WHO tools for strengthening suicide and self-harm monitoring and surveillance systems

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Overview

- Introduction by WHO

- An exploration of suicide registration procedures and surveillance systems internationally

- An outline of the benefits of real-time surveillance systems

- An examination of the terminology around suicidal behaviour

- Detailed best practice criteria for establishing and maintaining suicide attempt/self-harm surveillance systems

- A guideline on implementing standard operating procedures, involving monitoring and crosschecking cases

- Assessment of vignettes

Trinidad, May 2019

Importance of surveillance systems of suicide and suicide attempts

Dr Aiysha Malik
Department of Mental Health and Substance Abuse
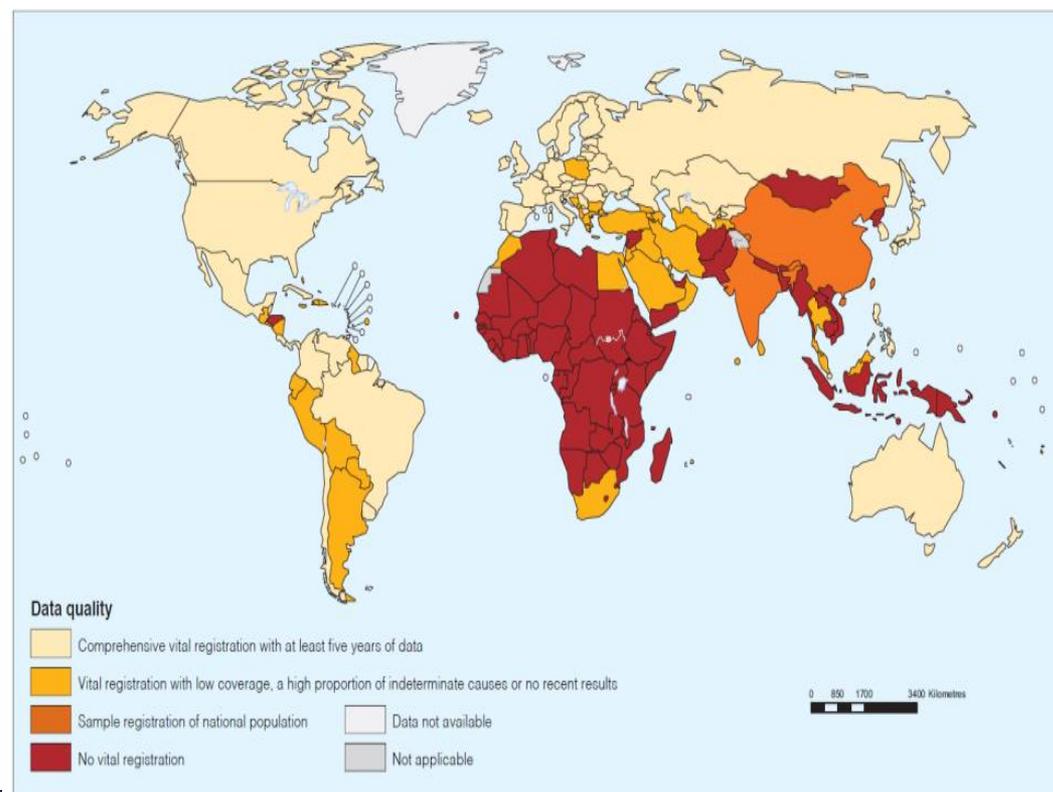**World Health Organization**

Data Quality

❖ The quality and availability of data on suicide and suicide attempts is poor globally

❖ ONLY 60 countries have good-quality vital registration data on suicide mortality

❖ ONLY 20 countries are known to have gathered national survey data and 3 have national hospital-based suicide attempt data

❖ Improvement of surveillance and dissemination of data is necessary to inform action

Map 2. Quality of suicide mortality data, 2012

Data quality

- Comprehensive vital registration with at least five years of data
- Vital registration with low coverage, a high proportion of indeterminate causes or no recent results
- Sample registration of national population
- No vital registration
- Data not available
- Not applicable

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Data Quality (continued)

❖ The 39 high-income countries with good vital registration data account for 95% of all estimated suicides in high-income countries.

❖ The 21 low- and middle-income countries with good vital registration data account for only 8% of all estimated suicides in low- and middle-income countries.

❖ In other countries, estimated suicides are necessarily based on modelling methods.

Mortality statistics

❖ Mortality statistics, including causes of death, are the foundation of public health planning, monitoring and evaluation of interventions. Yet, the overwhelming majority of low- and middle-income countries do not have reliable mortality statistics.

❖ This information paradox – where information is lacking where it is needed most – has critically hindered the ability of governments and country programmes to track progress in addressing the serious public health problem of suicide.

❖ The measurement of cause-specific mortality like suicide becomes even more important when monitoring progress and evaluating interventions. It is critical to know how effective programmes are. One of the clearest indicators of success is a decrease in mortality due to suicide.

Civil registration and vital statistics (CRVS)

❖ A well-functioning civil registration and vital statistics system (CRVS) is the best way to monitor mortality and causes of death [all causes of death, including suicide]. Civil registration is a core government function. The health sector plays a key role in generating data on births and deaths.

❖ Alternative methods to collect information on causes of death, including suicide, include sample registration systems, hospital data, burial systems, mortuaries, household surveys, clinical autopsy and others. Many of these efforts can serve as the **foundation** for civil registration systems, **but much work remains to be done**.

Medical certification

❖ Proper medical certification of cause of death requires use of the International Classification of Diseases (ICD), currently ICD-10.

❖ Tools are available for medical certification for deaths (particularly in the case of suicide a coroner or other legal authority is involved), and verbal autopsy when medical certification is absent.

❖ However, many deaths occur at home without medical certification.

❖ In addition, suicide is associated with considerable stigma. This may affect the practices of certifiers and data quality.

Alternative methods

❖ **Sample vital registration** (with verbal autopsy), implemented in a nationally representative sample of population clusters, represents an affordable, cost-effective, and sustainable short- and medium-term solution for countries that do not have a well-functioning CRVS system as yet.

