

## At-a-glance

# A contextual analysis of the Suicide Surveillance Indicators

Robin Skinner, MSP; Brittany Irvine, MA; Gabriela Willams, MSc; Caryn Pearson, MA; Jaskiran Kaur, BHSc; Xiaquan Yao, MSc; Lee Merklinger, MA; Tanya Lary, MA

 [Tweet this article](#)

The Federal Framework on Suicide Prevention<sup>1</sup> was developed by the Public Health Agency of Canada (PHAC) to set out Canada's strategic approach to suicide prevention, in accordance with *An Act Respecting a Federal Framework for Suicide Prevention* ("the Framework"), which became law in December 2012. The Framework included a commitment to publicly report statistics on suicide and associated risk factors. Towards this commitment, PHAC developed a set of indicators necessary for comprehensive suicide surveillance to inform suicide prevention initiatives. These indicators included measures of outcomes and risk and protective factors at the individual, family, community and societal level.

The Suicide Surveillance Indicators (SSI) were selected through a review of relevant literature retrieved from select publication databases (e.g. PubMed) and restrictions on type of evidence were applied: only systematic reviews, meta-analyses, literature reviews or government reports, published in English or French within the last six years, were eligible for inclusion. From this body of evidence, indicators—and data sources to operationalize measurement of indicators—were identified. External and internal stakeholders were asked to comment on the indicators and their operationalization. It is important to note that the literature review focussed on the general population only.

This At-a-glance brief presents the most current statistics available for reporting on

the SSI. In addition, there is a brief analysis of select elements of the SSI to present the magnitude of the associations between certain mental illnesses<sup>2,3</sup> and suicide-related behaviours (suicide thoughts, plans and/or attempts) using the 2012 Canadian Community Health Survey—Mental Health Component (CCHS-MH).<sup>4</sup> Further studies should continue to explore and monitor the association between suicide outcomes and other risk and protective factors (e.g. child abuse, social support)<sup>5</sup> listed in the SSI in order to apply this knowledge to suicide prevention initiatives.

## Results and discussion

Table 1 displays the SSI Quick Stats and presents current Canadian incidence rates of suicide-related mortality, self-inflicted injury hospitalizations and emergency department presentations, along with prevalence of suicidal thoughts, plans and attempts, and a list of key risk and protective factors. Canadian Vital Statistics indicate the suicide mortality rate was 11.5 per 100 000 people in 2013. Data from the CCHS 2015 indicate 2.5% of the population aged 15 years or older reported having suicidal thoughts (serious thoughts of committing suicide or of taking their own life), 0.8% had made a plan and 0.4% had attempted suicide, in the past 12 months.

With respect to mental illness, data from the CCHS-MH 2012 indicate 6.5% (95% CI: 6.0–7.0) of Canadians aged 15 years and older had symptoms consistent with a mood or generalized anxiety disorder in

the past 12 months, 1.3% (95% CI: 1.1–1.5) reported ever being diagnosed by a health professional with schizophrenia or psychosis and 1.7% (95% CI: 1.4–2.0) with posttraumatic stress disorder.

Table 2 displays unadjusted odds ratios calculated from the CCHS-MH between select mental illnesses and suicide-related behaviours. The goal at this phase of analysis was to assess known individual relationships with suicide; however, future work will control for confounding factors. In addition, breakdowns of the proportions by variables such as age and sex will be available on the Government of Canada's Public Health Infobase in the future. Consistent with the literature,<sup>2,3</sup> having symptoms consistent with a mood or an anxiety disorder was significantly associated with suicide-related behaviours (OR = 18.1, 95% CI: 14.3–23.0). In addition, reporting a diagnosis of schizophrenia/psychosis, posttraumatic stress disorder or an eating disorder was also significantly associated with suicide-related behaviours, with odds ratios of 10.6 (95% CI: 6.9–16.1), 15.5 (95% CI: 10.3–23.5) and 13.0 (95% CI: 5.6–30.3) respectively.

The ongoing monitoring and sharing of surveillance data on suicide mortality, suicide-related behaviours and associated risk and protective factors is a foundational element for suicide prevention in Canada.

