



**Ontario  
Health**



# Prevention System Quality Index

Special Report on Cancer Prevention for People Living  
with Serious Mental Illness

December 2022

# Prevention System Quality Index

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The statements in this report do not necessarily reflect the opinions or perspectives of the expert panel members or the organizations that they represent.

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# Highlights

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This report provides an overview of cancer disparities experienced by people living with serious mental illness in Ontario. Serious mental illness in this report refers to diagnoses of bipolar disorder and schizophrenia.

## **Cancer risk factors for people living with serious mental illness**

People living with serious mental illness have an increased risk of chronic diseases and a significantly higher prevalence of modifiable risk factors than the general population.

A 2018 study of people living with schizophrenia in Ontario found that they had a significantly higher prevalence of tobacco smoking, physical inactivity, and inadequate vegetable and fruit consumption than the general population. Additionally, rates of tobacco smoking remained high for people living with schizophrenia, while rates of tobacco smoking decreased for the general population.

## **Primary care and cancer preventive services**

Despite having a higher frequency of visits to primary care providers, people living with serious mental illness have increased mortality from cancer and are less likely than the general population to get screened for cancer and receive other preventive services, such as smoking cessation interventions.

## **Smoking cessation programs**

Based on a ConnexOntario survey of mental health and addictions sites, approximately 40 per cent of sites caring for people with serious mental illness in Ontario routinely screened for smoking status at intake or assessment, 66 per cent offered quit smoking education and advice, 44 per cent offered individual or group smoking cessation counselling, and 79 per cent offered referral to a smoking cessation program. Thirty-five per cent (n=126) of the sites delivered all of the following services: routine screening, education and advice, and cessation counselling or referral to counselling, which means they align with the widely used “Ask-Advise-Refer” approach to smoking cessation treatment. In addition to the services above, 25 per cent of sites provided free nicotine replacement therapy and 26 per cent had staff who are TEACH trained, which is a tobacco cessation certification program.

## **Opportunities to reduce cancer risk for people living with serious mental illness**

- Implement, evaluate and expand coordinated care between primary care, mental health care and other community services, with an emphasis on cancer screening and prevention;
- Provide primary care providers with specialized education and support to help them address cancer prevention in people living with serious mental illness;
- Support research to identify best practices in cancer screening participation for people living with serious mental illness; and
- Increase the availability of funded smoking cessation programs in mental health and addictions provider sites and improve cessation efforts for people living with serious mental illness.

# Foreword

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On behalf of Ontario Health, we are pleased to provide the Prevention System Quality Index Special Report on Cancer Prevention for People Living with Serious Mental Illness. Building on the Prevention System Quality Index report series, which presents opportunities for Ontario to implement system-level policies and programs that support cancer prevention, this special report looks more closely at the intersection between cancer prevention and serious mental illness. It highlights the cancer disparities experienced by people living with serious mental illness, provides insight into the current availability of smoking cessation services in Ontario, and offers provincial and local decision-makers policy and program considerations for improving cancer prevention in this population. This report is an example of Ontario Health's strength as a provincial health care organization that helps connect the mental health and cancer care systems, and identify opportunities to improve equitable health outcomes for people living with serious mental illness.

This report supports Ontario Health's [Chronic Disease Prevention Strategy 2020 to 2023](#) and Ontario's [Roadmap to Wellness: A Plan to Build Ontario's Mental Health and Addictions System](#). For more data and evidence on mental health and addictions, chronic diseases and their risk factors, please visit the Ontario Health [website](#).

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# Introduction

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The [Prevention System Quality Index \(PSQI\) reports](#) provide evidence and data that help policy-makers, policy influencers and program planners in governments, non-governmental organizations and local public health agencies implement policies and programs for preventing cancer and other chronic diseases in Ontario. The full PSQI report covers eight risk factors: tobacco, alcohol, unhealthy eating, physical inactivity, ultraviolet radiation, environmental and occupational carcinogens, and infectious agents.

