HEARTSMAP CME – SAFETY

HEARTSMAP Domain	Safety
Number of articles	4

General Theme	Clinician Bottom Line
Self-harm history • Self-harm history includes many elements including method and frequency of self-harm, present and past suicidal ideation, and any past and current psychiatric illnesses. (Level of Evidence: I)	• Three to 12 cognitive behavioural therapy (CBT) psychotherapies should be recommended to address self-harm as part of the long-term management. • See article #1
Self-harm management • CBT is the only evidence-based psychotherapy found to be effective in mitigating self-harm, and it requires 3 to 12 psychotherapy sessions to address the issue of self-harm. (Level of Evidence: I)	• It is important to take a thorough history of self-harm that includes four robust predictors of future suicide, which include history of suicidal attempts, non-suicidal self-harm practice, self-injury severity, and SES. • See articles #1 and 2
Suicide attempts • Low SES, history of suicidal attempts, non-suicidal self-harm practice, and self-injury severity are robust predictors of future suicides. (Level of Evidence: II.1)	
Self-harm presentations in ED • The most common presentation is self-poisoning with medication. Self-harm incidence rates increase with age, is higher in female, highest in rural areas, and is inversely proportional to neighbourhood SES. (Level of Evidence: II.2)	• ED physicians should thoroughly assess self-harm presentations to identify risk factors (age, gender, SES) and potential risks for suicides. • See article #3
Overall Risk of Suicide Completion • ED patients with a single visit due to suicide-related complaint and subsequent discharge have a higher rate of suicide completion relative to other ED cohorts (Level of Evidence: II.1) without history of mental health issues. • The overall risk of suicide completion among male youth is 2 per 1000 at 1 year follow up and among female youth is 1 per 1000 at 5 years follow up.	• It is essential to establish a standardized psychosocial assessment to identify history of self-harm behaviour, suicidal ideation and overdoses and address their long-term risks. • The short-term risks appear low, but have not yet been well studied. • See article #4

1. National Institute for Health and Clinical Excellence (2011). Self-harm: longer-term management. London (UK): National Institute for Health and Clinical Excellence (NICE); Clinical guideline; no. 133.
    a. **Objective**: to make recommendations for long term management of self-harm
    b. **Method:**
        i. **Population:** individuals aged 8 years and older
        ii. **Design**: meta-analysis of guidelines, key systematic reviews, and randomized controlled trials
        iii. **Primary outcome measure**: components of a self-harm history; statistical predictors of self-harm and suicides
    c. **Result:** A self-harm history should cover method and frequency of self-harm, present and past suicidal ideations, any psychiatric illnesses, and risks and protective factors. In addition, 3 to 12 psychotherapy sessions may be required to address self-harm.
    d. **Conclusion:** Given the robust meta-analysis of the guidelines, systematic reviews and RCTs, the national guideline presents a solid guideline in taking a comprehensive history of self-harm, which should include method and frequency of self-harm, present and past suicidal ideations, any psychiatric illnesses, and risks and protective factors. As a treatment, 3-12 psychotherapies should be considered to address the issue of self-harm.
    e. **Level of evidence:** I (comprehensive systematic review)

2. Horwitz, A. G., Czyz, E. K., & King, C. A. (2015). Predicting Future Suicide Attempts Among Adolescent and Emerging Adult Psychiatric Emergency Patients. *Journal of Clinical Child & Adolescent Psychology*, *44*(5), 751–761. http://doi.org/10.1080/15374416.2014.910789
    a. **Objective:** to evaluate the efficacy of using risk factors such as histories of suicidal attempts and non-suicidal self-injury to predict future suicide attempts
    b. **Method:**
        i. **Population**: 473 patients seeking services from a university hospital's psychiatric emergency (PE) located in the Midwestern United states
        ii. **Design:** a retrospective cohort study
        iii. **Primary objective measure**: odds ratios of future suicide attempts in patients who have 1) history of suicidal attempts, 2) habit of non-suicidal self-injury, and 3) severe self-harm vs. patients who do not have such risk factors
    c. **Result**: Compared to the risk of suicide in the general population, patients with these risk factors have the following odds ratios of attempting future suicides:
        i. Life-time history of suicidal attempts: 4.80, with $p < 0.001$
        ii. Lifetime non-suicidal self injury: 3.12, with $p < 0.01$
        iii. Suicidal injury severity: 1.51, with $p < 0.01$
        iv. SES: 2.57, with $p < 0.05$
    d. **Conclusion:** The well-designed retrospective cohort study, with robust odds ratios, lends a strong support to the study's conclusion that low SES, history of suicidal attempts, non-suicidal self-harm practice, and self-injury severity are robust predictors of future suicides. Clinically, it is important to take a thorough history of self-harm that includes all four predictors mentioned above to gauge the likelihood of future suicides.
    e. **Level of Evidence**: II.1 (well-designed retrospective cohort study)

