HEARTSMAP CME – ALCOHOL AND DRUGS

HEARTSMAP Domain	Alcohol and drugs
Number of articles	5
General Theme	Clinician Bottom Line
Street-involvement and substance use • Street-involvement predisposes youth to a greater risk of engaging in substance use. (Level of Evidence: II.1) • The unstable nature of street-involved youth makes the healthcare for these teens unpredictable and follow-ups more difficult. (Level of Evidence: II.1)	• Screen all adolescents for risky behaviour such as substance use. • See article #1
Substance use and harm reduction strategy • Harm reducing approach significantly reduces morbidity and mortality in youth engaged in substance and alcohol use. (Level of Evidence: II.1)	• Clinician or social worker should implement a harm reduction strategy for teens involved in substance use to mitigate the harmful effects. • See article #2
Truancy and substance use • Truancy is strongly associated with elevated substance use, with higher truancy corresponding to increased substance use. (Level of Evidence: II.1)	• Truancy is a strong risk factor for substance use, mental health problems, and externalizing behaviours. It is important to identify truant youth and connect them to an educational support service than can mitigate truancy and potentially reduce these negative outcomes. • See article #3
Child maltreatment and alcohol drinking • Child maltreatment (especially sexual abuse) is a strong predictor of adolescent binge drinking. (Level of Evidence: II.1)	• Youth with history of abuse should be screened for binge drinking as well, and an appropriate youth referral should be made to address both the abuse and drinking problem. • See article #4
Substance use and comorbidities • Youth with substance abuse are at higher risk of having co-morbid problems such as conduct disorder, emotional distress, and ADHD (Level of Evidence: II.2) • Many youth with substance abuse and other serious problems have not accessed the service. (Level of Evidence: II.2)	• Given the high risk of co-morbidities and low level of access in substance-use youth, it is crucial for clinicians to identify these youth early on and connect them to an intervention program. • See article #5

1. Elliott, A. S. (2016). Meeting the health care needs of street-involved youth: Position statements and practice points. Canadian Paediatric Society. Retrieved from: http://www.cps.ca/documents/position/health-care-needs-of-street-involved-youth
    a. **Objective**: review the prevalence, risk factors, and approaches to healthcare for street-involved youth
    b. **Method:** systematic review (MEDLINE search) of studies on street-involved youth between 1950 and 2012. Involves descriptive and ecological studies of street-involved youth, as well as cohort and cross-sectional studies on prevalence and incidence rate of various health concerns in street-involved youth
    c. **Primary outcome measure:** Risk factors that predispose youth to street involvement; risks factors associated with street-involvement
    d. **Result:** Street involvement poses elevated risks in physical, mental, emotional, and social domains. For instance, basic needs for food, shelter, and early initiation of sexual activity place street-involved youth at higher risk for sex trade, selling drugs, and panhandling. As a result, street-involved youth are at higher risk of substance use. In addition, parental drug use is one of the risk factors for street involvement.
    e. **Conclusion:** Due to high risk of substance use associated with street-involvement, a physician should screen and connect street-involved youth to a detox program and harm reduction strategy to mitigate the effects of substance use.
    f. **Evidence:** II.1 (systematic summary of demographic, cross-sectional, and cohort studies)

2. Leslie, K. M. (2014). Harm reduction: An approach to reducing risky health behaviours in adolescents: Position statements and practice points. Canadian Paediatric Society. Retrieved from: http://www.cps.ca/documents/position/harm-reduction-risky-health-behaviours
    a. **Objective**: to define harm reduction strategy and determine the efficacy in reducing alcohol, substance, and risky sexual behaviours
    b. **Method:**
        i. **Sample:** youth at-risk of engaging in or already engaged in alcohol, substance use, and risky sexual behaviours
        ii. **Design:** A systematic review of studies on harm reduction strategy, especially pertaining to substance use, STI/ HIV transmission, and alcohol use. The review involved descriptive and ecological studies of youth at risk of substance use, as well as prospective cohort and cross-sectional studies on efficacy of harm reduction programs in preventing STI (including HIV) transmission among drug users.
        iii. **Primary outcome measure:** odds ratio of reduction in morbidity and mortality by harm reduction strategy vs. traditional abstinence approach
    c. **Results:** Harm reduction strategy significantly reduces morbidity and mortality in youth, especially concerning substance and alcohol abuse.
    d. **Conclusion**: It is important to introduce at-risk youth to a harm reduction strategy to delay the initiation of substance use, and, if the youth is already engaged in risky behaviours, to reduce the frequency of engagement. One way that a clinician can assist in this process is to screen all adolescents for substance use.
    e. **Evidence:** II.1 (systematic summary of well-designed ecological, cross-sectional, and cohort studies)

