be the same for medical students and physicians, nevertheless they should be more advanced for physicians. Since physicians have actual experience of issuing death certificates, the training should also include common problems in cause of death certification and more complex case histories than those for the students. In addition, physicians should be more motivated in certifying for statistical use.

The most efficient occasion to train physicians are workshops, meetings, queries and medical journals.

With respect to training tools, the experts believe that 'modern material and media' (videos, computer assisted courses, CD-Rom, Web) may be extremely useful to support the 'traditional' teaching instruments.

### 5.4.4 European harmonization

Most of the experts believe that European common recommendations (EuCR) for training practices are feasible and necessary. In fact, 29 out of 37 countries/regions consider European harmonization on this topic necessary and 30 out of 37 countries/regions feasible (see Table 5.9).

Standardization on training practices may lead to an improvement on quality of data and may be very useful for those countries who do not have any type of guidance on death certification. In addition, EuCR, which are necessary to make WHO guidelines for certification more efficiently applied by the

European countries, may lead to a better comparability of mortality statistics among EU, EFTA, EEA and CEEC countries.

The most important suggestions from our 2003 survey are:

- to propose a leaflet about certification with emphasis on the importance of reliable statistics;
- to propose contents for the training courses (see previous paragraph “Opinion on most useful training time, contents and tools”).

More than half of the experts believe that ‘a question on certification in the post graduate examinations for physicians’ could be an important recommendation.

Among other recommendations we remember:

- ‘to propose to make impossible to send back an insufficient certification’ (Denmark);
- ‘to collaborate with professional associations’ (Luxembourg).

Answering to the question “Do you think that European recommendations on training practices could be easily applied in your country?”, 21 and 12 countries/regions said Yes and No, respectively (5 experts did not indicate). Their doubt about the possibility of applying EuCR comes from the difficulties to impose standards across many different institutions, from the high administrative costs and from the lack of resources.

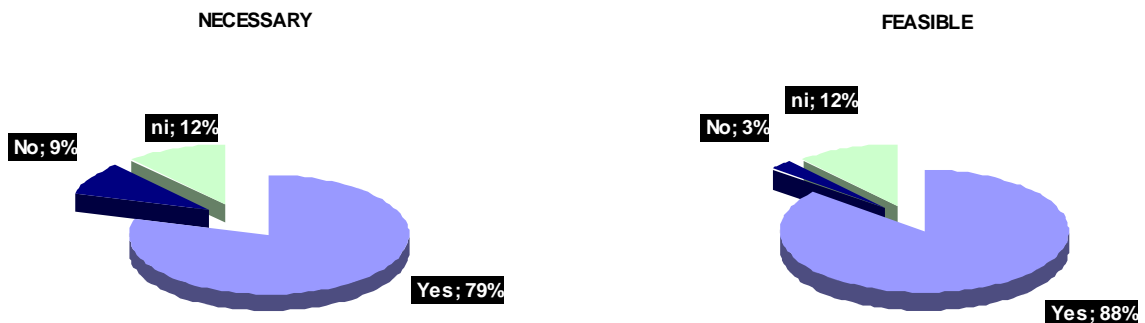
Finally, the experts pointed out that EuCR would not be easily applied because of a poor cooperation of the physicians, who often are not aware of the importance of mortality data for public health use.

A set of 7 Recommendation on Training Practices (Rec. 30-36) based on the results of the 1999 questionnaire, is available in Annex A.

Table 5.9 – Necessity and feasibility of having European Common Recommendations (EuCR) for training practices.

Country	Are EuCR necessary?	Are EuCR feasible?	Do you think EuCR could be easily applied in your country?
Albania	Yes	Yes	Yes
Austria	Yes	Yes	n.i
Belgium (Flemish)	Yes	Yes	No
Belgium (French)	Yes	Yes	Yes
Bosnia-Herzegovina			
Bulgaria	n.i	n.i	n.i
Croatia	Yes	Yes	Yes
Cyprus	Yes	Yes	Yes
Czech Republic	n.i.	n.i.	n.i
Denmark	n.i.	Yes	No
Estonia	Yes	Yes	No
Finland	Yes	n.i	Yes
France	Yes	Yes	Yes
Germany	Yes	Yes	No
Greece	Yes	Yes	Yes
Hungary	Yes	Yes	Yes
Iceland	No	Yes	Yes
Ireland	Yes	Yes	Yes
Italy	Yes	Yes	No
Latvia	Yes	Yes	n.i.
Lithuania	Yes	Yes	No
Luxembourg	Yes	Yes	Yes
Malta	Yes	Yes	Yes
Netherlands	Yes	Yes	No
Norway	n.i	Yes	n.i
Poland			
Portugal	Yes	Yes	Yes
Republic of Macedonia	Yes	No	Yes
Romania	Yes	Yes	Yes
Serbia Montenegro			
Slovak Republic	n.i	Yes	Yes
Slovenia	Yes	Yes	Yes
Spain	Yes	n.i	Yes
Spain-Catalonia	Yes	Yes	Yes
Sweden	Yes	Yes	Yes
Switzerland	No	Yes	No
Turkey	Yes	n.i	No
UK-England-Wales	n.i	Yes	No
UK-Scotland	No	Yes	No
UK-Northern Ireland	Yes	Yes	Yes

Graphic 5.5 – Percentage of countries/regions that have declared European Common Recommendations for training practices necessary and feasible.



## **5.5 *Not adequately filled up certificates: no medical information or ill-defined conditions of death***

### **No medical information**

24 out of 37 of the offices in charge of the mortality statistics declared to receive death certificates without any medical information. The number of death certificates with no information on the cause of death widely varies from a minimum of 10 (Iceland) to a maximum of 19,810 (5% of overall death of Turkey). 30 countries/regions assessed that some deaths are typically more affected by lack of information on causes of death than others. In particular they indicated sudden deaths, HIV, infectious diseases, drug and alcohol related deaths, post-surgery deaths, deaths among the elderly, deaths at home or at private nursing homes, deaths abroad, suicides, other external causes (such as poisoning and drowning) as the most affected by lack of information.

### **Ill-defined causes of death**

At the coding stage, 18 experts out of 37 declared that their offices consider likewise as ill-defined causes some conditions not in ICD9 (chapter XVI) or ICD10 (chapter XVIII)<sup>5</sup>.

Among these causes the most frequently cited are cardiac arrest, heart failure, circulatory and respiratory insufficiency, renal failure, hypertension and septicaemia. These conditions are now nearly all included in the revised version of Rule A (WHO, 1999, Collaborating ICD Centre Heads Meeting)<sup>6</sup>.

Experts consider that ill-defined death and lack of information of causes of deaths may introduce biases on mortality statistics, in particular for some kinds of causes and for specific sub-groups of the population (elderly). Nevertheless, there is a general agreement on the low or moderate impact that these biases may have on mortality data.

Sometimes it may happen that two biases may balance each other. On this topic, very interesting is the comment of the expert of Luxembourg that believes that ‘an under estimation concerning the statistics of mortality due to alcohol abuse can exist and be compensated by somatic complications, for example: liver cirrhosis, accidental falls, aspiration and asphyxia. Conversely, an over estimation related to ischemic heart diseases can exist, since they are occasionally codified as an alternative to sudden death, unknown causes of cardiac arrest, mainly if the certifying physician of emergency medical service did not know the patient.

### **European Recommendation on this topic**

For European recommendations, the proposals of the experts to improve quality of death certificate completion concern improvements in training and on query practices (see Recommendation on Query Practices (Rec. 23-29) and on Training Practices (Rec.30-36), Annex A).

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<sup>5</sup> Respondents were NOT asked to give information whether ICD10 updating of rule A (Senility and other ill-defined conditions) has been implemented in their countries/regions. This modification (ratified by HoC/WHO in Brazil, October 2000) should be effective from January 2001 according to the WHO updates schedule.

<sup>6</sup> ICD10 updating and the modification rules – Revised RULE A on “Senility and other ill-defined conditions” : cardiac arrest (ICD10 code: I46.9), hypotension (ICD10 code: I95.9), other and unspecified disorders of circulatory system (ICD10 code: I99), acute respiratory failure (ICD10 code: J96.0), respiratory failure unspecified (ICD10 code: J96.9), respiratory failure of newborn (ICD10 code: P28.5), Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (ICD10 code: R00-R94 or R96-R99).

## 6 Review of the existing training tools

### Presentation

In general, as seen in section 5, a lack of specifically addressed training tools (TT) for certification has been found in about a half of the interviewed countries. Moreover, where some kind of TT exist, these need to be improved and/or updated. The most common TTs are leaflets and guidelines rather than manuals. The web technology is seldom used, as an interactive software has been developed by Spain only; in other cases specific web-sites have been developed by Universities.

In particular, manuals, handbooks, booklets and guidelines, software and leaflets have been reviewed trying to identify how common features and peculiarities as well, have been treated.

This review is focused on existing TT world-wide, because useful examples come also from overseas in terms of manuals and software. The reason for this choice is that WHO indications on certification are followed world-wide with national/local adaptation; as one of aim of the present project is to provide generalised TT open to be adapted in different European countries, this present analysis takes into account differences, in order to find possible solutions both to different national needs and to develop common practices in certifying causes of death.

This review does not concern perinatal mortality.

A final note is on the statement “not interested” reported in the tables throughout this chapter: this statement implies that a specific aspect is not covered by that manual because the manual was developed for other purposes.

### 6.1 ICD-10

The International Statistical Classification of Diseases and Related Health Problems, Tenth Revision (ICD10), is published by WHO and regularly updated. The classification is a precious tool, which provides guidelines on certification and definitions for international use. The international standard certificate for the causes of death is also included in the Classification as a reference document locally adaptable to specific needs (Annex C). Therefore, ICD plays an important role in the definition of National death certificates and the completion of the medical part of them. However, due to its specific aims not addressed in particular to certification, a classification cannot enter into much detail in this regard. For this reason a number of specifically oriented products have been released from WHO itself, with the publication of a booklet to help physicians with the correct completion of the medical certification of causes of death, since the 1948 ICD6 revision until the ICD9 revision.

With respect to certification, ICD is the “antecedent mother” followed, with time, by several “consequent children”.

### 6.2 *Manuals, Handbooks, Booklets*

#### 6.2.1 *General aspects*

Unfortunately, training manuals from the countries/regions that declared to have them in the answers to the survey updating, could not be included in this review because not available when requested, or because written in the country native language. The present review is focused both on European and non European existing manuals or booklets. Target of these manuals are usually physicians in charge of filling up the medical part of the death certificate; in some cases only for natural causes, while in other cases for both natural and non-natural deaths.

Tools from the following institutions/countries have been analysed: World Health Organization (WHO); Regione Emilia Romagna, Italy; National Centre for Health Statistics (NCHS), USA; Office for National Statistics, (ONS), UK-England-Wales; Australian Bureau of Statistics (ABS), Australia; New Zealand Health Information Service (NZHIS), New Zealand; Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada; Centro Mexicano para la Clasificación de enfermedades (CEMECE), Mexico. The results of these analyses are reported in the following paragraphs, where each manual's main features have been represented in tables.

In USA the National Center for Health Statistics (NCHS), an Institute of the Center of Disease Control (CDC), has developed a complete set of handbooks two of which are analysed here: the first is a reference guide for physicians in charge of certifying natural deaths, the other one is specifically oriented to the certification of external causes by medical examiners and coroners. The analysis of both of them has provided useful information on the approach followed to develop such material. Two different products have been analysed in UK-England-Wales because "death counts", published by the Office for National Statistics (ONS), is more oriented to a learning-by-doing approach with short instructions and more information provided with the answers to specific exercises, while the other one is a booklet published by ONS showing instructions and examples; for a complete review of training manuals in UK-England-Wales, both of them should be taken into account. These two products are also designed to different targets: the "death counts information pack" manual has been designed primarily for medical students, junior doctors and general practitioners trainees, while the booklet is more adapted to every-day use by certifying physicians who completed their formal and academic training.