❖ **Hospital data** on cause-specific mortality can form a good basis for cause-specific mortality statistics, which can help identify needs for hospital treatment and allow related planning of resources. However, in countries where the majority of deaths take place outside of hospitals, hospital mortality data may not be representative of the mortality burden of the population as a whole.

Overview

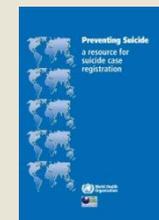**Civil registration and vital statistics (CRVS)**

Sample vital registration

Hospital data

Fatal injury surveillance in mortuaries
and hospitals: a manual for practitioners
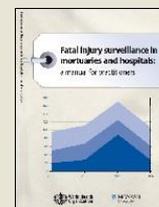
Preventing suicide: a resource for suicide
case registration

Suicide attempts

Practice manual for establishing and implementing suicide attempt and self-harm surveillance systems

❖ **Suicide attempt** is the single most important risk factor for suicide, and results in significant social and economic burden for communities

❖ Monitoring suicide attempts provides important information for development and evaluation of suicide prevention strategies

Improving suicide surveillance

Background

- Shared terminology, definition and classification of suicide and suicide related phenomena is an on-going challenge *(Menon, 2014; Brenner et al, 2011; Silverman, 2007;2006)*

- Variation in nomenclature, recording procedures and classification of suicide is associated with the lack of reliable and accurate suicide statistics (e.g. under-reporting of suicide in countries where suicide is criminalised) *(Mishara and Weisstub, 2016; Brenner et al, 2011; Goldney, 2010)*

- Absence of reliable and accurate suicide statistics represent a challenge for assessing targets, such as the targets set by the WHO Global Mental Health Action Plan: 10% reduction of the suicide rate in countries by 2020 *(WHO, 2014; Saxena et al, 2013)*

Background:
The need for standardised classification of suicide

- *Registering a suicide is a complicated procedure involving several different authorities, often including law enforcement. In countries without reliable registration of deaths, suicides simply are uncounted (WHO, 2014, p.7)*

Recommendations WHO 2014 report:

- Increase the quality and timeliness of national data on suicide and suicide attempts.

- Support the establishment of an integrated data collection system which serves to identify vulnerable groups, individuals and situations.

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Core components of national suicide prevention strategies

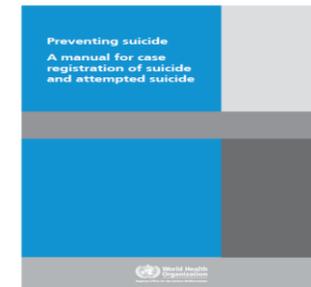|	
1) Surveillance	7) Crisis Intervention
2) Means Restriction	8) Postvention
3) Media	9) Awareness
4) Access to Services	10) Stigma Reduction
5) Training and Education	11) Oversight and Coordination
6) Treatment	

Factors affecting the quality of suicide mortality data

- Review of reliability of suicide statistics at global level (N=31 studies)

  - 42% of studies reported fairly reliable suicide mortality statistics or under-reporting of 0-10%;

  - 50% of studies reported more than 10% under-reporting

  (Tollefsen et al, 2012)

- In determining the manner of death (e.g. suicide, undetermined, accident, homicide), sometimes subjective interpretation is required

- Late registrations, e.g. when body cannot directly be located

- Different ICD editions included in review covering recent decades. This may contribute to variation in classification of suicide mortality deaths.

Changes from ICD-10 to ICD-11 codes for intentional self-harm and implications

- Intentional self-harm: ICD-10: 25 codes vs. ICD-11: 441

- Event of undetermined intent: ICD-10: 36 codes vs. ICD-11: 408

- Improved accuracy of suicide mortality statistics

- Likely increase in overall suicide rates

- Likely decrease in deaths of undetermined intent

- Improved accuracy of suicide mortality statistics may pose challenges for targets WHO Global Mental Health Action Plan and SDGs (2030)

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Challenges related to Suicide Surveillance

- Following establishment, it is important to have constant monitoring of the registration system.
This involves effective communication between the coordinating committee and the work-team.

- In addition to standard demographic characteristics, considering including additional data items, such as:

  - Ethnicity   - Sexual orientation (e.g. hetero-, homosexual, transgender)
  - Marital status   - Employment status at time of death
  - Occupation   - Medical history
  - Education   - Critical life experiences
  - Psychiatric history   - Treatment for suicide attempts/self-harm

Challenges related to Suicide Surveillance continued
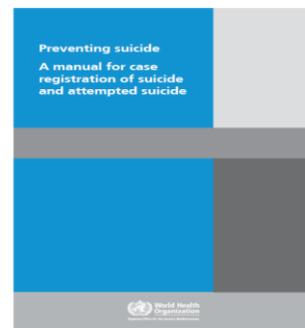
- Development of a suicide and/or suicide attempt register is an iterative process that will require constant monitoring and alteration over time, despite it being functional and effective.

- Increasing the scope of the register(s) to include the entire country, and establishing a suicide and suicide attempt register in a country, or subregion within a country, might involve:
  - increasing the size of the coordinating committee.
  - recruiting more members to the work-team.
  - improving training of the work-team.
  - strengthening or further organizing data collection, storage and analysis procedures.

- In the long term, a country may decide to:
  - harmonize and link the suicide and suicide attempt registers if/once both are present in the country or subregion within the country;

  - create a region-wide suicide and suicide attempt "observatory" to gauge prevalence, rates and risk factors of suicidal behaviour at the regional level (including many or all Member States in a given WHO region).

