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Evidence-based clinical guidelines for immigrants and refugees

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Key points

- Clinical preventive care should be informed by the person's region or country of origin and migration history (e.g., forced versus voluntary migration).
- Forced migration, low income and limited proficiency in English or French increase the risk of a decline in health and should be considered in the assessment and delivery of preventive care.
- Vaccination (against measles, mumps, rubella, diphtheria, tetanus, pertussis, polio, varicella, hepatitis B and human papillomavirus) and screening (for hepatitis B, tuberculosis, HIV, hepatitis C, intestinal parasites, iron deficiency, dental pain, loss of vision and cervical cancer) should be routinely provided to at-risk immigrants.
- Detecting and addressing malaria, depression, post-traumatic stress disorder, child maltreatment, intimate partner violence, diabetes mellitus and unmet contraceptive needs should be individualized to improve detection, adherence and treatment outcomes.

Conditions covered in systematic reviews

(see Appendix 2, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1 for summary of recommendations and clinical considerations)

Infectious diseases
- Measles, mumps, rubella
- Diphtheria, tetanus, polio, pertussis
- Varicella
- Hepatitis B
- Tuberculosis
- HIV
- Hepatitis C
- Intestinal parasites (*Strongyloides* and *Schistosoma*)
- Malaria

Mental health and maltreatment
- Depression
- Post-traumatic stress disorder
- Child maltreatment
- Intimate partner violence

Chronic and noncommunicable diseases
- Diabetes mellitus
- Iron-deficiency anemia
- Dental disease
- Vision health

Women's health
- Contraception
- Cervical cancer
- Pregnancy

1. Overview: evidence-based clinical guidelines for immigrants and refugees

There are more than 200 million international migrants worldwide,[1] and this movement of people has implications for individual and population health.[2] The 2009 United Nations *Human Development Report*[3] suggested that migration benefits people who move, through increased economic and education opportunities, but migrants frequently face barriers to local health and social services. In Canada, international migrants are a growing[4] and economically important segment of the population (Table 1A).[5–8]

Immigrants to Canada are a heterogeneous group. Upon arrival, new immigrants are healthier than the Canadian-born population, both because of immigrant-selection processes and policies and because of sociocultural aspects of diet and health behaviours. However, there is a decline in this "healthy immigrant effect" after arrival.[5] In addition, compared with the Canadian-born population, subgroups of immigrants are at increased risk of disease-specific mortality; for example, Southeast Asians from stroke (odds ratio [OR] 1.46, 95% confidence interval [CI] 1.00–1.91),[9] Caribbeans from diabetes mellitus (OR 1.67, 95% CI 1.03–2.32) and infectious diseases (e.g., for AIDS, OR 4.23, 95% CI 2.72–5.74), and immigrant men from liver cancer (OR 4.89, 95% CI 3.29–6.49).[10]

The health needs of newly arriving immigrants and refugees often differ from those of Canadian-born men, women and children. The prevalence of diseases differs with exposure to disease, migration trajectories, living conditions and genetic predispositions. Language and cultural differences, along with lack of familiarity with preventive care and fear and distrust of a new health care system, can impair access to appropriate health care services.[11] Additionally, patients may present with conditions or concerns that are unfamiliar to practitioners.[5,10]

Many source countries have limited resources and differing health care systems, and these differences may also contribute to health inequalities among migrants.[12] In these guidelines, we refer to low-and middle-income countries as "developing."

Table 1A: Classification of international migration to Canada (2007)*

Immigration category	Annual migration (no.)†‡
Permanent residents[6]	
Economic class (business and economic migrants)	131 000
Family class (family reunification)	66 000
Humanitarian class (refugees resettled from abroad or selected in Canada from refugee claimants)	28 000
Others	11 000
Total	237 000
Temporary residents[6]	
Migrant workers	165 000
International students	74 000
Refugee claimants (those arriving in Canada and claiming to be refugees)[6]	28 000
Other temporary residents[6]	89 000
Total[6]	357 000
Other migrants	
Total irregular migrants,§ not annual migration[7]	~ 200 000
Visitors[8]	~ 30 100 000

*Reproduced, with permission, from Gushulak et al.[5]
†Numbers rounded to nearest 1000. Total in each category may not match sum of values reported because of rounding.
‡Unless otherwise indicated.
§No official migration status; this population includes those who have entered Canada as visitors or temporary residents and remained to live or work without official status. It also includes those who may have entered the country illegally and not registered with authorities or applied for residence.

Why are clinical guidelines for immigrants needed?

Canadian immigration legislation requires that all permanent residents, including refugees, refugee claimants and some temporary residents, undergo an immigration medical examination. Screening is undertaken to assess the potential burden of illness and a limited number of public health risks. The examination is not designed to provide clinical preventive screening, as is routinely performed in Canadian primary care practice, and it is linked to ongoing surveillance or clinical actions only for tuberculosis, syphilis and HIV infection.[5]

The Canadian Task Force on Preventive Health Care and the US Preventive Services Task Force have produced many high-quality clinical prevention recommendations, but these statements have not explicitly considered the unique preventive needs and implementation issues for special populations such as immigrants and refugees. Evidence-based recommendations can improve uptake and health outcomes related to preventive services, even more so when they are tailored for specific populations.[13]

How are these guidelines different?

Use of evidence-based methods has yet to substantially affect the field of migration medicine.[14] The Canadian Collaboration for Immigrant and Refugee Health explicitly aims to improve patients' health using an evidence-based clinical preventive approach to complement existing public health approaches. In selecting topics, primary care practitioners considered not just the burden of illness but also health inequities and gaps in current knowledge.[15] Public health concerns and predeparture migrant screening and treatment protocols were also consid-

ered, but these were not the driving force for the recommendations. We implemented evidence-based methods, which included searches for evidence on immigrant preferences and values, as well as incorporating the GRADE approach (Grading of Recommendations Assessment, Development and Evaluation), to formulate clinical preventive recommendations.[16–18] Our evidence reviews synthesized data from around the world, and our recommendations focus on immigrants, refugees and refugee claimants, with special attention given to refugees, women and the challenges of integrating recommendations into primary care. Migrants living without official status are particularly vulnerable, but specific evidence for this population is limited.[19] In these guidelines, the "health settlement period" refers to the first five years of residence in Canada for an immigrant or refugee, the time during which loss of the healthy immigrant effect begins to surface.

In recent years, there has been an increase in development of practice guidelines for international migrants.[20] Notable publications have included *Cultural Competency in Health*,[21] *Immigrant Medicine*[22] and guidelines for refugees from the Australasian Society for Infectious Diseases.[23] Many have been designed to address diseases and conditions of public health importance,[23–25] and some highlight the importance of psychosocial problems and mental illness, issues of women's health and chronic noninfectious diseases.[21,26,27] Other practice guidelines include strategies to improve communication (e.g., interpreters), responsiveness to sociocultural background (e.g., cultural competence), empowerment (e.g., health literacy), monitoring (e.g., health and access disparities) and strategies for comprehensive care delivery.[21]

Our recommendations differ from other guidelines because of our insistence on finding evidence for clear benefits before recommending routine interventions. For example, in our guidelines for post-traumatic stress disorder, intimate partner violence and social isolation in pregnancy, we recommend not conducting routine screening, but rather remaining alert. With regard to screening for asymptomatic intestinal parasites, we recommend focusing on serologic testing for high burden of disease parasites, rather than traditional testing of stool for ova and parasites.

Box 1A: Fourteen-step process for evidence reviews used by the Canadian Collaboration for Immigrant and Refugee Health

1. Develop clinician summary table
2. Develop logic model and key questions
3. Set the stage for admissible evidence (using search strategy)
4. Assess eligibility of systematic reviews
5. Search for data specific to immigrant and refugee populations
6. Refocus on key clinical preventive actions and key questions
7. Assess quality of systematic reviews
8. Search for evidence to update selected systematic reviews
9. Assess eligibility of new studies
10. Integrate data from updated search
11. Synthesize final evidence bank and draft two key clinical actions
12. Develop table for summary of findings
13. Identify gaps in evidence and needs for future research
14. Develop clinical preventive recommendations using GRADE (Grading of Recommendations Assessment, Development and Evaluation)

*Adapted, with permission, from Tugwell and others.[16]

How were these guidelines developed?

We followed the internationally recognized Appraisal of Guidelines for Research and Evaluation (AGREE; www.agreetrust.org). We selected guideline topics using a literature review, stakeholder engagement and the Delphi process with equity-oriented criteria.[15] In May 2007, we held a consensus meeting of experts in immigrant and refugee health to develop a systematic process for transparent, reproducible, evidence-based reviews. The guideline committee selected review leaders from across Canada on the basis of their clinical and evaluation expertise (see Appendix 1, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1).

The 14-step evidence review process (Box 1A)[16] used validated tools to appraise the quality of existing systematic reviews, guidelines, randomized trials and other study designs. We searched MEDLINE, Embase, the Cochrane Library and other sources for admissible evidence, specifically reviews and related studies, from 1996 to 2010. We identified guidelines developed by other groups but based our recommendations on evidence from primary studies. We identified patient-important outcomes and used the GRADE approach to assess the magnitude of effect on benefits and harms and on quality of evidence. We included both direct evidence from immigrant and refugee populations and indirect evidence from other populations. We downgraded the quality of evidence for indirectness when there was concern that the evidence might not be applicable to immigrant and refugee populations (e.g., because of differences in baseline risk, morbidity and mortality, genetic and cultural factors, and compliance variations). We assessed whether benefits outweighed harms, the quality of evidence, and values and preferences to minimize the potentially negative effects of labelling on patients, families and communities (Table 1B).[16–18]

Each of the resulting evidence reviews for priority conditions of the Canadian Collaboration for Immigrant and Refugee Health provides detailed methods and results concerning the burden of illness for the immigrant populations relative to Canadian-born populations, along with information about effectiveness of screening and interventions, a discussion of clinical considerations, the basis for recommendations and gaps in research.

How should I begin to assess immigrants for clinical preventive care?

Determine each person's age, sex, country of origin and migra-

tion history to tailor preventive care recommendations. In caring for socially disadvantaged populations, sequencing of care using checklists or algorithms can improve both the uptake and the delivery of preventive care[13] and allows other members of the primary health care team to participate in the delivery of care. Working with interpreters, cultural brokers, patients' families and community support networks can support culturally appropriate care.[28] Most importantly, clinicians should recognize that the implementation of recommendations (vaccinations, for example) may take three or four visits, a process more akin to the delivery of well-baby care than to an annual examination. Our recommendations are aimed at primary care practitioners, but competencies related to immigrant and cross-cultural care will vary depending on training and experience, and expert support should be sought accordingly.

Which immigrant populations face the most significant health risks?

Refugees, who are by definition forcefully displaced, are at highest risk for past exposure to harmful living conditions, violence and trauma. Refugees undergo medical screening before admission to Canada but are protected by law from exclusion on the basis of noninfectious burden of illness (through the Immigration and Refugee Protection Act).[29] The health risks of refugees and other migrants vary greatly depending on exposures (e.g., to vectors of disease such as mosquitos), trauma from war, living conditions (e.g., access to water and sanitation), neglect from long periods in refugee camps, susceptibilities (e.g., related to ethnicity and migration stress), social stratification (e.g., race, sex, income, education and occupation) and access to preventive services (e.g., pre-departure access to primary care, vaccinations and screening, access to Canadian services and access issues related to linguistic and cultural barriers).

Specifically, refugees are at risk for a rapid decline in self-reported health after arrival (OR 2.31, 95% CI 1.1–4.9), as are low-income immigrants (OR 1.5, 95% CI 1.3–1.7) and immigrants with limited English- or French-language proficiency.[5,30–35] There is also an increased risk of reporting poor health among immigrants with limited English- or French-language proficiency (OR 2.0, 95% CI 1.5–2.7), those facing cost-related barriers to health care (OR 2.8, 95% CI 1.7–4.5),[36] low-income immigrants[32] and non-European immigrants (OR 2.3, 95% CI 1.6–3.3).[31]

Table 1B: Basis of recommendations*

Issue	Process considerations
Balance between desirable and undesirable effects	Those with net benefits or trade-offs between benefits and harms were eligible for a positive recommendation
Quality of evidence	Quality of evidence was classified as "high," "moderate," "low" or "very low" on the basis of methodologic characteristics of available evidence for a specific clinical action
Values and preferences	Values and preferences refer to the worth or importance of health state or consequences of following a particular clinical action

*Reproduced, with permission, from Tugwell et al.[16] Based on GRADE (Grading of Recommendations Assessment, Development and Evaluation.[17,18]

Clinical recommendations

Considering the burden of illness of immigrant populations, the quality of evidence for screening and interventions, and the feasibility of clinicians implementing the recommendations, we have organized our recommendations into four groups: infectious diseases, mental health and physical and emotional maltreatment, chronic and noncommunicable diseases, and women's health.