WHO manuals have been reviewed in two different languages and editions: the WHO French third edition and an Italian authorized translation of the fourth edition have been considered.

The other manuals from Mexico, Canada, Australia and New Zealand were downloaded from the web.

The last point refers to dissemination of these manuals: WHO manual is sold by WHO (latest update: 1980); the others are usually distributed for free and now can be downloaded from the site of the National Institute of Statistics in each country or from other reference sites such as the bulletin board on mortality developed by the Australian Bureau of Statistics (ABS). An exception to this refers to the manuals developed in UK-England-Wales: the "death counts manual" is part of a training pack including also a video sold by ONS; the booklet with instruction is coupled with a certain amount of empty death certificates usually distributed to physicians.

General aspects are usually well covered by National/local manuals, usually in introductory pages or in the text, as the necessity to illustrate a specific aspect arises (see table 6.1).

The origin of all these manuals and booklets is the WHO publication, however the fourth and last edition issued refers to instructions from ICD-9, showing lesser details than required to develop a super-national tool in the ICD-10 era.

When present, the sample of death certificate, the description of National Vital System Registration and the legislation, can be found at the end of the manual as annexes; notes on confidentiality and on the importance of reporting all the information on diseases in order to get precious data on multiple causes are available in the most updated manuals. The description of death certificate format as well as the importance and purpose of mortality data are prerequisites for each of the analysed tools.

The explanation of why and how queries are sent to physicians and how to reduce this burden could be a very useful paragraph intended as training in a broad sense of the term; however this aspect would need a careful evaluation either because not all the countries have developed a query system or because some of them have discontinued it.

A final aspect that requires particular attention is represented by the existing broad different categories of medical and non-medical personnel allowed to certify non-natural deaths in Europe (see paragraph 5.3.2). The national/regional laws vary so much that consistent national/regional adaptations of the European manual will be absolutely necessary on this topic. Warnings on checking

national/regional laws and instructions for the certification of non-natural deaths have to be included in the manual to be developed.



Table 6.1 – General aspects covered by existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHIS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Description of death certificate format	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Sample of current National death certificate	Not interested	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
General instructions for completing death certificates (writing, abbreviations, certifier identity....)	No	Yes	Yes	No	Yes, few	Yes	Yes	Yes	Yes, few
Notes on Confidentiality	No	Yes	Yes	No	Yes	No	Yes	No	No
Importance and purpose of mortality data	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes, in separate paragraphs	Yes
Instruction and warnings about who (differently qualified physicians, medical examiners, coroners,.....) is in charge of certifying what (natural deaths, non natural deaths, ....)	Not interested	Yes	Yes	Yes, plus 3 case histories with questions	Yes	Yes	Yes	Yes	Yes
Usefulness of all reported causes for statistical purposes (multiple causes)	No	Yes	Yes	No	No	No	Yes	No	No
Explanation of the need for querying	Yes	No	No	No	Yes	Yes	Yes	No	Yes
Description of National Vital System Registration	Not interested	Yes	Yes	No	Yes	Yes	No	No	No
Current National legislation	Not interested	No, physician's responsibilities stated	No, certifiers' responsibilities stated	No	No	Yes	Yes	No	No, physician's responsibilities stated
Instructions on deceased personal details and other general information on his/her death (N.A.M.E., age, place of death, ....)	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980" permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guia de autoaprendizaje para el llenado correcto del certificado de defuncion, Centro Mexicano para la Clasificacion de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.2 *Causes of Death*

The medical information on the death certificate usually is strictly adherent to WHO guidelines. All existing manuals cover these aspects from very similar perspectives, giving general descriptions of the items and then instructing on how to fill them up. Some countries in Europe have already added a fourth line in part I and this is reflected in manuals too; while a few have less than three lines (see table 6.2).

Information on disease duration reporting has not been asked in the questionnaire updating, but this information is usually requested as gathered from the available European certificates.

Part II “other significant conditions contributing to death”, is usually described in manuals, but differences exist in what is to be reported there, especially for pregnancy, alcohol abuse, and drug addiction; moreover, the survey has put in evidence that the item on contributory causes is often not well understood by the physicians, resulting in poor certification; for these reasons these aspects will necessitate to be carefully evaluated in order to reach a general agreement and to adopt a solution that can improve the quality of mortality data and provide a more efficient instrument for monitoring national/regional health policies.

Table 6.2 – Causes of death certification in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHIS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Possibility to add a fourth line in part I	No	Yes, instruction to add as many lines as necessary	Yes, a fifth line also	No	Yes, a fifth line also	No	Yes, instruction to add as many lines as necessary	Yes	No
Meaning of each line in part I	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
Instruction on how to fill each line in part I	Yes	Yes	Yes	Information provided with the answers to the exercises	Yes	Yes	Yes	Yes	Yes
Meaning of part II	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Instruction on how to fill part II	Yes	Yes	Yes	Information provided with the answers to the exercises	Yes	Yes	Yes	Yes	Yes
How to report duration	Yes	Yes	Yes	Information provided with the answers to the exercises	Yes	Yes	Yes	Yes	Yes
How to report external causes	Yes	Not interested	Yes	Not interested	Yes	Yes	Yes	Yes	Not interested

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980" permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guia de autoaprendizaje para el llenado correcto del certificado de defuncion, Centro Mexicano para la Classificacion de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.3 Maternal Deaths

In Europe only 8 countries/regions have added a specific item on pregnancy to the death form (see paragraph 5.1.2), in accordance with ICD10 recommendations issued in 1990. This situation has analogues in the training manuals, in fact only two among the most updated report the presence of this item on National death forms.

Specific indications on how to report maternal deaths are reported in the reviewed manuals. In general it is suggested to place the statements according to the role played by the pregnancy in determining or contributing to death. However discrepancies are also apparent as in the definition of the time interval elapsed from delivery on order for a death to be considered as a maternal death (details whether a maternal death is a late maternal death, have not been found on all the reviewed manuals).

Table 6.3 – Maternal deaths certification in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHIS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Item on pregnancy	No	No	No	No	No	No	Yes	Yes	No
How to report maternal deaths	No	Yes	No	No	Yes	Yes	Yes	Yes	No
Specific instructions for pregnant status (or post-partum; NCHS: ≤ 90 days; ABS : ≤ 42 days; NZHIS: ≤ 90 days N SCOTIA, and CEMECE: Preg.; ≤ 42 days; ≤ 1 year)	Yes # 7 and page 9, report either in part I or II	No	Yes, add in part II if the pregnancy contributed to death (page 12)	No	Yes, add in part II if not directly related to death	Hints on how to report maternal deaths	Yes, a specific item has been added according to ICD10	Yes, a specific item has been added according to ICD10	No
Examples on pregnancy or maternal death	Yes, # 7	Yes, # 11	No	No	Yes, # 4	No	Yes # 8	Yes, # 2	No

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980" permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guía de autoaprendizaje para el llenado correcto del certificado de defunción, Centro Mexicano para la Clasificación de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.4 Strategies to improve certification quality

### Examples

Two different approaches are shown in the manuals: the first one emphasizes the more common errors in reporting the chain of events in part I; the second system follows a different strategy; in fact, a selection of case histories followed by examples of correctly completed certificates is shown in order to emphasize what the best certification practices are (see table 6.4); this second approach can be found in each manual even though diverse level of details and different number of case histories are shown. In some cases (WHO, Canada and New Zealand) both approaches are followed making comparisons between the wrong completion versus the right one.

While the first approach is risky because trainees may retain some wrong example, the second one is generally preferred as training method because it can be defined as “positive”. In fact, best practices are emphasized by means of several case histories referring to different kind of deaths: natural deaths (infectious diseases, circulatory diseases, neoplasm, maternal deaths, ...) and non-natural deaths (traffic accidents, suicide, poisoning, drug addiction, ...); a selection of these will be part of the European manual to be developed by ISTAT.

### **Complexity and choices.**

A somewhat different strategy to increase the awareness of certifiers in their role has been followed in three of the reviewed manuals. Such manuals showed one example of a complex medical situation (see table 6.4) together with the different possibilities of certification arising from the differences in medical opinion on the role played by the different pathologies. This is a useful approach because it lets the certifier understand that in some cases a few acceptable alternatives are possible and that each certification act should be the result of reasoning in order to provide the best medical opinion. Another source of examples is represented by those emphasizing how a better specificity and a better description of the chain of events may be achieved. The system used in this case is to illustrate how specificity can be added to:

- symptoms (convulsions: epileptic, eclamptic);
- diseases that can be provoked by several different infectious agent or poison (meningitis: tubercular, meningococcal,...);
- diseases that can be better defined (pneumonia: hypostatic, atypical, ...);
- diseases specific to different sites with no indication of the site (tumor, aneurism, ...)
- metastatic cancers with neither indication of the primary site, nor with “primary site unknown” statement;
- diseases and traumatic events which requires a better specification of the circumstances linked to their manifestation (Accidents, congenital malformations, surgery, ....).

In some cases a list of incomplete statements with the missing details shown is printed as annex. Such list is present in WHO manual since its third edition published in 1969 and it has been slightly modified in more updated manuals.

Table 6.4 – Strategies to improve certification quality in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHIS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Examples of wrong chain of events or bad completion in certification	Yes	No	No	Yes	No	Yes	Yes	No	No
Examples of good certification practices (case histories with correct certificate completion)	Yes, 9 cases	Yes, 11 cases	Yes, 14 cases	No	Yes, 14 cases	Yes, 12 cases	Yes, 10 cases	Yes, 4 cases	Yes, 1 case showing how to complete different items
Choices when in presence of complex medical situations	Yes, 3 possibilities, # 9 (Diabetes + degenerative heart disease + gangrene )	Yes, 3 possibilities page 9 (Diabetes + complications + ischemic heart disease + pneumonia)	Not interested	No	No	No	Yes, 3 possibilities, # 10 (Diabetes + chronic ischemic heart disease + myocardial infarction)	No	No
Examples of how differences in certification impact on the attributed underlying cause of death	Yes, see above	Yes, see above	No	No	No	No	Yes, see above	No	No
Examples on how to add specificity and improve causal relations	Yes	No	No	Information provided with the answers to the exercises	No	Yes	No	No	No, but some notes are reported
List of frequent incomplete statements with the missing details shown	Yes	No	No	No	Yes	Yes	Yes	Short note only	No

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980" permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guía de autoaprendizaje para el llenado correcto del certificado de defunción, Centro Mexicano para la Clasificación de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.5 Focusing on selected items

Depending on the aim of each manual, descriptions on how to report information related to external causes of death may be found. Some manuals do not cover such issues even in presence of the

specific item in the death certificate, because training is addressed to physicians not allowed to fill up certificates for non-natural causes of death.

In Europe, the possibility to certificate non-natural deaths by physicians other than medical examiners or coroners differs from country to country and depends also on what kind of non-natural causes are involved in the fatal event. It appears to a certain extent that even the definition of non-natural deaths is not univocal. It is unlikely that this sort of ambiguity could be solved in the course of this project; for this reason a specific chapter on external causes should be developed, preceded by a clear warning to assess national laws on this aspect.