This report is the first in a series of PSQI special reports that will highlight new topics and indicators not covered in the full PSQI reports. This report is focused on cancer prevention for people living with serious mental illness in Ontario and includes:

- An overview of cancer risk factors for people living with serious mental illness;
- Primary care and cancer preventive services for people living with serious mental illness;
- Smoking cessation programs and their availability to people living with serious mental illness; and
- Provincial opportunities for reducing cancer risk for people living with serious mental illness.

This report outlines several cancer prevention policy areas identified by the literature, the data and expert input. Due to the limited scope of this report, it only focuses on a few policies and program opportunities for improving the system. The report does not explore the interconnected considerations involved in addressing the social determinants of health, which are crucial to reducing cancer disparities and improving cancer prevention for people living with serious mental illness.

## Overview of serious mental illness

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Serious mental illness refers to a mental, behavioural or emotional disorder that can seriously interfere with someone's day-to-day life.<sup>1</sup> Although there are varied definitions of "serious mental illness," based on expert input, serious mental illness in this report refers to bipolar disorder and schizophrenia.

A 2012 report found that each year in Ontario, approximately 42,230 people ages 18 to 64 are diagnosed with bipolar disorder<sup>2</sup> and 5,734 people in the same age group are diagnosed with schizophrenia.<sup>2</sup> A number of studies have shown that people living with these conditions have an increased risk of chronic diseases<sup>3-5</sup> and reduced life expectancy compared to the general population.<sup>5-7</sup>

The reasons for these poorer health outcomes are complex and interconnected. They include individual behavioural risk factors (e.g., tobacco smoking) that are more prevalent in people with serious mental illness than the general population<sup>8</sup>, stigma<sup>9</sup>, poor access to mental and physical health services<sup>8</sup>, and unequal access to the social determinants of health leading to conditions of poverty<sup>9</sup>, unemployment,<sup>9</sup> and inadequate housing and homelessness.<sup>9-12</sup> Many of these issues were exacerbated by the COVID-19

pandemic, which reduced access to in-person mental and physical health services, increased social isolation and heightened pre-existing gaps in social housing and Housing First<sup>i</sup> plans, furthering health disparities for people living with serious mental illness.<sup>14</sup>

## Cancer and serious mental illness

About 40 per cent of cancer cases in Canada are estimated to be preventable by eliminating modifiable risk factors, such as tobacco smoking, alcohol consumption, unhealthy eating and physical inactivity.<sup>15</sup> The ability to prevent cancer by targeting these risk factors highlights the significant role that system-level policies and programs can play in reducing the burden of cancer. People living with serious mental illness have been found to have a significantly higher prevalence of modifiable risk factors than the general population.<sup>8,10,16</sup>

A 2018 study examining temporal trends of modifiable risk factors for people living with schizophrenia in Ontario found that compared to the general population they had a significantly higher prevalence of tobacco smoking (38 per cent vs. 22 per cent), physical inactivity (62 per cent vs. 51 per cent) and inadequate vegetable and fruit consumption<sup>ii</sup> (37 per cent vs. 23 per cent).<sup>16</sup> The prevalence of binge drinking was initially found to be lower for people living with schizophrenia in the 2001–2005 period, but by 2007–2010, it had reached levels that were similar to the general population.<sup>16</sup> Furthermore, while rates of tobacco smoking decreased from 2001–2005 to 2007–2010 for the general population, rates of smoking remained high for people living with schizophrenia, highlighting a gap in tobacco use cessation efforts.<sup>16</sup> Comparable Ontario data on modifiable risk factor trends are not available for people living with bipolar disorder.

In addition to increased risk of cancer from modifiable risk factors, people living with serious mental illness are more likely to be diagnosed with an advanced stage of cancer and are at risk of worse cancer survival.<sup>8,17,18</sup> These worse outcomes may be due to delayed diagnosis, poorer quality of care due to stigma, and possible drug interactions between medications treating mental illness and chemotherapy.<sup>8,17,18</sup> To improve outcomes for people living with serious mental illness and to close the gap in cancer burden, targeted cancer prevention policies and programs are needed.