Appendix 2 (available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1) summarizes the evidence review and recommendations for each topic, providing specific comments about how the number needed to screen and treat for net benefits would differ for immigrant populations.

Infectious diseases

Many immigrants are susceptible to vaccine-preventable diseases upon arrival in Canada. For example, 30%–50% of new immigrants are susceptible to tetanus,[37] 32%–54% are susceptible to either measles, mumps or rubella,[38] and immigrants from tropical countries are 5–10 times more susceptible to varicella,[39] which has serious implications for adult immigrants.

A large proportion (20%–80%) of the immigrants who come from countries where chronic hepatitis B virus infection is prevalent are not immune. In addition, immigrants are more likely to be exposed to hepatitis B virus[40] in their households and during travel to countries where hepatitis B is prevalent. Immigrants from countries where chronic hepatitis B virus infection is prevalent (affecting 2% or more of the population) can benefit from screening and treatment to prevent hepatitis and hepatocellular carcinoma.

Foreign-born people account for 65% of all active tuberculosis in Canada,[41] and screening and treatment for latent tuberculosis remain priorities for immigrants from countries in sub-Saharan Africa, Asia, and Central and South America.[42] To promote patients' safety and adherence to therapy, patients must be informed of the risks and benefits of treatment in a culturally and linguistically appropriate manner.[43,44] Refugees may already be aware of their HIV-positive status but may have limited knowledge of effective screening and treatment options. HIV-related stigma and discrimination[45] put immigrants and refugees at risk for delayed diagnosis and unequal treatment rates for HIV infection. Immigrants are an unrecognized risk group for chronic hepatitis C virus infection and would benefit from early detection and appropriately timed treatment.[46]

Subclinical strongyloidiasis and schistosomiasis can persist for decades after immigration and, if left untreated, can lead to serious morbidity or death through disseminated disease.[47]

Serologic tests for these intestinal parasites, rather than traditional stool testing, are recommended.[48] Malaria is one of the leading causes of death worldwide,[49] and delay in diagnosis and treatment of *Plasmodium falciparum* may lead to severe disease and even death. Migrant children are especially at risk for malaria and its complications.[50]

Recommendations for infectious diseases are summarized in Box 1B.

Mental health and physical and emotional maltreatment

The mental health of immigrants has emerged as one of the most challenging areas for clinicians.[15] Among refugees, depression commonly co-occurs with post-traumatic stress disorder and other anxiety disorders,[51] which can complicate its detection and treatment.[28] Conducting a systematic clinical assessment, or using a validated questionnaire in a language in which the patient is fluent,[52] is recommended if the clinician practises in an integrated system that links patients with suspected depression to treatment programs with a stepped-care approach. Effective detection and treatment may also require the use of professional interpreters or trained culture brokers (not children or other family members) to identify patients' concerns, explain illness beliefs, monitor progress, ensure adherence, and address the social causes and the consequences of depression.[28] The majority of those who experience traumatic events will heal spontaneously after reaching safety.[53,54] Empathy, reassurance and advocacy are key clinical elements of the recovery process. Pushing for disclosure of traumatic events could cause more harm than good.

The children of ethnic minorities, including some recently settled immigrants and/or refugees, are disproportionately over-screened (up to 8.75 times more likely) and over-reported as positive (up to four times more likely) for child maltreatment.[55] False-positive reports could result in harm, leading to psychological distress, inappropriate family separation, impaired clinician–patient rapport and legal ramifications associated with the involvement of child protection services.[56] Routine screening is not recommended; rather, clinicians should remain alert for maltreatment, either intimate partner violence or child maltreatment.

Recommendations related to mental health and maltreatment, both physical and emotional, are summarized in Box 1C.

Box 1B: Summary of evidence-based recommendations for infectious diseases*

Measles, mumps and rubella

Vaccinate all adult immigrants without immunization records using one dose of measles–mumps–rubella vaccine.

Vaccinate all immigrant children with missing or uncertain vaccination records using age-appropriate vaccination for measles, mumps and rubella.

Diphtheria, pertussis, tetanus and polio

Vaccinate all adult immigrants without immunization records using a primary series of tetanus, diphtheria and inactivated polio vaccine (three doses), the first of which should include acellular pertussis vaccine.

Vaccinate all immigrant children with missing or uncertain vaccination records using age-appropriate vaccination for diphtheria, pertussis, tetanus and polio.

Varicella

Vaccinate all immigrant children < 13 years of age with varicella vaccine without prior serologic testing.

Screen all immigrants and refugees from tropical countries ≥ 13 years of age for serum varicella antibodies, and vaccinate those found to be susceptible.

Hepatitis B

Screen adults and children from countries where the seroprevalence of chronic hepatitis B virus infection is moderate or high (i.e., ≥ 2% positive for hepatitis B surface antigen), such as Africa, Asia and Eastern Europe, for hepatitis B surface antigen, anti-hepatitis B core antibody and anti-hepatitis B surface antibody.

Refer to a specialist if positive for hepatitis B surface antigen (chronic infection).

Vaccinate those who are susceptible (negative for all three markers).

Tuberculosis

Screen children, adolescents < 20 years of age and refugees between 20 and 50 years of age from countries with a high incidence of tuberculosis as soon as possible after their arrival in Canada with a tuberculin skin test.

If test results are positive, rule out active tuberculosis and then treat latent tuberculosis infection.

Carefully monitor for hepatotoxity when isoniazid is used.

HIV

Screen for HIV, with informed consent, all adolescents and adults from countries where HIV prevalence is greater than 1% (sub-Saharan Africa, parts of the Caribbean and Thailand).

Link HIV-positive individuals to HIV treatment programs and post-test counselling.

Hepatitis C

Screen for antibody to hepatitis C virus in all immigrants and refugees from regions with prevalence of disease ≥ 3% (this excludes South Asia, Western Europe, North America, Central America and South America).

Refer to a hepatologist if test result is positive.

Intestinal parasites

Strongyloides: Screen refugees newly arriving from Southeast Asia and Africa with serologic tests for *Strongyloides*, and treat, if positive, with ivermectin.

Schistosoma: Screen refugees newly arriving from Africa with serologic tests for *Schistosoma*, and treat, if positive, with praziquantel.

Malaria

Do not conduct routine screening for malaria.

Be alert for symptomatic malaria in migrants who have lived or travelled in malaria-endemic regions within the previous three months (suspect malaria if fever is present or person migrated from sub-Saharan Africa). Perform rapid diagnostic testing and thick and thin malaria smears.

*Order of listing considers clinical feasibility and quality of evidence.

Chronic and noncommunicable diseases

People of certain ethnic backgrounds (specifically Latin Americans, Africans and South Asians) face a twofold to fourfold higher prevalence of type 2 diabetes mellitus than white people,[57] with earlier onset and poorer outcomes. People with hypertension have the most to gain from treatment of obesity, high cholesterol, hypertension and hyperglycemia. Culturally appropriate diabetes education and lifestyle interventions are effective in preventing the disease or improving disease management.[58] Iron deficiency is the most common nutritional deficiency in the world,[59] and immigrant women[60] and children can benefit from screening and supplementation.

Dental disease is often challenging for medical practitioners, but screening and treating pain with nonsteroidal anti-inflammatory drugs can lead to better outcomes and more effective referrals for oral health care.[61] In addition, there is value in recommending twice-daily tooth-brushing with fluoridated toothpaste, as some immigrants may not be familiar with this approach to oral health.[62] Loss of vision is the final common pathway for all eye diseases,[63] and all immigrants can benefit from having their visual acuity assessed soon after arrival in Canada.

Recommendations for chronic and noncommunicable diseases are summarized in Box 1D.

Box 1C: Summary of evidence-based recommendations for mental health and physical and emotional maltreatment*

Depression

If an integrated treatment program is available, screen adults for depression using a systematic clinical inquiry or validated patient health questionnaire (PHQ-9 or equivalent).

Individuals with major depression may present with somatic symptoms (pain, fatigue or other nonspecific symptoms).

Link suspected cases of depression with an integrated treatment program and case management or mental health care.

Post-traumatic stress disorder

Do not conduct routine screening for exposure to traumatic events, because pushing for disclosure of traumatic events in well-functioning individuals may result in more harm than good.

Be alert for signs and symptoms of post-traumatic stress disorder (unexplained somatic symptoms, sleep disorders or mental health disorders such as depression or panic disorder).

Child maltreatment

Do not conduct routine screening for child maltreatment.

Be alert for signs and symptoms of child maltreatment during physical and mental examinations, and assess further when reasonable doubt exists or after patient disclosure.

A home visitation program encompassing the first two years of life should be offered to immigrant and refugee mothers living in high-risk conditions, including teenage motherhood, single parent status, social isolation, low socioeconomic status, or living with mental health or drug abuse problems.

Intimate partner violence

Do not conduct routine screening for intimate partner violence.

Be alert for potential signs and symptoms related to intimate partner violence, and assess further when reasonable doubt exists or after patient disclosure.

Note: PHQ-9 = nine-item Patient Health Questionnaire.

*Order of listing considers clinical feasibility and quality of evidence.

Women's health

To prevent unintended pregnancy, screening for unmet contraceptive needs should begin soon after a woman's arrival in Canada. Giving women their contraceptive method of choice (the intrauterine device being the most common contraceptive worldwide, although personal preferences vary), providing the contraceptive method on site and having a good interpersonal relationship all improve contraceptive-related outcomes.[64]

School vaccination programs vary by province, and immigrant girls and women may miss school programs for human papillomavirus vaccination, depending on their age at the time of arrival. Subgroups of immigrants, most notably South Asian and Southeast Asian women, have substantially lower rates of cervical cytology screening than Canadian-born women.[65] Women who have never undergone cervical screening and those who have not had cervical screening in the previous five years account for 60%–90% of invasive cervical cancers. Providing information to patients, building rapport

Box 1D: Summary of evidence-based recommendations for chronic and noncommunicable diseases*

Type 2 diabetes mellitus

Screen immigrants and refugees > 35 years of age from ethnic groups at high risk for type 2 diabetes (those from South Asia, Latin America and Africa) with fasting blood glucose.

Iron-deficiency anemia

Women

Screen immigrant and refugee women of reproductive age for iron-deficiency anemia (with hemoglobin).

If anemia is present, investigate and recommend iron supplementation if appropriate.

Children

Screen immigrant and refugee children aged one to four years for iron-deficiency anemia (with hemoglobin).

If anemia is present, investigate and recommend iron supplementation if appropriate.

Dental disease

Screen all immigrants for dental pain. Treat pain with nonsteroidal anti-inflammatory drugs and refer patients to a dentist.

Screen all immigrant children and adults for obvious dental caries and oral disease, and refer to a dentist or oral health specialist if necessary.

Vision health

Perform age-appropriate screening for visual impairment.

If presenting vision < 6/12 (with habitual correction in place), refer patients to an optometrist or ophthalmologist for comprehensive ophthalmic evaluation.

*Order of listing considers clinical feasibility and quality of evidence.

and offering access to female practitioners can improve acceptance of Papanicolau (Pap) testing.[66]

Finally, newly-arrived pregnant women are at increased risk for maternal morbidity.[67] We identified social isolation, risks of unprotected or unregulated work environments, and sexual abuse (specifically in forced migrants) as priority areas for research.

Recommendations related to women's health are summarized in Box 1E.