As shown in table 6.5 the choice to include instructions on injury-related items differs: UK-England-Wales has a very clear-cut position on not giving details on the completion of such items, USA have developed two different handbooks addressed to different kind of certifiers, while in Australia the physician has the possibility to certify accidental death (such as falls in the elderly population) and therefore instructions about place of injury and circumstances are provided.

Instructions on the completion of specifically designed items on diabetes, drug addiction and alcohol abuse are never reported in the analyzed manuals, however, such items are present in some certificates in Europe, as shown in table 5.3 on “additional information available on the death certificate”.

To conclude, a specific item with instructions on infectious diseases is reported in the NZHIS manual; as in our questionnaire there was not a specific question on this topic, we have no information whether this aspect should be covered by the manual to be developed; however this topic will not be covered by the manual, as for the previous cases on diabetes, drug or alcohol. The possibility to provide training for the completion of these items, rarely included in the death certificates, should be a task performed at national/regional level.

Table 6.5 – Some special items in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Item on Place of Injury	No	Not interested	Yes	Not interested	Yes	Yes	Yes	Yes	Not interested
Item on how Injury occurred (circumstances, activity)	No, report in part I (# 4)	Not interested	Yes	Not interested	Yes	Yes	Yes	Yes	Not interested
Item on date of injury	No	Not interested	Yes	Not interested	Not available	No item, but info is requested	Yes	No	Not interested
Item on manner of Death (Natural, Suicide, homicide, accident, undetermined intent, ...)	No	Yes	Yes	Not interested	No	Not interested	Yes	Yes	Not interested
Item on diabetes	No	No	No	No	No	No	No	No	No
Item on drug addiction	No	No	No	No	No	No	No	No	No
Item on alcohol abuse	No	No	No	No	No	No	No	No	No
Item on infectious diseases	No	No	No	No	No	Yes	No	No	No

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980" permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guía de autoaprendizaje para el llenado correcto del certificado de defunción, Centro Mexicano para la Clasificación de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.6 Autopsies

Information on availability and use of autopsies results may represent a good indication of overall data quality, both from the certification and the data registration system, production and management standpoints. However, obtaining these data is often difficult and mortality data may show in these cases some kind of biases in the attributed underlying cause of death and in multiple causes as well. Most of the European countries have included in their certificates an item to assess whether the autopsy has been performed or not, but this information is not sufficient and the general impression derived from the questionnaire is that the information collected on this topic should improve (see paragraph 5.1.1).

The updating of the 1999 questionnaire did not include more details on this subject, but information derived thanks to the collected European certificates shows that the situation regarding items on autopsies is usually focused on the general aspect of whether it was performed or not (Table 6.6). The presence of this question alone, however, does not take into account the effective availability of autopsy findings or the possibility to collect further information at later times: the consequence of this may represent a major source of low comparability among countries for those deaths requiring further medico-legal investigations. Even if these are a low percentage on the total number of deaths, they may represent a major source of bias in comparability.



Table 6.6– Additional information on autopsies from available death certificates.

Country <sup>(a)</sup>	Was an autopsy been performed or requested?	Were autopsy or other exams findings available for the completion of cause of death?	May further information relating to the cause of death be available later?
Albania	No	No	No
Austria	Yes	Not stated	Not stated
Belgium	Yes	Not stated	Not stated
Croatia	Yes	Not stated	Not stated
Czech Republic	Yes	Not stated	Not stated
Finland	Yes	Not stated	Not stated
France	Yes	Yes	Not stated
Hungary	Yes	Yes	Not stated
Ireland	No	No	No
Italy	Yes	Not stated	Not stated
Lithuania	Yes	Not stated	Not stated
Luxembourg	Yes	Not stated	Not stated
Malta	No	No	No
Portugal	Yes	Not stated	Not stated
Republic of Macedonia	Yes	Not stated	Not stated
Romania	No	No	No
Slovenia	Yes	Not stated	Not stated
Spain	No	No	No
Sweden	Yes	Not stated	Not stated
UK-England-Wales	Yes	Yes	Yes

(a) Certificates in the original language were used for the following countries: Italy; France; UK-England-Wales; Ireland; Malta; Portugal; Spain; Belgium; Luxembourg. The other information is gathered from English translations of the death certificates provided by each single country.

These preliminary aspects have to be taken into account when defining what to include in the European training manual. It is beyond the aims of this project to discuss on the opportunity to include items in death certificates, but this aspect will deserve further attention in the future.

In some cases (Canada, USA, UK-England-Wales, New Zealand), the existing tools (see table 6.7) show up to three different questions related to the autopsies indicating that instruction on these aspects is a necessity when good quality data are sought.

Moreover, notes on the importance of autopsies data are present in some cases, while useful examples of how amendments to certificates should be done, are generally lacking; in fact only one example is reported in the analysed manuals.

Table 6.7 – Autopsies-related points in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Item on autopsy (performed or not)	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Item on availability of autopsy results before the present certificate was issued	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes
Item and notes on future availability of information after further diagnostic procedures, investigation...	No	No	Yes, defined as “pending investigation”	No	No	Yes	Yes,	No	Yes
Notes on the importance of information derived from autopsy	No	Yes	Yes	No	No	Yes	Yes	No	No
Examples of amended certificates after medico-legal investigations	No	No	Yes, # 11	No	No	No	No	No	No

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of “Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980” permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989*

(c) *Physicians’ Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners’ and Coroners’ Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guía de autoaprendizaje para el llenado correcto del certificado de defunción, Centro Mexicano para la Clasificación de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.2.7 How to report...

Some aspects of medical certification that require special attention are reported in table 6.8; instructions on how to deal with these situations or diseases are presented in manuals according to their aims and targets to be addressed. It seems that choices on what instructions are to be included depend on the contrasting needs to be exhaustive and concise.

The instructions (and often a list) of symptoms or mode of dying are usually reported in every manual, while the details devoted to instructions on how to report cancer deeply differ: from a whole page showing several details in Australia, to few notes in Canada, New Zealand and UK-England-Wales, to no instructions in Mexico and USA.

The reporting of accidents and adverse events in the course of medical care is thought to be affected by biases also linked to the use of death certificate; the quality of such report could differ to a great extent whether the certificate can be used for insurance claims or not; in general manuals do not give a great emphasis to this aspect.

Few manuals only (USA and New Zealand) provide instructions on how to complete the certificate when the causes of death cannot be assessed, even after an autopsy was performed: this instruction should be carefully evaluated because there is an implicit risk to enhance the amount of such undetermined causes.

Work-related deaths take into account two different aspects: the first one deals with injuries at work (and instructions on this are widely present in manuals), the other deals with exposure to various noxious agents as possible risk factors in causing diseases. This last approach to provide work-

related exposure information, is followed only by UK-England-Wales, where a list of possible industrial origin in selected causes of death is also included in the reviewed training tools.

Table 6.8 – How to report selected issues in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Symptoms or mode of dying	Yes	Yes	Yes	Information provided with the answers to the exercises	No	Yes, # 2, # 2a	Yes	Yes	Yes
Neoplasms	Yes, few indications	No	Not interested	No	Yes (detailed indications)	Yes	Yes, few indications	No	Yes, few indications
Surgery or medical care – related adverse events	Yes, few indications *	No	Yes, # 5	No	Yes # 1	Yes, # 10	Yes, few indications	No	Yes
Hints on how to report elderly deaths	No	Yes	No	Information provided with the answers to the exercises	Yes, for neck of femur fractures due to fall	No	No	No	Yes
Notes on “Could not be determined” or “Unknown causes” statements	No	Yes, refer to coroners	Yes	No	No	Yes	No	No	No
Item on work accident or exposure to physical factors or chemical - biological substances during employment	No	Not interested	Yes	Yes	No	No	No	Yes	Yes
List of possible industrial origin in selected causes of death	No	No	No	Yes	No	No	No	No	Yes

\*) In the Italian translation of the IVth edition of WHO manual.

(a, b) *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of “Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980” permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, 1989.*

(c) *Physicians’ Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland 1996*

(d) *Medical examiners’ and Coroners’ Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland 1994*

(e) *Death certification training pack, Office for National Statistics, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, 1997*

(f) *Cause of death certification – Australia, Australian Bureau of Statistics, 2001, ICD-10 version.*

(g) *A guide to certifying causes of death, New Zealand Health Information Service, 2001.*

(h) *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada 2002.*

(i) *Guía de autoaprendizaje para el llenado correcto del certificado de defunción, Centro Mexicano para la Clasificación de enfermedades; 2001, Mexico*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

### *6.2.8 Exercises*

Few manuals (that one from Mexico, and the “Death counts information pack” from UK) offer the possibility to practice on completing death certificates, choosing causes from already completed certificates, or answering to questions (see table 6.9).

This choice is in part due to target selection: in some countries, in fact, questions or exercises on causes of death are part of the qualification exams for physicians. In this view an “exercises book” could be useful for young physicians who are about to complete their formal training. In other cases, where the manuals are addressed to qualified physicians, the choice is generally not to include exercises in manuals. This approach is not maintained in TT developed for the internet; in these cases in fact, the TT are conceived as self-study tools and usually contain some sort of practical exercises.

Table 6.9 – Various kinds of exercises in existing training manuals or booklets.

	WHO <sup>(a, b)</sup>	NCHS <sup>(c)</sup>	NCHS <sup>(d)</sup>	ONS <sup>(e)</sup>	ABS <sup>(f)</sup>	NZHIS <sup>(g)</sup>	NOVA SCOTIA <sup>(h)</sup>	CEMECE <sup>(i)</sup>	UK Booklet <sup>(j)</sup>
Exercises on certificate completion (with answers provided)	No	No	No	Yes, 3 case histories to be completed plus questions	No	No	No	Yes, 5 case histories to be completed	No
Exercises on assigning underlying cause (or other specified causes) in real certificates	No	No	No	Yes	No	No	No	Yes	No
General questions on death certification, Multiple choice or open answers (answers provided at the end of manual)	No	No	No	Yes	No	No	No	Yes	No

(a, b) WHO. *Le Certificat Médical de la Cause de Décès, Troisième édition, OMS, Genève 1969; Italian translation of "Le Certificat Médical de la Cause de Décès, Quatrième édition, OMS, Genève 1980"* permitted by WHO to CSPO (Centro per lo Studio e la Prevenzione Oncologica), published with the following title: *Il certificato medico delle cause di morte – Istruzioni per il medico certificatore. Edited by: Regione Emilia Romagna, Italy, 1989.*

(c) NCHS. *Physicians' Handbook on Medical Certification of Death, NCHS, CDC Hyattsville, Mariland, USA, 1996*

(d) NCHS. *Medical examiners' and Coroners' Handbook on Death registration and Fetal Death Reporting, NCHS, CDC Hyattsville, Mariland, USA, 1994.*

(e) ONS. *Death certification training pack, Office for National Statistics, London, UK, 1997; Death counts information pack, by M.P. Coleman and P. Aylin, Office for National Statistics, London, UK, 1997.*

(f) ABS. *Cause of death certification, ICD-10 version – Australian Bureau of Statistics, - Australia, 2001.*

(g) NZHIS. *A guide to certifying causes of death, New Zealand Health Information Service, New Zealand, 2001.*

(h) Nova Scotia Vital Statistics. *Medical certification of death and stillbirth - A handbook for physicians and medical examiners, Service Nova Scotia and Municipal Relations, Registry and information management Services; Vital Statistics, Halifax, Canada, 2002.*

(i) CEMECE. *Guia de autoaprendizaje para el llenado correcto del certificado de defuncion, Centro Mexicano para la Clasificación de enfermedades, Mexico, 2001.*

(j) *Death certification – a guide for doctors, Office for National Statistics, London, UK. 1997.*

## 6.3 Software

Very few TTs exist on the web for causes of death certification by physicians; for this reason, the present review is focused both on European and non European existing sites. Tools from the following institutions/countries have been analysed: University of Leeds, UK; University of Leicester, UK; National Association of Medical Examiner (N.A.M.E.), USA; Texas Department of Health (T.D.H.), USA.