### Author reference:

Public Health Agency of Canada, Ottawa, Ontario, Canada

Correspondence: Robin Skinner, Public Health Agency of Canada, 785 Carling Avenue, Ottawa, ON K1A 0K9; Tel: 613-799-5434; Email: robin.skinner@phac-aspc.gc.ca

TABLE 1

# SUICIDE SURVEILLANCE INDICATORS

## QUICK STATS, CANADA, 2017 EDITION

INDICATOR GROUP	INDICATOR MEASURE(S)	LATEST ESTIMATE	DATA SOURCE (YEAR)
<b>SUICIDE AND SELF-INFLICTED INJURY OUTCOMES</b>			
Suicide mortality	Mortality rate due to suicide, total population	11.5 per 100 000 people	CVS (2013)
Self-inflicted injuries, hospitalizations	Hospitalization rate for self-inflicted injuries (excluding Quebec)	50.2 hospitalizations per 100 000 people	DAD (2014/2015)
Self-inflicted injuries, emergency department	Emergency department (ED) presentation rate for self-inflicted injuries, Ontario	113.9 ED visits per 100 000 people	NACRS (2014/2015) (ON)
	Emergency department (ED) presentation rate for self-inflicted injuries, Alberta	160.5 ED visits per 100 000 people	NACRS (2014/2015) (AB)
	Proportion of emergency department (ED) presentations for self-inflicted injuries of total eCHIRPP cases among 10- to 24-year-olds	1072.8 ED visits per 100 000 eCHIRPP cases	eCHIRPP (2011–2016)
Suicidal thoughts	% of the population aged 15+ who report ever having serious thoughts of suicide or taking their own life (lifetime)	12.3%	CCHS (2015)
	% of the population aged 15+ who report having serious thoughts of suicide or taking their own life in past 12 months	2.5%	CCHS (2015)
Suicide plans	% of the population aged 15+ who report ever making a suicide plan (lifetime)	4.5%	CCHS (2015)
	% of the population aged 15+ who report making a suicide plan in past 12 months	0.8%	CCHS (2015)
Suicide attempts	% of the population aged 15+ who report ever attempting suicide or to take their own life (lifetime)	3.4%	CCHS (2015)
	% of the population aged 15+ who report attempting suicide or to take their own life in past 12 months	0.4%	CCHS (2015)
<b>INDIVIDUAL-LEVEL RISK AND PROTECTIVE FACTORS</b>			
Health status	% of the population aged 12+ who self-rate their health as <i>fair</i> or <i>poor</i>	10.7%	CCHS (2015)
	% of the population aged 12+ who self-rate their mental health as <i>fair</i> or <i>poor</i> <sup>a</sup>	5.9%	CCHS (2015)
	% of the population aged 12+ with moderate or severe disability, as per HUI <sup>b</sup>	31.7%	CCHS (2015)
	% of the population aged 12+ with one or more of these major chronic diseases: cancer, diabetes, cardiovascular and/or respiratory <sup>c</sup>	23.7%	CCHS (2015)
Chronic pain	% of the population aged 12+ who report having moderate to severe pain that <i>prevents some</i> or <i>most</i> activities	8.3%	CCHS (2015)
Sleep disturbances	% of the population aged 15+ who report having trouble going to sleep or staying asleep <i>most</i> or <i>all</i> of the time	14.5%	CCHS—Mental Health (2012)
Stress	% of the population aged 12+ who perceive most days as being <i>quite a bit</i> or <i>extremely</i> stressful in past 12 months	21.4%	CCHS (2015)
Mental illness	% of the population aged 15+ who report symptoms consistent with mood and/or generalized anxiety disorder (GAD) in past 12 months	6.5%	CCHS—Mental Health (2012)
	% of the population aged 15+ who report having been diagnosed with schizophrenia and/or psychosis by a health professional <sup>d</sup>	1.3%	CCHS—Mental Health (2012)
	% of the population aged 15+ who report having been diagnosed with an eating disorder by a health professional <sup>d</sup>	0.4%	CCHS—Mental Health (2012)
	% of the population aged 15+ who report having been diagnosed with posttraumatic stress disorder (PTSD) by a health professional <sup>d</sup>	1.7%	CCHS—Mental Health (2012)
Violence	% of the population aged 15+ who, before age 15, report experiencing at least one: physical or sexual violence by someone 18+ and/or exposure to violence exhibited by parents or guardians	32.9%	GSS—Victimization (2014)
	% of the population aged 15+ who report experiencing physical or sexual violence in past 12 months	4.1%	GSS—Victimization (2014)
	% of Grade 6 to 12 students who report being bullied by other students in past 30 days	25.1%	CSTADS (2014–2015)
Substance use	% of the population aged 15+ whose reported alcohol consumption exceeds Canada's Low-Risk Alcohol-Drinking Guidelines <sup>e</sup>	15.7%	CTADS (2013)
	% of the population aged 15+ who report experiencing at least one harm in past year due to illicit drug use <sup>f</sup>	2.9%	CTADS (2013)
School environment	% of Grade 6 to 10 students who <i>agreed</i> or <i>strongly agreed</i> that they felt they belonged at their school	63.1%	HBSC (2013–2014)
Personality	In development		