Knowledge translation

We developed a summary of our recommendations and have engaged multiple stakeholders as partners to share these recommendations with their constituencies, including the Public Health Agency of Canada, Citizenship and Immigration Canada, regional health and public health authorities, immigrant community groups and primary care practitioners. These recommendations and their related evidence reviews are available on the *CMAJ* website (see www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1). Forty primary care practitioners from across Canada with experience working with immigrants pilot-tested the recommendations, provided feedback on the presentation format and are helping to promote the guidelines through their networks. Finally, we sought feedback on our recommendations from our immigrant community partners (specifically, the Edmonton Multicultural Health Brokers Cooperative, which represents 16 ethnic communities) and continue to work with our community partners to improve access to health services.

Box 1E: Summary of evidence-based recommendations for women's health

Contraception

Screen immigrant women of reproductive age for unmet contraceptive needs soon after arrival to Canada.

Provide culturally sensitive, patient-centred contraceptive counselling (giving women their method of choice, having contraception on site and fostering a good interpersonal relationship).

Vaccination against human papillomavirus

Vaccinate 9- to 26-year-old female patients against human papillomavirus .

Cervical cytology

Screen sexually active women for cervical abnormalities by Papanicolaou (Pap) test.

Information, rapport and access to a female practitioner can improve uptake of screening and follow-up.

*Order of listing considers clinical feasibility and quality of evidence.

Directions for future research

Immigrant populations are a heterogeneous group. Because of the selection processes that are in place, most immigrants arrive in good health, although some subgroups are at increased risk of chronic and infectious diseases and mental illness. More research is needed on strategies to address barriers to health services, most urgently for refugees, women and other immigrants with low income and language barriers. There is also a need to develop and study interventions for social isolation and intimate partner violence for pregnant immigrants and refugees. Data remain limited for immigrant children, refugee claimants and nonstatus persons and for many disease areas, including malaria morbidity, post-traumatic stress disorder and interventions for intimate partner violence.

More work must be done to improve immigrants' access to health services. We hope this evidence-based initiative will provide a foundation for improved preventive health care for immigrant populations.

For a summary of recommendations and clinical considerations, see Appendix 2, at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1.

Podcasts for practitioners and additional information for patients can be found at www.ccirhken.ca.

2. Selection of potentially preventable and treatable conditions

Community-based primary health care practitioners see most of the immigrants and refugees who arrive in Canada. This is not only because Canada's health care system centres on primary care practice, but also because people with lower socioeconomic status, language barriers and less familiarity with the system are much less likely to receive specialist care.[68]

Guideline development can be costly in terms of time, resources and expertise.[69] Setting priorities is critical, particularly when dealing with complex situations and limited resources.[70] There is no standard algorithm on who should determine top priorities for guidelines or how this should be done, although burden of illness, feasibility and economic considerations are all important.[71] Stakeholder engagement, to ensure relevance and acceptability, and the use of an explicit procedure for developing recommendations are critical in guideline development.[72–74] We chose primary care practitioners, particularly those who care for immigrants and refugees, to help the guideline committee in selecting conditions for clinical preventive guidelines for immigrants and refugees, with a focus on the first five years of settlement. A more detailed description of this Delphi process was published previously.[15]

Methods

We used a modified Delphi consensus process to select 20 high-priority conditions for guideline development.[70,75,76] To begin, we identified key health conditions using an environmental scan, literature review and input from key informants from the Canadian Initiative to Optimize Preventive Care for Immigrants national network, a nascent network of immigrant health providers. This initial step identified 31 conditions. During the ranking process, survey participants were invited to list additional conditions. These conditions, if associated with potentially effective clinical preventive actions, were integrated into the pool of conditions for subsequent ranking.

We developed priority-setting criteria that emphasized inequities in health, building on a process developed for primary care guidelines affecting disabled adults.[70,77] Importance or burden of illness is often used for setting priorities, usefulness or effectiveness is frequently used, and disparity is now a well-recognized component of many public health measures.[78] We defined our criteria as importance, usefulness and disparity:

- Importance: Conditions that are the most prevalent health issues for newly arriving immigrants and refugees; conditions with a high burden of illness (e.g., morbidity and mortality).
- Usefulness: Conditions for which guidelines could be practically implemented and evaluated. Such guidelines refer to health problems that are easy to detect, for which the means of prevention and care are readily available and feasible, and for which health outcomes can be monitored.
- Disparity: Conditions that might not be currently addressed or that are poorly addressed by public health initiatives or illness-prevention measures that target the general population.

We (H.S., K.P., M.R., L.N.) purposively selected 45 primary care practitioners, including family physicians and nurse practitioners, recently or currently working in a setting serving recent immigrants and refugees. We sampled clinical settings from 14 urban centres across Canada to ensure in-depth experience with a variety of migrants. The settings also covered a range of health service funding models: community health centres (centres locaux de services communautaires in Quebec), refugee clinics, group and solo practices, and ethnic community practices. We aimed to select practitioners with substantial experience, academic expertise or local leadership roles who were willing to commit to offering future input into guideline development and dissemination.

Immigrant and refugee health is a new subdiscipline. The skills, knowledge and experience that define expertise have not yet been determined, and there are no examinations, certification or developed courses that can be used as a proxy for expertise. We believed that contextual knowledge, experience arising from engaged care of immigrants and refugees in Canada, and related work experience in international health were important factors in determining expertise. As a measure of expertise, we adapted a formula used by Médecins Sans Frontières. This criterion combines work with Médecins Sans Frontières in developed countries and in the field. Our criterion for experience was set at seven years or more and included all work in developing countries. It was calculated as number of years of experience with migrants in Canada + (2 × years of experience working in developing countries).

As prompts for decision-making, we asked our practitioner panel to make choices based on the defined criteria, imagining that the guidelines under development might be used at a clinic serving new immigrants or by physicians who do not often see immigrant and refugee patients. Just as clinical practice does, these criteria challenged practitioners to make choices based on competing demands.

This first round of the Delphi survey aimed to ensure that we had the appropriate health conditions under consideration and to begin developing some consensus as to priorities. Participants were asked to rank the 31 conditions identified initially and to propose conditions that were not on the initial list. We chose an a priori cut-off of 80% consensus for inclusion in the top 20. In the second round, we presented an unranked, modified version of this list, excluding all conditions that had already reached 80% consensus and adding newly proposed conditions. The remaining conditions to be included in the top 20 were determined by overall ranking in the second round. This list was reviewed by the codirectors of the Edmonton Multicultural Health Brokers Co-operative (www.mchb.org/OldWebsite2008/default.htm), a group representing over 16 ethnic communities that had initially requested preventive health guidance relevant for immigrant

communities. In addition, the panel of experts who would be developing the guidelines reviewed the list. Then, during the final round, we requested approval, through a simple agree/disagree vote, of the process and the resulting list of priorities, with one-on-one interviews to resolve concerns in the two months following the ranking process.

Consent to participate in the Delphi survey was determined by completion of a questionnaire. Demographic questions elicited personal, professional and practice characteristics of the study participants. With each round, we sent to participants (by email) an explanation of the process to date, the priority-setting criteria, instructions for filling out the survey and a link to the SurveyPro survey. Telephone follow-up was used to maximize response rate. We used Microsoft Excel for the analysis.

Results

Ninety per cent (40/45) of the selected practitioners agreed to participate. Four of the five participants who chose not to participate cited reasons of leave of absence or sabbatical leave, and the fifth cited workload. Ninety-five per cent of the consenting participants completed the first round of the survey, and 88% completed the second and third rounds (Figure 2A). The first two rounds of the Delphi consensus process took place between Mar. 5 and May 31, 2007.

The 40 participants consisted of 35 physicians and five nurse practitioners or nurses with expanded roles. Participants were predominantly women and had been in practice for an average of 14 years. They worked an average of 16 hours per week with immigrants and refugees. More than 80% spoke two or more languages (Table 2A).

The average length of experience working with refugees and immigrants in Canada was 7.5 years; 64% of participants had some experience working in developing countries, with a median overseas duration of 16 (range 1–120) months. Thirty-one per cent of primary care practitioners self-identified as being an immigrant or refugee; of the remainder, 38% self-identified as being the child of an immigrant or refugee (of the 35 practitioners who responded to this optional question).

Forty-five per cent of participants identified themselves as having had prior training in the field, which included accredited tropical medicine courses, designated rotations during residency, work exposures before becoming a health care practitioner, and conferences or self-directed studies in multicultural or cross-cultural medicine.

The refugees and immigrants with whom most practitioners interacted came from all parts of the world; using an average of straight ranking (1 to 6) of regions, south and central Africa was estimated as the most frequent source region of immigrants for these practitioners. Children formed, on average, 30% of clientele, and women, 41%. Seventy-one per cent of migrants were estimated to have been in Canada less than five years, and 73% were involuntary migrants. Involuntary migrants included refugee claimants, so-called Convention Refugees and internally displaced persons (although this is not really an issue for Canada).

Box 2A lists the top 20 conditions for which practitioners identified a current need for guidelines on the basis of our criteria. In the first round, 80% consensus was reached to *include* 11 conditions. Eighty per cent consensus was also reached to *exclude* three conditions from the process: Chagas disease, colon cancer and prostate cancer. Three well-defined and unique conditions were proposed for the second round of

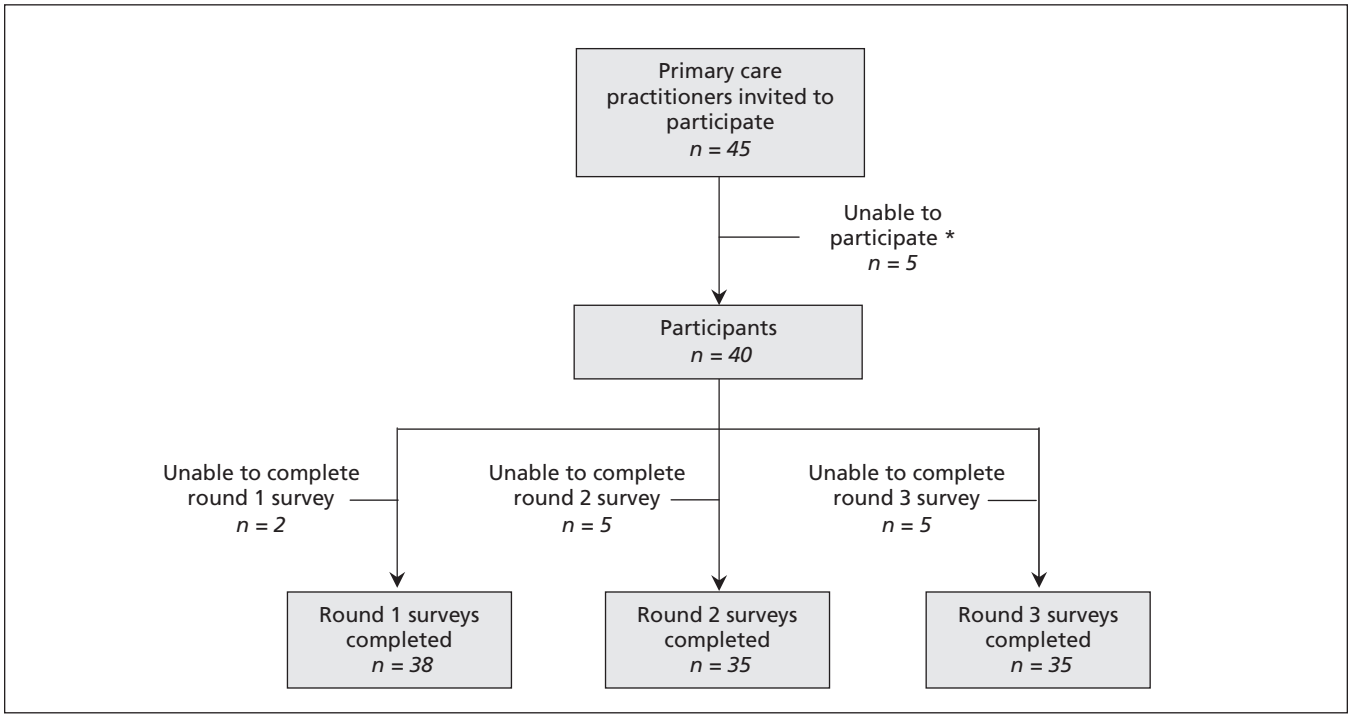

Figure 2A: Participant sampling and response rate. *One person was on sabbatical, three were on a leave of absence, and one cited workload. Adapted, with permission, from Swinkels and associates.[15]

ranking: osteoporosis, contraception and vision screening. The nine conditions selected in the second round were based on average ranking (Box 2A).