The analysed tools are usually addressed to a wide audience who wish/need to improve certification capabilities or need to acquire more information on specific aspects; therefore these sites are expected to be useful both as an interactive tutorial or as a reference, and their appearance and structure is usually oriented to satisfy these goals.

The site of Leicester University is called “The virtual autopsy”, it is mainly addressed to forensic medical students and it is focused on how to report autopsy results in death certificates; it provides very useful information on autopsies and pathologic findings. The other three sites are mainly devoted to causes of death certification in general, thus providing information from a broader perspective.

The general structure of the visited web-sites usually includes some introductory pages, general information, examples, tests and exercises, links.

### *6.3.1 Introductory pages*

Introductory pages may show information on mortality statistics and their importance and use, while didactic hints on specific arguments such as anatomy and physiology, can be available as hypertext links (see table 6.10). Besides these, useful tools are represented by quick access possibilities for those who need to obtain a certain information and do not want to navigate the site; in some cases, as requested by the T.D.H. site, a log-in form has to be completed by acceding people: this feature is useful to keep record of connections.

An interesting opportunity is offered by the T.D.H. site, where there is the chance to obtain credits for “Continuing Medical Education” (CME) programs. This is an appealing feature for physicians who work in Countries where these projects are operating. The possibility to improve or maintain education level could represent a spur to visit the site and explore the training offered. CME programs however, are managed quite differently in different countries. For this reason, a specific agreement at national/regional level will be required between those Institutes that are in charge of the site management and those responsible for the CME program.

A further possibility offered by the e-learning methodology is to propose this training to medical students who need to qualify on selected subjects (epidemiology, forensic medicine, general medicine, public health ...) during the last years of their educational curricula.

A very interesting tool is the “dynamic death certificate image map” contained in the T.D.H. site, where a real State certificate is reproduced and the possibility to click on all the certificate items to get information about its compilation and purpose is given. This sort of “interactive - training – death – certificate” represents a brilliant solution to prepare physicians to the use of the electronic death certificates.

Table 6.10 – **Introductory pages in visited web-sites.**

	University of Leeds <sup>(a)</sup>	University of Leicester <sup>(b)</sup>	N.A.M.E. <sup>(c)</sup>	T.D.H. <sup>(d)</sup>
Historic facts on mortality Statistics or ICD	No	No	No	Yes
Importance of Mortality Data	Yes	No	Yes	Yes
Table of Contents for quick access	Yes	Yes	Yes	Yes
Sub menus for different sections for quick access	No	Yes	No	Yes
“Log in” request	No	No	No	Yes
Credits for CME* programs or similar	No	No	No	Yes
Hints on anatomy and physiology	No	Yes	No	No
Dynamic Death certificate image map	No	No	No	Yes
Links	No	Yes	Yes	Yes

\*CME: Continuing Medical Education

(a) University of Leeds, UK. *Death certification: Training and guidance package*

(b) University of Leicester, UK. *The virtual autopsy*

(c) National Association of Medical Examiner (N.A.M.E.), USA. *Writing causes of Death Statements: a tutorial*

(d) Texas Department of Health (T.D.H.), USA. *Medical certification of cause and manner of death*

### 6.3.2 General information

This part is developed at different level of details by the analyzed web-sites; in fact, as shown in table 6.11, topics like privacy, mortality data processing and uses do not appear in most of the sites; this table emphasizes how different sites could be differently cut and retailed on specific users need: for instance, the University of Leicester site is strictly oriented to autopsies findings and does not treat common features in certification as usually envisaged by physicians.

Definitions and instructions to complete the medical part of the death certificate are usually provided by tools which aim to be addressed to a broad audience.

An idea of a useful dissemination means for spreading the leaflet to be realized by this project, is the quick tips page on the N.A.M.E. web-training site, that includes 12 relevant points to be kept in mind and one example of the correct filling up.



Table 6.11 – General information on certification and mortality statistics in visited web-sites.

	University of Leeds <sup>(a)</sup>	University of Leicester <sup>(b)</sup>	N.A.M.E. <sup>(c)</sup>	T.D.H. <sup>(d)</sup>
Privacy and other legal aspects	No	No	No	Yes
How data are handled and Vital Statistics Registration System	No	No	No	Yes
Data output (leading causes of Death, or other....)	No	No	No	Yes
Instruction and warnings about who (differently qualified physicians, medical examiners, coroners,.....) is in charge of certifying what (natural deaths, non natural deaths, ....)	Yes	No	No	Yes
How to fill up death certificate – in general	Yes	No	Yes	Yes
How to fill up death certificate – by single item	Yes	No	Yes	Yes
Definitions (Underlying cause, ....)	Yes	No	Yes	Yes
Quick tips (similar to leaflet)	No	No	Yes	No

(a) University of Leeds, UK. *Death certification: Training and guidance package*

(b) University of Leicester, UK. *The virtual autopsy*

(c) National Association of Medical Examiner (N.A.M.E.), USA. *Writing causes of Death Statements: a tutorial*

(d) Texas Department of Health (T.D.H.), USA. *Medical certification of cause and manner of death*

### 6.3.3 Some common problems in certification

Table 6.12 is a non all-inclusive list; the purpose here is just to show some of the hints and examples on common problems in certifying specific causes. Again, the level of details is not comparable among sites: the site of the University of Leeds does not go into much detail on specific causes as others do; in general the N.A.M.E. and T.D.H. training tools cover almost every possible cause of errors in certification; examples of wrong chain of events are given, but emphasis is on the best practices with several examples of filled-in certificates base on case histories.

Table 6.12 – Dealing with common problems of certification in visited web-sites.

	University of Leeds <sup>(a)</sup>	University of Leicester <sup>(b)</sup>	N.A.M.E. <sup>(c)</sup>	T.D.H. <sup>(d)</sup>
Errors in chain of events reporting	Yes	No	Yes	Yes
Part II	Yes	No	Yes	Yes
Mode of dying/ Non specific processes	Yes	No	Yes	Yes
Duration	No	No	Yes	Yes
Neoplasm	Yes	Yes	Yes	Yes
Multiple conditions	No	No	Yes	Yes
Elderly deaths	Yes	No	No	Yes
Poisoning	No	Yes	Yes, a specific section	Yes
Surgery	No	No	No	Yes, periprocedural deaths
Infectious diseases	No	Yes	Yes	Yes, Pneumonia
Symptoms, ill-defined	No	No	Yes	Yes
Manner of death classification	No	No	Yes	Yes
Autopsy findings	No	Yes, all case histories	No	Yes
Adverse effects in medical care	No	No	No	Yes, periprocedural deaths

(a) University of Leeds, UK. *Death certification: Training and guidance package*

(b) University of Leicester, UK. *The virtual autopsy*

(c) National Association of Medical Examiners (N.A.M.E.), USA. *Writing causes of Death Statements: a tutorial*

(d) Texas Department of Health (T.D.H.), USA. *Medical certification of cause and manner of death*

### 6.3.4 Tests and Exercises

Web-based TTs try to use at the best the possibility to learn by doing. However where the reported information have been analyzed into much detail, and relative interactions, heavy descriptions, exceptions, have been considered, the result has been to lessen clarity and easiness to use (see table 6.13).

The N.A.M.E. training site has been used to have an interactive tutorial (with case histories) and a utility (to test one's own cause of death statements), but unfortunately it is not operating any longer and there are not plans to implement it again in the near future (Hanzlick, personal communication); those sections that are still operating, provide several examples on different situations and causes. The different kinds of exercises are:

- multiple choice questions (Leeds and T.D.H.);

answers are given immediately in the multiple choices exercises; moreover, The Leeds University site offers the possibility to elaborate answers to a general questionnaire. This could be a very useful system in the organization of students' activities and/or to assign credits to professionals, especially if coupled with a personal log-in or password;

- case histories-based certificates completion; (Leeds, Leicester, N.A.M.E.);

answers to certificate completion can be provided immediately, thus giving the opportunity of doing another exercise, or not, attempting therefore a new answer to the same exercise, by the means of a "try again?" button, as in the University of Leicester site. A disadvantage of the "try again?" question is that the site obliges the trainee to stay on the same question or exercise until the right answer is given; very likely, this fact would contribute to quit the session; on the other hand, each time a wrong answer is given a message will appear giving hints on how to solve the problem.

Free text answers are seldom allowed, and never analyzed by the software in these sites. The free text provided by the certifier is usually not processed by the software and a pre-coded correct answer is given on the same screen to compare it with the one provided by the trainee.

Table 6.13 – Tests and exercises in visited web-sites.

	University of Leeds <sup>(a)</sup>	University of Leicester <sup>(b)</sup>	N.A.M.E. <sup>(c)</sup>	T.D.H. <sup>(d)</sup>
As separate section	No	No	Yes, inactive	No
Included in each text section	Yes	Yes, after each case history	No	Yes
may be skipped	Yes	Yes	No	Yes
Multiple choice tests after specific text section	Yes	No	No	Yes
“Try again?” question in case of wrong answer to multiple choice tests	No, correct answer is given immediately	No	No	No, correct answer is given immediately
Possibility to submit test with multiple choice answers referring to all the aspect in the web site (answers are elaborated automatically)	Yes	No	No	No
Exercises on death certificate completion based on case histories	Yes, 3 cases	Yes, 18 cases based on autopsy findings	Yes, 2 cases to be done on paper and checked on next screen	No
“Try again?” question in case of wrong death certificate completion	No, correct answer is given immediately	Yes	No	No
Are indications given in case of wrong answer?	Not interested	Yes	Yes, correct answer on next screen	Not interested
Free text allowed	Yes, but not analyzed by the software	No	No	No

(a) University of Leeds, UK. Death certification: Training and guidance package

(b) University of Leicester, UK. The virtual autopsy

(c) National Association of Medical Examiner (N.A.M.E.), USA. Writing causes of Death Statements: a tutorial

(d) Texas Department of Health (T.D.H.), USA. Medical certification of cause and manner of death

### 6.3.5 *Web-site features*

A detailed evaluation is premature and beyond the scopes of this report, therefore this last paragraph gives only some general impressions on the visited sites (see table 6.14).

The analyzed sites are similar with respect to the low level of difficulties on the exploration of different available functions: hypertext links between pages and use of buttons to perform specific actions are quite spread; the only site that has different active windows at the same time is the site of Leicester University, nevertheless its use is quite easy. Among the “user Friendly” characteristics are to be mentioned a “start here” page that introduces the users to the different functionality of the site and the computer technical requirements as well. The Leicester site only has this page developed. No one of the analysed site has an “Help on line”; this absence is probably due to the low interactivity level.

The “search” option is not strictly necessary, but in cases as T.D.H., it would have been helpful due to the large amount of information provided in that site.

In general, the graphic projects underneath all visited sites are not appealing. The exception is Leicester University, where “the interactive cadaver” gives autopsy results, photographs, and comments for each organ/system referred to the case history under discussion in the main window.

Details are desirable to a certain extent: it appears that too detailed sites are useful resources for completeness, but may be somewhat discouraging depending on various factor: time, expertise, motivation ...

Interactivity is to be sought because a web-based tool for training conceived as a paper tool, that is, just a sequence of pages to be read, does not fully utilise the potentialities provided by the internet technology.

