

# **PREVENTING SUICIDE**

## **A RESOURCE FOR SUICIDE CASE REGISTRATION**



**World Health  
Organization**

Department of Mental Health and Substance Abuse  
World Health Organization

This document is one of a series of resources addressed to specific social and professional groups particularly relevant to the prevention of suicide.

It has been prepared as part of SUPRE, the WHO worldwide initiative for the prevention of suicide.

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## FOREWORD

Suicide is a complex phenomenon that has attracted the attention of philosophers, theologians, physicians, sociologists and artists over the centuries. According to the French philosopher Albert Camus, in *The Myth of Sisyphus*, it is the only serious philosophical problem.

As a serious public health problem it demands our attention, but its prevention and control, unfortunately, are no easy task. State-of-the-art research indicates that the prevention of suicide, while feasible, involves a whole series of activities, ranging from the provision of the best possible conditions for bringing up our children and youth, through the early identification and effective treatment of mental disorders, to the environmental control of risk factors. Appropriate dissemination of information and awareness-raising are essential elements in the success of suicide prevention programmes.

In 1999 WHO launched SUPRE (Suicide Prevention), its worldwide initiative for the prevention of suicide. This booklet is one of a series of resources prepared as part of SUPRE and addressed to specific social and professional groups that are particularly relevant to the prevention of suicide. It represents a link in a long and diversified chain involving a wide range of people and groups, including health professionals, educators, social agencies, governments, legislators, social communicators, law enforcers, families and communities.

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The resources are now being widely disseminated, in the hope that they will be translated and adapted to local conditions - a prerequisite for their effectiveness. Comments and requests for permission to translate and adapt them will be welcome.

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## PREVENTING SUICIDE A RESOURCE FOR SUICIDE CASE REGISTRATION

Suicide was estimated to account for about one million deaths globally in 2008. Given that over 60% of suicides in the world are believed to occur in low- and middle-income countries,<sup>1</sup> it is unfortunate that there is comparatively little information about the burden of suicide in these areas.<sup>2</sup>

The lack of knowledge about suicide in low- and middle-income countries is likely to be connected to the fragmented nature of registration systems for suicide mortality.<sup>3</sup> In some countries, data on intentional self-harm may be included within an aggregate category of external injuries causes, which makes suicide difficult to distinguish from cases of accident or homicide. Data on suicide in other locations may only be partially available; for example, the sex of the individual may be recorded without information on the method of suicide. In other areas, reporting procedures for suicide may simply be non-existent.

There are numerous reasons for why establishing registration practices for suicide are important. First and foremost, registration systems can be helpful in quantifying the size of the problem, even more so with specification of the age, sex, and methods used of persons who die by suicide. Ascertaining this type of information is fundamental to the development of targeted suicide prevention strategies. A system for reporting registered suicide cases can also provide information on trends of suicide over time, and therefore be a valuable tool in public health and in research.

The aim of this publication is to provide a resource on how to establish or improve registration systems for suicide mortality. This includes:

- The identification of deaths due to suicide;
- Death certification of suicide cases using the International Classification of Diseases;
- Coverage of suicide registration systems (in cases where the suicide reporting system cannot function as a country-wide register);
- What information to record in case registration (including an example recording form);
- Persons involved in the data collection of suicide, and;
- The use of data collected on suicide mortality.

## **Identification of deaths due to suicide**

The ability to accurately identify cases of suicide from other causes of death is critical in establishing reliable mortality registration practices. Often this is approached based on exclusion principles, the so-called NASH system (Natural, Accidental, Suicide and Homicide).<sup>4</sup> A doctor can usually classify natural deaths, while cases of accident, suicide and homicide often require additional investigation around the circumstances of the death (see Figure 1).

The method of death is one of the first pieces of information to examine when identifying possible suicide cases. Although there is notable geographical variation across the world, the most common suicide methods are:

- Hanging;
- Firearms, and;
- Self-poisoning with pesticides.<sup>5</sup>

However, a number of suicide deaths also occurs by drug overdose,<sup>5</sup> which may be confused with accidental death.<sup>6</sup> Because of this, it is often necessary to ascertain additional evidence that a death is by suicide.<sup>7</sup> Some of these



additional sources of evidence may come from pathological and toxicological investigations, and police or coronial inquiries (involving investigations of evidence at the scene of the suicide and of past history).