INDICATOR GROUP	INDICATOR MEASURE(S)	LATEST ESTIMATE	DATA SOURCE (YEAR)
<b>FAMILY-LEVEL RISK AND PROTECTIVE FACTORS</b>			
Family relationship	% of Grade 6 to 10 students who report getting the emotional help and support they need from own family	64.9%	HBSC (2013–2014)
	% of Grade 6 to 10 students who report having a lot of arguments with their parents	21.7%	HBSC (2013–2014)
	% of Grade 6 to 10 students who report it is <i>easy</i> or <i>very easy</i> to talk to their parents about things that really bother them	83.2%	HBSC (2013–2014)
Family mental illness and substance use	% of the population aged 15+ with a family member who has problems with their emotions, mental health or use of alcohol or drugs, and report that their life is affected <i>a lot</i> or <i>some</i> by their family member's problems	13.7%	CCHS—Mental Health (2012)
Family history of suicide-related behaviour	In development		
<b>COMMUNITY-LEVEL RISK AND PROTECTIVE FACTORS</b>			
Social support	% of the population aged 15+ who report having no family or close friends to talk to about what is on their mind, feel at ease with, or call on for help	6.0%	GSS—Social Identity (2013)
	% of the population aged 15+ who report being <i>satisfied</i> or <i>very satisfied</i> with the communication frequency with friends and relatives not living with them	91.5%	GSS—Social Identity (2013)
Sense of community belonging	% of the population aged 12+ who report a <i>somewhat strong</i> or <i>very strong</i> belonging to local community	67.9%	CCHS (2015)
Suicide contagion/clusters	In development		
<b>SOCIETAL RISK AND PROTECTIVE FACTORS</b>			
Mental health service access	% of the population aged 15+ who perceived a need for mental care in past 12 months	17.5%	CCHS—Mental Health (2012)
	% of population aged 15+ who perceived a need for mental health care in past 12 months, but reported it was not met or only partially met	33.3%	CCHS—Mental Health (2012)
Firearm possession	Number of individual firearm licence holders aged 18+ as of December 2016 (% of population aged 18+ possessing a firearm licence)	2 066 961 (7.3%)	RCMP (2016) <sup>§</sup>
Mental health literacy	In development		
Media reporting guidelines (adherence to)	In development		
Stigma	In development		
Poisoning control	In development		

**Abbreviations:** CCHS, Canadian Community Health Survey; CSTADS, Canadian Student Tobacco, Alcohol and Drugs Survey; CTADS, Canadian Tobacco, Alcohol and Drugs Survey; CV, coefficient of variation; CVS, Canadian Vital Statistics; DAD, Discharge Abstract Database; eCHIRPP, electronic Canadian Hospitals Injury Reporting and Prevention Program; GSS, General Social Survey; HBSC, Health Behaviour in School-aged Children; NACRS, National Ambulatory Care Reporting System; RCMP, Royal Canadian Mounted Police.

**Notes:** Categories in *italics* are from 5-scale measures (except for Sense of Community Belonging, with a 4-scale measure); “In development” refers to measures that are under development either because a data source is currently not available or because more research has to be done to identify a promising measure or data source.

Estimates with a CV less than 16.6% are considered reliable for general use (no flag). Estimates with a CV between 16.6% and 33.3% should be interpreted with caution due to high levels of error (E). Estimates with a CV higher than 33.3% are not shown since they are deemed to be unreliable (O).<sup>5</sup>

<sup>a</sup> Understanding positive mental health may help to support suicide prevention efforts. For information on measuring positive mental health outcomes, along with risk and protective factors that are associated with them, including spirituality and coping, please refer to the Positive Mental Health Surveillance Indicator Framework: <http://infobase.phac-aspc.gc.ca/positive-mental-health/>

<sup>b</sup> Health Utilities Index (HUI).

<sup>c</sup> Chronic bronchitis, emphysema or chronic obstructive pulmonary disease.

<sup>d</sup> Conditions diagnosed by a health professional and expected to last or have already lasted 6 months or more.

<sup>e</sup> People who drink within this guideline must drink “no more than two drinks a day, 10 per week for women, and three drinks a day, 15 per week for men, with an extra drink on special occasions.” Canadian Centre on Substance Use and Addiction. <http://www.ccsa.ca/eng/topics/alcohol/drinking-guidelines/pages/default.aspx>

<sup>f</sup> Harm due to illicit drug use includes harm to friendships, physical health, home life/marriage, work, studies, employment opportunities and financial position, as well as legal problems, housing problems and difficulty learning things.

