Preventive care recommendations to promote health equity

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Abstract

Background: Avoidable disparities in health outcomes persist in Canada despite substantial investments in a publicly funded health care system that includes preventive services. Our objective was to provide preventive care recommendations that promote health equity by prioritizing effective interventions for people experiencing disadvantages.

Methods: The guideline was developed by a primary care provider–patient panel, with input from a patient-partner panel with diverse lived experiences. After selecting priority topics, we searched for systematic reviews and recent randomized controlled trials of screening and other relevant studies of screening accuracy and management efficacy. We used the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach to develop recommendations and followed the Appraisal of Guidelines for Research and Evaluation (AGREE II) reporting guidance. We managed competing interests using the Guideline International Network principles. The recommendations were externally reviewed by content experts and circulated for endorsement by national stakeholders.

Recommendations: We developed 15 screening and other preventive care recommendations and 1 policy recommendation on improving access to primary care. We recommend prioritized outreach for colorectal cancer screening starting at age 45 years and for cardiovascular disease risk assessment, to help address inequities and promote health. Specific interventions that should be rolled out in ways that address inequities include human papillomavirus (HPV) self-testing, HIV self-testing and interferon-γ release assays for tuberculosis infection. Screening for depression, substance use, intimate partner violence and poverty should help connect people experiencing specific disadvantages with proven interventions. We recommend automatic connection to primary care for people experiencing disadvantages.

Interpretation: Proven preventive care interventions can address health inequities if people experiencing disadvantages are prioritized. Clinicians, health care organizations and governments should take evidence-based actions and track progress in promoting health equity across Canada.

Avoidable disparities in health outcomes, or health inequities, can be partly addressed through primary and preventive care.[1,2] People are not inherently disadvantaged — Canada has a long and continuing history of active exploitative and oppressive processes.[3–7] Genocide against Indigenous people, anti-Black racism, policing of same-sex relationships, violations of workers' rights, ableism and environmental racism all have implications for health today.[3–8] Health inequities exist in Canada for many people, including Indigenous people, racialized people, people who identify as 2SLGBTQI+ (2-spirit, lesbian, gay, bisexual, transgender, queer or questioning and intersex), people with functional limitations and those with a low income.[8]

Preventive care such as screening for certain cancers can save lives,[9] but preventive care access is not equitable for a variety of reasons, including poor connections with primary care, limited availability to attend appointments, mistrust of health care and discriminatory practices within health care.[10–12] Stigmatization related to mental health conditions, substance use, HIV and other infectious diseases is a barrier to care, especially for people experiencing disadvantages.[13–18] People living in rural and

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remote parts of Canada face barriers to preventive care, including the time needed to get to clinics and a lack of social distance from care providers.[19]

Although preventive care is time consuming to provide and can sometimes lead to harms (e.g., unnecessary investigations and treatments),[20–22] patients expect and seek out preventive care. Patients may seek such services in ways that are not equitable, such as unequal access to publicly funded primary care or via privately funded "executive physicals."[23–25]

The "inverse care law," whereby those who might benefit most from care are least likely to receive it, could apply to preventive care, particularly after the COVID-19 pandemic.[26] Backlogs in health care services created by the pandemic will take years and substantial time and effort by primary care providers to clear, and doing so may worsen inequities.[27–31]

Prioritizing health equity could help to ensure that limited health care resources are deployed appropriately, and selecting efficient interventions could lessen the burden on overwhelmed providers. For example, approaches to preventive care — such as HPV self-testing and blood testing for tuberculosis infections — that could decrease the workload for primary care providers are not widely used in Canada.

The pandemic recovery period represents an opportunity to make changes and gear health care toward promoting equity and avoiding the types of inequities lamented during the pandemic.[32] Prominent guidance on preventive care has not focused on promoting health equity, although guideline producers recognize the importance of addressing inequities.[33,34]

We identified an opportunity to provide recommendations for preventive care that could address inequities, with input from patients and those with lived experiences of disadvantages. Preventive care services can be oriented to counter rather than amplify systemic inequities.[35,36] This guidance on preventive care complements upstream policy recommendations aimed at promoting health equity through income, housing, food access and other interventions.[37]

Scope

We recommend preventive care services that should be offered to promote health equity in Canada. We mention specific groups known to experience health disparities and we recognize that inequities play out differently based on the context. Our equity-focused guidance for specified people experiencing disadvantages complements other preventive care recommendations aimed at the general population that do not specify what preventive care should be provided for those experiencing disadvantages. Although our focus is on people experiencing disadvantages, some of our recommendations might also make sense for the general population. Because our focus is on promoting equity, we do not limit our recommendations by condition or risk factor.

These recommendations are intended mostly for primary care providers, but we also include guidance about community-based screening and policy changes needed so that those who screen positive can access appropriate management through a primary care provider.

Recommendations

We make 15 preventive care recommendations aimed at promoting equity, based on findings from systematic reviews of clinical trials of screening versus usual care, as well as from other study types, including studies of diagnostic test accuracy and clinical trials of treatment efficacy. We also make 1 policy recommendation on access to care for people experiencing disadvantages.

Grading of the recommendations is explained in Box 1, and a summary of the recommendations is available in Table 1. The studies supporting the recommendations are summarized below and detailed in Appendix 1, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.230237/tab-related-content. In addition to gathering input from members of a patient-partner panel with lived experience of disadvantages, we consulted studies on patient values and preferences to inform development of the recommendations (summary in Appendix 2, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.230237/tab-related-content).

People experiencing disadvantages include people with a low income, Indigenous people, racialized people, people who identify as 2SLGBTQI+ and people with functional limitations,[8] as well as specific groups mentioned in each recommendation. We defined adolescents as people aged 13–19 years, and children as those aged younger than 13 years.[69] Throughout the guideline, we use the terms "female" and "male" to refer to biologic sex and gender terms (e.g., "woman") to gender. We retain the terms used in the source studies where this is unclear.

A decision support tool, available at http://www.screening.ca, can be used to prioritize people for preventive care, and judgment can be used to prioritize others according to local or practice circumstances.

The optimal frequency is not clearly established for most preventive care interventions, as different intervals of screening have not been trialled against each other. For the recommendations in

Box 1: Grading of recommendations

We used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach to make recommendations.[38]

- Strong recommendations, indicated by "we recommend," mean that the benefits clearly outweigh negative effects. In some cases, we made strong recommendations without clinical trials of screening compared with usual care because we were confident, given the accuracy of screening tests and the effects of interventions, that the benefits of screening outweighed any harms.
- Weak recommendations (also called "conditional" recommendations), indicated by "we suggest," mean that the benefits outweigh negative effects, based on available information.
- The strength of recommendations is not indicative of the importance of the issue.
- Statements about certainty in effect estimates (high, moderate, low or very low) refer to our assessment of how well the findings from included studies reflect the true effects.

this guideline, the suggested frequency of screening and other preventive care is every 3–5 years, except where stated otherwise. This is based on the guideline panel's view of what is practicable, reasonable and feasible. Using the same interval for multiple recommendations allows them to be implemented together, such as during visits focused on preventive care.

Cancer

Colorectal cancer

We recommend prioritizing colorectal cancer screening outreach efforts for adults aged 45–74 years experiencing disadvantages (strong recommendation, high-certainty evidence).

Benefits

Screening for colon cancer reduces colorectal cancer mortality, whether done by fecal immunochemical testing (relative risk 0.90, 95% confidence interval [CI] 0.84 to 0.95), sigmoidoscopy (hazard ratio [HR] 0.74, 95% CI 0.68 to 0.80) or colonoscopy (HR 0.32, 95% CI 0.24 to 0.45).[70] Sigmoidoscopy is supported by better evidence than colonoscopy and involves preparation that is better tolerated.[71]

Inequities

People experiencing disadvantages are less likely to receive colorectal cancer screening. Recent immigrants to Canada are less likely to be screened (nonadherence odds ratio [OR] 3.73, 95% CI 2.25 to 6.18) than the Canadian-born population,[72] and people living in lower-income neighbourhoods have lower colorectal cancer survival rates than those in higher-income neighbourhoods.[73] Black people are less likely to undergo surgery for colorectal cancer in the United States than White people.[74]

Harms

Potential harms of colorectal cancer screening include the identification of adenomas that would not substantially affect health, as well as the harms of colonoscopy, including bowel perforation (5.4 perforations per 10 000 colonoscopies, 95% CI 3.4 to 7.4).[70]

Rationale

Colorectal cancer screening prevents colorectal cancer deaths. Because screening starting at age 45 years is effective in general for colorectal cancer (1 additional colorectal cancer death avoided for every 1000 in general population screened starting at age 45 yr rather than 50 yr),[70,75] and because people experiencing

Table 1 (part 1 of 4): Our recommendations and those of other guideline groups

Our recommendation	CTFPHC	USPSTF	Other guidelines
Cancer			
We recommend prioritizing colorectal cancer screening outreach efforts for adults aged 45–74 yr experiencing disadvantages (strong recommendation, high-certainty evidence).	The CTFPHC recommends screening adults aged 50–59 yr for colorectal cancer with FOBT (either gFOBT or FIT) every 2 yr or flexible sigmoidoscopy every 10 yr (weak recommendation, moderate-quality evidence). The CTFPHC recommends screening adults aged 60–74 yr for colorectal cancer with FOBT (either gFOBT or FIT) every 2 yr or flexible sigmoidoscopy every 10 yr (strong recommendation, moderate-quality evidence) (2016).[39]	The USPSTF recommends screening for colorectal cancer in adults aged 45–49 yr (grade B recommendation). The USPSTF recommends screening for colorectal cancer in all adults aged 50–75 yr (grade A recommendation) (2021).[40]	
We recommend offering HPV self-testing to people eligible for cervical cancer screening who are experiencing disadvantages (strong recommendation, high-certainty evidence).	For women aged 25–29 yr, the CTFPHC recommends routine screening for cervical cancer every 3 yr (weak recommendation, moderate-quality evidence). For women aged 30–69 yr, the CTFPHC recommends routine screening for cervical cancer every 3 yr (strong recommendation, high-quality evidence) (2013).[41]	The USPSTF recommends screening for cervical cancer every 3 yr with cervical cytology alone in women aged 21–29 yr. For women aged 30–65 yr, the USPSTF recommends screening every 3 yr with cervical cytology alone, every 5 yr with high-risk HPV testing alone, or every 5 yr with high-risk HPV testing in combination with cytology (co-testing) (grade A recommendation) (2018).[42]	
We recommend prioritizing outreach efforts for lung cancer screening with LDCT in adults aged 50–80 yr with a 20 pack-year smoking history who are experiencing disadvantages (strong recommendation, high-certainty evidence).	For adults aged 55–74 yr with at least a 30 pack-year smoking history who currently smoke or quit less than 15 yr ago, the CTFPHC recommends annual screening with low-dose CT up to 3 consecutive times (weak recommendation, low-quality evidence) (2016).[43]	The USPSTF recommends annual screening for lung cancer with low-dose CT in adults aged 50–80 yr who have a 20 pack-year smoking history and currently smoke or have quit within the past 15 yr. Screening should be discontinued once a person has not smoked for 15 yr or develops a health problem that substantially limits life expectancy or the ability or willingness to have curative lung surgery (grade B recommendation) (2021).[44]	