In some high-income countries, suicide registration systems are able to access supporting evidence from a range of data sources, including coroner and medical examiner records, police, crime and toxicology reports, and alcohol, tobacco, firearms and explosives trace reports.<sup>8</sup> In comparison, settings with limited resources may have to rely on basic information such as:

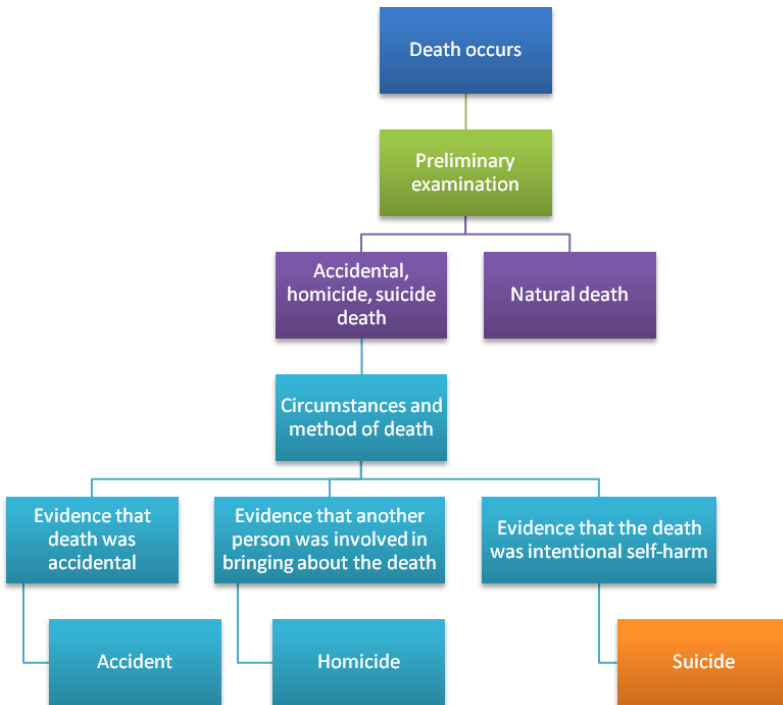
- The method and circumstances of death (e.g. that suggest the death was self-inflicted rather than accidental, natural or due to homicide);
- The presence of a suicide note or other written evidence of an intention to die, and/or;
- Past statements indicating that the act was self-inflicted (ascertained from a proxy witness).

Other indicators that increase the likelihood that the death was due to intentional self-harm may include:

- Past suicide attempts;
- Alcohol and drug use;
- Evidence of mental disorder, chronic pain or severe/terminal physical illness; and,
- Evidence of considerable emotional distress at the time of death.

However, it should be noted that factors related to suicide death are likely to differ according to the cultural, economic and social contexts.

Figure 1. Distinguishing suicide deaths from natural, accidental and homicide deaths.



### ***Psychological autopsy methods of investigation***

Psychological autopsy studies of suicide are in-depth investigations conducted by researchers. A psychological autopsy usually consists of a review of all written case-related materials (police documents, medical records, etc.) followed by an interview with the next-of-kin into the experiences, motivations, and potential presence of a mental disorder of a person who has died from suicide.<sup>9,10</sup> Psychological autopsy research can be useful in informing case registration systems, but it is often time-consuming and requires trained clinical interviewers.

## **Death certification using the International Classification of Diseases**

In many countries, suicide is coded using the International Classification of Diseases (ICD). The ICD is an international standard diagnostic classification for mortality and morbidity used for epidemiological and health management purposes.<sup>11</sup> ICD coding includes both actual cause of mortality, as well as the determining factors which led to the death.

In countries with a functioning civil registration system, information on causes of death is compiled from individual death certificates as recorded in civil registries. Such data as collected through a compulsory and routine system are invaluable for the assessment and monitoring of the health status of a population and for planning prevention or intervention strategies. The cause of death is medically-certified and coded according to the ICD. Around 120 countries report such cause-of-death data to WHO annually (<http://www.who.int/healthinfo/morttables>); the majority of these countries are in the high-income group, Latin America and the Caribbean, and Europe and Central Asia. The cause of death reported should be the underlying cause of death which is defined as “the disease or injury which initiated the train of morbid events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury” in accordance with the rules of the ICD. Suicide is thus reported as the underlying cause of death where applicable.

Several factors would affect the comparability of data over time. These are mainly related to the data completeness, type of certifiers, interpretation of the ICD rules for the selection of the underlying cause of death and social stigma in reporting certain causes of death.