Improving the quality of suicide registration procedures

Important elements when reviewing suicide registration procedures:

- Accurate legal inquiry
- Clarification of suicidal intent and update of screening criteria
- Compulsory forensic autopsy for injury deaths
- Exchange of information among authorities
- Electronic data transmission
- Final decision makers' access to information
- Enhanced training for Coroners and Forensic Medical Staff
- On-going training of qualified coders
- IASP – WHO guidelines for recording and classification of suicide deaths and training

Varnik et al, 2010; Tollefsen et al, 2012; Arensman et al, 2012; 2013; Bakst et al, 2016)

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Recommendations

- On-going review of the quality of suicide registration and classification procedures.

- Improve screening of probable suicide deaths among deaths classified as other external causes of death including open verdicts, narrative verdicts, death by misadventure, accidental drowning and single vehicle road traffic accidents.

- Integrate evidence informed screening criteria for suicide deaths in existing suicide registration and classification procedures.

- Consider preparations and implications of the changes from ICD-10 to ICD-11

Establishing and maintaining Suicide Attempt/ Self-harm Surveillance Systems

Establishing and maintaining Suicide Attempt/Self-harm Surveillance Systems

Practice manual for establishing and maintaining surveillance systems for suicide attempts and self-harm

World Health Organization
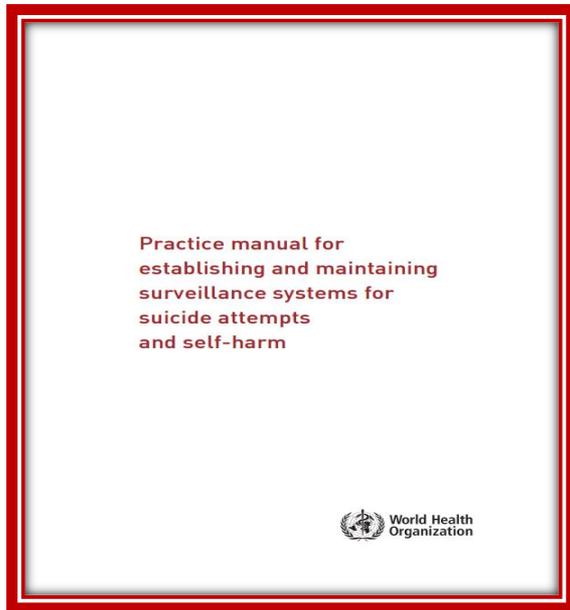
http://www.who.int/mental_health/suicide-revention/attempts_surveillance_systems/en/

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Background

- WHO Global Report on Preventing Suicide identified a need for guidance on surveillance of suicide attempts presenting to general hospitals (WHO, 2014)

- In recent years, growing number of countries where first steps have been made in setting up a monitoring system of suicide attempts presenting to one or more hospitals

- Improved surveillance and monitoring of suicide attempts presenting to general hospitals is a core element of the public health model

- Information on trends and patterns of attempted suicide presentation can contribute to effective suicide prevention strategies

The extent of suicidal behaviour, fatal and non-fatal
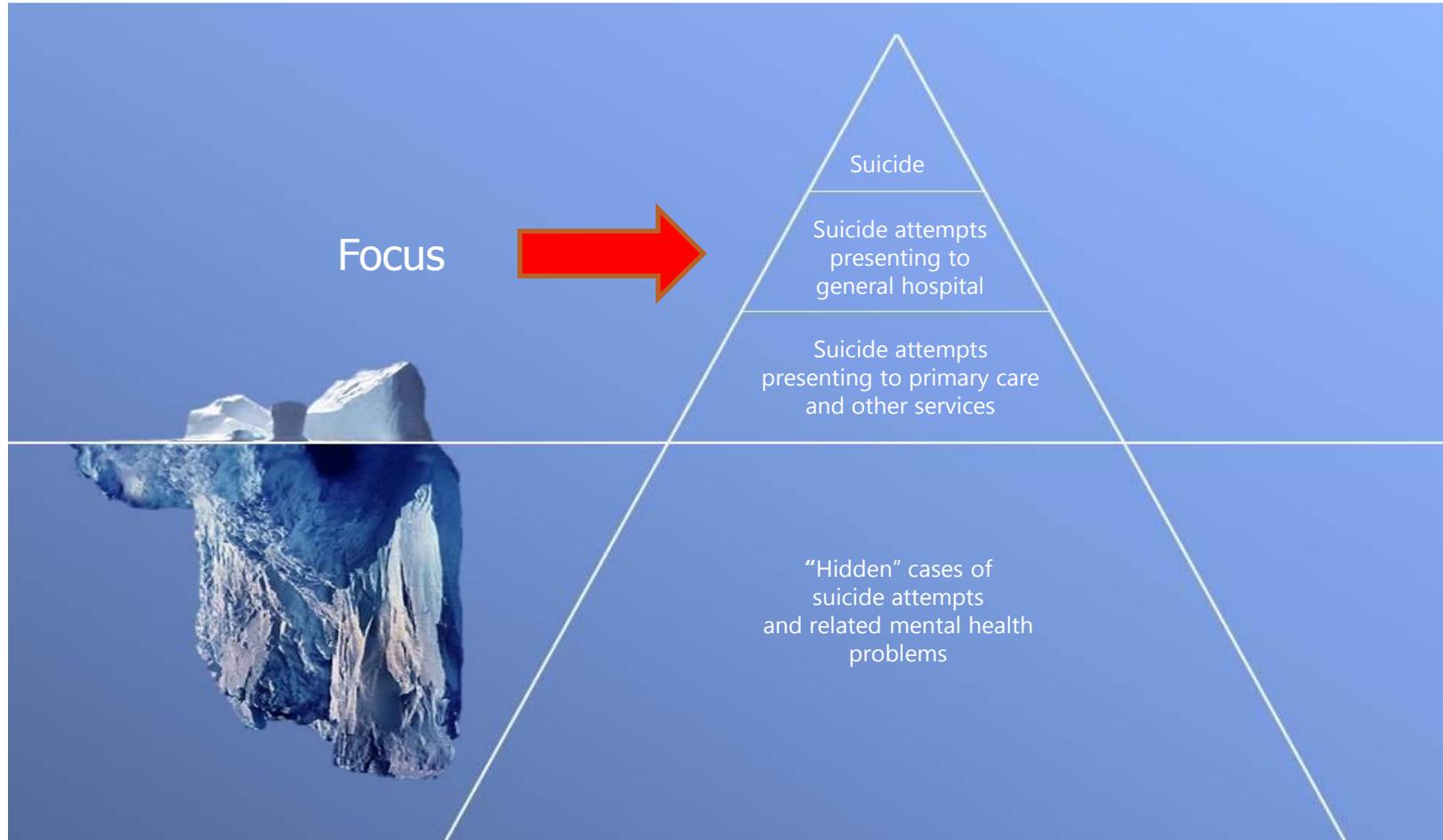
Aim of the WHO Practice Manual