Table 1 (part 2 of 4): Our recommendations and those of other guideline groups

Our recommendation	CTFPHC	USPSTF	Other guidelines
Cardiovascular disease			
We recommend prioritized cardiovascular risk assessment, including BP measurement using validated tools, and shared decision-making about management options, including pharmacotherapy, for adults aged 40–75 yr experiencing disadvantages; this includes women and people with mental health conditions (strong recommendation, high-certainty evidence).	The CTFPHC recommends BP measurement at all appropriate primary care visits (strong recommendation, moderate-quality evidence). The CTFPHC recommends that BP be measured according to the current techniques described in CHEP recommendations for office and out-of-office (ambulatory) BP measurement (strong recommendation, moderate-quality evidence). For people who are found to have an elevated BP during screening, the CHEP criteria for assessment and diagnosis of hypertension should be applied to determine whether the patient meets diagnostic criteria for hypertension (strong recommendation, moderate-quality evidence) (2012).[45]	The USPSTF recommends that clinicians prescribe a statin for the primary prevention of cardiovascular disease for adults aged 40–75 yr who have 1 or more cardiovascular disease risk factors (i.e., dyslipidemia, diabetes, hypertension or smoking) and an estimated 10-yr risk of a cardiovascular event of ≥ 10% (2022).[46] The USPSTF recommends screening for hypertension in adults aged ≥ 18 yr with office BP measurement. The USPSTF recommends obtaining BP measurements outside of the clinical setting for diagnostic confirmation before starting treatment (grade A recommendation) (2021).[47]	C-CHANGE: C-CHANGE recommends that a cardiovascular risk assessment be completed every 5 yr for men and women aged 40–75 yr using the modified Framingham Risk Score or Cardiovascular Life Expectancy Model to guide therapy to reduce major cardiovascular events. A risk assessment might also be completed whenever a patient's expected risk status changes (strong recommendation, high-quality evidence). Four approaches can be used to assess BP: AOBP (preferred method), non-AOBP, ambulatory BP and home BP monitoring (grade C–D recommendation, depending on BP method) (2022).[48]
We recommend prioritized screening for diabetes in people at higher risk, including those aged ≥ 40 yr, who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).	For adults at high risk of diabetes (determined with a validated risk calculator), the CTFPHC recommends routinely screening every 3–5 yr with HbA_{1c} (weak recommendation; low-quality evidence). For adults at very high risk of diabetes (determined with a validated risk calculator), the CTFPHC recommends routine screening annually with HbA_{1c} (weak recommendation, low-quality evidence) (2012).[49]	The USPSTF recommends screening for prediabetes and type 2 diabetes in adults aged 35–70 yr who have overweight or obesity. Clinicians should offer or refer patients with prediabetes to effective preventive interventions (grade B recommendation) (2021).[50]	C-CHANGE: Screening for diabetes using FPG or HbA_{1c} or both should be performed every 3 yr in people aged ≥ 40 yr or at high risk, using a risk calculator. Earlier testing or more frequent follow-up (every 6–12 mo with either FPG or HbA_{1c} or 2-hr plasma glucose in a 75 g oral blood glucose tolerance test should be considered in those at very high risk, using a risk calculator, or in people with additional risk factors for diabetes (grade D recommendation, consensus evidence) (2022).[48]
Infectious conditions			
We recommend HIV screening, including by self-testing, for adults aged 19–79 yr who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).	No published guideline for HIV screening	The USPSTF recommends screening for HIV infection in adolescents and adults aged 15–65 yr. Younger adolescents and older adults who are at increased risk of infection should also be screened (A recommendation). The USPSTF recommends screening for HIV infection in all pregnant people, including those who present in labour or at delivery whose HIV status is unknown (grade A recommendation) (2019).[51]	
We recommend HCV screening for adults aged 19–79 yr who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).	The CTFPHC recommends against screening for HCV in adults who are not at elevated risk (strong recommendation, very low-quality evidence) (2017).[52]	The USPSTF recommends screening for HCV infection in adults aged 18–79 yr (grade B recommendation) (2020).[53]	CASL: To increase the identification of the large proportion of people living with undiagnosed HCV, CASL recommends that screening be both risk based and target the birth cohort of people born from 1945 to 1975, which currently encompasses most people chronically infected with HCV in Canada (class of recommendation: 2a; level of evidence: C) (2018).[54]
We recommend screening for latent TB infection with either a TST or IGRA in people with risk factors including recent immigration from a country with a high incidence (strong recommendation, moderate-certainty evidence).	No published guideline for TB screening	The USPSTF recommends screening for latent TB infection in populations at increased risk (grade B recommendation) (2023).[55]	CTS: The CTS strongly recommends both the TST and IGRA as acceptable alternatives for TB infection diagnosis* (good evidence) (8th edition, 2022).[56] CCIRH: The CCIRH recommends screening children, adolescents aged < 20 yr and refugees aged 20–50 yr from countries with a high incidence of TB, as soon as possible after their arrival in Canada, with a TST (high quality of evidence) (2011).[57]

Table 1 (part 3 of 4): Our recommendations and those of other guideline groups

Our recommendation	CTFPHC	USPSTF	Other guidelines
Substance use			
We recommend screening for tobacco use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).	The CTFPHC recommends asking children and youth (age 5–18 yr) or their parents or both about tobacco use and offering brief information and advice, as appropriate, during primary care visits (weak recommendation, low-quality evidence) (2017).[58]	The USPSTF recommends that clinicians ask all adults about tobacco use, advise them to stop using tobacco, and provide behavioural interventions and FDA-approved pharmacotherapy for cessation to nonpregnant adults who use tobacco (grade A recommendation). The USPSTF recommends that clinicians ask all pregnant people about tobacco use, advise them to stop using tobacco and provide behavioural interventions for cessation to pregnant people who use tobacco (grade A recommendation) (2021).[59] The USPSTF recommends that primary care clinicians provide interventions, including education or brief counselling, to prevent initiation of tobacco use among school-aged children and adolescents (grade B recommendation) (2020).[60]	C-CHANGE: Tobacco use status of all patients should be updated on a regular basis and health care providers should clearly advise patients to quit smoking (grade A recommendation, level 1 evidence) (2022).[48]
We recommend screening for harmful alcohol use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).	No published guideline for alcohol use screening	The USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults aged ≥ 18 yr, including pregnant women, and providing people engaged in risky or hazardous drinking with brief behavioural counselling interventions to reduce unhealthy alcohol use (grade B recommendation) (2018).[61]	
We recommend screening for substance use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).	No published guideline for substance use screening	The USPSTF recommends screening by asking questions about unhealthy drug use in adults aged ≥ 18 yr. Screening should be implemented when services for accurate diagnosis, effective treatment and appropriate care can be offered or referred. (Screening refers to asking questions about unhealthy drug use, not testing biological specimens.) (Grade B recommendation) (2020).[62]	
Mental health			
We recommend screening for depression together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).	The CTFPHC recommends against instrument-based depression screening using a questionnaire with cut-off score to distinguish "screen positive" and "screen negative" administered to all people during pregnancy and the postpartum period (up to 1 yr after childbirth) (conditional recommendation, very low-certainty evidence) (2022).[63]	The USPSTF recommends screening for depression in the adult population, including pregnant and postpartum people, as well as older adults (grade B recommendation) (2023).[64]	CNMAT: The CNMAT recommends that screening be done in primary and secondary care settings in people with risk factors (psychosocial adversity, chronic medical conditions, high users of the medical system) when there are available resources and services for subsequent diagnostic assessment and management (2016).[65]

disadvantages may not be immediately reached by outreach efforts, it is reasonable to start outreach for people experiencing disadvantages at the age of 45 years rather than 50 years, as recommended for Black people by the US Multi-Society Task Force.[76] Results of clinical trials of screening indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong). Screening can occur as soon as people respond to outreach efforts.

Practice considerations

The frequency of screening is typically every 2 years for fecal immunochemical testing and every 5–10 years for other modalities.[70] The preparation for sigmoidoscopy is usually better tolerated and may be easier for people experiencing disadvantages to implement than that for colonoscopy.[77] More resource-intensive reminders about cancer screening (including colorectal cancer screening), such as phone calls, improve screening rates;[78] letters and text messages can also help.[79] Other efforts, such as in-person community outreach, may be needed.