The list of top 20 conditions was reviewed and approved, with one modification, by the panel of key experts who would be developing the guidelines: routine vaccine-preventable diseases were considered a single priority, with tetanus, diphtheria and polio combined with measles, mumps and rubella for the purposes of guideline development. As a final step, we sent the 20 identified conditions to survey participants for approval and discussion; all 35 people who participated in this round approved (i.e., 88% of the 40 original participants).

Discussion

Refugees and many immigrants may have poor or deteriorating health, because of conditions experienced before, during or after arrival to Canada. A health care system that is poorly adapted to their needs compounds this situation, resulting in further marginalization. Our Delphi consensus process used practitioners' years of field experience strategically to identify preventable and often unrecognized clinical care gaps that can result from such majority-system biases.

An overarching goal of our guideline development project was to supplement guidelines that exist for the general Canadian population[79] by focusing on health inequities. We therefore selected a high proportion of practitioners who work with refugees, a particularly vulnerable subgroup of immigrants prone to disparities. Using practitioners to select conditions ensured both that the needs of the future guideline-users were given priority and that conditions presenting serious clinical challenges, but that might be under-represented in the literature, were included. In working with perceived needs of practitioners, we risked a reporting bias: overemphasizing popular stereotypes (e.g., the importance of infectious diseases), underemphasizing unrecognized or emerging conditions (e.g., vitamin D deficiency)[80] and loss of precision in terms of specific populations (e.g., our list does not fully reflect the greatest needs of children).[81] Also, by deliberately selecting participants who work with refugees, we risked falsely stereotyping the health status of all immigrants by overemphasizing refugee-specific conditions and, conversely, by underemphasizing common heath risks, such as hypertension, that affect all immigrants.

The Delphi process generated 20 conditions for guideline development that reflected the needs and priorities of primary care practitioners working with immigrants and refugees. Although immigrant screening has historically focused on infectious diseases,[82] the conditions selected by survey participants extended across a spectrum of diseases, including infectious disease, dentistry, nutrition, chronic disease, maternal

Table 2A: Demographic characteristics of 40 participants in Delphi consensus process*

Characteristic	No. (%) of participants†
Sex, female *(n = 40)*	25 (62)
Age, yr, mean	42.5
Length of practice, yr, mean	14.0
Province of practice *(n = 40)*	
British Columbia	7 (18)
Prairies (Alberta, Saskatchewan, Manitoba)	4 (10)
Ontario	17 (42)
Quebec	8 (20)
Maritime (New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador)	4 (10)
Type of practice *(n = 39)*	
Solo	2 (5)
Group (excluding those in a community health centre)	19 (49)
Community health centre	18 (46)
Level of cross-cultural exposure and expertise	
Experience working with immigrants or refugees, mean, yr	7.5
Medical experience in low- and middle-income countries *(n = 39)*	25 (64)
≥ 7 years' experience (criteria adapted from Médecins Sans Frontières) *(n = 40)*	26 (65)
Bilingual *(n = 40)*	33 (82)
Speaks more than 2 languages *(n = 40)*	17 (42)

*Adapted, with permission, from Swinkels and associates.[15]
†Except where indicated otherwise.

Box 2A: High-priority conditions

1. Abuse and domestic violence*
2. Anxiety and adjustment disorder*
3. Cancer of the cervix
4. Contraception
5. Dental caries, periodontal diseases*
6. Depression*
7. Diabetes mellitus*
8. Hepatitis B*
9. Hepatitis C
10. HIV/AIDS*
11. Intestinal parasites*
12. Iron-deficiency anemia*
13. Malaria
14. Measles, mumps, rubella, diphtheria, tetanus, pertussis, polio and Hib disease
15. Pregnancy screening
16. Syphilis
17. Torture and post-traumatic stress disorder*
18. Tuberculosis*
19. Varicella (chicken pox)
20. Vision screening

*Conditions identified by consensus in first round (the rest were selected in the second round).

and child health, and mental health. Mental health conditions were rated particularly high, and all four of the proposed mental health conditions reached 80% consensus in the first round of the Delphi survey. Four infectious diseases and three chronic diseases also reached 80% consensus. The inclusion of dental caries and periodontal disease in the top 11 conditions is notable, reflecting important cultural, as well as socioeconomic, barriers that refugees and immigrants face in access to dental care.[83] This range of conditions suggests that immigrant and refugee medicine covers the full spectrum of primary care. Although infectious disease continues to be an important area of concern, we are now seeing mental health and chronic diseases as key considerations for recently arriving immigrants and refugees.

Take-home messages

Preventable and treatable, but often-neglected, health conditions were selected for the development of guidelines for immigrant populations made vulnerable because of health system bias. Criteria that emphasized addressing inequities in health helped in identifying gaps in clinical care. This evidence-based guideline initiative marks the evolution of immigrant and refugee medicine from a focus on infectious diseases to a more inclusive consideration of such chronic diseases as mental illness, dental disease, diabetes mellitus and cancer. We hope that this practitioner engagement process will improve the practicality of the evidence-based guidelines, help practitioners who already to work in the area to target and streamline their efforts, and encourage new practitioners to enter this challenging and interesting discipline.

For the complete description of the Delphi consensus process, see www.cmaj.ca/lookup/doi/10.1503/cmaj.090290.

3. Evaluation of evidence-based literature and formulation of recommendations

A variety of methods are used for developing clinical guidelines and practice recommendations.[84] We used the recently developed approach of moving away from recommendations classified by letters and numbers to the simplified classification system recommended by the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group[85] and applied this to clinical preventive actions. Our guideline development process followed the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (www.agreetrust.org), which is recognized internationally as providing best-practice criteria for evidence-based guideline development.

We developed our recommendations on the basis of a prespecified process overseen by the guideline committee of the Canadian Collaboration on Immigrant and Refugee Health. Defining a methods process ensured that each guideline was developed in a systematic, reproducible manner and was based on the best evidence available. This process was based on existing guidelines, including the Canadian Medical Association (CMA) handbook on developing clinical practice guidelines[84] and the ADAPTE framework for adapting existing guidelines.[86] Our process emphasized identifying immigrant- and refugee-specific evidence on efficacy and population characteristics from guidelines, systematic reviews and primary studies. When immigrant- and refugee-specific evidence was unavailable, we used specific criteria, adapted from the Cochrane Handbook,[87] to judge how this evidence applied to our intended target population.

Conditions considered most important by practitioners caring for immigrants and refugees in Canada were assigned to groups of content experts, who were asked to develop evidence reviews with clinical conclusions for recent immigrants and refugees to Canada using a logic model and following a structured 14-step process. The guidelines focus on clinical care gaps[84] during the "health settlement period," which we define as the first five years of residence in a new country for an immigrant or refugee. This is the period during which health practitioners are likely to have initial contact with this population and the time during which stressors from a person's country of origin and country of settlement are most likely to manifest. Immigrants and refugees are thus grouped together by this organizing period of resettlement; however, the heterogeneity, complexities and differences between and within these groups were recognized throughout the process.

In our process, we emphasized making clinically relevant recommendations and establishing an extension to existing guidelines rather than a replacement or revision.

Methods

We used the AGREE checklist to guide the overall development process: a panel of experts and a guideline committee set the scope and purpose of the guidelines, and stakeholders were engaged to select priority conditions and to merge recommendations. To ensure rigour and applicability, we developed 14 standardized steps (described below and summarized in Box 1A in section 1 of this article, above). The guideline committee and other guideline experts and practitioners provided feedback to improve clarity of presentation. We accepted funding only from university and government sources, to ensure editorial independence. Here we describe the steps in our standardized evidence review.

Step 1: Develop clinician summary table

A standardized clinician summary template was used in setting the framework for each selected condition. During subsequent steps, this clinician summary table was used to focus development of the preventive guidelines, on the basis of the condition's prevalence in the population of interest, population-specific clinical considerations (e.g., stigma and awareness of screening and treatment options), clinical actions upon migration, screening tests, screening interval or timing, and treatment.

Step 2: Develop logic model and key questions

Our logic model, which illustrates a plausible causal pathway for each guideline, was adapted from the US Preventive Services Task Force,[88] with the addition of a box to consider patient perspectives (for an example, see Figure 3A). The logic model outlines the population of interest (immigrants and refugees); the intervention (i.e., screening); the target condition; adverse effects of screening, diagnosis and treatment; treatment options and outcomes; and the link between treatment and reductions in morbidity and mortality. The model illustrates how identification of the condition can be expected to lead to treatment and reduced morbidity and mortality in the population of interest. This logic model identified the need to consider whether intermediate outcomes would be accepted as the basis for the recommendations, and if so, the strength of association between intermediate and clinical outcomes. For example, high-risk behaviour is an intermediate outcome in reducing morbidity and mortality from HIV.

Review group leaders were asked to use this logic model to define the PICO (population, intervention, comparison and outcome) format for each clinical action. These elements guided the search for evidence.

Step 3: Set the stage for admissible evidence

We followed the process used by the US Preventive Services Task Force and the Canadian Task Force on Preventive Health Care to focus on evidence most critical to making a recommendation.[84] We began with searches of specific guidelines and systematic reviews for the target population of immigrants and refugees, to document the current state of direct evidence. We extended these searches to capture evidence from the general population. The search strategy was modelled on that used by the Cochrane Collaboration[89] and

was conducted by one of two clinical librarians. The following databases were searched: MEDLINE, PreMEDLINE, Cochrane Database of Systematic Reviews, Database of Abstracts of Reviews of Effectiveness, Embase, CINAHL, National Guideline Clearing House and the CMA Infobase. We also searched the databases and publications of the Canadian Task Force on Preventive Health Care, the US Preventive Services Task Force, the Centers for Disease Control and Prevention, and the World Health Organization. We asked authors to create flow charts of their searches, using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA)[90] framework as a template.

Step 4: Assess eligibility of systematic reviews

Two members of the review group independently reviewed the search strategies, abstracts and relevant full-text articles on the basis of the inclusion criteria and specified outcomes of interest.

Data from each eligible systematic review were extracted and documented in a table with the following headings: author and year, objective, number and types of studies included, setting, participants, intervention and findings. If no eligible systematic review was found, then the review group team searched for the next best available study (randomized controlled trials, observational studies) that addressed the question.

Step 5: Search for data specific to immigrant and refugee populations

A tailored search process was used to gather information on population-specific considerations relevant to immigrants and refugees in the following areas:

- baseline risk (prevalence) versus the Canadian general population
- rate of clinically important beneficial and harmful outcomes (e.g., mortality, morbidity)
- genetic and cultural factors (e.g., knowledge, attitudes, practices, cultural preferences, dietary preferences)
- compliance variation (e.g., physicians' and patients' adherence to recommendations)

Step 6: Refocus on key clinical preventive actions and key questions

After reviewing the literature and available evidence, review group teams were asked to focus on the most relevant clinical action(s) and immigrant and refugee subpopulation(s) and to select three or fewer candidate recommendations with added value over and above existing guidelines.

Step 7: Assess quality of systematic reviews

For each recommendation, all relevant systematic reviews were compared to ensure consistency among findings. If the conclusions of the systematic reviews were consistent, the most recent review was selected. Any inconsistencies in reviews were explicitly addressed: reasons for inconsistencies, including the evidence base or the interpretation, were explored, and the most appropriate systematic review was selected, considering the purposes of these guidelines.