Finally, maintenance and updating of a training site should be evaluated and set up when the site is developed or implemented in different settings.

Table 6.14 – Characteristics of visited web-sites.

	University of Leeds <sup>(a)</sup>	University of Leicester <sup>(b)</sup>	N.A.M.E. <sup>(c)</sup>	T.D.H. <sup>(d)</sup>
User-friendly *	G	G	G	G
Help online	No	Yes	No	No
Start here page	No	No	No	No
Interactivity*	G	E	P	G
“Search” string	No	No	No	No
Graphic/Design*	P	G	G	P
Details*	P	E	G	E
Last edited on:	Not available	Summer 2001	Dec. 2002	March 2002

\* Ratings: P: Poor; G: Good; E: Excellent

(a) University of Leeds, UK. Death certification: Training and guidance package

(b) University of Leicester, UK. The virtual autopsy

(c) National Association of Medical Examiner (N.A.M.E.), USA. Writing causes of Death Statements: a tutorial

(d) Texas Department of Health (T.D.H.), USA. Medical certification of cause and manner of death

## 6.4 Leaflets

As already discussed in chapter 5 many countries/regions have expressed the need to shorten and simplify guidelines for physicians (see paragraph 5.4.1). This aim could be easily reached with short instructions at the back of the certificate or with leaflets that could be used in case of need. Some of the experts declared to have leaflets or booklets but, due to the difficulty of obtaining such material and to revise it, here we will discuss just European and non European examples written in English, French or Italian.

The available material consists of:

- from USA: 2 versions of NCHS instructions;
- from France: general instruction at the back of the certificate;
- from Italy: 3 versions of Instruction on the back of the certificate and a leaflet from one of the local health facility.

The review of all these leaflets is shown in table 6.15. The main topic emphasized by all the leaflets is the legibility. Actually, it is always asked to write in capital letters and in black ink and not to use the abbreviations. In USA and France examples are shown on the correct completion of death certificates. In particular, for France, several examples have been placed in front of the death certificate. Nearly all the leaflets examined emphasize ‘not to state the mode of dying alone’ and some of them focus on specific pathologies that need specification, such as neoplasms (malignancy, site).

Table 6.15 - Characteristics of leaflets

	NCHS <sup>(a,b)</sup>	INSERM <sup>(c)</sup>	ISTAT <sup>(d,e,f)</sup>	USL-RA <sup>(g)</sup>
Utility on importance of certification	Yes	Yes	Yes	Yes
Notes on confidentiality (or other legal aspects)	No	Yes	Yes	Yes
Instruction and warnings about who (differently qualified physicians, medical examiners, coroners,.....) is in charge of certifying what (natural deaths, non natural deaths, ....)	No	No	No	No
Legibility (writing and abbreviations)	Yes	Yes	Yes	Yes
Meaning and completion of cause of death items	Yes	Yes	Yes	Yes
Examples of properly completed certificates	Yes 2 examples	Yes <sup>^</sup>	No	No
Duration	In examples	No	Yes	No
Manner of death	Yes	No	Yes	No
Explanations on other specific items	Autopsy, place and date of injury	Pregnancy, autopsy	Pregnancy, place and date of injury	No
Mode of dying	Yes	Yes	Yes	No
Senility	No	No	No	No
Contacts for more information	No	No	Yes	Yes

<sup>^</sup>on the front of death certificate

(a) NCHS. 'Instructions for completing the cause-of-death section of the death certificate', CDC Hyattsville, Mariland, USA, 1999

(b) NCHS. 'Instructions for completing the cause-of-death section of the death certificate for injury and poisoning', CDC Hyattsville, Mariland, USA, 1999

(c) INSERM. 'Instructions pour remplir le volet médical du certificat de décès', France.

(d) ISTAT. 'Istruzioni per la compilazione della parte "A", relative alle cause di morte, nelle schede di morte oltre il 1° anno di vita per maschio', Roma, ITALY, 2002.

(e) ISTAT. 'Istruzioni per la compilazione della parte "A", relative alle cause di morte, nelle schede di morte oltre il 1° anno di vita per femmina', Roma, ITALY, 2002.

(f) ISTAT. 'Istruzioni per la compilazione della parte "A", relative alle cause di morte, nelle schede di morte nel 1° anno di vita', Roma, ITALY, 2002.

(g) USL – RA. 'Come compilare la scheda ISTAT delle cause di morte', Ravenna, ITALY.

## 6.5 Conclusions

Some aspects have to be considered when the issue of quality of death certification comes to attention: efforts should be concentrate on relevant causes, both from a numeric and an epidemiological point of view; finally, attention should be paid in particular to those diseases or conditions most affected of lack of accuracy and specificity in reporting.

Only detailed studies on the quality of certification in each country could reveal the real training priorities by geographical area, but this is neither easy to realise nor one of the aims of the present project; this suggestion is a possibility for future actions on quality improvements and harmonisation. This project will provide to each participating European country some generalised, internationally agreed tools through which awareness and quality of certification can be improved by picking-up the most relevant parts of it to accomplish for national/regional public health priorities.

## 7 Annex A: Eurostat Recommendations

The recommendations comes from the FINAL REPORT on “Comparability and Quality Improvement of European Causes of Death Statistics”

### **Recommendation 0**

The information collected for this report and the recommendations settled on by the experts network needs to be updated and followed-up.

## **COVERAGE**

### **Recommendation 1**

Death count should be as complete as possible. Comparing the mortality files to other registers, such as population registers and registers on specific conditions may be very useful in this process.

### **Recommendation 2**

Each European country should publish data on all deaths occurring in their country, but keep residents and non-residents apart when publishing and analysing this (to avoid double counting in Europe).

### **Recommendation 3**

Each European country should forward copies of death certificates (or information) for nonresidents to the Causes of Death Statistics Office in the country of residence of the deceased.

## **CONFIDENTIALITY**

### *Principle*

*Understanding that the basic principle for confidentiality of Causes of Death data is to obtain the highest quality of information whilst protecting / respecting the deceased, his or her family and the certifying authority. This principle should be applied following the existing guidelines on statistical data in general and on Causes of Death data in particular.*

### **Recommendation 4**

Identifiable Causes of Death data should not be used for general administrative purposes (i.e. insurance, personal interest matters...) unless this is required by legislation and subsequently specifically requested.

### **Recommendation 5**

Any change in privacy or data protection should avoid the possible adverse consequences on Causes of Death statistics and medical research.

### **Recommendation 6**

It is essential that the implications of confidentiality regulations be properly understood. Thus the above principle should be respected whenever appropriate during the training of physicians or when communicating with lawyers, researchers and public.

### **Recommendation 7**

Any use of identifiable data other than that for statistical purposes, including public health and medical research, is not the responsibility of the statistical bodies and therefore should not be subject to discussion in the framework of statistical issues. However, under certain conditions for research purposes, individual causes of death data could be used, following existing national rules and regulations.

### **Recommendation 8**

Further investigation into the use of national rules and regulations of individual causes of death data for research purposes in European countries is recommended. This could lead to a list of best practices, aiming at the 'step-wise' improvement of common practices in European countries.



## **ORGANISATION OF CAUSES OF DEATH STATISTICS OFFICES**

### **Recommendation 9**

Each European country's Causes of Death Statistics Office should have close links with the Ministry or Department of Health.

### **Recommendation 10**

Each European country's Causes of Death Statistics Office should have access to statistical, epidemiological and clinical advice either by having this expertise among its staff, or by their having easy access to it.

## **INFANT CAUSES OF DEATH CERTIFICATION**

### *Preamble*

*The perinatal death certificate recommended by the WHO has been adopted by only a few European countries. Among the reasons for this non-application, the difficulty to select a sole underlying cause of death and thus include these deaths in routine cause of death statistics, is the most important.*

### **Recommendation 11**

The European Commission should facilitate consultations with the WHO concerning the perinatal death certificate.

### **Recommendation 12**

Consideration should be given on ways to encourage the correlation / linkage of detailed birth information to infant deaths. Should that prove impractical, the standard death certificate should be extended to include a single cause of maternal morbidity (if any), relevant to the infant death.

### **Recommendation 13**

Analysis of infant mortality is enhanced by additional data from events around the time of birth (ie.; birth weight, apgar score, single/multiple birth, delivery complications). To put these into context, both numerator (deaths) and denominator (births) should be used, and include the same additional variables.

### **Recommendation 14**

Three main additional elements, relevant to the analysis of infant deaths, to be collected should be: birth weight, gestation and plurality.

## **GENERAL CAUSES OF DEATH CERTIFICATION**

### **Recommendation 15**

Each European country must use the 'International Form of Medical Certification of Cause of Death' with 4 lines (WHO Revision Conference 1989). Each European country should also apply the WHO rules, guidelines and regulations for selection of the underlying cause of death.

### **Recommendation 16**

The basic additional information to be collected on the death certificate is:

- place of death; (home, hospital, nursing home etc.)
- place of accident;
- pregnancy state;
- country of usual residence;
- citizenship.

### **Recommendation 17**

For the purpose of violent causes of death statistics, the definition of epidemiological criteria should be harmonised so that it is made clear whether the death is due to suicide, homicide, accident or could not be determined after investigation.

### **Recommendation 18**

Information on autopsies should be recorded on death certificates, including:

- was an autopsy carried out?
- was it a legal or medical autopsy?
- has the result been used in certification?
- is an autopsy still on-going?

### **Recommendation 19**

Information on other investigations should be recorded on death certificates, including:

- were specific investigations carried out to help in the certification of cause of death?
- are specific investigations still on-going?

If the answers to the above are 'yes', the certifier should specify.

### **Recommendation 20**

In case of legal inquest:

- the Causes of Death Statistics Office must be informed if there is an inquest (provisional death certificate);
- the Causes of Death Statistics Office could use a provisional cause of death before the final cause of death;
- the persons (or institutions) who state the final cause of death must transmit the information to the Causes of Death Statistics Office;
- the Causes of Death Statistics Office must ask for the final cause of death;
- the Causes of Death Statistics Office must include the final cause of death in statistics.

### **Recommendation 21**

Causes of Death Statistics Offices should notify the Eurostat office of any change in their national death certificate when submitting annual data.

### **Recommendation 22**

The development of electronic certification should be supported.

## **QUERY PRACTICES**

### **Recommendation 23**

Queries should be technically feasible. Therefore, the certifier should be identifiable by the Statistics Offices and the deceased should at least be identifiable by the certifier directly or indirectly. It may be useful to identify another physician to whom queries may be addressed (general practitioner, senior hospital consultant etc).

### **Recommendation 24**

The certifier should be queried when the underlying cause of death selected by applying ICD 10 selection rules is an ill-defined condition according to the new ICD10 modification rule A.

### **Recommendation 25**

A common list of certification problems for European countries to query in priority should be developed: pathologies and situations (unknown and ill-defined causes, inconsistent and incomplete sequences).

### **Recommendation 26**

In case of an age limit to query, this age limit should be 80 years old.

### **Recommendation 27**

To improve the quality of Causes of Death statistics, the delay between the death and the query should be as short as possible.

### **Recommendation 28**

Changes as a result of late or further information (either spontaneous or in response to queries) should be included in final statistics.

### **Recommendation 29**

Publication of information on query practices (number, % of useful answers, average delay etc.) in official European Causes of Death statistics, should be developed.

## **TRAINING PRACTICES**

### **Recommendation 30**

Basic training in death certification for medical students as well as continuous professional development for practising physicians should be developed.