Table 1 (part 4 of 4): Our recommendations and those of other guideline groups

Our recommendation	CTFPHC	USPSTF	Other guidelines
Oral health			
We recommend screening for dental caries, education about oral health and referrals to dentists for children aged < 5 yr experiencing disadvantages (strong recommendation, moderate-certainty evidence).	The CTFPHC states there is good evidence that the following manoeuvres are effective in preventing dental caries: use of dentifrices containing fluoride, fluoridation of drinking water, fluoride supplements for patients in areas where there is a low level (≤ 0.3 ppm) of fluoride in the drinking water, professionally applied topical fluoride and use of fluoride mouth rinses for patients with very active decay or at a high risk of dental caries and selective use of professionally applied fissure sealants on permanent molar teeth† (1995).[66]	The USPSTF recommends that primary care clinicians prescribe oral fluoride supplementation starting at age 6 mo for children whose water supply is deficient in fluoride (grade B recommendation). The USPSTF recommends that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption (grade B recommendation). The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of routine screening examinations for dental caries performed by primary care clinicians in children aged < 5 yr (I statement) (2021).[67]	
Social risk			
We recommend screening for social risk factors, including poverty or the ability to afford basic necessities, and connection with resources and supports in all families with children (weak recommendation, moderate-certainty evidence).	No published guideline for poverty screening	No published guideline for poverty screening	
We suggest screening for IPV and connection with resources, including legal advocacy, for people experiencing disadvantages (weak recommendation, moderate-certainty evidence).	No published guidelines for IPV screening	The USPSTF recommends that clinicians screen for IPV in women of reproductive age and provide or refer women who screen positive to ongoing support services (grade B recommendation). The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for abuse and neglect in all older or vulnerable adults (I statement) (2018).[68]	
Access to care providers			
We recommend prioritized connection to primary care, including automatic enrolment with choice of provider, for people experiencing disadvantages (strong recommendation, moderate-certainty evidence).	No published guideline for primary care access	No published guideline for primary care access	

Note: AOBP = automated office blood pressure, BCG = bacille Calmette–Guérin, BP = blood pressure, CASL = Canadian Association for the Study of the Liver, C-CHANGE = Canadian Cardiovascular Harmonized National Guideline Endeavour, CCIRH = Canadian Collaboration for Immigrant and Refugee Health, CHEP = Canadian Hypertension Education Program, CNMAT = Canadian Network for Mood and Anxiety Treatments, CT = computed tomography, CTFPHC = Canadian Task Force on Preventive Health Care, CTS = Canadian Tuberculosis Standards, FDA = US Food and Drug Administration, FIT = fecal immunochemical test, FOBT = fecal occult blood testing, FPG = fasting plasma glucose, gFOBT = guaiac FOBT, HbA_{1c} = glycosylated hemoglobin, HCV = hepatitis C virus, HPV = human papillomavirus, IGRA = interferon-γ release assay, IPV = intimate partner violence, LDCT = low-dose computed tomography, TB = tuberculosis, TST = tuberculin skin test, USPSTF = United States Preventive Services Task Force.
*Either test can be used for TB infection screening in any of the situations in which testing is indicated. However, preferences and exceptions are detailed in subsequent recommendations (good evidence). The CTS conditionally recommends that an IGRA is preferred over a TST in the following situations: When children aged 2–10 yr previously received a BCG vaccine; when people aged ≥10 yr received a BCG vaccine after infancy (age > 1 yr), received a BCG vaccine more than once or are uncertain about when they received a BCG, or both; when adequate training and quality assessment and control are not available for TST administration or reading or both, but personnel and facilities to perform IGRAs are available; when a person is unable or unlikely to return to have their TST read; and when the TST is contraindicated (poor evidence) (8th edition, 2022).[56]
†There is poor evidence that the following manoeuvres are effective in preventing dental caries: professionally applied topical fluoride and the use of fluoride mouth rinses for patients with a low risk of carries, toothbrushing (without a dentifrice containing fluoride) and flossing, cleaning of teeth by a dentist or dental hygienist before topical application of fluoride or at a dental visit and dietary counselling for the general population. There is good evidence to recommend against the use of over-the-counter fluoride mouth rinses by the general population (1995).[66]

Equitable implementation resources

Outreach could be performed by nonclinicians, including community health workers, or via organized centralized screening programs that already exist.[80] Financial barriers to colorectal cancer screening, such as costs of bowel preparation regimes should not exist, and people should be provided with paid leave to complete testing. Instructions on completing the test, including in the form of videos, should be provided in a variety of languages.

Cervical cancer

We recommend offering HPV self-testing to people eligible for cervical cancer screening who are experiencing disadvantages (strong recommendation, high-certainty evidence).

Benefits

Screening for cervical cancer with high-risk HPV strain testing increases the early detection of cervical cancer (relative risk range 1.61 [95% CI 1.09 to 2.37] to 7.46 [95% CI 1.02 to 54.66]).[81] High-risk HPV screening alone or with cytology co-testing is associated with lower risk of invasive cervical cancer (pooled relative risk 0.60, 95% CI 0.40 to 0.89) as well as higher colposcopy rates (e.g., 5.7% v. 3.1% in 1 trial[82]) than cytology alone.[81] Self-testing is associated with greater screening uptake than standard-of-care screening practices (relative risk 2.10, 95% CI 1.80 to 2.45), particularly among older women (relative risk 2.25, 95% CI 1.44 to 3.50) and women of lower socioeconomic status (relative risk 1.62, 95% CI 1.15 to 2.28).[83] Self-sampling test kits for HPV increase screening for and early detection of cervical cancer, particularly among women experiencing disadvantages who are facing practical and personal barriers to screening, and self-testing is as accurate as clinician sampling (pooled ratio for detecting cervical intra-epithelial neoplasia [CIN]2+ or CIN3+ 0.99, 95% CI 0.97 to 1.02), although its specificity may be slightly (2%–4%) lower.[84]

Inequities

Women with disabilities are less likely to attend cervical cancer screening (OR 0.63, 95% CI 0.45 to 0.88).[85] Black females are less likely to have screening than White females.[86] Those born outside of Canada and 2SLGBTQI+ people are less likely to be screened for cervical cancer.[87–89] A history of sexual trauma can be a barrier to cytologic smear completion.[90,91]

Harms

Potential harms of cervical cancer screening include the harms associated with biopsies or treatments of cervical lesions, some of which may increase the risk of preterm birth (relative risk 1.75, 95% CI 1.57 to 1.96), according to observational studies.[92]

Rationale

We did not identify clinical trials of screening compared with usual care or evidence that screening reduces cervical cancer mortality. Screening for cervical cancer is a routine part of care because it seems to be effective at identifying lesions that should be treated, but barriers to screening exist that could be overcome by HPV self-testing. The effectiveness of cervical cancer screening, which is now a routine part of care, means that the benefits of screening, including promoting health equity, clearly outweigh harms (therefore, the recommendation is strong).

Practice considerations

The age or timing of cervical cancer screening initiation varies across Canada, and providers can follow local guidance on when to start and how often to repeat screening, as the optimal timing of initiation and the frequency of screening has not been established by comparative studies. In the absence of local guidance, HPV self-testing can be repeated every 5 years. Resources exist to support the care of transgender people (www.phsa.ca/transcarebc/Documents/HealthProf/Primary-Care-Toolkit.pdf).

Equitable implementation resources

Because there should be no financial barrier to HPV self-testing and no fees should be charged to patients or clinicians, additional funding may be required as HPV self-testing is not generally publicly funded. Testing for HPV costs about $20[93] and is cost-effective;[94] self-testing requires less clinician time than cytologic smears. Instructions on completing the self-test — including in the form of diagrams or videos, as well as the follow-up needed after a positive screen — should be provided in a variety of languages.

Lung cancer

We recommend prioritizing outreach efforts for lung cancer screening with low-dose computed tomography (LDCT) in adults aged 50–80 years with a 20 pack-year smoking history who are experiencing disadvantages (strong recommendation, high-certainty evidence).

Benefits

Screening high-risk people with LDCT reduces lung cancer mortality compared with chest radiography (rate ratio 0.85, 95% CI 0.75 to 0.96) and no screening (rate ratio 0.75, 95% CI 0.61 to 0.90).[95]

Inequities

Despite lower screening participation, Black people screened with LDCT have greater reduction in lung cancer mortality than White people (HR 0.61, 95% CI 0.37 to 1.01 v. 0.86, 95% CI 0.75 to 0.98).[96] Among people diagnosed with lung cancer in the US, a significantly lower percentage of Black people who smoke are eligible for lung cancer screening than White people who smoke (32% v. 56%; $p < 0.001$).[97]

Harms

Potential harms of screening include unhelpful follow-up testing for findings that would not have substantially affected health (false positive rate of 3.9% in 1 trial), complications of biopsies (occurring in about 0.1% of patients screened), and radiation-induced cancers (0.11 cases per 1000 people for LDCT after 4 screening rounds, based on 1 modelling study).[98]

Rationale

Lung cancer screening prevents lung cancer deaths, but people at high risk face barriers to receiving LDCT. Results from 1 clinical trial, which enrolled patients aged 50 years or older with lighter smoking histories (15 pack-years), and a modelling study support our recommended criteria for starting screening earlier for people experiencing disadvantages.[98–100] Results of clinical trials mean that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong).

Practice considerations

Low-dose computed tomography is usually repeated annually, although randomized controlled trials (RCTs) have not compared different frequencies.[95] Outreach could include phone calls, text messaging and letters.[79]

Equitable implementation resources

Organized and centralized screening programs could decrease the amount of clinician time needed for lung cancer screening. Barriers to lung cancer screening should not exist, and implementing this recommendation will require access to computed tomography (CT) scanners for those living in rural settings; travel expenses should be covered, mobile CT scanners deployed and more CT scanners built where needed.

Cardiovascular disease

Cardiovascular disease, including hypertension

We recommend prioritized cardiovascular risk assessment, including blood pressure measurement using validated tools, and shared decision-making about management options, including pharmacotherapy, for adults aged 40–75 years experiencing disadvantages; this includes women and people with mental health conditions (strong recommendation, high-certainty evidence).