The most relevant systematic reviews were then assessed

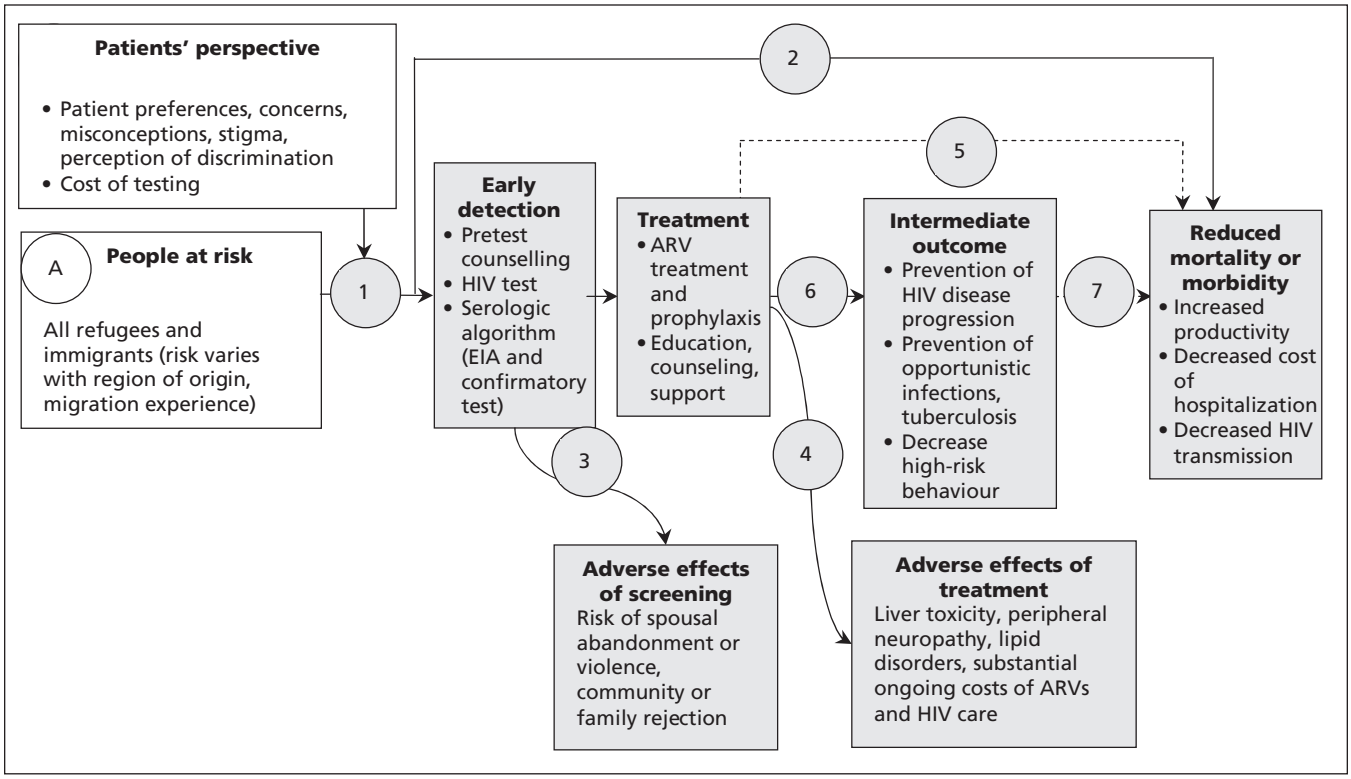

Figure 3A: Sample logic model for HIV (adapted from US Preventive Services Task Force).[88] Open rectangles designate the potential screening population and patient factors to be considered; shaded rectangles designate interventions and related outcomes; and circles and numbers provide points in the evidence chain that were used to develop the search questions. Note: ARV = antiretroviral, EIA = enzyme immunoassay.

for quality to ensure they met the four criteria assessed in the National Institute for Health and Clinical Excellence (formerly the Health Development Agency) critical appraisal tool for evidence-based briefings or reviews of reviews:[91] systematicity (the review must apply a consistent and comprehensive approach), transparency (the review must be clear about the processes involved), quality (the review must have appropriate methods and analysis) and relevance (the review must be relevant in terms of focus; i.e., populations, interventions, outcomes and settings).

Step 8: Search for evidence to update selected systematic reviews

To find new primary studies published since the selected systematic review, a search was conducted using the same approach as in step 3.

Step 9: Assess eligibility of new studies

As in step 4, two reviewers independently screened for relevant studies and then assessed each study for eligibility. Each relevant study was summarized to describe study design, the clinical intervention, details about length of intervention and follow-up, outcomes, population characteristics and data analysis.

For studies evaluating the effectiveness or safety of treatment or screening, the Cochrane Effective Practice and Organisation of Care Review Group's data collection checklist[92] and the Newcastle–Ottawa Scale[93] for assessing the quality of nonrandomized studies in meta-analyses were used to assess study limitations.

Step 10: Integrate data from updated search

Any new relevant and eligible studies that could modify or substantially strengthen the conclusions of the "reference" systematic review were assessed and added to the worksheet.

Step 11: Synthesize final evidence bank and draft two key clinical actions

The review group teams synthesized the evidence from the updated systematic reviews, explicitly incorporating clinical considerations and value judgments specific to immigrant and refugee populations to draft preferably no more than two key clinical actions, targeting (where necessary) specific populations or regions.

Box 3A: Grades of evidence of the Grading of Recommendations Assessment, Development and Evaluation (GRADE) Working Group (www.gradeworkinggroup.org)

- High quality: Further research is very unlikely to change our confidence in the estimate of effect.
- Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
- Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
- Very low quality: We are very uncertain about the estimate.

Step 12: Develop table for summary of findings

Both desirable and undesirable effects of the intervention were summarized, in both absolute and relative terms, for each patient-important outcome using the summary-of-findings table format adopted by the Cochrane Collaboration.[94] The quality for each outcome was assessed using the items specified by the GRADE Working Group (indirectness, consistency, precision, reporting bias and study limitations) (Box 3A). Observational studies that met these five criteria were upgraded if they also met one of three additional criteria (dose–response, influence of confounding variables, large effect).[85] A separate table was developed for each clinical action or question. For dichotomous outcomes, relative risks or odds ratios were extracted from the reference systematic review (or next best available study). Number needed to treat for one person to benefit was calculated as 1/(control event rate × [1 – relative risk]). The control event rate was taken from the control group of the reference systematic review or best available study.

Step 13: Identify gaps in evidence and needs for future research

The review group teams identified gaps in the literature and outlined recommendations for future research on such topics as implementation, inequalities and vulnerable groups, cost-effectiveness and implications of applying the recommendations in health care settings.

Step 14: Develop clinical preventive recommendations

For each condition, the guideline committee reviewed the clinician summary table, the logic model and the summary-of-findings tables and met with the review group leader to clarify details. Then, for each key clinical action, the guideline committee discussed each of the issues in the GRADE system (see Table 1B in section 1 of this article, above):[16–18] the balance between desirable and undesirable effects (the relative importance of burden, benefits and harms), quality of the available evidence, and values and preferences. We explicitly decided not to use cost and feasibility in judging the basis of the recommendation because we did not have sufficient confidence in the data. Rather than report the strength of the recommendation as weak or strong, the guideline committee chose to make the recommendation only in the event of net benefits and to report the basis for the recommendation, to provide clinicians with key information to consider when selecting or discussing the preventive recommendation with a patient. The guideline committee took votes if the agreement was not unanimous, and the majority prevailed.

Discussion

This 14-step process was useful for ensuring sufficient uniformity among the transdisciplinary teams for each condition. Specifically, this systematic approach enabled the review group teams to meet the requirements of the GRADE quality-assessment process and the steering group to apply the GRADE recommendation process. These steps were also designed to conform with AGREE, the current quality stan-

dard for guidelines. We worked with each review group leader and team to ensure we met the 23 AGREE criteria in six domains: scope and purpose, stakeholder involvement, rigour of development, clarity and presentation, applicability and editorial independence.[16]

Take-home messages

We combined the AGREE best-practice framework, the current quality standard for guidelines, with the recently developed GRADE approach to quality assessment to develop evidence-based clinical preventive guidelines for immigrants and refugees to Canada. Here, we have documented the systematic approach used to produce the evidence reviews and apply the GRADE approach. The 14-step approach included building on evidence from previous systematic reviews, searching for and comparing evidence between general and specific immigrant populations, and applying the GRADE criteria for making recommendations. The basis of each recommendation (balance of benefit and harm, quality of evidence, values) is stated explicitly to ensure transparency.

For a more complete description of the evaluation of the literature and formulation of recommendations, see www.cmaj.ca/lookup/doi/10.1503/cmaj.090289.

12. Depression

Depression is a common and costly health care problem.[383] Nearly all people with major depression are seen only in primary care, but up to 60% of cases go undetected and untreated.[384] The level of underdiagnosis and inadequate treatment for depression is higher among migrants, who face cultural, linguistic and other barriers to accessing mental health care.[385] Although migration in itself does not lead to an increase in depression, specific stressors and challenges can contribute to the onset of depression or influence its course, particularly among refugees.[386] In general, immigrants to Canada have lower rates of depression than the general Canadian population, whereas refugees have comparable rates of depression but higher rates of post-traumatic stress disorder.[387] Over time, the rate of depression in immigrant groups increases to match that of the general population. We undertook this review to determine whether existing approaches to screening for depression are appropriate for immigrants and refugees and to identify strategies that could improve the quality of care. The recommendations of the Canadian Collaboration for Immigrant and Refugee Health on screening for depression are outlined in Box 12A.

Box 12A: Recommendations from the Canadian Collaboration for Immigrant and Refugee Health: depression

If an integrated treatment program is available, screen adults for depression using a systematic clinical inquiry or validated patient health questionnaire (PHQ-9 or equivalent).

Link suspected cases of depression with an integrated treatment program and case management or mental health care.

Basis of recommendations

Balance of benefits and harms

The number needed to treat to prevent one case of persistent depression was 18 (95% confidence interval 10–91) in studies of 1–12 months' duration. Treatment in enhanced depression-care models accounts for an additional 1%–2% reduction in depressive symptoms relative to usual care. The prevalence of depression is similar among Canadians and among immigrants and refugees (10.7%), but access to care may be limited for migrants. No data on harms were reported, which would include patients' out-of-pocket costs and adverse effects of medication.

Quality of evidence

Moderate

Values and preferences

The committee attributed more value to screening and treating depression to improve quality of life and less value to concerns about impairing rapport in therapeutic relationships, cultural acceptability and potential stigma of diagnostic labels, the cost and inconvenience of additional follow-up assessments, and the possible adverse effects or costs associated with treating patients with an incorrect diagnosis.

Note: PHQ-9 = nine-item Patient Health Questionnaire.

Methods

We used the 14-step approach developed by the Canadian Collaboration for Immigrant and Refugee Health[16] (summarized in section 3 of this article, above). We considered the epidemiology of depression in immigrant populations and defined clinical preventive actions (interventions), outcomes and key clinical questions. We searched MEDLINE, Embase, CINAHL, PsychLIT, the Cochrane Library and other sources from Jan. 1, 1998, to Jan. 1, 2010. Detailed methods, search terms, case studies and clinical considerations can be found in the complete evidence review for depression (Appendix 10, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1).

Results

Recommendations from the Canadian Task Force on Preventive Health Care[388] and the US Preventive Services Task Force[389,390] make scant mention of immigrants and refugees. In its guidelines for the treatment of depression,[391] the American Psychiatric Association notes that language and other cultural variables may hamper accurate diagnostic assessment and treatment; it also mentions ethnic differences in the response to pharmacotherapy. The guidelines of the UK National Institute for Health and Clinical Evidence include statements on ethnic variations in prevalence and on the importance of social and cultural factors in choice of treatment.[392] More recent studies, discussed in the complete evidence review (Appendix 10, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1), provide evidence that can inform the implementation of screening for depression and integrated care for immigrants and refugees in primary care.

What is the burden of depression in immigrant populations?

The Canadian Community Health Survey (version 1.2) revealed a lifetime prevalence of depression of 10.8% in the general population.[393] Immigrants who had arrived in Canada in the previous four years had the lowest rates of depression (3.3%–3.5%). Among those who had arrived 10–14 years ago (rate 8.5%) or more than 20 years ago (rate 6.8%–7.2%), rates were similar to those of the Canadian-born population.[394] Proficiency in English or French and employment status did not affect these rates. A meta-analysis of studies on serious mental disorders among refugees found rates of depression similar to those in the general population but much higher levels of post-traumatic stress disorder, often in association with depression.[51]

Pregnancy and the postpartum period have been associated with symptoms of depression in immigrant women.[395] Risk factors may include stressful life events, lack of social support

or isolation, physical health problems, inability to speak the language of the host country, the demands of multiple roles and separation from children who have remained in the country of origin.[396,397]

Does screening for depression decrease morbidity and mortality?