### **Recommendation 31**

Basic certification training should be:

- taught at the end of clinical training;
- integrated into appropriate courses in public health or epidemiology
- if taught in legal medicine, emphasis on WHO guidelines and definitions is essential;
- the contents of the course and exams should be prepared by Causes of Death Statistics Offices in collaboration with university teachers.

### **Recommendation 32**

Causes of Death Statistics Offices should, through collaborative effort, investigate the opportunities for continuous professional training for physicians, and integrate death certification as a training module (in many countries vocational training/continuous professional training is an obligation for physicians).

### **Recommendation 33**

The creation of a basic training course package should be developed as reference on certification (sequence, underlying causes etc.) for specific national training purposes on Causes of Death certification, and be adapted by each European country.

### **Recommendation 34**

To encourage awareness of the medical profession and improve certification, a common model or leaflet for inclusion in national training packages and campaigns should be developed. The main contents should be common and each country will adapt the final redaction and form to its own context. The document has to be short, freely available and easily copied (e.g. small plastic card, filofax). Certification must be explained with text and examples of case histories of 4/5 lines. These case histories have to be prepared with hospital practitioners. The Causes of Death Statistics Offices should find specific opportunities to disseminate the document.

### **Recommendation 35**

The creation of a common website on Causes of Death certification should be developed within existing networks of Eurostat and WHO (to be adapted by each European country).

### **Recommendation 36**

Causes of Death Statistics Offices should take advantage of opportunities for informing doctors on death certification via: queries, medical and public health journals, conferences and congresses for physicians.

*The follow-up of these recommendations on certification training needs to be organised (capacity and authority) with a possible responsibility of Ministries of Health and delegation to the Causes of death Statistics Offices.*

## **EUROPEAN COLLECTION OF MORTALITY STATISTICS**

### **Recommendation 37**

European countries should implement WHO ICD10 updates. They should be applied by the beginning of a new data year and be subjected to tests on their impact on statistics.

**Recommendation 38**

European countries must supply individual data to Eurostat. The record should contain information on citizenship, usual country of residence and country of death.

**Recommendation 39**

Eurostat should publish quality indicators for Causes of Death data, which could include at a national level : autopsy rate, query rate, unknown cause of death rate (investigated by a query/not investigated) and missing forms.

## 8 Annex B: References

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## **9 Annex C: The death certificate forms**

We have collected death certificates from most of the countries taking part to the project ( on 23). Some forms are available in the original language only and other are available in English version. The English collected documents are sometimes just translations of the info requested, written in a narrative form. In this work we decided to report only the forms available in English language showing the original layout and having a good quality of image. For this purpose the certificates from Albania, Finland, Hungary, Ireland, Italy, Macedonia, Malta, Rep Ceca, have been included into this annex.

Some certificates are more than one page, because either they report different kind of data(demographic and medical ones) submitted physically separated by the certifying physician and the civil status officer, or because they have a back page for the instructions (Ireland; Italy). The different pages of PDF files (Acrobat reader format), correspond to the different pages of paper death certificates; in one case front and back parts have been reported on the same page(Ireland).

ALBANIA

INSTITUT OF STATISTICS  
Rr. Leka Dukagjini, no.5, tirane, Albania  
Tel: 042 22411 Fax : 042 28300

SPECIMEN

Nr. [ ][ ][ ][ ][ ][ ]

DEATH FORM

D4

MEDICAL CONFIRMATION OF THE CAUSE OF THE DEATH

Name, Father's surname of the dead person

Date of Birth: day [ ][ ] month [ ][ ] year [ ][ ][ ][ ]  
Date of Death: day [ ][ ] month [ ][ ] year [ ][ ][ ][ ]

PART I - MEDICAL CERTIFICATE

A - MEDICAL DATA

<b>I. PLACE OF DEATH</b>		<b>II. HAS BEEN THE PERSON UNDER MEDICAL TREATMENT</b>	
Home _____	[ ][ ]1	Yes	[ ][ ]1
Medical institution _____	[ ][ ]2	No	[ ][ ]2
Other _____ ( Specify )	[ ][ ]3		

III. CAUSE OF DEATH

<b>a - NATYRAL (if not skip to b)</b>		<b>b - VIOLENT</b>	
<b>1. INITIAL CAUSE</b>		<b>4. CAUSE</b>	
_____		Accident [ ][ ]1	Accident at work [ ][ ]2
_____		Suicide [ ][ ]3	Kill [ ][ ]4
_____		<b>5. OBJECT OR MANER THAT CAUSED THE DEATH</b>	
ILLNESS CODE [ ][ ][ ][ ][ ]		_____	
<b>2. INTERMEDIATE CAUSE OR COMPLICATION</b>		_____	
_____		ILLNESS CODE (E 800-E999) [ ][ ][ ][ ][ ]	
_____		<b>6. ILLNESS OR COMPLICATION CAUSED AS A RESULT OF THE INJURY</b>	
ILLNESS CODE [ ][ ][ ][ ][ ]		_____	
<b>3. FINAL CAUSE</b>		_____	
_____		ILLNESS CODE (800-999) [ ][ ][ ][ ][ ]	
_____		<b>7. TIME ACCIDENT OR KILLING</b>	
ILLNESS CODE (001-999) [ ][ ][ ][ ][ ]		hour _____ [ ][ ] date _____ [ ][ ][ ]	
_____		month _____ [ ][ ] year _____ [ ][ ][ ][ ]	
<b>Health centre or physician stamp.</b>		<b>8. PLACE OF ACCIDENT OR KILLING</b>	
date _____		Street _____ [ ][ ]1	
		Other places _____ [ ][ ]2	
		PHYSICIAN SIGN	

**DEATH CERTIFICATE**  
of a person aged 28 days or more

- |  |  |                        |
|--|--|------------------------|
| 1. Family name   | 2. First names   |                        |
| 3. Social security number<br>day month year identifier | 4. Time of death<br>day month year   | confirmed<br>estimated |
| 5. Last home municipality                              | 6. Administrative court  |                        |
| 7. Causes of death                                     | ICD-10 disease classification codes<br>(To be entered without the full stop) |                        |

A  
B  
C

- 7.1 Diseases, injuries, toxic conditions and external causes leading to death (I)
- |  |                              |  |                             |
|--|------------------------------|--|-----------------------------|
| A. Direct cause of death (not the final mode of dying) | Cause code or external cause | Symptom code*<br>Main injury/<br>toxic substance | Assumed duration of illness |
| B. Intervening cause(s) of death                       |                              |  |                             |
| C. Underlying cause of death                           |                              |  |                             |

SPECIMEN

- 7.2 Other significant conditions contributing to the death (II), but not related to the conditions stated in 7.1
8. Classification of death (determined by 7.1 C above/underlying cause of death)
- |                 |              |          |                                  |         |          |     |                     |
|-----------------|--------------|----------|----------------------------------|---------|----------|-----|---------------------|
| Disease disease | Occupational | Accident | Medical treatment or examination | Suicide | Homicide | War | Undetermined intent |
|-----------------|--------------|----------|----------------------------------|---------|----------|-----|---------------------|
9. Where the death is classified as an accident, select the best suited alternative from the following:
- |                  |         |                                   |                         |         |                  |       |           |
|------------------|---------|-----------------------------------|-------------------------|---------|------------------|-------|-----------|
| During transport | At work | During sport or physical exercise | During leisure activity | At home | In hospital care | Other | Not known |
|------------------|---------|-----------------------------------|-------------------------|---------|------------------|-------|-----------|
10. Place of death
- |                |   |                           |                            |
|----------------|---|---------------------------|----------------------------|
| Home/residence | Unit of health care, state which: _____ | Other, state which: _____ | Abroad, state where: _____ |
|----------------|---|---------------------------|----------------------------|

11. Medical treatment administered in the past four weeks if not already entered in 7. above.  
No Yes State when, type of treatment and condition treated, at 12
12. Circumstances of death (State of health prior to the onset of the train of events which lead to death. Progress of the disease which lead to the death; main examination results and treatment.)  
If the death entailed a mortal injury or toxic condition, the external conditions must be described in detail.
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

13. Method used to investigate cause of death
- |                      |                 |                  |                          |   |                      |
|----------------------|-----------------|------------------|--------------------------|---|----------------------|
| Clinical examination | Medical autopsy | Forensic autopsy | Other, state what? _____ | Place of autopsy/Other, state what? _____ | Autopsy number _____ |
|----------------------|-----------------|------------------|--------------------------|---|----------------------|

14. I hereby certify, on my honour and conscience, that the information given above is true and correct
- |                          |                                  |  |
|--------------------------|----------------------------------|--|
| Place and date           | Medical practitioner's signature | 15. Code of issuing health care unit (place of office) _____ |
| Place of office or stamp | Tel.: _____<br>Fax: _____        | Medical practitioner's name in print                         |
|                          | Position                         |  |

Provincial Government statement: The cause of death has been investigated and the death certificate has been properly completed.  
Date Signature (Sections 7. to 13. to be filled in and the death certificate signed after causes of death have been investigated.)

Completed form to be forwarded to the Provincial Government of the province in which the last home municipality of the deceased was situated. The Provincial Government will forward the form on to Statistics Finland.

HUNGARY

Data supply is obligatory on basis of §.10 of the 1993 law No XLVI regarding statistics

I. Copy of the HCSO

CERTIFICATE ON THE EXAMINATION OF THE DECEASED

Register identifier		Running number		<b>To be filled in by the registrar</b>
1. Surname and given name of the deceased _____				
2. Place of birth		3. Sex      male (1) – female (2)      sex      year      month      day		
		birth date		
4. Address, postal code of the last place of residence		5. Address, postal code of the last place of stay		
6. Name of the relative (arranger of the burial)		7. His/her address		8. His/her nearer indication
9. Place of death		10. Date of death		11. Its nearer indication
		year      month      day		
12. Name of the medical attendant		13. His/her post and address of his/her place of work (consultation room, department)		
14. Name of the physician examining the deceased		15. His/her post and address of his/her place of work (consultation room, department)		
16. The physician does not find necessary – finds necessary the pathological examination – finds necessary an examination by a public authority <i>(To underline the desired reply)</i>				
17. Motive of the examination (procedure) and other comments				
18. Date of issue		year      month      day		L. S. _____ signature of the physician examining the deceased
19. Date of the transport to the house of the deceased		20. Date authorized for the burial		
		year      month      day		
21. Comment of the investigating committee of the police authorities, of the health administrative organ				
22. To be filled in by the prosecutor, expert in forensic medicine and by the health administrative organ, respectively, competent by the place of death who stated the cause of death		It can be cremated without autopsy It can be cremated after autopsy It can be cremated after autopsy <i>(To underline the desired reply)</i>		L. S. _____ signature

**Before filling in read the last paragraph of the Information!**

23. The cause of death was stated through autopsy (1) – by the medical attendant (2) – by a physician (3) *(To underline the desired reply)*

24. Did the deceased get a medical treatment during the period of disease? Yes (1) – no (2) *(To underline the desired reply)*

26. Approximate time passed between the beginning and the death (minutes, hours, weeks, months, years)

25. I. a. Disease or condition contributing directly to death

\_\_\_\_\_ I. a. \_\_\_\_\_

I. b. Preliminary disease or condition contributing to the above mentioned

\_\_\_\_\_ I. b. \_\_\_\_\_

I. c. Preliminary disease or condition contributing to the above mentioned

\_\_\_\_\_ I. c. \_\_\_\_\_

I. d. Underlying disease or condition

\_\_\_\_\_ I. d. \_\_\_\_\_

II. Other more significant associated disease(s) or condition(s) contributing to death

\_\_\_\_\_ II. \_\_\_\_\_

27. In case of **violent death**: accident – suicide – homicide *(To underline the desired reply)*

a) where did it happen? (at home, in the street etc.) \_\_\_\_\_

b) its way, cause and circumstances \_\_\_\_\_

c) wich part of the body was hurt and by what kind of injury? \_\_\_\_\_

d) its date

year	month	day

L. S. \_\_\_\_\_  
signature of the physician

Comments

front page

BIRTHS AND DEATHS REGISTRATION ACT (IRELAND), 1880.