Benefits

Global cardiovascular risk assessment is associated with reductions in blood pressure (mean difference [MD] −2.22 mm Hg, 95% CI −3.49 to −0.95), total cholesterol (MD −0.11 mmol/L, 95% CI −0.20 to −0.02) and smoking (risk ratio 1.62, 95% CI 1.08 to 2.43), according to a systematic review, although no differences in cardiovascular morbidity or mortality were observed.[101] Incorporating nontraditional risk factors (ankle-brachial index, high-sensitivity C-reactive protein level and coronary artery calcium score) into traditional cardiovascular risk assessment has not been shown to influence health outcomes or mortality.[102] A multicomponent intervention including hypertension screening is associated with reductions in the number of cardiovascular-related hospital admissions (risk ratio 0.91, 95% CI 0.86 to 0.97) but not mortality.[103] Effective management options such as statins are suggested for the primary prevention of cardiovascular disease in asymptomatic people who otherwise might not be offered treatment options without cardiovascular risk assessment.[104]

Inequities

Studies from other countries indicate that women are less likely than men to be assessed for cardiovascular disease risk (OR 0.88, 95% CI 0.81 to 0.96) and to have risk factors addressed (OR 0.75, 95% CI 0.60 to 0.93).[105,106] Racialized people are disproportionally affected by hypertension-mediated complications, which may be a result of disparities in hypertension awareness, treatment and control within these groups. According to a meta-analysis examining racialized populations in Europe, although Black people are more likely to be aware (OR 1.26, 95% CI 1.02 to 1.56) and treated (OR 1.49, 95% CI 1.18 to 1.88) for hypertension than White people, they are significantly less likely to have their blood pressure controlled (OR 0.56, 95% CI 0.40 to 0.78) and have poorer disease management.[107] Compared with the general population, patients with schizophrenia and bipolar disorder receive less effective care for hypertension (low rates of screening, prescription and adherence to treatment), despite increased incidence and cardiovascular mortality rates observed in these populations.[108] A low income is associated with an increased risk of cardiovascular disease.[109,110]

Harms

Potential harms of cardiovascular risk assessment include the harms of pharmacotherapy, such as the risk of electrolyte abnormalities, acute kidney injury and syncope with antihypertensive agents, and risks of myalgias and liver dysfunction with statins.[111,112]

Rationale

Trials comparing cardiovascular risk assessment with usual care indicate benefits in surrogate health outcomes but not mortality. Because risk factors such as hypertension are often asymptomatic, equitable implementation of cardiovascular risk assessment will help identify people who would benefit from interventions, including pharmacotherapy, that prevent cardiovascular mortality. The accuracy of screening and the effectiveness of preventive treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh harms (therefore, the recommendation is strong).

Practice considerations

The optimal screening frequency has not been established; we suggest screening every 3–5 years. Validated risk estimation tools include the Framingham Risk Score and the Cardiovascular Life Expectancy Model,[113,114] although the tools were derived from relatively homogeneous patient populations.[115] Community-based screening, such as screening for hypertension in retail pharmacies, can help reduce cardiovascular morbidity, likely by identifying people not accessing primary care.[116–118] This recommendation should be implemented alongside interventions that promote access to healthy foods (such as income supports and the direct provision of healthy foods)[119] and physical activity (such as improvements to the built environment that support physical activity and community-based exercise programs).[120]

Equitable implementation resources

Although clinical assessments of cardiovascular risk can be implemented with existing resources, outreach should help ensure that people experiencing disadvantages attend clinics. Community-based screening programs should be supported for people who face barriers to attending clinics.[116–118]

Diabetes

We recommend prioritized screening for diabetes in people at higher risk, including those aged 40 years or older, who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Trials of screening for diabetes found no significant mortality benefit compared with no screening, including for both diabetes-related mortality and all-cause mortality.[121] However, for people with recently diagnosed type 2 diabetes, glucose control with sulfonylureas or insulin decreases the risk for diabetes-related mortality (relative risk 0.83, 95% CI 0.73 to 0.96), all-cause mortality (relative risk 0.87, 95% CI 0.79 to 0.96) and myocardial infarction (relative risk 0.85, 95% CI 0.74 to 0.97).[121] For patients with overweight and diabetes, glucose control with metformin decreases the risk for diabetes-related mortality (relative risk 0.58, 95% CI 0.37 to 0.91), all-cause mortality (relative risk 0.64, 95% CI 0.45 to 0.91) and myocardial infarction (relative risk 0.61, 95% CI 0.41 to 0.89).[121] Sodium–glucose cotransporter 2 (SGLT2) inhibitors reduce cardiovascular mortality (relative risk 0.82, 95% CI 0.74–0.91) in people with type 2 diabetes.[122] For people with an elevated blood glucose level, lifestyle interventions are associated with a reduction in diabetes risk (relative risk 0.81, 95% CI 0.73 to 0.89).[121]

Inequities

People with diabetes who have a low income have higher mortality and hospital admission rates; disparities in outcomes based on income have grown over time.[123,124] Compared with White people, Black people with diabetes have lower odds for controlled glycosylated hemoglobin (OR 0.67, 95% CI 0.55 to 0.83) and blood pressure (OR 0.68, 95% CI 0.58 to 0.80).[125]

Harms

Potential harms of diabetes screening include the harms of pharmacotherapy, which vary according to the medicines selected; metformin, first-line treatment for type 2 diabetes, can cause gastrointestinal symptoms and weight loss.[126]

Rationale

Clinical trials comparing diabetes screening with usual care have not shown reductions in mortality. Indirect evidence exists that diabetes screening improves outcomes through initiation of diabetes management after diagnosis, and there are inequities that support our recommendation for prioritized screening. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh harms (therefore, the recommendation is strong).

Practice considerations

Because the optimal screening frequency has not been established, we suggest screening for diabetes every 3–5 years, at the same time that cardiovascular risk is assessed.

Equitable implementation resources

Although diabetes screening can be implemented with existing resources, efforts will be needed to ensure people experiencing disadvantages are able to have testing done. Point-of-care testing may support the implementation of this recommendation where laboratory testing is difficult to access.[127]

Infectious conditions

HIV

We recommend HIV screening, including by self-testing, for adults aged 19–79 years who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Compared with conventional HIV testing methods, in which the result takes more than 24 hours, rapid voluntary counselling and testing for HIV in health facilities and communities is associated with a 3-fold increase in HIV testing uptake (relative risk 2.95, 95% CI 1.69 to 5.16) and a 2-fold increase in the receipt of test results (relative risk 2.14, 95% CI 1.08 to 4.24), as well as a possible reduction in HIV incidence (relative risk 0.89, 95% CI 0.63 to 1.24).[128] Compared with standard facility-based testing services, HIV self-testing is associated with a 2-fold increase in testing uptake (relative risk 2.09, 95% CI 1.69 to 2.58), whereas the number of people with a diagnosis of HIV among those tested (relative risk 0.81, 95% CI 0.45 to 1.47) and the number linked to HIV care or treatment among those diagnosed (relative risk 0.95, 95% CI 0.79 to 1.13) is similar between the self-testing and standard testing arms.[129] Antiretroviral therapy is highly effective at reducing mortality and reducing or eliminating the risk of spread.[130]

Inequities

For older adults (aged ≥ 50 yr), HIV screening uptake is significantly lower among women (OR 2.14, 95% CI 1.92 to 2.39), those with less than a high school degree (OR 0.74, 95% CI 0.65 to 0.84), and those reporting no regular doctor visits (OR 2.32, 95% CI 1.92 to 2.74), whereas Black (OR 3.47, 95% CI 2.82 to 4.25) and Hispanic (OR 2.06, 95% CI 1.50 to 2.84) older adults have significantly higher odds of HIV testing than White people.[131] Despite higher testing rates, Black patients are less likely to initiate HIV care than White patients (relative risk 1.57, 95% CI 1.38 to 1.78).[132] Initiation of care is also lower among men (relative risk 1.31, 95% CI 1.15 to 1.48), those with lower health insurance coverage (relative risk 0.93, 95% CI 0.92 to 0.94), lower household income (relative risk 0.96, 95% CI 0.94 to 0.97), and lower education level (relative risk 0.97, 95% CI 0.96 to 0.98).[132,133]

Harms

Potential harms of screening include stigmatization related to having testing done or being diagnosed with HIV,[134] and harms associated with treatment, which vary according to the medicines selected.

Rationale

We did not identify clinical trials that compared screening for HIV with usual care. Screening can identify people with HIV who would benefit from effective treatment that has the additional benefit of reducing the spread of HIV. Self-testing for HIV can address some of the barriers to effective HIV treatment. The accuracy of screening and the effectiveness of treatment indicate that the benefits of screening, including the promotion of health equity, clearly outweigh harms (therefore, the recommendation is strong).

Practice considerations

The ideal screening frequency has not been established. We suggest screening every 3–5 years or at other intervals, based on risk factors such as the number of sexual partners and substance use. Rapid voluntary counselling and testing for HIV in health facilities, as well as HIV self-testing, may be an effective strategy to help reach marginalized populations that report low access to HIV testing and care services. Pre- and post-test counselling is important regardless of the testing modality and whether testing is anonymous.

Equitable implementation resources

Testing for HIV should be easily available both through health care providers and in the community. Pilot programs that make self-testing readily available, for example in vending machines, can inform broader roll-out.[135]

Hepatitis C

We recommend hepatitis C virus (HCV) screening for adults aged 19–79 years who are experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Screening for HCV infection is accurate, whether based on risk factors (sensitivity of 82%; number needed to screen to identify 1 HCV case is 15) or year of birth (sensitivity of 76%; number needed to screen to identify 1 HCV case is 29).[136] Direct antiviral therapy is associated with small improvements in quality of life and functional outcomes, as well as lower rates of cardiovascular events and hepatocellular carcinoma.[136] Direct antiviral therapy is also associated with sustained virologic response (SVR) rates greater than 95% (49 studies, n = 10 181), and achieving an SVR after antiviral therapy is associated with decreased risk of all-cause mortality (pooled HR 0.40, 95% CI 0.28 to 0.56; 13 studies, n = 36 986) and hepatocellular carcinoma (pooled HR 0.29, 95% CI 0.23 to 0.38; 20 studies, n = 84 491) compared with no SVR.[136]

Inequities

Several factors are associated with increased likelihood of HCV screening, including male sex (OR 1.18, 95% CI 1.11 to 1.25).[137,138] Linkage to HCV treatment is significantly lower among men than women (OR 2.36, 95% CI 0.90 to 6.25), despite higher screening rates.[137]

Harms

Potential harms of screening include stigmatization related to having testing done or being diagnosed with an HCV-related condition,[134] and harms associated with treatment, which vary according to the medicines selected.