## Primary care and preventive services

Primary care providers are at the forefront of cancer prevention, providing preventive services, such as cancer screening, vaccinations, and referrals for diagnostic tests and specialists. In general, people living with serious mental illness may face difficulty accessing primary care services due to many factors, including issues related to their health care providers (e.g., limited availability, stigma and inadequate knowledge about best practices for cancer preventive care for people with serious mental illness),

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<sup>i</sup> Housing First is a policy approach that focuses on quickly providing permanent housing, without contingency, to people who are experiencing homelessness.<sup>13</sup>

<sup>ii</sup> For this study, inadequate vegetable and fruit consumption was defined as consuming vegetables and fruit fewer than three times per day.



socioeconomic barriers (e.g., not being able to afford transportation to appointments) and individual factors (e.g., mental illness symptoms interfering with care-seeking and appointment attendance).<sup>19</sup> There is some evidence that access to primary care may not be the main issue in Ontario; one study found that people experiencing early stages of serious mental illness in Ontario access primary care at a higher frequency than the general population.<sup>20</sup> However, despite having a higher frequency of visits to primary care providers, people living with serious mental illness are less likely than the general population to get screened for cancer<sup>18,21,22</sup> and receive other preventive services, such as smoking cessation interventions<sup>18</sup>. This disparity may be due to a focus on mental health concerns at primary care visits,<sup>23</sup> misattributing physical symptoms to mental illness or prioritizing socioeconomic urgencies, such as lack of housing, instead of cancer screening and other preventive services.<sup>24</sup>

There is limited evidence on effective system-level policies and programs that increase cancer screening for people living with serious mental illness. In 2016, a Cochrane systematic review found no randomized control trials assessing interventions to increase cancer screening for people living with serious mental illness,<sup>25</sup> although a later 2019 randomized control trial encouraging colorectal cancer screening in people living with schizophrenia found that case management intervention, such as patient navigation and education, was effective in improving screening rates.<sup>26</sup> More research is needed to identify best practices for promoting cancer screening participation in people living with serious mental illness and to address disparities.

There is, however, evidence on more specific practices that can help primary care providers improve preventive care for people living with serious mental illness. For example, training primary care providers to successfully identify and treat mental illnesses has been identified as a high priority, and certain kinds of training have been shown to increase knowledge and incorporation into primary care practice.<sup>27-29</sup> In addition, coordination of care between providers and settings (e.g., primary care, mental health care, counselling and other community services) has been shown to improve physical and mental health outcomes by helping people living with serious mental illness navigate the system to meet their health needs.<sup>30-34</sup> One study found significantly reduced rates of smoking and improved cardiovascular blood markers after people with bipolar disorder and schizophrenia received individual education and behavioural counselling on cardiovascular risk factors, and primary and mental health care teams coordinated support across appointments.<sup>35</sup> Another study found that people living with schizophrenia had improved cancer screening uptake when provided with education on cancer screening by a case manager at psychiatric appointments, along with two follow-up sessions and patient navigation support.<sup>26</sup> Moving forward, it will be important to better understand and identify opportunities for how training for primary care providers and coordination of care in Ontario can improve cancer prevention for people with serious mental illness.

## Smoking cessation programs

Smoking tobacco is a major contributor to chronic diseases, such as cardiovascular disease, chronic lower respiratory disease, lung cancer and almost 20 other types of cancer.<sup>36</sup> As highlighted earlier in this report, people living with serious mental illness are more likely to smoke tobacco than the general population, and it is important for smoking cessation services to be easily accessible for this population. Smoking cessation interventions can include a range of behavioural and pharmacological supports, such as counselling, educational resources, group support sessions, nicotine replacement therapy, natural

cessation products (e.g., cytisine) and prescription medications (i.e., bupropion and varenicline). These interventions have been shown to help people, including those with serious mental illness, stop smoking or reduce the amount of cigarettes smoked.<sup>37</sup> Smoking cessation programs have specifically been shown to be effective for people with serious mental illness. Pharmacotherapies have also been shown to be effective and safe for people with serious mental illness in terms of physical and psychiatric side effects.<sup>38-43</sup>