S.R.D. ....  
 District ....  
 Entry No. ....

**MEDICAL CERTIFICATE OF THE CAUSE OF DEATH**

The certificate opposite should be completed and signed by the medical practitioner who personally attended the deceased during the last illness, and by no other person.

Name of deceased: ..... Age: .....

Place of death: .....

Last seen alive by me on: ..... Date of death: .....

Whether seen after death by me (answer "yes" or "no" in all cases):

If a woman, was the deceased known to have been pregnant at the time of death or within the previous 42 days (answer "yes" or "no" in all cases):

	Former Residence of Deceased

**COUNTERFOIL**

Name of Deceased .....

Age .....

Last seen .....

Died on .....

At .....

**Cause of Death**

I. (a) .....

(b) .....

(c) .....

II. ....

Signed .....

Date .....

**CAUSE OF DEATH (please print clearly)**

I

*Disease or Condition directly leading to death.* (This does not mean the mode of dying, e.g. heart failure, asphyxia etc. It means the disease, injury or complications which caused death.) (a) .....

*Antecedent Causes* (morbid conditions if any, leading up to the above cause, stating the underlying condition last) (b) .....

(c) .....

II

*Other Significant Conditions* contributing to the death but not related to the disease or condition causing it. ....

Approximate interval between onset and death

Name of Medical Practitioner (block capitals): .....

Signature: ..... Registered Qualification: .....

Residence ..... Date: .....

When completed and signed, this certificate should be given to one of the qualified informants listed overleaf, who will bring it to the Registrar of Births and Deaths for the district in which the death occurred, and to no other person.

back page

**PERSONS QUALIFIED TO BE INFORMANTS FOR THE REGISTRATION OF THE DEATH**

- . The nearest relative of the deceased present at the death, or in attendance during the last illness.
- . Any other relative having the necessary information required to be registered concerning the death.
- . A person present at the death.
- . The occupier or any other resident of the house in which the death occurred.
- . The person responsible for the disposing of the body.

In addition to the cause of death as certified overleaf the informant must be prepared to state to the Registrar:-

- 1) The date and place of death.
- 2) The full names and surname of deceased.
- 3) The marital condition of deceased (single, married, or widowed).
- 4) The correct age of deceased.
- 5) The rank, profession, or occupation of deceased. (If deceased was a child or young unmarried person without occupation, the full names and rank or profession of the father will be required; if a wife or widow, those of the husband or deceased husband.)



# ITALY

For a correct filling of the form please read the INSTRUCTIONS on the back of the form

Name and Surname of the deceased

Age

ISTAT

National Institute of Statistic

individual code of the deceased

Istat D.5 Edition 2003

## DEATH CERTIFICATE OVER 1 YEAR OF LIFE FOR FEMALE

Number of form

<p><b>PART A</b> to be completed by physician)</p> <p><b>Place of death</b></p> <p>Home <input type="checkbox"/> 1</p> <p>Public Hospital <input type="checkbox"/> 2</p> <p>Private hospital <input type="checkbox"/> 3</p> <p>Long term care Institute <input type="checkbox"/> 4</p> <p>Other(specify) <input type="checkbox"/> 5</p>	<p>Province of death _____</p> <p>Municipality of death _____</p> <p>Local Health's Unit Agency where death occurred _____</p> <p><b>Autopsy</b></p> <p>requested <input type="checkbox"/> 1</p> <p>not requested <input type="checkbox"/> 2</p>	<p><b>PART B</b> - to be completed by Civil Status Officer</p> <p>Check and eventually correct the name of the deceased</p> <p><b>Number of death declaration</b></p> <p>Part Series 1 <input type="checkbox"/> I 2 <input type="checkbox"/> II</p> <p>1 <input type="checkbox"/> B 2 <input type="checkbox"/> C</p> <p>Civil Status Office _____</p> <p>District _____ (b)</p> <p>Municipality _____</p> <p>Province _____</p>	<p><b>1. Date of death</b></p> <p>time Day Month Year</p> <p><b>2. Date of birth</b></p> <p>Day Month Year</p> <p><b>3. Place of birth</b></p> <p>The same municipality of death <input type="checkbox"/> 1</p> <p>Other municipality _____ <input type="checkbox"/> 2</p> <p>(specify municipality and province) municipality province</p> <p>Foreign country _____ <input type="checkbox"/> 3</p> <p>(specify) _____</p> <p><b>4. Age</b></p> <p>Years _____ 4. _____</p> <p><b>5. Civil Status</b></p> <p>Unmarried _____ <input type="checkbox"/> 1</p> <p>Married _____ <input type="checkbox"/> 2</p> <p>Widow _____ <input type="checkbox"/> 3</p> <p>Divorced or already married(a) _____ <input type="checkbox"/> 4</p> <p>Legally separated _____ <input type="checkbox"/> 5</p> <p>If married or legally separated,specify:</p> <p>Birth year of survivor spouse _____</p> <p>Wedding date _____</p> <p><b>6. Place of residence</b></p> <p>The same municipality of death <input type="checkbox"/> 1</p> <p>Other municipality _____ <input type="checkbox"/> 2</p> <p>(specify municipality and province) (municipality) (province)</p> <p>Foreign country _____ <input type="checkbox"/> 3</p> <p>(specify) _____</p> <p><b>7. Educational level</b></p> <p>University degree(long) _____ <input type="checkbox"/> 1</p> <p>University degree(short) _____ <input type="checkbox"/> 2</p> <p>High school _____ <input type="checkbox"/> 3</p> <p>Secondary school diploma _____ <input type="checkbox"/> 4</p> <p>Primary school diploma or no degree _____ <input type="checkbox"/> 5</p> <p>(a) Already married means the person who obtained the dissolution or cessation of civil marriage for the law of 1st December 1970, n°898</p> <p>(b) Only for the municipalities that are divided in districts</p>
<p><b>NATURAL CAUSE OF DEATH</b></p> <p><b>1. Underlying cause</b> (write in capital letter)</p> <p>Choose the only pathology considered the initial disease of the morbidity process at point 2 and 3</p> <p>Interval (a) onset to death</p> <p>yy mm dd</p> <p>that led to cause 2</p> <p><b>2. Intermediate cause</b> (write in capital letter)</p> <p>Complications or development of preceding cause, indicated at point 1</p> <p>Interval (a) onset to death</p> <p>yy mm dd</p> <p>that led to cause 3</p> <p><b>3. Immediate cause</b> (write in capital letter)</p> <p>Disease directly resulting in death linked to the causes indicated at points 1 and 2.</p> <p>Do not enter the mode of dying (e.g.:cardiac arrest; respiratory arrest)</p> <p>Interval (a) onset to death</p> <p>yy mm dd</p> <p><b>4. Other Significant Conditions</b> (write in capital letter)</p> <p>Enter all diseases or conditions contributing to death but not listed in the chain of events at points 1; 2; 3.</p> <p>Interval (a) onset to death</p> <p>yy mm dd</p> <p>(a) enter approximate interval between onset to death</p>		<p><b>EXTERNAL CAUSE OF DEATH</b></p> <p><b>5. Violent cause</b></p> <p>Accident 1 Injury at work 2</p> <p>Suicide 3 Homicide 4</p> <p><b>6. Description of the injury</b> (write in capital letter)</p> <p>_____</p> <p><b>7. Diseases or Complications due to (as a consequence of) the underlying injury</b> (write in capital letter)</p> <p>_____</p> <p><b>8. Already existing morbidity conditions not directly contributing to death</b> (write in capital letter)</p> <p>_____</p> <p><b>9.1 How the injury occurred</b> (write in capital letter)</p> <p>_____</p> <p><b>Interval between the accident and the death</b></p> <p>years months days hours</p> <p><b>9.2 Date of accident, suicide, homicide</b></p> <p>hour day month year</p> <p><b>9.3 Place of accident, suicide, homicide</b></p> <p>1 Home 2 Res. Institutions 3 Schools 4 Sports and athletics area 5 Street and highway 6 Trade and service area 7 Industrial and construction area 8 Farm 9 Other places(specify)</p>	
<p><b>10. Pregnancy</b></p> <p>Pregnant at time of death <input type="checkbox"/> 1 Pregnant within 42 days of death <input type="checkbox"/> 2 pregnant 43 days to 1 year before death <input type="checkbox"/> 3</p>		<p><b>8. Occupation</b></p> <p>Employed _____ <input type="checkbox"/> 1</p> <p>Unemployed _____ <input type="checkbox"/> 2</p> <p>First job seeker _____ <input type="checkbox"/> 3</p> <p>Retired _____ <input type="checkbox"/> 4</p> <p>Housekeeper _____ <input type="checkbox"/> 5</p> <p>Student _____ <input type="checkbox"/> 6</p> <p>Unable to work _____ <input type="checkbox"/> 7</p> <p>Others _____ <input type="checkbox"/> 8</p> <p><b>9. Working and not working status</b></p> <p>Employed _____ <input type="checkbox"/> 1</p> <p>Unemployed _____ <input type="checkbox"/> 2</p> <p>First job seeker _____ <input type="checkbox"/> 3</p> <p>Retired _____ <input type="checkbox"/> 4</p> <p>Housekeeper _____ <input type="checkbox"/> 5</p> <p>Student _____ <input type="checkbox"/> 6</p> <p>Unable to work _____ <input type="checkbox"/> 7</p> <p>Others _____ <input type="checkbox"/> 8</p> <p><b>10. Professional position</b></p> <p>Self employed</p> <p>Entrepreneurs and free-lancers _____ <input type="checkbox"/> 1</p> <p>Self employed _____ <input type="checkbox"/> 2</p> <p>Others _____ <input type="checkbox"/> 3</p> <p>Employed</p> <p>Managers and functionaries _____ <input type="checkbox"/> 4</p> <p>Employee-Wage earners _____ <input type="checkbox"/> 5</p> <p>Not skilled employee _____ <input type="checkbox"/> 6</p> <p>Others _____ <input type="checkbox"/> 7</p> <p><b>11. Economical activity</b></p> <p>Agriculture, hunt and fishing _____ <input type="checkbox"/> 1</p> <p>Industry _____ <input type="checkbox"/> 2</p> <p>Commerce, public service, hotels _____ <input type="checkbox"/> 3</p> <p>Public Administration _____ <input type="checkbox"/> 4</p> <p>Others _____ <input type="checkbox"/> 5</p> <p><b>12. Citizenship</b></p> <p>Italian</p> <p>For birth _____ <input type="checkbox"/> 1</p> <p>Obtained _____ <input type="checkbox"/> 2</p> <p>Foreign _____ <input type="checkbox"/> 3</p> <p>(specify) _____</p> <p>Sign, name and address of Civil Status Officer _____</p>	
<p><b>To the best of my knowledge and belief death occurred due to the causes stated</b></p> <p>Date _____ Physician in charge of the deceased <input type="checkbox"/></p> <p>_____ Medical Examiner <input type="checkbox"/></p> <p>Sign of the physician _____</p> <p>Physician's or health care institute stamp and telephone number _____</p>		<p>_____</p>	

**Instructions for completing the "Part A" regarding to causes of death section, of the death certificate over 1 year for female (ISTAT D5-2003 edition)**

Accurate cause-of-death information is important for the following reasons:

To the public health community in evaluating and improving the health of all citizens;  
Because the data are provided only for a statistical use and Istat has a task to keep the "statistical secret".  
The confidential reason" is not violated because data are provided only aggregated and anonymous.