Rationale

We did not identify trials of screening compared with usual care. Screening can identify people who would benefit from treatment that can be curative and prevent liver cancer, in addition to eliminating the risk of spread. The accuracy of screening and the effectiveness of treatment indicates that the benefits of screening, including the promotion of health equity, clearly outweigh harms (therefore, the recommendation is strong).

Practice considerations

Screening more or less frequently than every 3–5 years may be appropriate depending on risk factors, including the number of sexual partners and substance use, although the optimum interval is not established.[139]

Equitable implementation resources

Community-based screening programs may improve uptake. Treatments for HCV infection (i.e., direct antiviral therapy) identified by screening or by clinical assessment are currently expensive but have been shown to be cost-effective.[140]

Tuberculosis

We recommend screening for latent tuberculosis infection with either a tuberculin skin test or interferon-γ release assay in people with risk factors including recent immigration from a country with a high incidence (strong recommendation, moderate-certainty evidence).

Benefits

Both the tuberculin skin test and interferon-γ release assays (IGRAs) are moderately sensitive and highly specific. Sensitivity for detecting infection ranges from 0.52 to 0.79 for different tuberculin skin test thresholds and from 0.77 to 0.90 for different IGRAs.[141] In people who have not been vaccinated against tuberculosis, specificity ranges from 0.95 to 0.99 for tuberculin skin tests and 0.95 to 0.98 for IGRAs.[56,141] Tuberculosis preventive treatment for those with latent tuberculosis is effective at preventing tuberculosis disease.[142]

Inequities

Tuberculosis is a quintessential example of a health condition that is linked to social circumstances.[143,144] Being part of a population with a high tuberculosis incidence is the main risk factor for having latent tuberculosis infection.[56] Indigenous people living in certain communities are at elevated risk of tuberculosis infection and disease.[145] Tuberculosis mortality and morbidity is higher among several groups experiencing disadvantages, including those who have experienced homelessness, people who use substances and people who have been incarcerated.[146] The risk of tuberculosis disease and its complications are much higher among people with HIV.[147]

Harms

Potential harms of tuberculosis screening include stigmatization,[148] and harms of treatment include influenza-like symptoms and hepatotoxicity.[142]

Rationale

We did not identify relevant clinical trials of tuberculosis screening compared with usual care. Screening in people at high risk can identify those who would benefit from preventive treatment and also reduce the likelihood of spread to individuals vulnerable to tuberculosis disease. In people at high risk, the effectiveness of treatment means that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong).

Practice considerations

Screening should be offered to people who are at high risk of tuberculosis infection, such as those who have recently arrived from a country with a high incidence. Countries with a high incidence (> 200 per 100 000) can be determined using the World Health Organization's global tuberculosis report (https://worldhealthorg.shinyapps.io/tb_profiles/).[149] Refugees who have lived in a country with an incidence of more than 50 per 100 000 may also be screened.[149] Screening for latent tuberculosis is also recommended for people with HIV, given the risk of progression.[147] We did not find sufficient evidence to recommend screening for latent tuberculosis infection among Indigenous people, although the incidence is high in some communities where routine testing may be appropriate. Decision aids can be used to determine the risk of progressing to active tuberculosis disease and the risks of hepatotoxicity from treatment (http://tstin3d.com/en/calc.html). One-time screening will usually be sufficient.[56]

Separate from screening for latent tuberculosis, clinicians should be alert to the risk of tuberculosis disease among people who use substances and people who have experienced homelessness or incarceration.

Equitable implementation resources

Barriers to testing and treatment for tuberculosis infection should not exist; IGRA testing should be available without charge where appropriate, such as to those who have been vaccinated against tuberculosis.[150] Interferon-γ release assay testing costs about $55,[151] is cost-effective[151,152] and requires less clinician time than skin testing. Screening and clinical efforts should be complemented by investments to address upstream determinants and recognize Indigenous sovereignty where relevant.[145]

Substance use

Tobacco use

We recommend screening for tobacco use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Asking about tobacco use in the last 12 months is an accurate way to detect tobacco use.[153] Interventions for tobacco cessation in adults including nicotine replacement therapy (rate ratio 1.55, 95% CI 1.49 to 1.61; 133 trials, *n* = 64 640), bupropion (rate ratio 1.64, 95% CI 1.52 to 1.77; 46 trials, *n* = 17 866), varenicline (rate ratio 2.24, 95% CI 2.06 to 2.43; 27 trials, *n* = 12 625), behavioural interventions such as advice from clinicians (risk ratio 1.76, 95% CI 1.58 to 1.96; 28 trials, *n* = 22 239), and combined pharmacotherapy and behavioural interventions (risk ratio 1.83, 95% CI 1.68 to 1.98; 53 trials, *n* = 25 375) all increase smoking quit rates compared with no intervention.[154] Among pregnant people, behavioural interventions are associated with greater smoking cessation during late pregnancy (rate ratio 1.35, 95% CI 1.23 to 1.48).[154] Among adults who smoke, behavioural interventions are also associated with reductions in all-cause mortality (7%), coronary disease mortality (13%) and lung cancer incidence and mortality (11%).[154]

Inequities

Tobacco use substantially contributes to disparities in mortality, according to income in Canada.[155] People who smoke and have higher incomes are more likely to intend to quit (OR 1.26, 95% CI 1.14 to 1.40; *n* = 16 458) and to be abstinent for at least 1 month (OR 1.30, 95% CI 1.09 to 1.55; *n* = 5289).[156] Females are more likely than males to use nicotine patch (OR 1.39, 95% CI 1.16 to 1.67), varenicline (OR 1.37, 95% CI 1.13 to 1.66), Smokers' Helpline phone (OR 1.39, 95% CI 1.07 to 1.79), Smokers' Helpline online (OR 1.43, 95% CI 1.18 to 1.74), self-help materials (OR 1.81, 95% CI 1.46 to 2.26) and alternative methods (OR 1.40, 95% CI 1.14 to 1.73).[157]

Harms

Potential harms of screening include the harms associated with treatment such as systemic (e.g., palpitations) and local (e.g., rash) adverse effects related to nicotine replacement therapy, weight loss and insomnia for bupropion, and vivid dreams for varenicline.[154,158,159]

Rationale

We did not identify clinical trials screening for tobacco use. Screening can identify people who would benefit from effective interventions that could address the substantial burden of tobacco use. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong). Tobacco use often begins during adolescence; thus, so too should screening.

Practice considerations

Screening can be done by asking about tobacco use during the last 12 months.[153] The ideal frequency of screening has not been established by clinical trials; we suggest screening every 3–5 years. More frequent screening might be prudent in adolescents.

Equitable implementation resources

Supports for tobacco cessation can be offered by those outside of the usual care team.[160,161] Barriers to accessing treatments, including out-of-pocket costs, should be eliminated, and implementing this recommendation will require access to counselling and pharmacotherapy.

Alcohol use

We recommend screening for harmful alcohol use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

For adults (35 studies, *n* = 114 182), studies of brief screening instruments commonly report sensitivities and specificities between 0.70 and 0.85; for example, studies of screening with a single-item question ("How many times in the past year have you had 4 [5 for males] or more drinks in a day?") have reported sensitivities ranging from 0.73 to 0.88 (95% CI range, 0.65 to 0.89) and specificities ranging from 0.74 to 1.0 (95% CI range, 0.69 to 1.0).[162] For adolescents (10 studies, *n* = 171 363), a study (*n* = 225) reported a sensitivity of 0.73 (95% CI 0.60 to 0.83) and specificity of 0.81 (95% CI 0.74 to 0.86) using the Alcohol Use Disorders Identification Test–Consumption (AUDIT-C) to detect the full spectrum of unhealthy alcohol use.[162]

Across all populations (68 trials, *n* = 36 528), counselling interventions are associated with a decrease in drinks per week (MD −1.60, 95% CI −2.20 to −1.00; 32 trials, *n* = 15 974), the proportion exceeding recommended drinking limits (OR 0.60, 95% CI 0.53 to 0.67; 15 trials, *n* = 9760), and the proportion reporting a heavy use episode (OR 0.67, 95% CI 0.58 to 0.77; 12 trials, *n* = 8108), and an increase in the proportion of pregnant women reporting abstinence after 6–12 months (OR 2.26, 95% CI 1.43 to 3.56; 5 trials, *n* = 796).[162] Counselling interventions are also associated with a greater reduction in all-cause mortality than with no intervention (OR 0.64, 95% CI 0.34 to 1.19; 9 trials, *n* = 4533).[162] Acamprosate (number needed to treat 12, 95% CI 8 to 26) and naltrexone (number needed to treat 20, 95% CI 11 to 500) reduce the likelihood of a return to drinking in adults with alcohol use disorders.[163]

Inequities

Women are less likely than men to utilize any alcohol service (OR 0.53, 95% CI 0.33 to 0.86), specialty services (OR 0.41, 95% CI 0.19 to 0.87) and 12-step groups (OR 0.39, 95% CI 0.21 to 0.71).[164] Women are less likely to receive a face-to-face visit (HR 0.84; *n* = 66 053) and relapse prevention medication approved by the US Food and Drug Administration (HR 0.89; *n* = 66 053) than men.[165] People residing in rural areas are less likely than urban residents to receive alcohol screening (OR 0.15, 95% CI 0.14 to 0.16), be educated about alcohol use (OR 0.15, 95% CI 0.14 to 0.17) or receive advice about alcohol consumption (OR 0.08, 95% CI 0.06 to 0.09) after a positive screen.[166] Rural residents also have lower odds of treatment initiation (OR 0.88, 95% CI 0.83 to 0.93; *n* = 52 165), treatment engagement (OR 0.86, 95% CI 0.77 to 0.97; *n* = 14 114) and receipt of medication (OR 0.83, 95% CI 0.73 to 0.94; *n* = 15 062).[167] Among adults aged 65 years or older (*n* = 9663), women are more likely than men to report any alcohol screening (relative risk 1.22, 95% CI 1.05 to 1.42) but less likely to discuss alcohol use with their providers (relative risk 0.82, 95% CI 0.73 to 0.91).[168]

Harms

Potential harms of screening include adverse effects of treatment such as anxiety, diarrhea and vomiting for acamprosate, and vomiting and headaches for naltrexone.[163]

Rationale

We did not identify clinical trials of screening. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong). Alcohol use often begins during adolescence.