- To improve standardization within and between countries with regard to establishing and maintaining a surveillance system of hospital (incl. health centres) presented suicide attempts

- For large countries, it would be recommended to develop a <u>multi-centre surveillance system</u>, e.g. UK, Australia, Russia

- For small countries, it would be recommended to develop a <u>national surveillance system</u>, e.g. Ireland, Luxembourg

Key topics

- Nomenclature, definitions and classification

- Existing surveillance systems of suicide attempts

- Development and implementation of a surveillance system for suicide attempts

- Training of staff involved in data collection

- Database management, data analysis and interpretation

- Reporting of surveillance outcomes and dissemination

- Maintenance and sustainability over time

Benefits of surveillance systems for hospital/health centre treated suicide attempts

- Informing:
  - Service provision, resource deployment and guidelines for self-harm management
  - Assessment and interventions for non-fatal suicidal behaviour
- "Real-Time Data"
- Evaluation of interventions
- Regional variations
- Clinical management of self-harm
- All attendances to hospital Emergency Departments
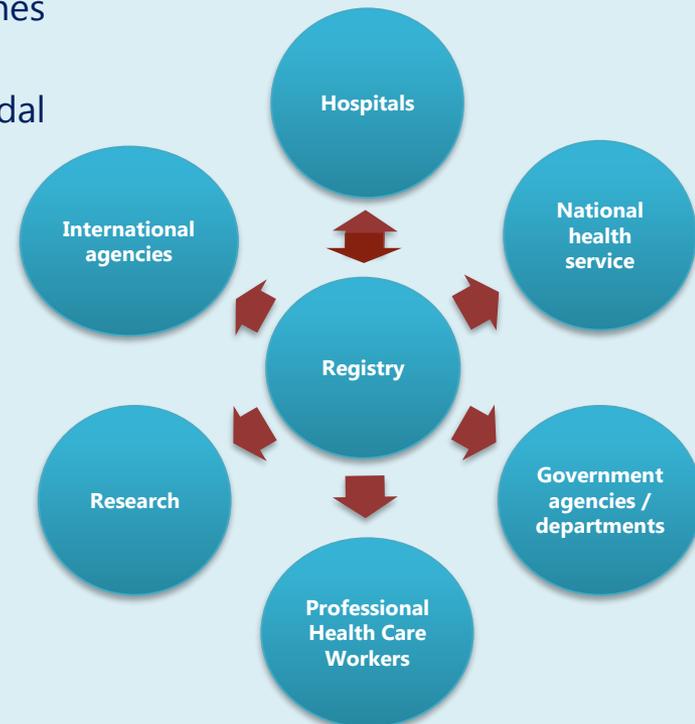
Increasing rates of self-harm among children, adolescents and young adults: a 10-year national registry study 2007–2016

CrossMark

Eve Griffin[1] · Elaine McMahon[1] · Fiona McNicholas[2,3,4] · Paul Corcoran[1,5] · Ivan J. Perry[5] · Ella Arensman[1,5]