Screening tools

Many screening instruments for depression have been validated in primary care settings, and little evidence suggests that any particular instrument performs better than other instruments, although brief tools tend to be less specific.[398] Both brief screening tools (two or three items) and longer ones tend to have relatively high false-positive rates (60%–70%) when the prevalence of depression is 10%.[399] Therefore, positive results on screening must be confirmed by a full diagnostic interview. Most screening instruments have not been validated for many of the immigrant groups commonly seen in primary care in Canada, although the patient health questionnaire has been validated with Chinese, South Asian and other populations.

Relative benefits and harms of treatment

In a systematic review of screening for depression conducted in 2002, the US Preventive Services Task Force found that clinical trials of integrated programs have demonstrated modest improvements in patient outcomes, but benefits have not been observed when screening results are simply reported to physicians without coordinated treatment and follow-up.[400] Subsequent reviews have confirmed this finding.[401] Adverse effects among immigrants have not been systematically studied, but they may include impaired rapport and less use of general medical services if patients believe they are being labelled and stigmatized or are being treated improperly, the cost and inconvenience of additional follow-up assessments, and possible adverse effects or costs associated with treating patients with an incorrect diagnosis.

In a recent meta-analysis, Gilbody and associates[398] found no benefit for screening alone, although there was some benefit in high-risk populations. However, a cumulative meta-analysis showed modest benefit when an integrated system of collaborative care was in place for follow-up (Table 12A).[402] In a low-quality longitudinal study conducted in the United States, Wells and colleagues[403] examined the effect of screening for depression within an integrated system of care, with follow-up by nurses and with other quality-associated improvements. The greatest improvement was seen for minority groups, specifically African Americans and Latinos.[404]

Clinical considerations

Screening

Screening should be conducted in a language in which the patient is fluent, either with translated instruments or through a trained interpreter. Cultural variations in presentation of symptoms, ways of coping and the stigma attached to mental health problems may complicate detection and treatment.[405] The presence of prominent somatic symptoms and patients' tendency to attribute their depressed mood to somatic distress can also reduce primary care physicians' recognition of depression.[406]

Among refugee patients with depression, more than half also have post-traumatic stress disorder, and this comorbidity can complicate the recognition of depression.[51] Many cultures strongly stigmatize mental health problems, which may limit disclosure of behavioural or emotional difficulties.[405] Depression can be distinguished from other forms of mental health problems and can be explained as a state of "energy depletion" and demoralization, which may provide a rationale for psychosocial assessment and treatment.

Child-bearing women

Guidelines from obstetrical groups have proposed that women be screened for depressive symptoms in each trimester of pregnancy, at 1–2 weeks postpartum, and possibly at 2, 4, and 6

Table 12A: Summary of findings for effects of collaborative care for depression

Patient or population: Patients with depression
Setting: Primary care
Intervention: Collaborative care
Comparison: Usual care
Source: Gilbody S, Bower P, Fletcher J, et al. Collaborative care for depression: a cumulative meta-analysis and review of longer-term outcomes. *Arch Intern Med* 2009;166:2314-21.[402]

Outcome	Absolute effect		Relative effect (95% CI)	No. of participants (studies)	GRADE quality of evidence	Comments (95% CI)
	Risk for control group	Difference with collaborative care				
Depression at 6 mo*	See comment	0.25 (0.18–0.32)	NA	12 344 (35)	Moderate†	NNT 18 (10–91)

Note: CI = confidence interval; GRADE = Grading of Recommendations Assessment, Development and Evaluation; NA = not applicable; NNT = number needed to treat.
*Standardized depression scales.
†Directness uncertain because the studies were conducted in the US health system setting, and it is unclear whether their results would apply to immigrants and refugees in the Canadian health care system.

months postpartum.[407–409] The Edinburgh Postnatal Depression Scale or nine-item patient health questionnaire have been used with immigrant women. Immigrant women's multiple roles in the home and the workplace may impede access to health services.[395,396] Availability of child care facilities, transportation and support from family members and spouses can facilitate their seeking help. Group meetings can be an effective way to provide social support and health-promotion information.

Adolescents and children

The US Preventive Services Task Force has recommended screening adolescents (age 12–18 years) when integrated systems of treatment are available, including assessment, psychotherapy and follow-up.[410,411] It is unclear which of the more than 30 available depression scales is best for screening and diagnosing depression among immigrant and refugee youth.

Elderly people

Migrant elderly people have not been well studied but may have a high risk of depression because of social isolation, loss of familiar surroundings and the changing nature of the family as members adapt to the new social context.[412]

What are the potential implementation issues?

Linguistic and cultural differences may constitute substantial barriers to recognition of depression and subsequent treatment negotiation and delivery.[413,414] Medical interpreters, "culture brokers," bilingual and bicultural mental health practitioners, clinician training in cultural competence and cultural consultation may mitigate these potential barriers.[52,415–417] Screening for depression produces benefits only when it is linked to an integrated system of care. An integrated system involves the following elements: systematic patient education, availability of allied health professionals to support continuity of care, frequent follow-up, a caseload registry to track patients, caseload supervision by a psychiatrist if indicated, stepped care and a plan for preventing relapse.[418] Stepped care involves a progression of levels from patient education and self-management to medication or psychotherapy and, for complex cases, referral to a mental health practitioner.[419]

The clinical relationship is central to detection and treatment of mental health problems in primary care. Screening with structured questionnaires cannot replace clinical sensitivity, systematic inquiry and relationship-building. Given the great diversity of immigrant and refugee patients, no single approach is likely to be sufficient for optimal recognition and appropriate treatment of depression.

Recommendations of other groups

The Canadian Task Force on Preventive Health Care recommends screening adults for depression in primary care when integrated systems that include diagnostic, treatment and follow-up components are in place.[388] The US Preventive Services Task Force recommends screening adolescents (age 12–18 years) when integrated systems of treatment, including assessment, psychotherapy and follow-up, are in place; however, it concludes that evidence is insufficient to make any recommendation for children 7–11 years of age.[410,411] Our recommendations highlight the value of screening for depression in the context of integrated treatment programs.

Take-home messages

- Rates of depression are lower among new immigrants to Canada, but over time these rates generally rise to match the rate in the general population.
- The prevalence of depression among refugees is comparable to that in the general population.
- Existing guidelines for depression suggest that all patients should be screened for depression when integrated systems are in place to provide follow-up treatment.
- For immigrants, use information about depression in relevant languages, translated screening questions and trained interpreters, as well as systematic inquiries about losses, stressors and symptoms.
- Moderate to severe depression should be treated with a stepped-care model, beginning with psychoeducation and antidepressant medication, close follow-up and culturally appropriate counselling.

For the complete evidence review for depression in immigrant populations, see Appendix 10, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1.

More detailed information and resources for screening, assessment and treatment of depression can be found at: www.mmhrc.ca.

13. Post-traumatic stress disorder

A large proportion of new immigrants to Canada come from countries experiencing social turmoil, and some are directly affected by protracted conflicts or war.[420] Refugees and others who face significant trauma and loss are at risk for mental health consequences, including post-traumatic stress disorder. For three main reasons, primary care practitioners play a key role in the recognition and management of post-traumatic stress disorder in immigrants and refugees. First, immigrants and refugees underutilize formal mental health services.[420] Second, an integrated treatment approach is often needed for extreme traumas, common in refugees, such as torture and rape, which have severe and long-lasting consequences for both physical and mental health.[421] Third, a family perspective is essential because trauma stemming from organized violence tends to affect the whole family, particularly children, who may not display dramatic or easily recognizable symptoms. We conducted an evidence review to determine the burden of post-traumatic stress disorder within immigrant and refugee populations, to evaluate the effectiveness of screening and treatment, and to identify barriers for primary care. The recommendations of the Canadian Collaboration for Immigrant and Refugee Health on post-traumatic stress disorder are outlined in Box 13A.

Box 13A: Recommendations from the Canadian Collaboration for Immigrant and Refugee Health: post-traumatic stress disorder

Do not conduct routine screening for exposure to traumatic events, because pushing for disclosure of traumatic events in well-functioning individuals may result in more harm than good.

Be alert for signs and symptoms of post-traumatic stress disorder, especially in the context of unexplained somatic symptoms, sleep disorders or mental health disorders such as depression or panic disorder, and perform clinical assessment as needed to address functional impairment.

Basis of recommendation

Balance of benefits and harms

Many persons who have been exposed to trauma do fine once they find safety and social supports. Brief screening instruments overestimate the rate of disease because they focus on symptoms and do not measure functional impairment. Detailed inquiry and pushing for disclosure without indications of distress or disorder could be harmful. There are no clinical trials demonstrating the benefits of routine screening for post-traumatic stress disorder.

Quality of evidence

Low (evidence available for refugee populations)

Values and preferences

The committee attributed more value to preventing potential harms from routine screening in the absence of clear evidence of benefits and determined that post-traumatic stress disorder was best dealt with through primary care practitioners remaining alert for signs and symptoms of this condition and performing clinical assessment to address functional impairment.

Methods

We used the 14-step method developed by the Canadian Collaboration for Immigrant and Refugee Health[16] (summarized in section 3 of this article, above). We considered the epidemiology of post-traumatic stress disorder in immigrant populations and defined clinical preventive actions (interventions), outcomes and key clinical questions. We searched MEDLINE, Embase, CINAHL, PsychLIT, the Cochrane Library and other sources from Jan. 1, 2002, to Dec. 31, 2010. Detailed methods, search terms, case studies and clinical considerations can be found in the complete evidence review for post-traumatic stress disorder (Appendix 11, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1).

Results

We identified 16 systematic reviews relevant to immigrants and refugees and five guidelines. We selected the 2005 guidelines commissioned by the National Institute for Clinical Excellence for the management of post-traumatic stress disorder in primary care,[422] but none of the selected intervention studies in those guidelines provided evidence for immigrants or refugees. We also selected four Cochrane reviews on treatment of post-traumatic stress disorder,[423–426] the practice guidelines from the International Society for Traumatic Stress Studies[427] and a systematic review on treatment of this condition in refugees and asylum seekers.[428]

What is the burden of illness of post-traumatic stress disorder in immigrant populations?

Most persons who experience traumatic events have a favourable mental health prognosis.[53] When symptoms of post-traumatic stress disorder or acute stress disorder develop, there is, in most cases, substantial natural recovery (estimated at about 80%). However, those in whom post-traumatic stress develops may remain symptomatic for years and are at risk of secondary problems, such as substance abuse.[54] A meta-analysis of studies involving adult refugees resettled in developed countries reported a 9% prevalence of post-traumatic stress disorder, and 5% had major depression. Among refugees with major depression, 71% also had post-traumatic stress disorder. Conversely, 44% of refugees with post-traumatic stress disorder also had major depression.[51] Studies of child refugees report 11% prevalence of post-traumatic stress disorder.[429,430] Symptoms may be reactivated when faced with new traumas, particularly if reminiscent of earlier traumatic experiences.[431] Torture and cumulative trauma are the strongest predictors of post-traumatic stress disorder and are associated with chronic physical and mental health problems.[430] Fear of repatriation may exacerbate consequences of premigratory traumas.

Longitudinal studies from Canada indicate that most adults and children with refugee status adapt well, in spite of a high level of exposure to premigratory trauma.[432,433] A population-based health survey from Quebec similarly found that non-refugee immigrants also experienced high levels of premigratory trauma, but that most immigrants were in good mental health.[434]

Does screening for post-traumatic stress disorder decrease morbidity and mortality?

Screening

Several short screening instruments practical for primary care settings have been developed.[435] The four-item primary care post-traumatic stress disorder screening scale[436] and the Breslau seven-item screening scale (available at http://ajp.psychiatryonline.org/cgi/content/full/156/6/908#T2) are two simple means of identifying symptoms in primary care patients. In both cases, their cultural validity is unknown. Very few screening instruments have been tested for diagnostic accuracy among immigrants, refugees and asylum seekers. However, it may be reasonable to use questionnaires to assist in identifying symptoms, as part of a clinical assessment when addressing functional impairment.

Relative benefits and harms of psychological treatment (adults and children)

The systematic review and meta-analysis commissioned by the National Institute for Clinical Excellence[422] provided evidence that psychological treatments, including trauma-focused cognitive–behavioural therapy and eye movement desensitization and processing, reduce the symptoms of post-traumatic stress disorder. We rated the quality of this evidence as low because of study limitations and inconsistency of results. Two Cochrane reviews[425,426] provided similar evidence of effectiveness. A recent systematic review[428] showed that psychological treatments (cognitive–behavioural therapy and narrative exposure therapy) can reduce symptoms of post-traumatic stress disorder among refugees, but we rated this evidence as very low quality. Other authors have reported that patients may experience adverse effects with therapy, such as re-experiencing traumatic events, and rates of withdrawal from active therapy may approach 30%.[437]

Clinical considerations

What are the potential implementation issues?