Practice considerations

Problematic alcohol use can be identified by asking about the number of weekly drinks or how often the number of daily drinks has exceeded a certain threshold.[153] The ideal frequency of screening has not been established by clinical trials; we suggest screening every 3–5 years. More frequent screening might be prudent in adolescents.

Equitable implementation resources

Barriers to accessing treatments including out-of-pocket costs should be eliminated, and implementing this recommendation will require access to counselling and pharmacotherapy.

Other substance use

We recommend screening for substance use together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

According to a systematic review, both frequency-based and risk assessment screening instruments generally have a sensitivity greater than or equal to 0.80 and a specificity greater than or equal to 0.85 for identifying unhealthy drug use and drug use disorders among adults when validated against a structured diagnostic interview.[169]

Psychosocial interventions are associated with an increased likelihood of drug use abstinence (relative risk 1.60, 95% CI 1.24 to 2.13), decreased number of drug use days (MD −0.49, 95% CI −0.85 to −0.13), and decreased drug use severity (standardized mean difference [SMD] −0.18, 95% CI −0.32 to −0.05) at 3 to 4 months' follow-up.[169] Beneficial effects at 6–12 months are observed only for drug use abstinence (relative risk 1.25, 95% CI 1.11 to 1.52).[169] Effects are generally greater in treatment-seeking populations than in screen-detected populations, stronger for cannabis use than other drug use outcomes, stronger for shorter-term (3–4 mo) than longer-term (6–12 mo) outcomes, and stronger for more intensive interventions than brief interventions.[169] Both opioid agonist therapy (methadone and buprenorphine) and naltrexone are associated with decreased risk of relapse (relative risk 0.75, 95% CI 0.59 to 0.82 for opioid agonist therapy; 0.73, 95% CI 0.62 to 0.85 for naltrexone) and increased likelihood of treatment retention (relative risk 2.58, 95% CI 1.78 to 4.59 for opioid agonist therapy; 1.71, 95% CI 1.13 to 2.49 for naltrexone) among people with an opioid use disorder after 4 to 12 months of treatment.[170]

Inequities

According to a systematic review of 50 RCTs, both Black (4 trials, *n* = 2327) and Hispanic (3 trials, *n* = 3260) participants have worse treatment retention than White participants.[171] Abstinence post-treatment is also lower among Black people (1 trial, *n* = 1175) and Hispanic people (1 trial, *n* = 699) relative to White people, and Black participants report more days of substance use post-treatment than White participants (1 trial, *n* = 297).[171] Racialized people receive psychosocial treatment at rates significantly lower than White people (estimated coefficient −0.17, 95% CI −0.19 to −0.16 for Asian people; −0.05, 95% CI −0.06 to −0.04 for Hispanic people), indicating a disparity, although Black people are more likely to receive treatment than White people (estimated coefficient 0.03, 95% CI 0.02 to 0.04). However, all 3 racialized groups are less likely than White people to receive treatment engagement, follow-up care within 30 days after an emergency department visit, and follow-up care after withdrawal from treatment.[172]

Harms

Screening for substance use is not associated with harms,[169] but identifying people with substance use disorder could lead to stigmatization and affect care.[173] Potential harms of screening for substance use also include harms associated with pharmacotherapy, such as sedation for methadone and constipation for buprenorphine.[174,175]

Rationale

We did not identify clinical trials of screening. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong). Substance use often begins during adolescence.

Practice considerations

Asking about substance use in the last 12 months accurately detects substance use that can benefit from interventions.[153] The ideal frequency of screening has not been established by clinical trials; we suggest screening every 3–5 years. More frequent screening might be prudent in adolescents.

Equitable implementation resources

Barriers to accessing treatments out-of-pocket costs should be eliminated, and implementing this recommendation will require access to counselling and pharmacotherapy.

Mental health

Depression

We recommend screening for depression together with appropriate supports in adolescents and adults experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Depression screening may reduce symptoms, according to mixed results of 3 clinical trials. A trial of 462 postpartum women found that those receiving depression screening were less likely to be depressed at 6 months postpartum than those receiving usual care (relative risk 0.59, 95% CI 0.39 to 0.89), and mean Edinburgh Postnatal Depression Scale scores were also lower in the screened group (SMD −0.34, 95% CI −0.15 to −0.52).[176,177] Programs involving depression screening during pregnancy or postpartum (with or without additional treatment components) are associated with reduced risk of depression at 3–5 months postpartum compared with usual care.[178] However, a trial of patients with acute coronary syndrome (*n* = 1001) found little to no difference in health-related quality of life and depression symptoms among those screened for depression compared with those receiving usual care.[179] In adults undergoing initial consultation for osteoarthritis (1 trial, *n* = 1412), evaluation for depression and general health after consultation had no statistically significant effect on health outcomes.[180] Pharmacologic and nonpharmacologic treatments for depression are effective.[181]

Inequities

Stigmatization is a barrier to depression treatment and can manifest differently based on identity and age.[182] Previous recommendations against depression screening assume that adults and adolescents with depression will be diagnosed based on regular clinical care,[183] but this may not hold true for those experiencing disadvantages. Screening could help address inequities in depression care pathways and outcomes.[184,185]

Harms

Potential harms of screening include harms of pharmacologic treatment, such as adverse effects of commonly used antidepressants (e.g., agitation, sexual dysfunction or weight gain, and withdrawal effects with selective serotonin reuptake inhibitors).[186]

Rationale

Clinical trials comparing screening with usual care have been targeted to specific populations and have had mixed results, and 1 trial showed a large benefit. People experiencing disadvantages may not have access to usual care (assumed to include mental health assessment), resulting in inequities in mental health outcomes and offered supports. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong).

Practice considerations

Depression screening instruments — including asking whether the patient feels down or hopeless, or has experienced anhedonia in the last month — are accurate.[187,188] Clinical trials have not established the ideal frequency of screening; we suggest screening take place every 3–5 years.

Equitable implementation resources

Screening for depression will require clinician time, even if implemented using questionnaires or if supported by other team members. Barriers to effective treatments, such as counselling and pharmacotherapy, should be eliminated.

Oral health

Dental caries

We recommend screening for dental caries, education about oral health and referrals to dentists for children younger than 5 years experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

Dental screening performed by a trained primary care clinician is accurate for children younger than 5 years: sensitivity of 0.76 (95% CI 0.55 to 0.91) and specificity of 0.95 (95% CI 0.92 to 0.98) for identifying a child with 1 or more cavities; sensitivity of 1.0 and specificity of 0.87 (CI not reported) for identifying nursing decay of front teeth (commonly from sleeping with bottles); and sensitivity of 0.53 and specificity of 0.77 (CI not reported) for identifying a child at increased risk for future caries.[189] Oral health education improves behaviours such as tooth-brushing and improves oral health, as assessed by plaque formation and gingival bleeding.[190] Topical fluoride in a dental clinic compared with placebo or no intervention is associated with decreased caries burden (MD −0.94, 95% CI −1.74 to −0.34; 13 trials, $n = 5733$) and likelihood of incident caries (relative risk 0.80, 95% CI 0.66 to 0.95; 12 trials, $n = 8177$) with no risk of fluorosis or adverse events.[189]

Inequities

Racialized people (OR 0.73, standard error [SE] 0.05), males (OR 0.63, SE 0.03), people with lower education (OR 0.40, SE 0.03) and income (OR 0.29, SE 0.03), and those with government-assisted insurance (OR 0.67, SE 0.08) or no insurance (OR 0.25, SE 0.02) are less likely to receive dental care at least once a year.[191] Recent immigrants are less likely to use dental care at least once a year than people born in Canada (OR 0.73, SE 0.10), according to the 2013–2014 Canadian Community Health Survey ($n = 9\,625\,439$).[191] Indigenous people may be more likely to report no dental visits in the past year than non-Indigenous people (OR 1.21, 95% CI 0.87 to 1.68).[192] Urban residents report greater satisfaction with the cost of their last dental visit (MD 0.19, 95% CI 0.10 to 0.29) than their rural counterparts.[193]

Most oral health conditions among children with special needs are worse than those of other children, including the Decayed, Missing, and Filled Permanent Teeth index (SMD 0.44, 95% CI 0.34 to 0.54), Plaque Index (SMD 0.16, 95% CI 0.03 to 0.29), Community Periodontal Index of Treatment Needs (SMD 1.42, 95% CI 1.22 to 1.62), and the Oral Hygiene Index (SMD 0.80, 95% CI 0.64 to 0.96).[194]

Harms

Topical fluoride treatment is not associated with a risk of fluorosis and has not been shown to cause other adverse effects, although some adverse events may have been under-reported and some children may have trouble tolerating the odour and taste.[189]

Rationale

We did not identify clinical trials of screening. Clinicians are able to detect early childhood caries, and the presence of caries indicates the need for interventions such as oral health education and fluoride treatments. The accuracy of screening and the effectiveness of treatments indicate that the benefits of screening, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong).

Practice considerations

Screening for dental caries can be done at each childhood preventive care or "well child" encounter. Oral health education can cover topics such as avoiding nursing caries, avoiding sugary foods and drinks, and tooth-brushing importance and technique.[195]

Equitable implementation resources

Clinicians may require training to identify caries, and this could be done as part of required annual professional development, although routinely used instruments such as the Rourke Baby Record already include guidance on dental caries.[196] Cost and location should not be barriers to screening for dental problems and for dental care. Some travel grants to support care access for people living in remote communities that currently do not support access to dental care are needed.

Social risk

Poverty

We recommend screening for social risk factors, including poverty or the ability to afford basic necessities, and connection with resources and supports in all families with children (weak recommendation, moderate-certainty evidence).