Abstract
Purpose Rates of hospital-treated self-harm are highest among young people. The current study examined trends in rates of self-harm among young people in Ireland over a 10-year period, as well as trends in self-harm methods.
Methods Data from the National Self-Harm Registry Ireland on presentations to hospital emergency departments (EDs) following self-harm by those aged 10–24 years during the period 2007–2016 were included. We calculated annual self-harm rates per 100,000 by age, gender and method of self-harm. Poisson regression models were used to examine trends in rates of self-harm.
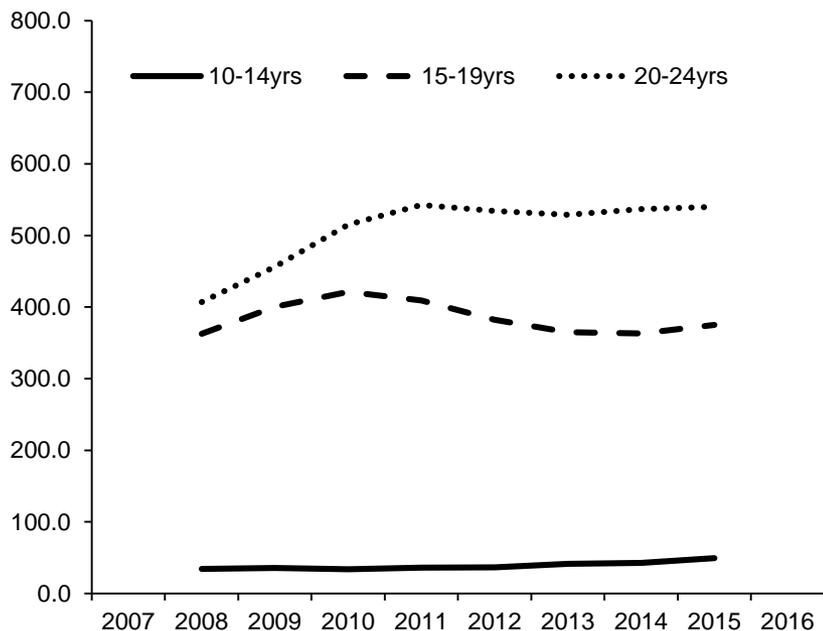**Results** The average person-based rate of self-harm among 10–24-year-olds was 318 per 100,000. Peak rates were observed among 15–19-year-old females (564 per 100,000) and 20–24-year-old males (448 per 100,000). Between 2007 and 2016, rates of self-harm increased by 22%, with increases most pronounced for females and those aged 10–14 years. There were marked increases in specific methods of self-harm, including those associated with high lethality.
Conclusions The findings indicate that the age of onset of self-harm is decreasing. Increasing rates of self-harm, along with increases in highly lethal methods, indicate that targeted interventions in key transition stages for young people are warranted.
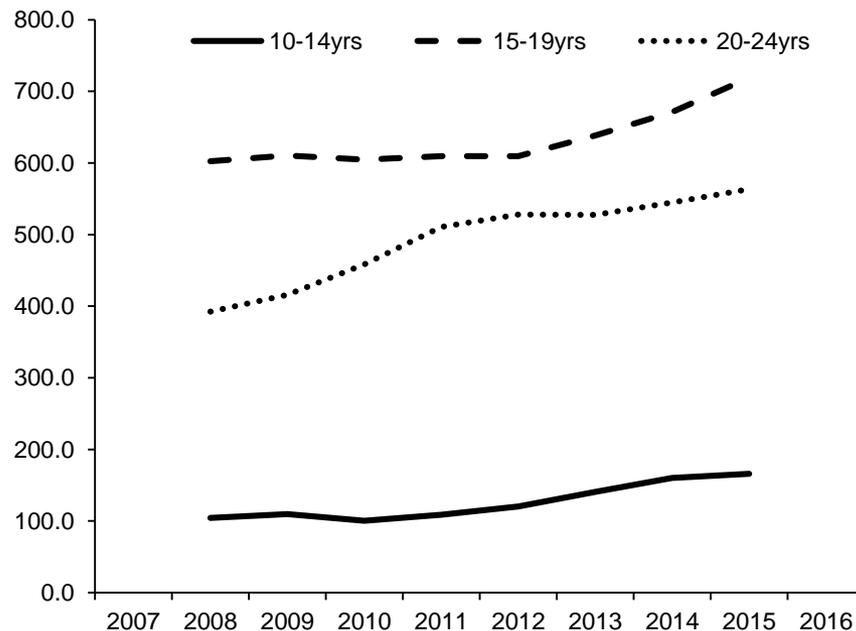
Keywords Self-harm · Young people · Epidemiology

# Self-harm among young people in Ireland, 2007-2016

Male

Female

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# Self-harm intervention and suicide prevention at national level in Ireland

- National Clinical Programme for the Assessment and Management of Patients Presenting to Emergency Departments following Self-Harm

- *Connecting for Life*, Ireland's National Strategy to Reduce Suicide, 2015-2020
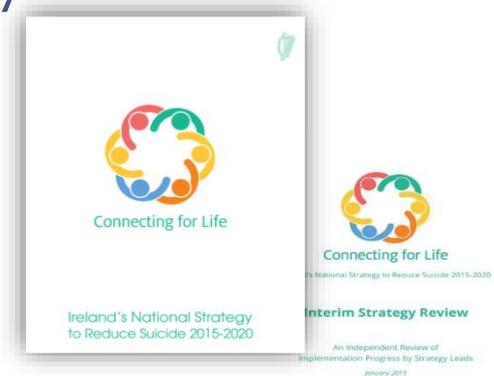
Nomenclature, definitions and classification - Challenges

- Need for consistency in terminology and definitions in order to achieve comparable data on suicide attempts within and across countries

- Reaching agreement on the terminology and definition is complicated by the varying levels of suicidal intent and heterogeneity of motives reported by people engaging in self-harming behaviour *(Scoliers et al, 2009; McAuliffe et al, 2007; Hjelmeland et al, 2002)*

- Globally, more similarities between definitions compared to the wide ranging terminology

- Translating English language terms in other languages may have a different meaning

- Quantification of suicidal intent cannot be fully represented by one term and would be more suitable for classification (operational criteria).

Terms used to describe intentional self-harming behaviour
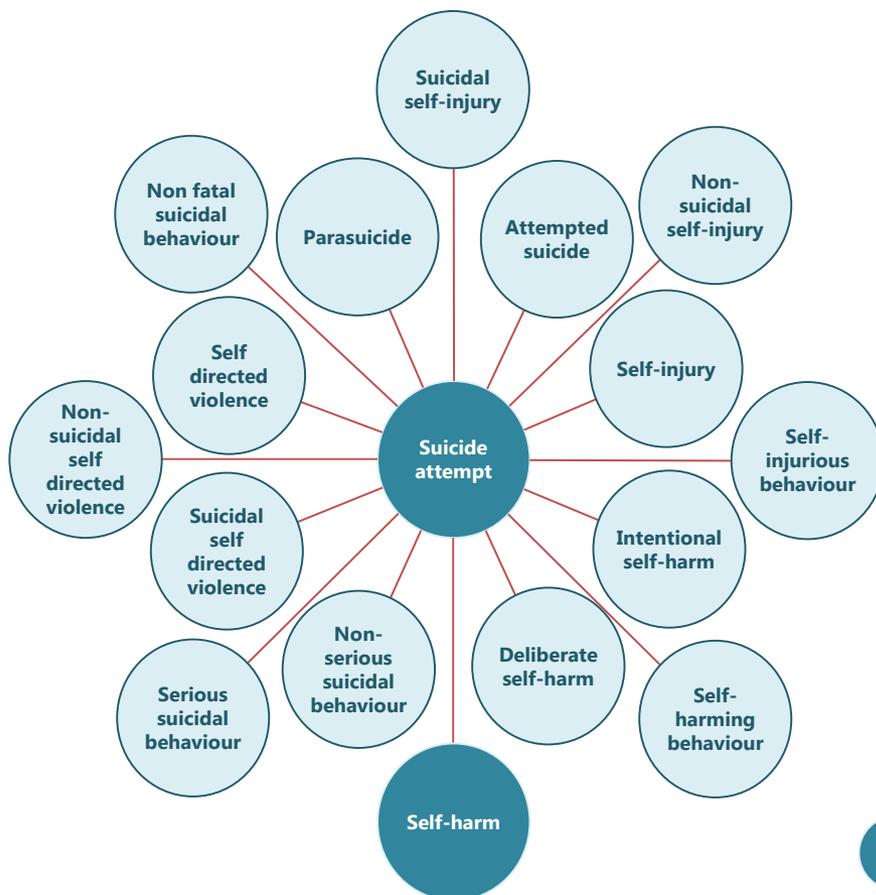
Recommended terms