While some programs in Ontario, such as the Ontario Drug Benefit program and the Non-Insured Health Benefits program for First Nations and Inuit, may help cover the costs of smoking cessation supports (e.g., medications) for some people, many people may need to rely on private health insurance or pay out-of-pocket. As a result, financial barriers can impact the accessibility of smoking cessation services. Fully covering the costs of smoking cessation services may increase the likelihood that people who smoke try to quit, use smoking cessation treatments and succeed in quitting.<sup>44</sup> Minimizing this barrier is particularly important to consider because people living with serious mental illness are more likely to live in poverty.<sup>9</sup>

## **Indicator: Availability of smoking cessation services at sites treating adults living with a serious mental illness**

This indicator looks at how many health care provider settings (e.g., hospitals, community health centres) address the presenting symptoms of schizophrenia and bipolar disorder in adults and offer smoking cessation services. Data were from ConnexOntario's<sup>iii</sup> 2021 annual survey of services provided by mental health and addictions service provider sites. Only provider sites in the ConnexOntario database that self-reported addressing the presenting symptoms of schizophrenia and/or bipolar disorder in adults through clinical and/or therapeutic services were assessed. Additional details on data methodology and limitations can be found in Appendix A.

Out of 978 sites that participated in the ConnexOntario survey in 2021, a total of 365 service provider sites reported addressing the presenting symptoms of schizophrenia and/or bipolar disorder. Out of these 365 sites, 40 per cent (n=146) routinely screened for smoking status at intake or assessment, 66 per cent (n=240) offered quit smoking education and advice, 44 per cent (n=162) offered individual or group smoking cessation counselling, and 79 per cent (n=290) offered referral to a smoking cessation program.

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<sup>iii</sup> ConnexOntario is funded by the Government of Ontario and Ontario Health. ConnexOntario maintains a comprehensive addictions and mental health services database in Ontario. ConnexOntario contributes statistical data for the development of public policy and strategic planning around mental health and addictions resources by responding to requests from provincial and federal governments, Ontario Health, social planning bodies, service providers and other professionals, scientists and researchers, and the general public.

**Table 1: Smoking cessation services provided by mental health and addictions service provider sites that address adults with a diagnosis of schizophrenia and/or bipolar disorder, Ontario, 2021**

| Smoking cessation service   | Number of sites (N=365) | Per cent of sites |
|---|-------------------------|-------------------|
| <b>Routine screening</b><br>Screening for smoking status is done at intake or assessment  | 146                     | 40                |
| <b>Education and advice</b><br>Printed material or verbal advice only, presentations, suggested resources or services   | 240                     | 66                |
| <b>Individual or group smoking cessation counselling</b><br>More than advice or information: individual or group therapeutic process of identifying goals, barriers, a strategy and emotional support as needed | 162                     | 44                |
| <b>Referral to smoking cessation program</b><br>Counselling provided through referral internally or to an external organization   | 290                     | 79                |

**Data sources:** ConnexOntario, Participating Sites Survey, 2021.

**Prepared by:** Ontario Health, Population Health and Prevention in April 2022.

**Data notes:** Includes sites that self-reported addressing the presenting symptoms of people with a diagnosis of schizophrenia and/or bipolar disorder. The service categories do not add up to 365 because sites can offer multiple services. See Appendix B for detailed results on the “individual or group smoking cessation counselling” and “referral to smoking cessation program” service categories.

Thirty-five per cent (n=126) of the sites delivered all of the following services: routine screening, education and advice, and cessation counselling or referral to counselling. These sites align with the widely used “Ask-Advise-Refer” approach to smoking cessation treatment. Ask-Advise-Refer is an evidence-based approach designed to help health care providers routinely assess the smoking status of all of their patients, deliver brief advice on quitting smoking and refer people who smoke to evidence-based cessation treatment.<sup>45</sup> When people who smoke receive Ask-Advise-Refer, a greater proportion of them enrol in smoking cessation treatment<sup>45</sup> and they are more likely to report tobacco cessation at a 12-month follow-up than people who did not receive Ask-Advise-Refer.<sup>46</sup>

These findings highlight an opportunity for a more consistent and systematic approach to smoking cessation by increasing the availability of smoking cessation programs in mental health and addictions provider sites. Routine screening is the service category that is most often missing from sites.