Benefits

In 1 RCT (Well Child Care, Evaluation, Community Resources, Advocacy, Referral, Education: the WE CARE trial), mothers ($n = 336$) enrolled in a clinic-based screening for social risk factors and referral system were more likely to receive referrals at the index visit (OR 29.60, 95% CI 14.70 to 59.60) and be enrolled in a new community resource (OR 2.10, 95% CI 1.20 to 3.70) than those receiving usual care.[197] Those screened also had greater odds of being employed (OR 44.40, 95% CI 9.80 to 201.40), having children in child care (OR 6.30, 95% CI 1.50 to 26.00) and receiving fuel assistance (OR 11.90, 95% CI 1.70 to 82.90), and lower odds of being in a homeless shelter (OR 0.20, 95% CI 0.10 to 0.90) than control participants.[197] In another RCT ($n = 1809$), families enrolled in a pediatric social needs navigation program, which included standardized screening and in-person resource navigation services, reported significantly fewer unmet social needs (MD −0.39, SE 0.13 v. MD 0.22, SE 0.13; $p < 0.001$) and significantly greater improvement in their child's overall health status (MD −0.36, SE 0.05 v. MD −0.12, SE 0.05; $p < 0.001$) than those receiving preprinted information on community resources.[198]

Harms

Our recommendation is intended to connect children with helpful supports, but a potential harm is that racialized and Indigenous families could be disproportionately referred to child protective services if this recommendation is misapplied.[199]

Rationale

Social needs screening and in-person resource navigation within health care settings can improve access to community-based resources for families with unmet basic needs, according to a small number of clinical trials. The effects of screening likely depend on its manner of implementation and on available community supports (therefore, the recommendation is weak or conditional).

Practice considerations

A handout that contains both questions about social risks and relevant resources could be used to facilitate discussions.[197] Studies have not established the ideal frequency for screening; we suggest screening every 3–5 years.

Equitable implementation resources

The intervention studied in the WE CARE clinical trial was designed to be inexpensive and easy to implement.[197,200] The studied handout requires tailoring to mention local resources and will likely need to be updated periodically.

Intimate partner violence

We suggest screening for intimate partner violence (IPV) and connection with resources, including legal advocacy, for people experiencing disadvantages (weak recommendation, moderate-certainty evidence).

Benefits

Universal screening for IPV is associated with no significant differences in future IPV incidence over 3–18 months, quality of life, adverse events, psychological distress or health care utilization, according to a systematic review.[201] Studies examining the performance accuracy of screening tests for IPV that occurred in the previous year or currently found sensitivities ranging from 30% to 94% and specificities ranging from 38% to 95% across all screening instruments.[201] Screening may be more effective during pregnancy.[201,202] Screening can help connect women with effective supports,[203] and may make clinical spaces feel safer for those experiencing IPV. Interventions including connection with legal advocacy reduce the risk of violence for women experiencing IPV.[204]

Inequities

Rates of police-reported IPV are 3 times higher among Black women (rate ratio 3.03, 95% CI 2.79 to 3.29) and 2 times higher among Hispanic women (rate ratio 2.19, 95% CI 2.02 to 2.39) than among White women.[205] A meta-analysis examining prevalence and correlates of IPV victimization found that transgender people experience a disproportionate burden of IPV than those who are cisgender, including both physical (rate ratio 2.19, 95% CI 1.66 to 2.88) and sexual (rate ratio 2.46, 95% CI 1.64 to 3.69) IPV, and victimization is also associated with sexual risk, substance use and mental health burden in transgender populations.[206]

Neighbourhoods across Florida with a higher percentage of Black non-Hispanic residents have lower availability of IPV screening services ($\beta = -0.35$, $z = -1.90$, $p = 0.057$), whereas neighbourhoods with a majority of White non-Hispanic residents have more comprehensive services available for IPV screening ($\beta = 0.58$, $z = 2.22$, $p = 0.03$).[207] Neighbourhoods with a higher percentage of older residents ($\beta = -0.03$, $z = -2.89$, $p = 0.004$) and those receiving social security benefits ($\beta = 0.01$, $z = 2.24$, $p = 0.025$) have a lower availability of IPV screening services.[207] A smaller proportion of rural than urban emergency departments across Oregon have official IPV screening policies (74% v. 100%, $p = 0.01$), standardized IPV screening instruments (21% v. 55%; $p = 0.01$), regular IPV training for clinicians (38% v. 70%, $p = 0.02$), and on-site violence advocacy (44% v. 95%, $p < 0.001$).[208]

Harms

Studies have not identified harms of IPV screening, but potential harms include stigmatization and retaliation from partners.[201]

Rationale

Although trials did not detect overall improvements from universal screening, screening is accurate and can help connect people with supports that are effective at mitigating the harms of IPV. Screening could help address inequities. The effects of screening likely depend on its manner of implementation and on available community supports (therefore, the recommendation is weak or conditional).

Practice considerations

Four-item screening instruments such as Hurt, Insult, Threaten, Scream (HITS) are accurate.[201,209] Screening is usually done only if the patient can be assessed without the partner present. The ideal frequency of screening is not known; we suggest screening every 3–5 years. Pregnancy can elevate the risk of IPV, and screening during pregnancy should be considered.[210] Primary care providers should be able to connect people with community resources.

Equitable implementation resources

Screening and counselling both require clinical resources. Screening can be done using questionnaires, which can be administered by members of the clinical team. Investments are needed to ensure people have access to effective supports, including legal advocacy.

Access to care providers

Primary care access

We recommend prioritized connection to primary care, including automatic enrolment with choice of provider, for people experiencing disadvantages (strong recommendation, moderate-certainty evidence).

Benefits

An adequate supply of primary care providers has been shown to reduce inequities in health across racial and socioeconomic groups.[1] Higher ratios of primary care physician to population are associated with improvements in various health outcomes, including all-cause, heart disease and cancer mortality, life expectancy, low birth weight and other health indicators; these effects are usually more pronounced among socially disadvantaged groups, including racialized people, households with a low

income and uninsured individuals.[211,212] Continuity of primary care is associated with a lower risk of death[213,214] and hospital admission.[215,216] Unattached people are significantly less likely to report having received routine care (25.9% v. 73.1%) and immediate care for urgent problems (25.7% v. 36.0%) than those attached to a family doctor.[217] Positive primary care experiences are associated with reductions in the adverse effects of income inequality on health.[218] Community health centres are successful in reducing and eliminating health access disparities by establishing themselves as a regular source of care for people experiencing disadvantages.[211]

Inequities

Patient experiences are significantly worse for patients in lower-income neighbourhoods and those with health self-reported as poor or fair.[219] People without a family doctor are significantly more likely to be male (58.7% v. 41.3%), younger (17.2% v. 14.9%) and recent immigrants (8.6% v. 5.6%).[217] Voluntary primary care enrolment, where people need to request care connection, can disadvantage people with a low income and with certain functional limitations.[35] Being able to choose a primary care provider may be especially important for people experiencing disadvantages because, for example, having more Black primary care providers is associated with higher life expectancy for Black people.[220,221]

Harms

We did not identify studies that showed overall harms of being connected to primary care, but harms associated with care, such as adverse effects of prescription medicines, may be more likely in those connected to primary care providers.

Rationale

Primary care access is associated with better health outcomes, but access to this care is inequitable. Automatic enrolment with a primary care practice, similar to the way children are eligible to attend schools by virtue of living in a catchment area, should help to promote equitable access. The benefits of primary care attachment, including the promotion of health equity, clearly outweigh the harms (therefore, the recommendation is strong).

Practice considerations

Although implementing this recommendation will require resources and changes beyond the direct control of clinicians, primary care providers can actively reach out to the communities they serve to ensure people experiencing disadvantages are connected with care.[222]

Equitable implementation resources

Ideally, people should be able to register at a primary care practice of their choosing, and those practices should be adequately resourced to support their patient populations.[223] Automatic enrolment, whereby people cannot be turned away, for those experiencing disadvantages may be opposed by others, especially given current difficulties for many in accessing primary care;[224] however, patient engagement initiatives suggest that automatic enrolment has more than limited support.[225]

Increasing the capacity of primary care would likely require substantial government investments, but prioritizing access for those experiencing disadvantages could be the first step toward meeting overall population needs. Although the costs of improving primary care access have not been precisely estimated, automatic enrolment of people experiencing disadvantages might involve increasing primary care spending by $100 per capita for the entire population, or by around $3.8 billion annually.[226] The exact cost will depend on the mix of providers, which might include family physicians, nurse practitioners and nurses. Although our recommendation is aimed at promoting health equity and not saving money, investments in primary care may, under some circumstances, save money through improving health.[1,227] For Black people in the US, living in a county with more Black primary care providers is associated with a higher life expectancy,[221] suggesting that a representative primary care workforce can help improve population health.

Methods

The Equitable Preventive Praxis Initiative in Canada project was initiated by the co-leads (N.P., A.L.) to build on previous guidance related to policy changes that could promote health equity during the pandemic recovery period,[37] and was based on the perspective that disparities in health outcomes could be partially addressed by equitable preventive care. Our values statement is in Appendix 2.

The project was funded by the Canadian Institutes of Health Research. We used the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach to develop recommendations, and followed the Appraisal of Guidelines for Research and Evaluation (AGREE II) reporting guidance.[228,229]

Guideline panel composition

The co-leads recruited members for the guideline panel in March and April 2022, by posting advertisements in journals and other publications (*CMAJ*, *Canadian Family Physician* and *The Medical Post*), emailing organizations to identify potential members (Canadian Medical Association, College of Family Physicians of Canada and Black Physicians of Canada), and emailing individuals and clinical groups to determine interest in participating. We explicitly welcomed racialized women and others who are typically under-represented in clinical practice guideline panels.[230]

The co-leads reviewed applications submitted by 71 individuals and selected 13 additional panel members according to experience in primary care and in promoting health equity. The guideline panel (N.P., M.C., K.L.D., S.I., S.H.J., A.K., F.-D.L., M.L., T.M., A.O., Y.O., O.O., L.P., P.W., A.L.) comprised 11 family physicians, 1 nurse practitioner, 1 primary care nurse, 1 administrator and 1 patient. Panel members were compensated for their time.