Proposed terminology and definition

- The terms 'self-harm' or 'self-harming behaviour' offer the most common ground internationally

- However, this term cannot always be translated with the same meaning in other languages. Therefore, the term 'suicide attempt' might be preferred in such instances

- Proposed definition, which is common in several surveillance systems and monitoring studies:

"A non-habitual act with non-fatal outcome that the individual, expecting, or taking the risk, to die or to inflict bodily harm, initiated and carried out with the purpose of bringing about wanted changes" (De Leo et al, 2004)

Inclusion criteria

- ***Inclusion criteria:***

   - All methods of self-harm are included i.e., drug overdoses, alcohol overdoses, lacerations, illicit drug overdose, ingestion of pesticides, attempted drowning's, attempted hangings, gunshot wounds, etc. where it is clear that the attempt was intentionally inflicted;

   - All individuals alive on admission to hospital following an act of attempted suicide are included;

   - All methods of self-harm as per ICD-10 coding.

- Some individuals may use a combination of methods, such as overdose of medication together with self-cutting. If the individual has engaged in multiple methods of intentional self-harm at the time of presentation, all methods should be recorded.

Exclusion criteria

- Alcohol overdoses/intoxication only BUT without the intention to self-harm and when no other methods of self-harm are combined

- Accidental overdoses of street drugs where there is a clear link with regular drug use or addiction