In addition to the services above, 25 per cent (n=93) of service provider sites provided free nicotine replacement therapy and 26 per cent (n=95) had staff who are TEACH trained, which is a tobacco cessation certification program that trains providers with the knowledge and skills to help their patients with tobacco cessation.<sup>47</sup>

# Conclusion

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This Prevention System Quality Index special report examines cancer risk disparities for people living with serious mental illness and suggests opportunities for improving cancer prevention in this population in Ontario. While primary care and preventive services are important components in cancer prevention, there is a need for more evidence on targeted cancer screening interventions for people living with serious mental illness. Approximately one-third of sites caring for people with serious mental illness in Ontario offer smoking cessation services that align with the widely used “Ask-Advise-Refer” approach to smoking cessation treatment. Increasing the percentage of sites offering “Ask-Advise-Refer” could improve access to smoking cessation for this population. Opportunities for system-level approaches in Ontario noted in this report include:

- Implement, evaluate and expand coordinated care between primary care, mental health care and other community services, with an emphasis on cancer screening and prevention;
- Provide primary care providers with specialized education and support to help them address cancer prevention in people living with serious mental illness;
- Support research to identify best practices in cancer screening participation for people living with serious mental illness; and
- Increase the availability of funded smoking cessation programs in mental health and addictions provider sites and improve cessation efforts for people living with serious mental illness.

A multipronged and cross-sectoral approach will be needed to address the disparities in cancer prevention facing people with serious mental illness, beyond the opportunities highlighted in this report. This type of approach includes examining opportunities to address social determinants of health, and intersections between mental illness and systemic barriers faced by disadvantaged populations. Ontario Health and system partners must seek to address disparities in cancer prevention and improve equitable health outcomes for people living with serious mental illness.

# References

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1. American Psychiatric Association. What is mental illness? [Internet]. American Psychiatric Association; 2018 [updated 2018 Aug; cited 2022 May 12]. Available from: <https://www.psychiatry.org/patients-families/what-is-mental-illness>.
2. Ratnasingham S, Cairney J, Rehm J, Manson H, Kurdyak PA. Opening Eyes, Opening Minds: The Ontario Burden of Mental Illness and Addictions Report. Toronto: Institute for Clinical Evaluative Sciences and Public Health Ontario; 2012.
3. Lambert AM, Parretti HM, Pearce E, Price MJ, Riley M, Ryan R, et al. Temporal trends in associations between severe mental illness and risk of cardiovascular disease: A systematic review and meta-analysis. *PLoS Med*. 2022;19(4):e1003960.
4. Kessing LV, Vradi E, McIntyre RS, Andersen PK. Causes of decreased life expectancy over the life span in bipolar disorder. *J Affect Disord*. 2015;180:142-7.