3. Vaughn, M. G., Maynard, B. R., Salas-Wright, C. P., Perron, B. E., & Abdon, A. (2013). Prevalence and correlates of truancy in the US: Results from a national sample. *Journal of Adolescence*, *36*(4), 767–776. http://doi.org/10.1016/j.adolescence.2013.03.015
    a. **Objective**: to identify the prevalence, sociodemographic characteristics, and mental health correlates of truancy
    b. **Method**:
        i. **Population:** 68,736 youth aged 12-17 as part of 2009 National Survey on Drug Use and Health (NSDUH).
        ii. **Design:** Cross-sectional study involving multiple self-reported questionnaires that measure the rate of truancy, sociodemographic and mental health conditions, school engagement, parental involvement, and externalizing behaviours.
        iii. **Primary outcome measure:** odds ratios of externalizing behaviours and mental health concerns in youth who demonstrate truancy vs. do not.
    c. **Result**: 11% of adolescents between ages 12-17 have reported skipping over the past 30 days. Severely truant individuals (skip more than 4 times per month) were 1.5-2 times more likely to engage in substance use, fight at school, carry a handgun, and steal than moderate skippers (skip 1-3 times per month).
    d. **Conclusion:** Despite the limiting nature of the cross-sectional study, the size and longitudinal nature of the sample, as well as the magnitude of odds ratios, add strength to the study's conclusion that truancy is robustly associated with externalizing behaviours, one of which is substance use.
    e. **Level of evidence**: II.1 (well-designed cross-sectional study)

4. Shin, S. H., Edwards, E. M., & Heeren, T. (2009). Child abuse and neglect: Relations to adolescent binge drinking in the national longitudinal study of Adolescent Health (AddHealth) Study. *Addictive Behaviours*, *34*(3), 277–280.
    a. **Objective:** to examine the association between child maltreatment and adolescent binge drinking
    b. **Method:**
        i. **Sample:** 12,748 adolescents as part of the National Longitudinal Study of Adolescent Health (grades 7 through 12)
        ii. **Design**: retrospective cohort study
        iii. **Primary objective measure**: Odds ratio of binge drinking in youth with various subtypes of maltreatment compared to youth without maltreatment
    c. **Result:** Defining binge drinking as five or more drinks on a single occasion, at least 2-3 times per month,
        i. Neglected youth were 1.2 times more likely to binge drink than peers without maltreatment.
        ii. Youth with sexual abuse were 2.0 times more likely to binge drink than peers without maltreatment
        iii. Youth who were both neglected and physically abused were 1.3 times more likely to binge drink than peers without maltreatment.
        iv. Youth who suffered all mistreatment (neglect, sexual abuse, and physical abuse) were 1.8 times more likely to binge drink than peers without maltreatment.
        v. Youth with parental alcoholism were 1.43 times more likely to binge drink than peers without parental alcoholism.

d. **Conclusion:** Given the large sample size and the longitudinal nature of the cohort study, the study's finding that child maltreatment (especially sexual abuse) is a strong predictor of adolescent binge drinking is well supported. A child suspected of abuse should be also screened for binge drinking, and a professional resource should be provided to tackle both the abuse and drinking problem.
e. **Level of evidence:** II.1 (well-designed retrospective cohort study)

5. Jaycox, L. H., Morral, A. R., & Juvonen, J. (2001). Mental Health and Medical Problems and Service Use Among Adolescent Substance Users. *Journal of the American Academy of Child & Adolescent Psychiatry*, *42*(6), 701–709.
    a. **Objective**: to characterize the type of mental health services received by youth admitted to one of the seven substance abuse treatment programs in the United States between 1998 and 2001.
    b. **Method**:
        i. **Sample:** 1,088 youth aged 12-19, admitted to one of the seven substance abuse treatment programs across the United states between 1998 and 2001
        ii. **Design:** a large demographic study on adolescents who were admitted to the substance abuse program
        iii. **Primary objective measure:** Prevalence of co-morbidities in youth with substance problems and their access to mental health service
    c. **Result:**
        i. Among youth entering the substance use program, the teens had the following concurrent disorders:
            1. 44% had clinically significant emotional distress
            2. 50% met the criteria for ADHD
            3. 2/3 met the criteria for conduct disorder
        ii. 54% reported at least one severe mental health issue but received no services in the previous 3 months prior to entering the substance use program
    d. **Conclusion**:
        i. The large demographic study lends fair evidence that many youth who suffer substance abuse can present with other co-morbid problems. Despite the co-morbidity of severe illness, however, many of these teens many not have received the appropriate mental health service. Therefore, clinicians should connect youth with substance problem to an appropriate intervention program.
    e. **Level of evidence:** II. 2 (large demographic study without a distinct control group)

Appendix: Guide for Level of Evidence

Canadian Task Force on the Periodic Health Examination's Levels 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