- Specific examples of self-harm without a deliberate intention to cause self-harm:
  - Individual put his/her foot through the door in anger.
  - Individual took usual medication twice by accident to relieve chronic back pain
  - Drugs taken to induce abortion
  - Self-referral due to thoughts/ideation e.g. had thoughts of drowning by jumping off bridge but took no action and went to emergency department for help
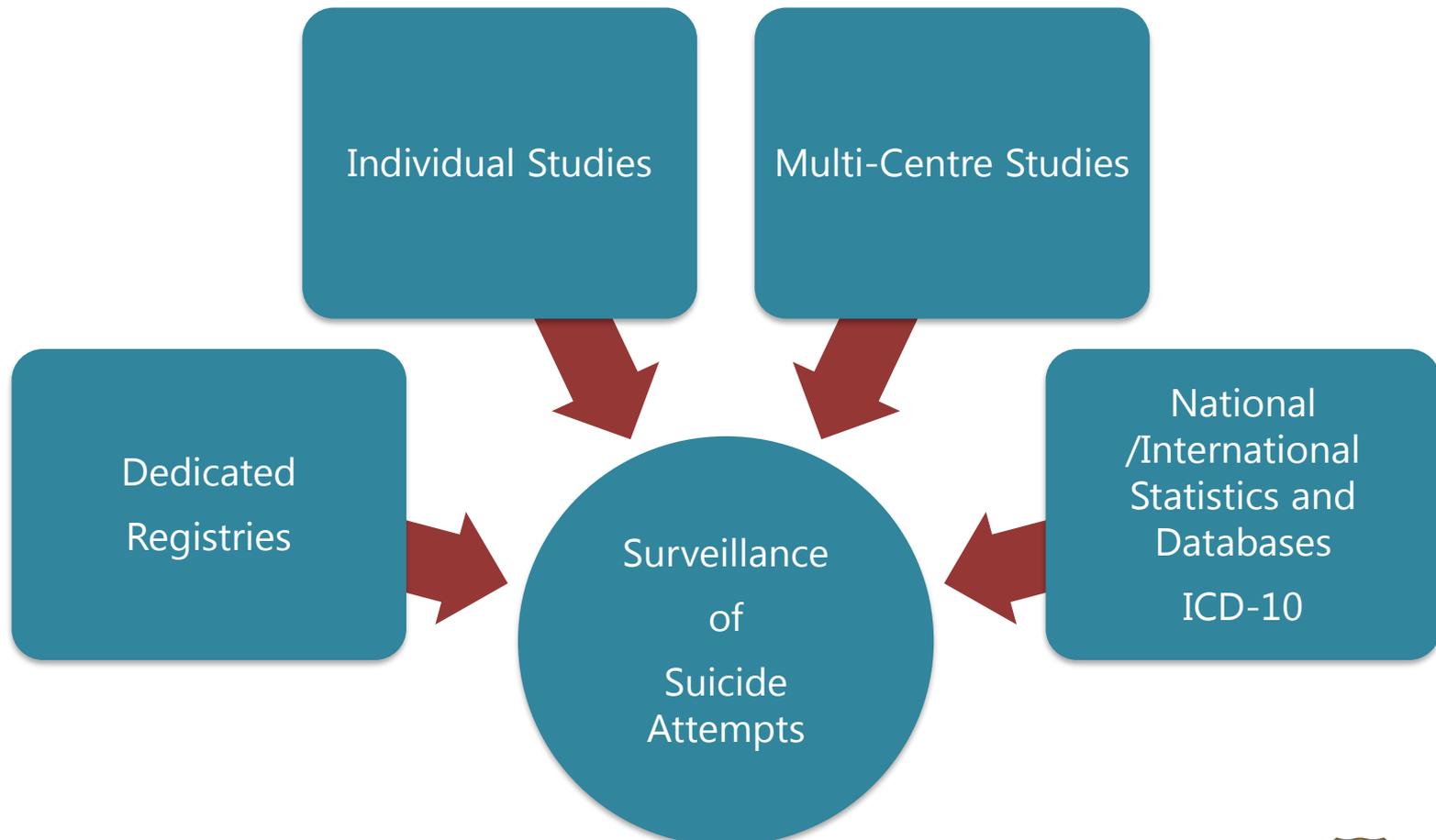
Motives related to self-harm by gender
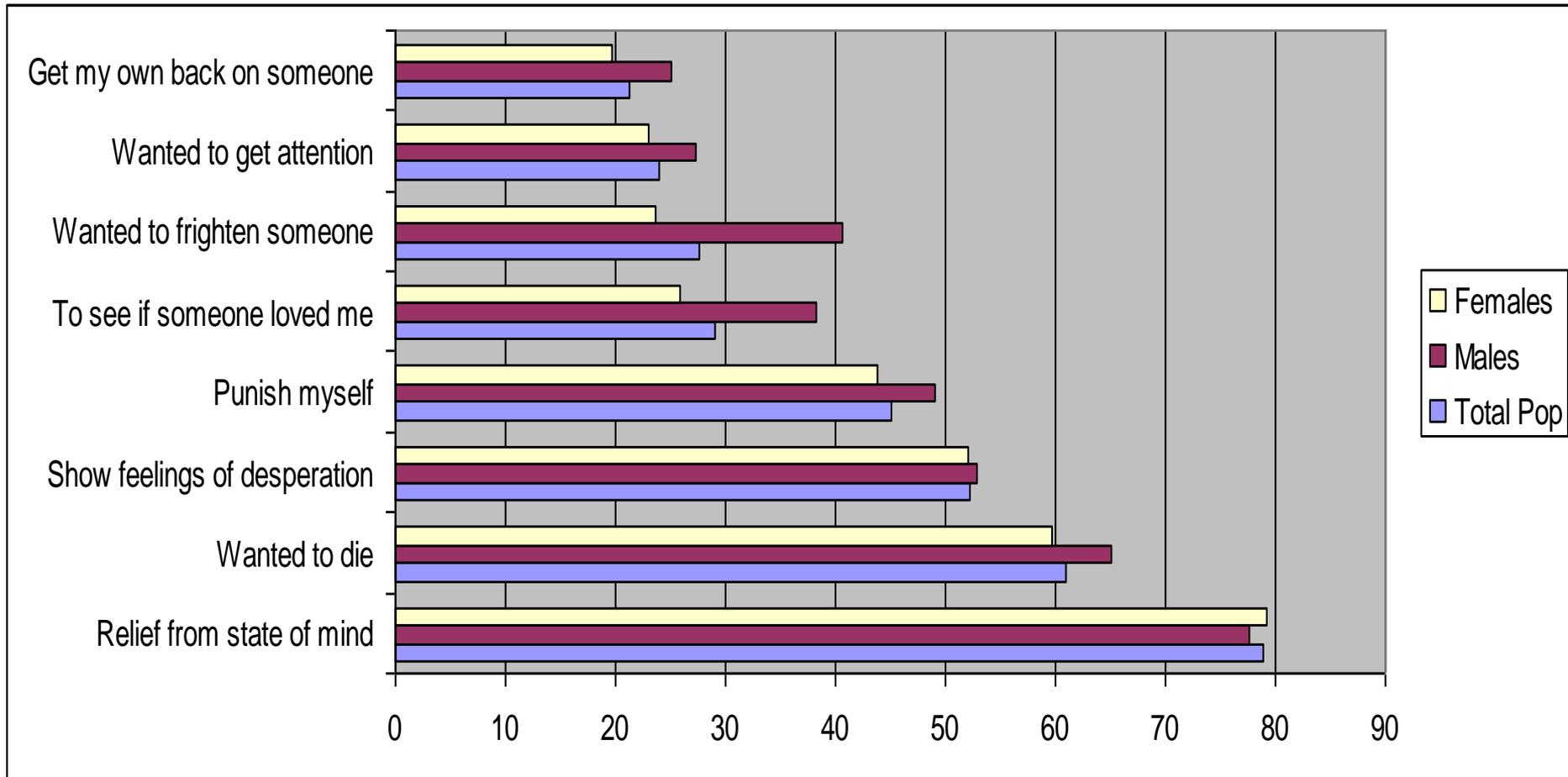
Scoliers et al, 2009; Rasmussen et al, 2016

Countries with a suicide attempt registry of any kind based on IASP-WHO survey

National Registry ♀ National Statistics led ♀ Developing World Study ♀ Multi Centre Studies ♀ Individual Studies ♀

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Different methods used in surveillance of hospital treated suicide attempts

Development and implementation of a surveillance system for suicide attempts

Important aspects and elements:

- Informing and engaging governments and relevant stakeholders

- Governance and requirements of coordinating agencies

- Costs and potential funding sources

- Setting up a surveillance system

  -Standard Operating Procedures

  -Case ascertainment

  -Data items

- Registration forms/systems and data entry

  -Coding and data entry

- Ethical requirements, confidentiality and data protection, in particular GDPR

Data items

- **Core data items:**

-Data collector
-Date of registration
-Hospital number
-Unique event number
-Unique person identification number
-Sex
-Date of birth
-Age
-Postal code/area code
-Date of presentation
-Time of presentation
-Mode of arrival at the hospital
-Seen by on arrival at the hospital
-Date of self-harm
-Day of the week of the self-harm
-Time of the self-harm

-Location of the self-harm
-Method(s) according to ICD-10 codes
-Medical severity of the self-harm
-Statement of intention to die
-History of self-harm
-Psychological/psychiatric assessment in the hospital
-Diagnosis
-Admission to hospital
-Discharge

- **Optional data items, e.g:**

-Nationality
-Country of origin
-Ethnicity
-Religion
-Marital status
-Employment status etc.

Training of staff involved in data collection

Why is this important?