5. Walker ER, McGee RE, Druss BG. Mortality in mental disorders and global disease burden implications: a systematic review and meta-analysis. *JAMA Psychiatry*. 2015;72(4):334-41.
6. Hjørthøj C, Stürup AE, McGrath JJ, Nordentoft M. Years of potential life lost and life expectancy in schizophrenia: a systematic review and meta-analysis. *The Lancet Psychiatry*. 2017;4(4):295-301.
7. Kessing LV, Vradi E, Andersen PK. Life expectancy in bipolar disorder. *Bipolar Disorders*. 2015;17(5):543-8.
8. Weinstein LC, Stefancic A, Cunningham AT, Hurley KE, Cabassa LJ, Wender RC. Cancer screening, prevention, and treatment in people with mental illness. *CA: a cancer journal for clinicians*. 2016;66(2):134-51.
9. Canadian Mental Health Association, Ontario. Poverty and mental illness [Internet]. Canadian Mental Health Association; 2007 [Available from: <https://ontario.cmha.ca/documents/poverty-and-mental-illness/>].
10. Muirhead L. Cancer risk factors among adults with serious mental illness. *Am J Prev Med*. 2014;46(3 Suppl 1):S98-103.
11. World Health Organization, Calouste Gulbenkian Foundation. Social determinants of mental health. Geneva: World Health Organization; 2014.
12. Ayano G, Tesfaw G, Shumet S. The prevalence of schizophrenia and other psychotic disorders among homeless people: a systematic review and meta-analysis. *BMC Psychiatry*. 2019;19(1):370.
13. Homeless Hub. Housing first [Internet]. Toronto: Homeless Hub; 2021 [cited 2022 Jun 10]. Available from: <https://www.homelesshub.ca/solutions/housing-accommodation-and-supports/housing-first>.
14. Mental Health Commission of Canada. COVID-19 and People Living With Serious Mental Illness: Policy Brief Ottawa, Canada: Mental Health Commission of Canada; 2020.
15. Poirier AE, Ruan Y, Volesky KD, King WD, O'Sullivan DE, Gogna P, et al. The current and future burden of cancer attributable to modifiable risk factors in Canada: Summary of results. *Preventive Medicine*. 2019;122:140-7.
16. Chiu M, Rahman F, Vigod S, Wilton AS, Kurdyak P. Temporal trends in cardiovascular disease risk factor profiles in a population-based schizophrenia sample: a repeat cross-sectional study. *J Epidemiol Community Health*. 2018;72(1):71-7.
17. Davis LE, Bogner E, Coburn NG, Hanna TP, Kurdyak P, Groome PA, et al. Stage at diagnosis and survival in patients with cancer and a pre-existing mental illness: a meta-analysis. *J Epidemiol Community Health*. 2020;74(1):84-94.
18. Grassi L, Riba M. Cancer and severe mental illness: Bi-directional problems and potential solutions. *Psycho-Oncology*. 2020;29(10):1445-51.
19. Centre for Addiction and Mental Health. Mental health and primary care policy framework. Toronto, ON: Centre for Addiction and Mental Health 2016.
20. Schoer N, Rodrigues R, Reid J, Ryan BL, Lizotte DJ, Booth R, et al. Patterns of Primary Care Use Prior to a First Diagnosis of Nonaffective Psychotic Disorder in Ontario, Canada: Modèles d'utilisation des soins de première ligne avant un premier diagnostic de trouble psychotique non affectif en Ontario, Canada. *Canadian Journal of Psychiatry - Revue Canadienne de Psychiatrie*. 2021;66(4):406-17.
21. Solmi M, Firth J, Miola A, Fornaro M, Frison E, Fusar-Poli P, et al. Disparities in cancer screening in people with mental illness across the world versus the general population: prevalence and comparative meta-analysis including 4 717 839 people. *Lancet Psychiatry*. 2020;7(1):52-63.