The cause-of death information should be YOUR best medical OPINION

In completing the CAUSE-OF-DEATH Section:

Use a typewriter with good black ribbon and clear keys. If a typewriter is not available, print legibly using permanent **black** ink;  
After the Name, Surname, Age of the dead, the physician have to fill the "Part A" of the form, referred to causes of death. This part A is divided in two squares which describe natural and external causes of death.

**Cause of Death – Natural Causes**

Enter every influent disease on death. One condition can be reported as "probable" also if not certainly diagnosed. Don't enter the symptoms inside the causes of death squares.

Question 1 – Part A - Death Certificate represents the Underlying Cause-of-Death or the initial cause of the morbidity process which lead to death.

Question 2 – Part A - Death Certificate represents the Intermediate Cause-of-Death or Complication of disease indicated in the first question. The intermediate causes have to indicate the etiological or pathological sequences as well as to sequences in which earlier condition is believed to have prepared the way for a sequent cause by damage to tissues or impairment of function.

Question 3 – Part A - Death Certificate represents the Immediate Cause-of-Death.

Do not LEAVE BLANK this line.

The mode dying (for example, cardiac arrest and respiratory arrest) should not be used but you can use the condition which directly cause the death. However, if the underlying cause isn't identified, you have to enter this Immediate Cause on question 3 and to indicate "Unknown Natural Cause" on question 1 lines.

Question 4 – Part A - Death Certificate represents the Other Significant Conditions

Enter all diseases or conditions that contributed to death that were not listed in the chain of events in questions 1-2-3 and that did not result in the underlying cause-of-death.

For each of the 4 questions you have to indicate, filling the appropriate space, the time interval between the starting and the end of disease.

**Cause of Death – External Causes**

Enter every injury which has caused a lethal trauma. One condition can be reported as "probable" also if not certainly diagnosed. Don't enter the symptoms inside the causes of death squares.

Question 5 – Part A - Death Certificate reports 4 different causes, considered as possible mode of dying. Fill always one of these causes. (Mode of dying: 1)Accidental, 2)Work Accident, 3)Suicide, 4)Homicide.)

Question 6 – Part A - Death Certificate represents the Description of injury which starts the death process.

Question 7 – Part A - Death Certificate represents the Diseases or Complication linked to underlying injury.

Question 8 – Part A - Death Certificate represents the Morbidity conditions which already existed before the injury and which have, in case but not directly, contributed to death. This conditions could help to provide more information about the individual health status.

Question 9.1 – Part A - Death Certificate represents the Mode in which the injury has been done. You have to exactly indicate the tool used to provoke the injury.

Question 9.2-9.3-9.4 – Part A - Death Certificate provides information about: date of the accident, the interval between the violent action and the death; the place where the accident occurred.

Do not LEAVE BLANK these lines and FILL IN them in every part, it is important for a better processing of data.

**Question10:**

**Pregnancy at time of death or within past year:.**

In agreement with recent OMS recommendations it is right to indicate the status of pregnancy of the deceased.

Check the appropriate box.

**The declaration must be reported by the Physician in charge of the deceased or by Medical Examiner, the date of compilation, the stamp and telephone number of the hospital/other care institute, or of the Physician, together with his legibly signature, must be provided.**

**If further autopsy or other exams' findings are available after the compilation of death certificate, they must be immediately communicate to the Local Health's agency.**

For more information, refer to: <http://www.istat.it> (Per i rispondenti/Imprese e Istituzioni)

# MACEDONIA

REPUBLIC OF MACEDONIA  
STATE STATISTICAL OFFICE

## CERTIFICATE OF DEATH AND MEDICAL REPORT FOR CAUSE OF DEATH

<p><b>1. NAME AND SURNAME OF DECEDENT</b> _____</p> <p><b>2. SEX</b> ? Male ? Female _____</p> <p><b>3. DATE OF DEATH</b> _____ <small>day, month, year (0 - 24)</small></p> <p><b>4. PLACE OF DEATH</b> Settlement _____ Municipality _____</p> <p><b>5. Unique personal identification number</b> _____ <small>hour (for children to 7 days)</small></p> <p><b>6. PLACE OF BIRTH</b> Settlement _____ Municipality _____</p> <p><b>7. PLACE OF RESIDENCE</b> Street _____ Number _____ Settlement _____ Municipality _____ State _____</p> <p><b>8. MARITAL STATUS</b> _____ <b>9. CITIZENSHIP</b> _____</p> <p><b>10. PARENT'S NAME</b> Father _____ Mother _____ <small>For infants, unique personal identification number of mother</small></p> <p><b>11. DECEDENT WAS MEDICALLY TREATED FROM THE ILLNESS HIS/HER DIED?</b> ? yes ? no</p> <p><b>11b) MANNER OF DEATH</b> ? NATURAL ? accident ? VIOLENT ? suicide ? homicide</p> <p><b>12. FOR THOSE WHO WERE TREATED</b> a) date of last exam _____ b) number of medical ID _____ c) facility name _____</p> <p><b>13. THE DEATH WAS CERTIFIED BY ?</b> Physician _____ ? other person _____ Name and surname of a person _____ Signature _____</p>	<p style="text-align: center;"><b>MEDICAL REPORT FOR CAUSE OF DEATH</b></p> <p><b>14. CAUSE OF DEATH</b></p> <p>I.</p> <p>a) Immediate cause (final disease or condition resulting in death) _____</p> <p>b) Antecedent causes _____</p> <p>c) Sequentially (morbid) conditions, if any, leading to immediate cause (stated under a) Enter <b>underlying cause</b> (disease or injury that initiated events resulting in death) <b>LAST</b>. _____</p> <p>d) <b>UNDERLYING CAUSE OF DEATH</b> _____</p> <p><b>EXTERNAL CAUSE OF DEATH</b> _____</p> <p>II. Other significant conditions contributing to death, but not related to the diseased or condition directly led to death _____</p> <p style="text-align: right;"><small>approximate interval between onset and death</small></p>
<p style="font-size: 2em; opacity: 0.5; transform: rotate(-15deg);">SPECIMEN</p>	
<p><b>15. AUTOPSY FINDINGS NUMBER</b> _____ <b>date</b> _____</p> <p style="text-align: right;">Physician signature _____</p>	
<p><b>REGISTER MARK:</b> Entered in a death register for settlement _____ municipality _____ by current number _____ on _____ day, month, year _____</p> <p style="text-align: right;">Registrar's signature _____</p>	

## CERTIFICATE OF DEATH AND CAUSE THEREOF

1. Name and surname .....
2. Age and sex ..... Identity Card No. ....  
(if dead person had an Identity Card)
3. Place of birth .....
4. Residence .....
5. Profession, trade or other status .....
6. Name and surname of parents and whether living or dead .....
7. Whether bachelor or spinster, married, widower or widow, and in the latter two cases the name and surname of the husband or wife .....
8. Hour, day, month and year of death .....
9. Place where death occurred .....

\*10. Cause of death:—

	Approximate interval between onset and death
I	
Disease or condition directly leading to death (a) .....	.....
Antecedent causes: morbid conditions, if any, giving rise to the above cause, stating the underlying condition last (b) .....	.....
(c) .....	.....

II

Other significant conditions contributing to the death but not related to the disease or condition causing it

SPECIMEN

- \*11. Place of Interment .....
12. Signature of the Medical Practitioner .....
- Date .....
- Name in Block Letters .....
- Address .....

TO THE POLICE OFFICER IN CHARGE OF THE ACTS OF

DEATH IN .....

\* NOTES:

The certifier should enter under —

I. (a) The disease or injury which initiated the train of morbid events leading to death, i.e. the disease, injury or complication which was the direct cause of death. This does not mean the mode of dying e.g. heart failure, asphyxia, etc.

(b) The condition, if any, considered to have been antecedent to the direct cause, both in respect of time and of etiological or pathological relationship. A condition can be entered as antecedent even though a long interval of time has elapsed since its onset or since the occurrence of symptoms of it.

(c) Any other condition which is considered to be antecedent to (b) in the same sense as described above.

If it is thought that there has not been any antecedent condition as defined above, lines I (b) and (c) should be left blank.

On no account must the starting point of the sequence be entered in Part II because of lack of space for it in Part I.

II. Any other conditions which, though not in the casual sequence in Part I, appear to have contributed something to the fatal outcome.



Český statistický úřad  
Sokolovská 142  
18604 Praha 8  
tel. 74051111

# NOTIFICATION OF DEATH

**Obyv 3 - 12**  
Filed by the CSO  
Report no. Vk 4/00  
of 24 June 1999  
IKF 493095

Month ..... 200....

The statistical survey is part of the Programme of Statistical Surveys for 2001. According to the State Statistical Service Act No. 89/1995 Coll., the reporting unit is obliged to provide all requested data. The protection of individual data is guaranteed.

District \_\_\_\_\_

Local authority \_\_\_\_\_

Place of death (municipality) \_\_\_\_\_ (to be completed by CSO)

Serial no. of registry \_\_\_\_\_ Serial number 

--	--	--	--

 01

First name and surname of the deceased \_\_\_\_\_

Date of death day, month, year 

--	--	--	--	--	--	--	--	--	--

 02

Date of birth day, month, year 

--	--	--	--	--	--	--	--	--	--

 03

Birth certificate no. \*) 

--	--	--	--	--	--	--	--	--	--

 04

Sex 1 - male 2 - female 

--

 05

Marital status 1 - single 2 - married 3 - divorced 4 - widowed 

--

 06

Highest educational achievement 1 - basic, 2 - secondary without GCSE (incl. apprentices), 3 - secondary with GCSE, 4 - university 

--

 07

In words \_\_\_\_\_ (to be coded by CSO) 08

Citizenship \_\_\_\_\_ 09

Permanent residence District \_\_\_\_\_ 10

Municip. \_\_\_\_\_

Street, no. \_\_\_\_\_

Birth certificate number of spouse \*) 

--	--	--	--	--	--	--	--	--	--

 11

Cause of death acc. to autopsy (or doctor's examination) from the deceased's examination sheet Diagnosis (4-digit code of MKN - 10) \_\_\_\_\_

I. a) Disease (condition) directly leading to death \_\_\_\_\_

b) Previous causes \_\_\_\_\_ (to be coded by CSO)

c) Primary cause \_\_\_\_\_ 12

II. Other severe pathological conditions and changes \_\_\_\_\_

Was on-the-job accident, other accident, murder, suicide the cause of death? (tick as appropriate and describe briefly) \_\_\_\_\_ 13

Was autopsy carried out? 1 - Yes 2 - No 

--

 14

Give the following for children who died by 1 year of age

Length of life in hours if the death occurred within 24 hours, or code 99 for older infants 

--	--

 15

Where did the death occurred? 1 - in institution 2 - at home 3 - other place 

--	--	--

 16

Birth weight (grams) 

--	--	--	--

 17

In \_\_\_\_\_ on \_\_\_\_\_ 200 \_\_\_\_\_ Signature of registrar \_\_\_\_\_

Use digits to fill in all boxes except for those to be completed by CSO. Use words to fill in the dotted sections. See overleaf for additional instructions on completion.

\*) If not available (especially with foreigners), construct the number using the first digits of the data of birth. Fill in the tenth place with zero in the event of 9-digit birth certificate numbers.