- Available information in hospital records on cases of suicide attempts is limited and sometimes incomplete

- Achieving standardisation and uniformity within and across countries will contribute to improved accuracy and comparability of data on hospital referred suicide attempts globally

Innovative element of manual:

- Active learning section involving a series of case vignettes and guidance based on inclusion and exclusion criteria following from the definition. In addition to cases, non-cases and ambiguous cases are also included.

Database management, data analysis and interpretation

- Data management procedure involving five key stages
    1. Data collection
    2. Data compiling
    3. Data cleaning
    4. Data analysis
    5. Data interpretation

- Data analysis
    -Recommended statistical analysis
    -Multi-annual data and advanced statistical analysis

Reporting of surveillance outcomes and dissemination & Maintenance and sustainability over time

Reporting of surveillance outcomes and dissemination

- Annual and multi-annual reports including suggested formats
- Evidence briefs for Government representatives, policy makers and other relevant stakeholders
- Papers for peer reviewed journals

Maintenance and sustainability over time

- Maintaining standardization and quality of data collection
- Arranging independent reviews of the system
- Government support and long term funding

RESEARCH ARTICLE

Recommended next care following hospital-treated self-harm: Patterns and trends over time

Ella Arensman[1,2]*, Eve Griffin[1], Caroline Daly[1], Paul Corcoran[1,2], Eugene Cassidy[3,4], Ivan J. Perry[2]

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Abstract

Objective

The specific objectives of this study were to examine variation in the care of self-harm patients in hospital settings and to identify the factors that predict recommended next care following self-harm.

Methods

Data on consecutive presentations to Irish emergency departments (EDs) involving self-harm from the National Self-Harm Registry Ireland from 2004 to 2012 were utilised. Univariate and multivariate regression analyses were performed to assess the associations between patients' clinical and demographic characteristics, and recommended next care received.

Results

Across the study period a total 101,904 self-harm presentations were made to hospital EDs, involving 63,457 individuals. Over the course of the study there was a declining number of presentations resulting in patient admission following attendance with self-harm. Recommended next care varied according to hospital location, with general admission rates ranging from 11% to 61% across administrative health regions. Multinomial logistic regression identified that the factor which most strongly affected next care was the presenting hospital. Being male, older age, method, repeat self-harm, time of attendance and residence of the patient were all identified as influencing care received. Psychiatric admission was most common when highly lethal methods of self-harm were used (OR = 4.00, 95% CI, 3.63–4.41). A relatively large proportion of patients left the ED without being seen (15%) and the risk of doing so was highest for self-harm repeaters (1.64, 1.55–1.74 for those with 5+ presentations).

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National Self-Harm Registry Ireland

❖ Operated by the National Suicide Research Foundation via the Department of Health and Children

❖ Full coverage since 2006 (36 hospitals)

❖ Pop (2016 est): 4,593,300
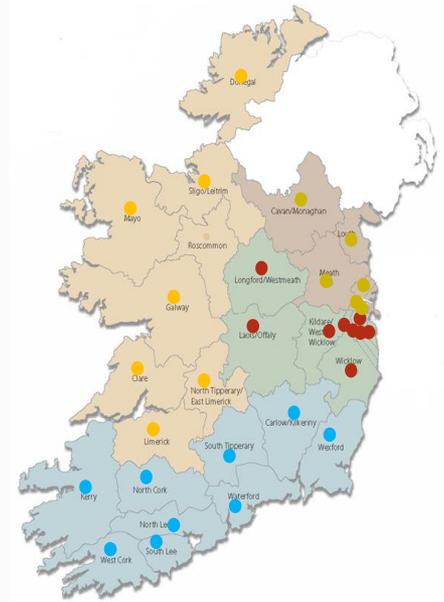
Northern Ireland Registry of Self-Harm

❖ Established in **2007** as a pilot project in the Western area

❖ Expanded to all trust areas (12 hospitals) since April 2012

❖ Pop (2016 est): 1,829,700

Challenges

? Data systems not uniform across hospitals
- ✓ Standardised case ascertainment approach in each hospital, including multiple sources (e.g. triage and psychiatric notes)

? Hospital policy on visitation times/ space
- ✓ Data Registration Officers must be flexible in working in the ED and must be ready to leave if asked
- ✓ Data Registration Officers will visit in the evening/ at weekends

? Assuring data quality
- ✓ Annual cross-validation of consecutive cases
- ✓ Team meetings and up-skilling of Data Registration Officers (at least 2 per year)

? Motivating hospitals
- ✓ Quarterly reporting on hospital data
- ✓ Presentations for staff
- ✓ Allowing access to data for research

Any country-specific needs / challenges??

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Rating of case vignettes

1. Question:
- Would you include this case in the surveillance system?
  - Yes
  - No
  - I'm unsure

2. Question:
- Is this an example of:
  - Intentional self-harm
  - A non-case
  - Ambiguous (further information required)

Vignette 1

Vignette example 1

Admission notes: 28-year-old man with head injury. Profoundly autistic, accompanied by carer who explains he has a pattern of head-banging.

Behaviour: Not communicative. No eye contact. Rocking back and forth and reluctant to allow head examination.

Vignette 2

Vignette example 2

Admission notes: 20-year-old man BIBA following road traffic accident.
Witness who called ambulance reported that the car suddenly swerved across the road and drove straight into a wall.

Behaviour: Unconscious on admission but was conscious at the scene.
Ambulance crew report that he said he was arguing on the phone with his girlfriend and she ended the relationship. Said he just didn't want to feel anymore and aimed his car at the wall.

Vignette 3

Vignette example 3

Admission notes: 49-year-old man presents with injury to right hand. Suspected fracture – index and middle finger and possibly thumb. Says he punched wall following fight with girlfriend.

Behaviour: Laughing but apologetic. Says he has a bit of a temper.

Implementation of suicide and suicide attempt/self-harm surveillance systems

- **Suicide and Suicide attempt/Self-Harm Surveillance Systems**

1. What are facilitating factors for improving surveillance of suicide and suicide attempts/self-harm in your country?

2. What are challenges?

3. How can IASP and WHO assist in improving surveillance of suicide attempts/self-harm?

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