22. Vigod SN, Kurdyak PA, Stewart DE, Gnam WH, Goering PN. Depressive symptoms as a determinant of breast and cervical cancer screening in women: a population-based study in Ontario, Canada. *Arch Womens Ment Health*. 2011;14(2):159-68.
23. Hsu JH, Calzavara A, Vigod S, Stukel TA, Kiran T, Kurdyak P. Factors Associated With Diabetes Care Quality Among Patients With Schizophrenia in Ontario, Canada. *Psychiatric Services*. 2020;71(2):188-91.
24. Sayani A, Vahabi M, O'Brien MA, Liu G, Hwang S, Selby P, et al. Advancing health equity in cancer care: The lived experiences of poverty and access to lung cancer screening. *PLoS ONE [Electronic Resource]*. 2021;16(5):e0251264.
25. Barley EA, Borschmann RD, Walters P, Tylee A. Interventions to encourage uptake of cancer screening for people with severe mental illness. *Cochrane Database Syst Rev*. 2016;9(9):Cd009641.
26. Fujiwara M, Yamada Y, Shimazu T, Kodama M, So R, Matsushita T, et al. Encouraging participation in colorectal cancer screening for people with schizophrenia: A randomized controlled trial. *Acta Psychiatrica Scandinavica*. 2021;144(4):318-28.
27. Clatney L, Macdonald H, Shah SM. Mental health care in the primary care setting: family physicians' perspectives. *Can Fam Physician*. 2008;54(6):884-9.
28. Lester H, Tritter JQ, Soroohan H. Patients' and health professionals' views on primary care for people with serious mental illness: focus group study. *Bmj*. 2005;330(7500):1122.
29. Weinerman R, Campbell H, Miller M, Stretch J, Kallstrom L, Kadlec H, et al. Improving mental healthcare by primary care physicians in British Columbia. *Healthc Q*. 2011;14(1):36-8.
30. Lim CT, Caan MP, Kim CH, Chow CM, Leff HS, Tepper MC. Care Management for Serious Mental Illness: A Systematic Review and Meta-Analysis. *Psychiatric Services*. 2021:appips202000473.
31. Health Quality Ontario. Quality Improvement: Coordinated care management for patients with mental health and/or addictions conditions [Internet]. Toronto: Queen's Printer for Ontario; 2017 [cited 2021 Nov 29]. Available from: <https://www.hqontario.ca/Quality-Improvement/Quality-Improvement-in-Action/Health-Links/Health-Links-Resources/Coordinated-Care-Management-for-Patients-with-Mental-Health-and-or-Addictions-Conditions>.
32. EENet Centre for Addiction and Mental Health. Effective care coordination approaches for individuals with mental health and substance use concerns [Internet]. Toronto: Centre for Addiction and Mental Health; 2017 [updated 2017 May 1; cited 2021 Dec 6]. Available from: <https://kmb.camh.ca/eenet/resources/effective-care-coordination-approaches-individuals-mental-health-and-substance-use-concerns>.
33. Gaebel W, Kerst A, Janssen B, Becker T, Musalek M, Rössler W, et al. EPA guidance on the quality of mental health services: A systematic meta-review and update of recommendations focusing on care coordination. *European psychiatry : the journal of the Association of European Psychiatrists*. 2020;63(1):e75-e.
34. Dieterich M, Irving CB, Bergman H, Khokhar MA, Park B, Marshall M. Intensive case management for severe mental illness. *Cochrane Database of Systematic Reviews*. 2017;(1).
35. Daumit GL, Dalcin AT, Dickerson FB, Miller ER, Evins AE, Cather C, et al. Effect of a Comprehensive Cardiovascular Risk Reduction Intervention in Persons With Serious Mental Illness: A Randomized Clinical Trial. *JAMA network open*. 2020;3(6):e207247-e.
36. U.S. Department of Health and Human Services. The health consequences of smoking: 50 years of progress. A report of the Surgeon General. Atlanta (GA): U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2014.