Primary care practitioners need to be aware that immigrants and refugees may have been exposed to traumatic events. If a patient discloses a traumatic experience, it may be helpful to acknowledge the pain and suffering associated with the experience, to explain that a reaction is common for anyone who has undergone trauma and to offer empathetic reassurance that the situation is likely to get better. Several Canadian cities have centres and experts available to help care for survivors of trauma and torture.

Exploration of trauma and its consequences is not recommended in the first meeting with a patient unless it is the patient's primary complaint. However, certain symptom presentations should alert clinicians to the need for assessment for post-traumatic stress disorder, including unexplained physical complaints, sleep disorders,[422] depression, panic disorder and somatoform disorder.[51] Other presentations, such as severe dissociation mimicking brief reactive psychosis, dissociative disorders (amnesia and conversion) and psychotic depression, although less frequent, may also be related to post-traumatic stress disorder. Key elements of the assessment include level of psychological distress, the impairment associated with the symptoms in the patient and his or her family, substance abuse and suicidality.

Familiarity with the cultural background of the patient is recommended, and assessment should involve a professional interpreter if the patient's language ability is inadequate to express psychological distress and narrate the experience.[422] Disclosing traumatic experience through relatives, family members or, particularly, children can be traumatic.[438]

Although not supported by clinical trials, the National Institute for Clinical Excellence[422] recommends a phased intervention model, reflecting a pragmatic approach for refugees and asylum seekers who face the possibility of being returned to a traumatic environment. Phase I is defined as the period in which safety has not yet been established and during which intervention should focus on practical, family and social support. Phases II and III should focus on the patient's priorities, which may include social integration and/or treatment of symptoms. Unemployment, isolation and discrimination may overshadow the efficacy of mental health treatment in many patients,[430] which suggests that multifaceted interventions that include primary care, community organizations and other social institutions may be effective.[432]

Recommendations of other groups

The UK National Institute for Clinical Excellence[422] recommends against routine systematic provision of brief, single-session interventions. It recommends that consideration be given to the use of a brief screening instrument to detect post-traumatic stress disorder among refugees and asylum seekers, but does not suggest any specific instrument for screening or provide evidence of effectiveness of treatment in refugees. It also recommends that children and youth with post-traumatic stress disorder be offered a course of trauma-focused cognitive behaviour therapy. For sleep disorders, the National Institute for Clinical Excellence recommends the short-term use of hypnotic medication for adults or, if longer-term treatment is required, the use of suitable antidepressants to reduce the risk of dependence. For significant comorbid depression or severe hyperarousal, the National Institute for Clinical Excellence recommends paroxetine and mirtazapine. The US Centers for Disease Control and Prevention state that, in general, the majority of people who experience reactions to stress after disasters and emergencies show resilience and do not go on to experience long-term psychopathology.[439] Our recommendations highlight the paucity of evidence for routine screening and the potential for harms.

Take-home messages

- Forty percent of Canadian immigrants and refugees from countries involved in war or with significant social unrest have been exposed to traumatic events before migration.
- Most (estimated at 80%) individuals who experience traumatic events heal spontaneously after reaching safety.
- Empathy, reassurance and advocacy are key clinical elements of the recovery process.
- Pushing for disclosure of traumatic events by well-functioning individuals may result in more harm than good.

For the complete evidence review for post-traumatic stress disorder in immigrants, see Appendix 11, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1.

More detailed information and resources for assessment and treatment of trauma and survivors of torture can be found at: www.mmhrc.ca.

14. Child maltreatment

Child maltreatment is an important public health problem worldwide.[440] The 2003 Canadian incidence study of reported child abuse and neglect estimated an incidence rate of 22 per thousand for child maltreatment.[441] Of reported cases, 15% involved emotional maltreatment, 28% involved exposure to domestic violence, 24% involved physical abuse, 30% involved neglect and 3% involved sexual abuse. Surveys conducted with nonrepresentative ethnic minority samples (which have likely included immigrants and refugees) have yielded higher rates of maltreatment than appear in official reports.[442] This review was undertaken to clarify reports of child maltreatment in ethnic communities, to determine whether existing tools to screen for child maltreatment are appropriate for immigrant and refugee children, and to recommend strategies to improve the quality of care for these populations. The recommendations of the Canadian Collaboration for Immigrant and Refugee Health related to child maltreatment are outlined in Box 14A.

Methods

We used the 14-step approach developed by the Canadian Collaboration for Immigrant and Refugee Health[16] (summarized in section 3 of this article, above). We considered the epidemiology of child maltreatment in immigrant populations and defined clinical preventive actions (interventions), outcomes and key clinical questions. We searched MEDLINE, Embase CINAHL, PsychLIT, the Cochrane Library and other sources from Jan. 1, 1995, to Dec. 31, 2010. Detailed methods, search terms, case studies and clinical considerations can be found in the complete evidence review for child maltreatment (Appendix 12, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1).

Results

We found no systematic reviews or guidelines on screening, prevention or treatment for child maltreatment in recently settled immigrants or refugees. The general literature search identified 180 titles with reference to child maltreatment. Seventeen citations were selected, and five key reviews retained as evidence.[443–447] Studies conducted with general population and ethnic minority samples provided additional evidence that informed our recommendations related to child maltreatment among immigrants and refugees.

What is the burden of child maltreatment in immigrant populations?

The prevalence and incidence of child maltreatment among immigrant and/or refugee children in Canada are unknown. The evidence on maltreatment among ethnic minority children in the United States and Canada suggests that some ethnic minority children are disproportionately over- and under-represented in child protection services.[448] These children are more likely to be screened for child maltreatment and also more likely to be reported to child protection services. Higher rates of screening result in a higher rate of

Box 14A: Recommendations from the Canadian Collaboration for Immigrant and Refugee Health: child maltreatment

Screening

Do not conduct routine screening for child maltreatment.

Be alert for signs and symptoms of child maltreatment during physical and mental examinations, and assess further when reasonable doubt exists or after patient disclosure.

Basis of recommendations

Balance of benefits and harms

The committee recommends against routine screening because of poor performance of screening instruments and the potential harms caused by the very high false-positive rates. Sensitivity ranged between 25% and 100%, specificity between 16.5% and 94.3%, and positive predictive value (when available) between 1.7% and 28.2%.

Quality of evidence

Low

Values and preferences

The committee attributed more value to evidence for the negative effects of screening in relation to the high potential for harms. Harms could result from false positives leading to inappropriate labelling, psychological distress, inappropriate family separation, impaired clinician–patient rapport, potential reduction in use of general medical services and legal ramifications associated with involvement of child protection services.

Prevention of child maltreatment and associated outcomes

A home visitation program encompassing the first two years of life should be offered to immigrant and refugee mothers living in high-risk conditions, including teenage motherhood, single parent status, social isolation, low socioeconomic status, or living with mental health or drug abuse problems.

Basis of recommendation

Balance of benefits and harms

Home visitation programs for high-risk mothers, provided by nurses, reduced days in hospital for children ($p < 0.001$). Harms from surveillance and reporting to child protection services were not clearly demonstrated.

Quality of evidence

Moderate

Values and preferences

The committee attributed more value to supporting high-risk mothers with an offer of a home visitation program to provide practical support for families and the program's potential to improve health outcomes for children than to the potential risks associated with increased reporting to child protection services.

inappropriate referral to child protection services. Ethnic minority children who received medical examinations were twice as likely ($p < 0.001$) to be reported to child protection services.[55]

The Canadian incidence study of reported child abuse and neglect[441] found that ethnic minority children had a 1.8 times greater likelihood to be over-represented, whereas white and Arab children were under-represented. The higher rates were found among Aboriginals, Blacks, Latinos and Asians (the latter group for only physical abuse). This racial bias[449] may be one explanation why ethnic minority children are disproportionately represented at all levels of the child protection process,[450–452] despite the fact that they do not seem to be at higher risk of maltreatment.[453] Another explanation may be professionals' divergent views as to what should be considered grounds for clinical suspicion of child maltreatment,[454] which is associated with recency of training in child abuse, prejudices about the perpetrator[454,455] and the professionals' beliefs in the positive or negative consequences of reporting a given family to child protection services.[454]

Does screening for child maltreatment reduce harm and premature death or disability?

Screening tools

Most screening methods consist of self-administered questionnaires generally completed by the mother, interviews or checklists completed by the professional who collects information directly from the child or clinical judgments by nurse or professional teams.[443,445] All screening methods attempt to predict child maltreatment on the basis of either parents' potential for maltreatment or the presence or level of risk factors associated with maltreatment, rather than on the occurrence of actual maltreatment. Three systematic reviews have reported that these instruments tend to have high sensitivity but poor specificity and false-positive rates too high for use in clinical settings.[443–445] Sensitivity ranged between 25% and 100%, specificity between 16.5% and 94.3%, and positive predictive value (when available) between 1.7% and 28.2%.

Table 14A: Summary of findings for home visitation by nurses to prevent child maltreatment

Patient or population: Pregnant first-time mothers with at least one "sociodemographic risk characteristic"
Settings: US clinic with free prenatal services and private obstetricians' offices;[462] US public system of obstetric care[459]
Intervention: Home visitation by nurses
Comparison: Usual care
Sources: MacMillan HL; Canadian Task Force on Preventive Health Care. Preventive health care, 2000 update: prevention of child maltreatment. *CMAJ* 2000;163:1451-8.[444] Olds DL, Eckenrode J, Henderson CR Jr, et al. Long-term effects of home visitation on maternal life course and child abuse and neglect: fifteen-year follow-up of a randomized trial. *JAMA* 1997;278:637-43.[459] Kitzman H, Olds DL, Henderson CR Jr, et al. Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing: a randomized controlled trial. *JAMA* 1997;278:644-52.[462]

Outcome	Absolute effect		Relative effect (95% CI)	No. of participants (studies)	GRADE quality of evidence	Comments
	Risk for control group	Difference with home visitation by nurses (95% CI)				
Out-of-home placements (follow-up: 16 mo)	226 per 1000	31 more per 1000 (70 fewer to 201 more per 1000)	RR 1.14 (0.69–1.89)*†	197 (1)	Moderate‡§	NNT not statistically significant
Mean no. of substantiated reports of child abuse and neglect over 15 yr	0.54¶	0.25 fewer¶	0.77 (0.34–1.19)**	245 (1)[462]	Moderate	NA
Mean no. of days in hospital for injuries and ingestions over 2 yr	0.16	0.13 fewer	NA	697 (1)[462]	Moderate	$p < 0.001$
Mean no. of health care encounters for injuries and ingestions over 2 yr	0.55	0.12 fewer	NA	697 (1)[462]	Low	$p = 0.05$

Note: CI = confidence interval; GRADE = Grading of Recommendations Assessment, Development and Evaluation; NA = not applicable; NNT = number needed to treat; RR = risk ratio.
*Calculated using http://statpages.org/ctab2x2.html.
†Because RR crosses 0 (i.e., not statistically significant), the NNT could not be estimated.
‡Pregnant women with "specified psychosocial risk factors": substance abuse, homelessness, domestic violence, psychiatric illness, incarceration, HIV infection or lack of social support.
§"When the recommendation is in favour of an intervention and the 95% confidence interval (or alternative estimate of precision) around the pooled or best estimate of effect includes no effect and the upper confidence limit includes an effect that, if it were real, would represent a benefit that would outweigh the downsides" (GRADE Pro software).
¶Adjusted for socioeconomic status, marital status, maternal age, education, locus of control, support from husband or boyfriend, working status, and husband or boyfriend use of public assistance at registration.
**Estimate = (comparison log incidence) – (intervention log incidence).