3. Bethell, J., Bondy, S. J., Lou, W. Y. W., Guttmann, A., & Rhodes, A. E. (2013). Emergency department presentations for self-harm among Ontario Youth. *Canadian Journal of Public Health*, *104*(2), e124+.
    a. **Objective**: to describe the demographic characteristics of youth aged 12-18 presenting to the emergency departments in Ontario with self-harm.

b. **Method:**
    i. **Population**: 22,589 self-harm presentations by 17,557 individuals as recorded in National Ambulatory Care Reporting system between 2002 and 2009
    ii. **Design**: a demographic study
    iii. **Primary objective measure**: incidence rates of self-harm by age, gender, and SES
c. **Result:** Self-harm incidence rate increased with age, were higher in girls than boys, and was inversely proportional to neighbourhood SES. In terms of geography, self-harm incidence rate was the highest in rural areas. The most common form of self-harm was self-poisoning with medical agents such as acetaminophen and antidepressants, which accounted for 2/3 of cases. Self-harm presentation made up roughly 1 in 100 ED presentations.
d. **Conclusion**: While not as robust as a cohort or case-control study, the demographic study provides a valuable initial survey into the incidence rates of self-harm, with rates higher with age, in females, in patients from low SES, and the highest in rural areas. The study also found that self-poisoning with medication was the most common presentation of self-harm.
e. **Level of evidence**: II.2 (a large demographic study without controls)

4. Crandall C, Fullerton-Gleason L, Aguero R, LaValley J. (2006). Subsequent Suicide Mortality among Emergency Department Patients Seen for Suicidal Behavior. *Acad Emerg Med*. Apr;13(4):435-42.
    a. **Objective:** to quantify and compare whether mortality rates for patients first seen for a suicide-related complaint and later discharged from the ED were higher than ED comparison groups.
    b. **Method:**
        i. **Population**: All ED patients 10 years and older with at least one visit to the University of New Mexico Health Sciences Centre (UNMHSC) ED between February 1994 and November 2004 were eligible.
        ii. **Design**: a non-concurrent prospective cohort study
        iii. **Primary objective measure**: death due to suicide
        iv. **Result:** Among the 218,304 ED patients, there were 6,470 deaths and of these 408 were due to suicide. This risk was more pronounced in males when compared to females. Among male youth with a history of self-harm behaviour, suicidal ideation or overdose, the risk of suicide death was at 1, 3, 5, and 10 years respectively: 2/1000, 6/1000, 8/1000 and 1.1/100. Among females, these were lower, respectively: 0, 0, 1/1000, and 6/1000.
    c. **Conclusion**: The rate of suicide is higher among these patients in comparison to population-based estimates. Since most ED patients who later died from suicide did not have overdose, suicidal ideation or self-harm on their medical records, this report affirms the importance of establishing a standardized psychiatric evaluation for all of these ED visits to more proactively diagnose and treat these most at risk cohorts.
    d. **Level of evidence**: II.1 (a well designed cohort study)

Appendix: Guide for Level of Evidence

Canadian Task Force on the Periodic Health Examination's Level of Evidence*

Level	Type of evidence
I	At least 1 RCT with proper randomization
II.1	Well designed cohort or case-control study
II.2	Time series comparisons or dramatic results from uncontrolled studies
III	Expert opinions