In the current version of the ICD (ICD-10), the codes for suicide are under Chapter XX "External causes of morbidity and mortality" as "Intentional Self-Harm" (codes X60–X84). These codes are listed in Appendix A.

There are two main sections in standard death certificates. Part I concerns the sequence of actions that led to the death, including the underlying cause.<sup>12</sup> Part II of the death certificate contains other significant conditions that may have contributed to the death.

An example of how a suicide case may be coded using the ICD-10 codes for "Intentional Self-Harm" can be seen below.

*Case information:* A deceased male is found with a gunshot wound to the head. He was located at home and had recently been diagnosed with depression.

*ICD-10 code:*

Part I: X72.0 Intentional self-harm by handgun discharge, place of occurrence home.

Part II: Unipolar depression.

### ***Inaccurate recording of suicide in the ICD***

A noted problem is the miscoding of suicide under alternate ICD-10 codes, such as "event of undetermined intent" (Y10–Y34) or "accidental deaths" (relevant V, W, X, Y codes, e.g. X40-X49 accidental poisoning).<sup>13,14</sup> These inaccuracies have an impact on the quantification of the total burden of suicide in a country and can have negative implications for the design, implementation and evaluation of

suicide prevention strategies. At the same time, they are unduly inflating funding of programmes related to the over-reported causes of death. These problems highlight the critical need to ensure that all suicide cases are recorded appropriately using the ICD-10 codes for intentional self-harm (X60–X84).

## **Coverage of suicide registration systems**

In many high-income countries of the world, registration practices for suicide mortality cover the whole country. This may not be feasible in countries where there is a lack of available financial resources or a lack of trained staff. Geographical remoteness may also impact on the ability to capture data on suicide across the whole country. If this is the case, it is possible to begin a recording system for suicide in a sample area, such as a region, province or even city. However, sample areas should be representative (or as close as possible to representativeness) of the population in the country as a whole in terms of sex, age, socio-economic characteristics, and geography.

## **What information to record in case registration**

A registration system for suicide mortality should aim to capture basic information such as:

- Sex;
- Age;
- Method of suicide (using ICD-10 codes, refer to Appendix A);
- Date of suicide;
- Time of suicide;

- Location of where the person was found or carried out the suicide;
- Place of residence;
- Presence of suicide note;
- Statement indicating an intention to die.

These items are provided in the example registration form in Appendix B. Many of these pieces of information may already be collected as part of routine death registration or police investigation in high-income areas. However, this information may only be partially available in other areas of the world. Therefore, the example registration form can be adapted or changed according to the local situation or sample area.

Aside from basic information, it is also useful to gather information that may help to reconstruct the circumstances preceding the death. These topics of investigation may include:

- Consumption of alcohol or drugs immediately prior to death;
- History of suicide attempts;
- Mental disorder;
- Chronic pain and/or physical illness;
- Emotional distress and/or adverse life experiences;
- Relationship status (e.g. single, married, widowed etc.);
- Ethnicity (ethnic origin as adapted to the local context);
- Sexual orientation (e.g. homosexual, heterosexual);
- Employment status at the time of death, and;
- Occupation at the time of death.

This information may be ascertained from police reports, medical records, and through psychological autopsy investigations.

## **Persons involved in data collection of suicide**

Physicians and coroners involved are critical in providing official records on suicide to national mortality registration systems. In some cases, police may also undertake registration of suicide deaths. Occupations that may be involved in collecting information on suicide cases include:

- Physicians;
- Coroners and other medico-legal authorities;
- Police or administrative staff within police departments;
- Mental health and health workers;
- Mortuary or funeral staff
- Health information systems staff and statistics officers;
- Researchers in health-related disciplines (e.g. epidemiologists and bio-statisticians, suicide researchers, psychologists, sociologists); and
- Those employed at relevant non-governmental or community organizations.

## **Use of data collected on suicide mortality**

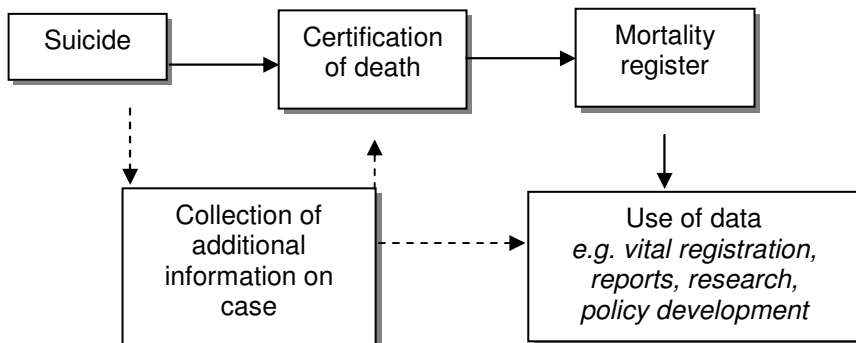
Suicide registration systems can provide information about the burden of suicide in a country. They can be of interest to a range of stakeholders including:

- Government officials;
- Policy makers;
- Researchers and scholars;
- Health professionals;
- Community groups;
- National mortality registers;
- International organizations.