<sup>§</sup> Royal Canadian Mounted Police. Commissioner of Firearms 2016 report. Ottawa (ON): Royal Canadian Mounted Police; 2017 [Catalogue No.: PS96E-PDF].

**Suggested citation:** Public Health Agency of Canada. Suicide surveillance indicators: Quick Stats, Canada, 2017 edition. Ottawa (ON): Public Health Agency of Canada; 2017.

Visit the Suicide Surveillance Indicators online: <http://infobase.phac-aspc.gc.ca/>

**TABLE 2**  
**Prevalence of select mental illnesses and suicide-related behaviours**  
**and bivariate associations, estimates for Canadians aged 15 years and older**

Risk factor	Unweighted n <sup>a</sup>	Estimate <sup>b</sup> (%)	95% CI, <sup>b</sup> α = .05	Suicide-related behaviours <sup>c</sup>			
				Estimate <sup>b</sup> (%)	95% CI, <sup>b</sup> α = .05	Unadjusted OR <sup>b</sup>	95% CI, <sup>b</sup> α = .05
<b>Mood and/or generalized anxiety disorder (GAD) symptoms in past 12 months</b>							
Yes	1 748	6.5	6.0–7.0	25.5	22.0–29.1	18.1	14.3–23.0
No*	21 876	93.5	93.0–94.0	1.9	1.6–2.1	1.0	
<b>Reported schizophrenia and/or psychosis diagnosis by a health professional</b>							
Yes	381	1.3	1.1–1.5	25.4	17.8–33.1	10.6	6.9–16.1
No*	23 268	98.7	98.5–99.0	3.1	2.8–3.5	1.0	
<b>Reported posttraumatic stress disorder (PTSD) diagnosis by a health professional</b>							
Yes	425	1.7	1.4–2.0	31.8	23.1–40.4	15.5	10.3–23.5
No*	23 205	98.3	98.1–98.6	2.9	2.6–3.2	1.0	
<b>Reported an eating disorder diagnosis by a health professional</b>							
Yes	102	0.4	0.3–0.5	30.7 <sup>e</sup>	14.1–47.2	13.0	5.6–30.3
No*	23 546	99.6	99.5–99.7	3.3	2.9–3.6	1.0	

Source: 2012 Canadian Community Health Survey—Mental Health Component (Statistics Canada share-restricted data).

Abbreviations: CI, confidence interval; GAD, generalized anxiety disorder; OR, odds ratio; PTSD, posttraumatic stress disorder.

Note: Estimates with a coefficient of variation (CV) less than 16.6% are considered reliable for general use (no flag). Estimates with a CV between 16.6% and 33.3% should be interpreted with caution due to high levels of error (E). Estimates with a CV higher than 33.3% are not shown since they are deemed to be unreliable (O).<sup>6</sup>

<sup>a</sup> Count includes only cases where respondents completed survey questions related to both suicide-related behaviours and select mental illnesses.

<sup>b</sup> All estimates, CIs and ORs are weighted.

<sup>c</sup> Suicide-related behaviours include suicidal thoughts, plans and attempts in the past 12 months.

\* Reference category for the measure of association.

## References

- Public Health Agency of Canada. Working together to prevent suicide in Canada: the federal framework for suicide prevention. Ottawa (ON): Government of Canada; 2016 [Catalogue No.: HP35-61/2015E-PDF]. 51 p.
- Li Z, Page A, Martin G, Taylor R. Attributable risk of psychiatric and socio-economic factors for suicide from individual level, population-based studies: a systematic review. *Soc Sci Med*. 2011;72(4):608-16.
- Taylor PJ, Hutton P, Wood L. Are people at risk of psychosis also at risk of suicide and self-harm? A systematic review and meta-analysis. *Psychol Med*. 2015;45(5):911-26.
- Statistics Canada. 2012 Canadian Community Health Survey—Mental Health Component. Ottawa (ON): Statistics Canada; 2013.
- Afifi TO, MacMillan HL, Boyle M, Taillieu T, Cheung K, Sareen J. Child abuse and mental disorders in Canada. *CMAJ*. 2014;186(9):E324-E332.
- Statistics Canada. 5.0 Data accuracy and quality [Internet]. Ottawa (ON): Statistics Canada; [modified 2009 Sep 21; cited 2017 May 11]. Available from: <http://www.statcan.gc.ca/pub/13f0026m/2007001/ch5-eng.htm>