37. Hartmann-Boyce J, Livingstone-Banks J, Ordóñez-Mena JM, Fanshawe TR, Lindson N, Freeman SC, et al. Behavioural interventions for smoking cessation: an overview and network meta-analysis. *Cochrane Database Syst Rev.* 2021;1:Cd013229.
38. Hawes MR, Roth KB, Cabassa LJ. Systematic Review of Psychosocial Smoking Cessation Interventions for People with Serious Mental Illness. *J Dual Diagn.* 2021;17(3):216-35.
39. Pearsall R, Smith DJ, Geddes JR. Pharmacological and behavioural interventions to promote smoking cessation in adults with schizophrenia and bipolar disorders: a systematic review and meta-analysis of randomised trials. *BMJ Open.* 2019;9(11):e027389.
40. Gilbody S, Peckham E, Bailey D, Arundel C, Heron P, Crosland S, et al. Smoking cessation for people with severe mental illness (SCIMITAR+): a pragmatic randomised controlled trial. *The Lancet Psychiatry.* 2019;6(5):379-90.
41. Kozak K, George TP. Pharmacotherapy for smoking cessation in schizophrenia: a systematic review. *Expert Opin Pharmacother.* 2020;21(5):581-90.
42. Peckham E, Brabyn S, Cook L, Tew G, Gilbody S. Smoking cessation in severe mental ill health: what works? an updated systematic review and meta-analysis. *BMC Psychiatry.* 2017;17(1):252.
43. Roberts E, Eden Evins A, McNeill A, Robson D. Efficacy and tolerability of pharmacotherapy for smoking cessation in adults with serious mental illness: a systematic review and network meta-analysis. *Addiction (Abingdon, England).* 2016;111(4):599-612.
44. van den Brand FA, Nagelhout GE, Reda AA, Winkens B, Evers S, Kotz D, et al. Healthcare financing systems for increasing the use of tobacco dependence treatment. *Cochrane Database Syst Rev.* 2017;9(9):Cd004305.
45. Vidrine JI, Shete S, Cao Y, Greisinger A, Harmonson P, Sharp B, et al. Ask-Advise-Connect: a new approach to smoking treatment delivery in health care settings. *JAMA Intern Med.* 2013;173(6):458-64.
46. United States Public Health Service Office of the Surgeon General, National Center for Chronic Disease Prevention and Health Promotion (US) Office on Smoking and Health.
47. Centre for Addiction and Mental Health. About TEACH [Internet]. Toronto: 2022 [Available from: <https://www.nicotinedependenceclinic.com/en/teach/Pages/About-TEACH.aspx>].



# Appendix A: Indicator methodology and technical details

## Availability of smoking cessation services at sites serving adults living with a serious mental illness

### Definition

The number of publicly funded mental health and addictions sites that treat adults with schizophrenia and/or bipolar disorder and that have implemented smoking cessation services (routine screening, education and advice, individual or group smoking cessation counselling, or referral to a smoking cessation program).

### Data sources

- ConnexOntario's 2021 survey of services provided by mental health and addictions sites.

### Calculation

Numerator: Number of sites that deliver smoking cessation services.

Denominator: Total number of sites that treat the symptoms and address the presenting symptoms of schizophrenia and/or bipolar disorder through clinical and/or therapeutic services.

### Technical specifications

- ConnexOntario conducts an annual survey of mental health and addictions sites through email or phone. All responses to the survey questions are self-reported by sites. A total of 978 sites offering adult mental health services funded by the Ministry of Health/Ontario Health participated in the ConnexOntario survey.
- Survey results from all 978 sites were reviewed to identify sites that accept a referral for people with a diagnosis of schizophrenia and/or bipolar disorder AND treat the symptoms and address the presenting symptoms of schizophrenia and/or bipolar disorder through clinical and/or therapeutic services as deemed appropriate by the organization. Of the 978 sites, 365 sites met the criteria for treating the symptoms of schizophrenia and/or bipolar disorder.
- Types of smoking cessation services for each of the 365 sites were reviewed.

### Considerations

- The indicator was limited to mental health and addictions sites that participate in the ConnexOntario survey. Therefore, there may be some mental health and addictions sites not captured in this indicator.

### Data limitations

- The ConnexOntario data are self-reported by mental health and addictions provider sites. The program components and quality of smoking cessation interventions may vary by site.



## Appendix B: Counselling and referral service categories

This table provides a detailed breakdown of the types of counselling and referral services noted in the ConnexOntario survey.

**Table 2: Detailed results for the counselling and referral service categories**

| Responses in ConnexOntario survey                                 | Number of sites (N=365) | Per cent of sites |
|---|-------------------------|-------------------|
| Individual smoking cessation counselling                          | 150                     | 41                |
| Group smoking cessation counselling                               | 68                      | 19                |
| Referral to smoking cessation program within organization         | 164                     | 45                |
| Formal referral to smoking cessation program outside organization | 217                     | 59                |

**Data sources:** ConnexOntario, Participating Sites Survey, 2021.

**Prepared by:** Ontario Health, Population Health and Prevention in April 2022.

**Data notes:** Includes sites that self-reported addressing the presenting symptoms of people with a diagnosis of schizophrenia and/or bipolar disorder.