Providing case registration information to policy makers, researchers and health professionals allows greater exposure to the problem of suicide and can be a way of raising awareness, initiating research and developing prevention campaigns, and monitoring the effectiveness of suicide prevention and intervention strategies.

A description of the process of registering suicide cases can be seen in Figure 2. As can be seen, the collection of additional information on suicide cases may aid death certification, and can contribute to the use of suicide data in vital registration reports, research and policy development.

Figure 2. Overview of the process for collecting and disseminating data on suicide





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## Appendix A: ICD-10 codes for intentional self-harm

- X60 Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics
- X61 Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified
- X62 Intentional self-poisoning by and exposure to narcotics and psychodysleptics (hallucinogens), not elsewhere classified
- X63 Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system
- X64 Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances
- X65 Intentional self-poisoning by and exposure to alcohol
- X66 Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours
- X67 Intentional self-poisoning by and exposure to other gases and vapours
- X68 Intentional self-poisoning by and exposure to pesticides
- X69 Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances
- X70 Intentional self-harm by hanging, strangulation and suffocation
- X71 Intentional self-harm by drowning and submersion
- X72 Intentional self-harm by handgun discharge
- X73 Intentional self-harm by rifle, shotgun and larger firearm discharge
- X74 Intentional self-harm by other and unspecified firearm discharge
- X75 Intentional self-harm by explosive material
- X76 Intentional self-harm by smoke, fire and flames
- X77 Intentional self-harm steam, hot vapours and hot objects
- X78 Intentional self-harm by sharp object
- X79 Intentional self-harm by blunt object
- X80 Intentional self-harm by jumping from a high place
- X81 Intentional self-harm by jumping or lying before moving object
- X82 Intentional self-harm by crashing of motor vehicle
- X83 Intentional self-harm by other specified means
- X84 Intentional self-harm by unspecified means

## Appendix B: Example registration form for suicide mortality

Date of case registration (Day / Month / Year): __/__/____	Not applicable	Unknown
1.1 Country: -----	888	999
1.2 Sample area (if applicable): -----	888	999

2.1 Case name (if authorized): -----	888	999
2.2 Case identification number (assigned): -----	888	999
2.3 Residential address: -----	888	999
2.4 Sex: _Male _Female _Transsexual	888	999
2.5 Date of birth (Day / Month / Year): __/__/____	888	999
2.5.1 Age (in years) -----	888	999
2.6 Date found (Day / Month / Year): __/__/____	888	999
2.7 Day of the week found: -----	888	999
2.8 Time found (Hour / Minute): __/____	888	999
2.9 Date of death (Day / Month / Year): __/__/____	888	999
2.10 Day of the week when died: -----	888	999
2.11 Time of death (Hour / Minute): __/____	888	999
2.12 Location found ( <b>Adapt to local context</b> ): _Home _Railway _..... _Other	888	999
2.12.1 Description of the location: -----	888	999

3.1 Suicide method used (according to ICD-10 codes): -----	888	999
3.1.1 Description of suicide method: -----	888	999
3.2 If more than one method was used, suicide method two (according to ICD-10 codes): -----	888	999
3.2.1 Description of suicide method two: -----	888	999

4.1 Is there evidence of a suicide note or written intent to die?: _No _Yes	888	999
4.1.1 Description of evidence: -----	888	999
4.2 Did the deceased make a verbal statement indicating an intention to die? _No _Yes	888	999
4.2.1 Description of evidence: -----	888	999

## **Appendix C: Summary of key points**

### **ESTABLISHING A CASE REGISTRATION SYSTEM FOR SUICIDE MORTALITY:**

#### **KEY POINTS**

- Clear methods of distinguishing deaths due to suicide from other causes of mortality.
- Accurate death certification practices using the ICD-10 codes for intentional self-harm.
- Collection of case information using a standardized recording form.
- Alignment of data recording with official mortality registration systems.