We worked with a separate panel of patient partners with lived experience of social structural inequality, Equity-Mobilizing Partnerships in Community (EMPaCT). That panel was formed for an Ontario-based study of lung cancer screening and has since supported multiple projects in Canada.[231] This independent community table was co-designed in an interdisciplinary

way so that diverse patient partners could use the lens of their collective lived experience to provide health equity analysis to projects, such as the development of guidance.

Topic selection

Four authors (N.P., A. Sabir, H.W., A.L.) developed a list of 26 candidate topics based on guidance covered by the US Preventive Services Task Force (USPSTF) and the Canadian Task Force on Preventive Health Care (CTFPHC), after considering the burden of each condition or risk factor, the availability of apparently effective interventions, and the existence of disparities or inequities in outcomes in Canada and preventive care that could be addressed by further guidance.

Three authors (N.P., H.W., A. Sabir) then conducted scoping reviews for each candidate topic including the burden, disparities in outcomes, effectiveness of preventive care interventions, harms of preventive care interventions, likelihood that new guidance could improve equity, and existing guidance. The guideline panel received input on the topics, the topic selection process and general considerations from the EMPaCT patient-partner panel at a videoconference consultation on Mar. 30, 2022.

Guideline panel members independently rated the importance of each candidate topic via email and then met via videoconference to select topics on June 15, 2022. At the meeting, panel members first independently voted for topics and then discussed various factors (burden, disparities, effectiveness, harms, equity considerations, availability of guidance) and overall considerations, such as the scope of the guideline and feasibility of making recommendations. In total, 16 topics were selected by consensus of the panel.

Literature review and knowledge synthesis

For each prioritized topic, 3 authors (N.P., A. Sabir, H.W.) developed research questions that addressed important outcomes (measured in those experiencing disadvantages and in the general population) and inequities related to screening and management, among other factors. With support from a librarian with expertise in health sciences information technology, 2 authors (A. Sabir, H.W.) conducted systematic searches for existing systematic reviews on MEDLINE on June 21, 2022, and also searched for studies published after the systematic reviews we found were completed (Appendix 2).

Three authors (N.P., A. Sabir, H.W.) created evidence-to-decision tables (Appendix 1) for each topic using MAGICapp (https://app.magicapp.org/) and conducted nonsystematic searches for studies of values and preferences (Appendix 2) and for the resources needed for equitable implementation of recommendations.

Development of recommendations

Evidence-to-decision tables, existing relevant recommendations and several potential draft recommendations for each topic (drafted by the co-leads) were circulated before guideline panel meetings that took place by videoconference on Oct. 5, Nov. 9, and Dec. 7, 2022. Before these meetings, guideline panel members had an opportunity to provide their preferences for the different draft recommendation options, comments and suggested changes to recommendations, via an online form. Recommendations were established during meetings by consensus and any revisions were discussed during meetings.

We took patient values and preferences (Appendix 2) into account when discussing and drafting recommendations. We received input from the EMPaCT patient partners via a videoconference meeting on Nov. 30, 2022, regarding our draft recommendations and knowledge exchange plans.

We recommended interventions based on either direct evidence of improvements in health for those experiencing disadvantages, or on indirect evidence, such as the accuracy of screening and the effectiveness of management options (that together suggest that increasing access to the proven intervention for those experiencing disadvantages will promote health equity). We also considered existing guidance related to preventive care for the general population, and the implications of applying this guidance and routine care for people experiencing disadvantages.

We considered the practical implications for clinicians and the equitable use of resources when drafting recommendations. We determined who would benefit from each recommendation by considering both overall health inequities in Canada[8] and evidence of inequities specific to the topic; the latter was often based on studies from other countries, particularly the US. Considering various sources of information is appropriate for providing guidance on preventive care interventions, given the complexity of their effects.[232]

We shared the draft guidance with guideline panel members for input in December 2022 to confirm consensus before external review.

External review

In January 2023, we circulated the draft guidance for external review by experts in guideline methodology, preventive care, primary care, specific clinical areas and health equity. We specifically sought input from individuals and organizations with expertise in family medicine, public health, cancer screening, cardiovascular disease screening, cervical cancer screening, tuberculosis screening, mental health screening and pediatric dentistry.

External review resulted in several revisions to the recommendation wording in some cases or to the text supporting the recommendation (e.g., summarizing recent guidance from the *Canadian Tuberculosis Standards*[56]). The co-leads first made these revisions, which the guideline panel then reviewed and approved.

Management of competing interests

An external Competing Interest Oversight Committee consisting of 1 lead and 2 additional members (academic family physicians with expertise in managing conflicts of interest) applied Guidelines International Network principles to advise the co-leads on how to handle competing interests.[233] All guideline panel members declared competing interests using the February 2021 form from the International Committee of Medical Journal Editors (https://www.icmje.org/disclosure-of-interest/) before the first meeting, and again before manuscript submission. The co-leads reviewed the declarations and proposed actions, and the external oversight committee provided risk assessments and advice. All declared competing interests were deemed low risk and declaration was deemed sufficient.

Implementation

Although the need to address inequities in medicine has long been recognized,[234–237] prioritizing health care for people experiencing disadvantages may represent a radical shift away from carrying on as though health care and outcomes were fair, and toward taking specific actions aimed at addressing inequities. National and provincial bodies that support clinicians can help disseminate the recommendations and assist in their implementation.

Some of the recommended interventions, including IGRA testing and HPV and HIV self-testing, may reduce workloads for primary care providers. Time implications for clinicians in implementing the recommendations are discussed in Appendix 2. The decision supports we provide (Appendix 3, available at www.cmaj.ca/lookup/doi/10.1503/cmaj.230237/tab-related-content, and at http://www.screening.ca) can be used to implement our recommendations focused on people experiencing disadvantages, alongside other guidance aimed at the general population.

Dedicated efforts should be made to provide people experiencing specific disadvantages (e.g., people experiencing homelessness) with access to preventive care.[146,238] For example, improved access to preventive care such as screening must be matched with improvements in connecting patients to management options in the case of a positive screen, which includes access to sufficient travel grants for those living in rural or remote areas, if the care needed cannot be provided locally. Language translation services will help support the implementation of recommendations.

Given that many inequities are rooted in exploitation and theft,[4–6] it is appropriate to invest resources in promoting equitable health outcomes. Preventive care represents a relatively small fraction of total health spending in Canada (5%, according to 2023 data from the Organization for Economic Co-operation and Development, compared with 25% for hospitals).[239] Although cost savings are not the rationale for the recommendations in this guideline, many recommendations likely will save money (e.g., access to primary care will likely reduce total health spending) and make care more efficient (e.g., IGRA testing reduces the number of patient visits). Additional infrastructure, such as CT scanners in rural settings, may be needed. Other recommended interventions (e.g., HPV testing) appear to be cost-effective.

In addition to implementing the recommendation about primary care connection, provincial and territorial governments should ensure that preventive service provision is appropriately compensated and supported. Some of our preventive care recommendations (HPV and HIV self-testing, IGRA testing for tuberculosis infection) should be publicly funded (coverage currently varies across Canada, despite previous calls for public funding[240–243]), and effective roll-out will require multisectoral support.[243]

Progress in implementing the guidelines can be tracked nationally, provincially and locally and at the level of health care institutions and providers by comparing primary care connection rates and rates of the recommended screening interventions in specific populations. We aim to update the recommendations within 5 years and may update specific recommendations sooner if there are important new developments.

Other guidelines

These recommendations focused on addressing health inequities complement and mostly align with guidance from CTFPHC, USPSTF and other guideline producers (Table 1). Some key differences include our recommendations for HPV self-testing (rather than Papanicolaou smears, as currently recommended by the CTFPHC), starting colorectal cancer screening outreach at age 45 years (rather than 50, as recommended by the CTFPHC), and screening for poverty in families with children. In addition to the specific evidence cited in support of our recommendations, our guidance is also based on our perspective that equitable access to preventive care is a way to address health inequities.

Further explanations of how and why our guidance differs from guidance provided elsewhere are included in Appendix 2. Our guidance can be used in conjunction with guidance from other bodies. For example, clinicians might decide to screen for depression among those experiencing disadvantages, as we recommend, but not to implement screening for the general population based on guidance from the CTFPHC, or to screen based on risk factors (including psychosocial adversity, chronic medical conditions and family history) as recommended by the Canadian Network for Mood and Anxiety Treatments.[65,183,244,245]

Gaps in knowledge

Some screening interventions, such as screening for poverty or social risk in adults and screening for IPV in men, have yet to be assessed in clinical trials. Several interventions were recommended based on the accuracy of screening instruments and the effectiveness of management options, although clinical trials of screening could be done for substance use and dental caries.

Clinical trials that assess the effect of screening and appropriate management for HIV, HCV infection, tuberculosis infection, tobacco use, alcohol use, substance use, depression, dental caries and poverty should be done in Canada. The total cost of conducting these trials would likely be modest when considering the burden of conditions, the cost of care and the potential benefits of improving care.

We also support calls for more research on ways to address specific inequities not addressed by this guidance, such as prostate cancer in Indigenous and Black males.[246,247]

Limitations

Indigenous health could be specifically addressed through an Indigenous-led process focused on preventive care for Indigenous people, which ours was not, although our recommendations might benefit many groups experiencing disadvantages.

Our topic prioritization did not include issues that we did not identify as likely opportunities to advance health equity and that are addressed by guidance from other bodies. Our guidance addresses only some aspects of critically important issues in Canada, such as preventing opioid-related deaths, that require a multifaceted approach beyond the scope of preventive health care. Vaccines are not addressed by our guidance, although they are an important aspect of preventive care.

Some of the recommendations are based on indirect evidence, such as the accuracy of screening interventions and the effectiveness of subsequent management, rather than on clinical trials of screening. Many of the studies underlying our recommendations, including those assessing disparities, were done in other countries, primarily the US. Our values and preferences statement was based on informal rather than systematic literature searches. We also performed informal rather than systematic searches related to resource implications.

Conclusion

More equitable deployment of primary and preventive care could help address health disparities. Primary care providers and their representative bodies should be supported by governments in implementing recommendations that promote health equity, with careful tracking of their effects, especially in those experiencing disadvantages. Future health care guidance should centre on, rather than just mention, health equity.

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