Relative benefits and harms from screening

False-positive ratings, which are the most common result in low-risk populations, can lead to a number of negative consequences, such as inappropriate labelling and punitive attitudes, psychological distress,[56] inappropriate separation of children from family support systems, destruction of family supports, loss of resources and loss of autonomy for those falsely accused.[456] This may leave parents wary of any subsequent assistance that may be offered,[56] thus reducing their access to care. A systematic review of the performance of screening tests concluded that adding a screening protocol to the clinical encounter yielded additional false-positives that exceeded additional abused children detected.[457]

Compared with the general population, immigrant and refugee families may be more likely to suffer from the direct and indirect harms related to screening. Screening instruments have not been culturally validated and are less likely to be accurate because of factors such as language barriers, different cultural norms of behaviours and different attitudes toward institutional authority.[458] Given the limited state of knowledge in immigrant populations, potential harms from routine screening for child maltreatment outweigh benefits, which have not yet been clearly established.

Relative benefits and harms of preventing child maltreatment

Home visitation programs by nurses aim to prevent child maltreatment by assessing and supporting families. To date, the 15-year longitudinal study by Olds and associates[459] has provided the best evidence for the effectiveness of a nurse–family partnership program in reducing actual child maltreatment. The effectiveness of this program is particularly evident for first-time mothers who are younger than 19 years of age, single or economically disadvantaged (Table 14A).[444,446,460,461] Another prevention program (the Early Start Program) has also shown efficacy in reducing hospital admissions for child injuries at 36 months (17.5% v. 26.3% for control group).[463]

Relative benefits and harms of treatment for child maltreatment

Several specific forms of intervention have been devised to reduce the consequences of child maltreatment. Trauma-focused cognitive–behavioural therapy reduces sexually abused children's symptoms of anxiety, depression and sexual behaviour problems[464] in both general population and ethnic minority children. Table 14B presents the outcomes of cognitive behavioural interventions.[447] Parent–child interaction therapy[465] showed a reduction in repeated reports of physical abuse in treatment relative to control groups (standard psychoeducational program) (19% v. 49%). In most other studies, the outcomes were not statistically significant but there was a consistent tendency in favour of treatment programs. The lack of evidence of efficacy for immigrant or

Table 14B: Summary of findings for cognitive–behavioural therapy for sexually abused children

Patient or population: Sexually abused children aged 2–18 yr
Settings: Unted States and Australia, communities and hospitals
Intervention: Cognitive–behavioural therapy for children
Comparison: Variable: group information-based approach, cognitive–behavioural therapy for parents and children, community control, wait-list control
Source: Macdonald G, Higgins JPT, Ramchandani P. Cognitive-behavioural interventions for children who have been sexually abused. *Cochrane Database Syst Rev* 2006;(4):CD001930.[447]

Outcome	Absolute effect, mean score		Relative effect, % (95% CI)	No. of participants (studies)	GRADE quality of evidence
	Risk for control group	Difference with cognitive–behavioural therapy (95% CI)			
Depression, by Child Depression Inventory	5.47*	1.8 lower (3.98 lower to 0.38 higher)	–33 (–73 to 7)	443 (5)	Moderate†
Anxiety, by various scales	27.76*	0.21 lower (0.40 to 0.02 lower)	–0.8 (–1.4 to –0.1)	456 (5)	High
Post-traumatic stress disorder, by various scales	2.32	0.43 lower (0.69 to 0.16 lower)	–19 (–0 to –7)	464 (6)	High
Sexualized behaviour	8.2	0.65 lower (3.53 lower to 2.24 higher)	–8 (–43 to 27)	451 (5)	Very low†‡
Externalizing behaviour	13.82	0.14 lower (0.44 lower to 0.15 higher)	–1 (–3 to 1)	560 (7)	Moderate§

Note: CI = confidence interval; GRADE = Grading of Recommendations Assessment, Development and Evaluation.
*Representative study chosen on basis of sample size.
†95% CI includes no effect and the upper or lower confidence limit crosses the minimal important difference (MID), either for benefit or harm. (GRADE Pro software recommends that "if the MID is not known or the use of different outcomes measures required calculation of an effect size [ES], we suggest downgrading if the upper or lower confidence limit crosses an effect size of 0.5 in either direction.")
‡Test for heterogeneity $p = 0.02$.
§Test for heterogeneity $p = 0.01$.

refugee children precludes extrapolation of the findings to these groups.

Clinical considerations

What are the potential implementation issues?

Some forms of child discipline may be unusual or outside Canadian social norms but are not pathological[466] or dangerous for the child. Immigrant or refugee families may resort to other disciplinary behaviours (e.g., hitting a child with an object) that are condoned in their cultural context but that contravene child protection laws in Canada. Some cultural practices (e.g., scarification as part of life cycle rituals among some African children or cupping, a common traditional healing method in some Asian cultures that leaves circular ecchymoses) may be misinterpreted as signs of child abuse. Other culture-specific practices (e.g., female genital cutting) contravene child protection and civil laws in Canada. In situations where child maltreatment is suspected, observed or disclosed, the practitioner must take action in accordance with the child protection law in his or her region.

Language barriers, fear of separation from the child, fear of punitive institutional power and fear of deportation may constitute major barriers to disclosure of child maltreatment. Failure to investigate family dynamics and intergenerational conflicts, after disclosure of maltreatment by an immigrant child, may further disempower the parents and attribute greater power to the child, consequently aggravating his or her problem. Immigrant and refugee children placed in foster care may suffer from loss of connection with language of origin and religious, familial and cultural traditions. As a preventive strategy, clinicians may want to provide families with sources of information about their province's child protection law, their legal rights and their obligations regarding children, in addition to addressing other risk factors for child maltreatment. Recent research is showing that the SEEK (Safe Environment for Every Kid) model is promising.[467]

Recommendations of other groups

The US Preventive Services Task Force concluded that there is insufficient evidence for or against routine screening of child abuse.[456] The Canadian Task Force on Preventive Health Care concluded that there is fair evidence to exclude screening for child maltreatment.[79] The American Academy of Paediatrics[468] and the American Medical Association[469,470] do not support universal screening, but recommend that physicians be alert for signs and symptoms of child maltreatment during routine physical examination. The Task Force on Community Preventive Services of the US Centers for Disease Control and Prevention recommends early childhood home visitation for the prevention of child maltreatment in high-risk families and families with low-birth-weight infants.[471] Our recommendations highlight the importance of prevention and the potential harms of routine screening in the context of cultural and linguistic diversity.

Take-home messages

- Children from ethnic minorities, including recently settled immigrants and refugees, are eight times more likely to be subjected to screening for child maltreatment than children in the general population.
- Immigrant and refugee families may be particularly vulnerable to the harms that can occur because of legal and institutional interventions consequent to false-positive screening results, such as over-reporting for child maltreatment and unnecessary separation of the child from his or her family.

For the complete evidence review for child maltreatment in immigrant populations, see Appendix 12, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1.

More detailed information and resources on cultural aspects of child maltreatment can be found at: www.mmhrc.ca.

15. Intimate partner violence

Intimate partner violence, defined as physical, emotional, financial and/or sexual abuse perpetrated against the victim by his or her intimate partner,[472] is a significant public health problem worldwide.[440] In Canada, a 1999 study of a nationally representative sample of 26 000 participants reported 8% intimate partner violence against a female and 7% against a male by a previous or current partner in the past five years.[473] Women, however, are more likely than men to be the victims of serious violent acts such as sexual abuse, beatings (25% v. 10%), being choked (20% v. 4%) or being threatened or having a weapon used against them (13% v. 7%).[474] They are also more likely than men to be injured during the violent act (40% v. 13%) and to be fearful for their lives (40% v. < 10%).[474] In this review we aimed to determine whether existing screening tools and approaches for intimate partner violence are appropriate for immigrant and refugee women and to identify care barriers for these populations. The recommendations of the Canadian Collaboration for Immigrant and Refugee Health related to intimate partner violence are outlined in Box 15A.

Methods

We used the 14-step approach developed by the Canadian Collaboration for Immigrant and Refugee Health[16] (summarized in section 3 of this article, above). We considered the epidemiology of intimate partner violence in immigrant populations and defined clinical preventive actions (interventions), outcomes and key clinical questions. We searched MEDLINE, Embase, CINAHL, PsychLIT, the Cochrane Library and other sources from Jan. 1, 1995, to Dec. 31, 2010. Detailed methods, search terms, case studies and clinical considerations can be found in the complete evidence review for intimate partner violence (Appendix 13, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1).

Results

We found no systematic reviews or evidence-based guidelines on screening, prevention or treatment for intimate partner violence in immigrants or refugees. The general literature search identified 409 titles on intimate partner violence, and after appraisals, we retained two key reviews as evidence.[475,476] After the search update, we selected two additional key reviews and one randomized controlled trial.[477–479] Studies conducted with general population and ethnic minority samples informed our clinical recommendations.

What is the burden of intimate partner violence in immigrant populations?

Three studies provided secondary analyses of the 1999 Statistics Canada General Social Survey. Women born in developing countries reported the highest prevalence rates of intimate partner violence, followed by Canadian-born women and immigrant women from developed countries. However, when all other variables in the model were controlled for, the analysis showed that recently settled immigrant women (i.e., in Canada for less than 10 years) had significantly lower odds of intimate partner violence victimization than longer-term immigrants and Canadian-born women.[480] Single, divorced, separated or widowed immigrant women were 10 times more likely to report intimate partner violence than immigrant women married or in a common-law relationship.[481] Immigrant women reported higher rates of emotional abuse than Canadian-born women (14.7% v. 8.7%), with the strongest risk factor being their partner's low educational level.[482]

Regional surveys on intimate partner violence have yielded higher rates. MacMillan and colleagues[483] reported rates that ranged from 4.1% to 17.7% for Canadian-born women and 12.6% for foreign-born women. Ahmad and coauthors[484] reported a 22% rate of intimate partner violence following computer screening. Prevalence rates also vary in relation to the health care setting (highest prevalence in emergency departments). Finally, women in war zones, disaster zones, during flight or displaced in refugee camps in countries of asylum may be at higher risk for intimate partner violence.[485]

Does screening for intimate partner violence reduce morbidity or mortality?

Screening tools

Screening for intimate partner violence differs from tradi-

Box 15A: Recommendations from the Canadian Collaboration for Immigrant and Refugee Health: intimate partner violence

Do not conduct routine screening for intimate partner violence.

Be alert for potential signs and symptoms related to intimate partner violence, and assess further when reasonable doubt exists or after patient disclosure.

Basis of recommendation

Balance of benefits and harms

Current evidence does not demonstrate clear benefits from screening women for intimate partner violence, and harms have resulted from screening. Compared with the general population, there may be greater risk among immigrant and refugee women for harm directly related to screening (e.g., risk of loss of migration status and sponsorship agreements). Harm may occur indirectly through impaired patient–physician rapport and subsequent reduction in use of medical and mental health services.

Quality of evidence

Moderate

Values and preferences

The committee attributed more value to evidence of harms and lack of evidence of benefits and less value to recommending uncertain interventions, even in the face of significant concerns.

tional screening for medical disorders because the target of clinical concern is a behavioural event, which women usually recognize as a problem but which they may not view as appropriate for medical attention.[485,486] Four short self-report questionnaires have received the most study. The "Hurt, Insulted, Threatened, or Screamed at" questionnaire (four items) yields sensitivity ranging from 30% to 100% and specificity from 86% to 99%.[476] The Partner Violence Screen (three items) provides sensitivity from 35% to 71% and specificity from 80% to 94%.[477] The Women Abuse Screening Tool (eight items) yields 47% sensitivity and 96% specificity.[479] The Abuse Assessment Screen (five items) yields sensitivity ranging from 32% to 94% and specificity from 55% to 99%.[487]

A Canadian randomized controlled trial found women preferred self-completed approaches.[483] However, other studies comparing administration methods of screening instruments (e.g., face-to-face interviews, computer screening, written screening) have shown inconsistent results.[484,488,489] Furthermore, it is unknown whether these results apply to immigrant and refugee women.

Relative benefits and harms of screening

A Canadian trial on the effect of screening found no statistically significant differences between women screened or not screened at 6, 12 or 18 months follow-up for recurrence of intimate partner violence (Table 15A).[478] More than half of the women who disclosed being victims of intimate partner violence on screening did not discuss the violence with their practitioner during the health care visit. An important study limitation was that no specific intervention was provided to women who disclosed or screened positive.[478]

Other studies have found screening benefits such as decreasing isolation, increasing support, relief, breaking the silence and validating women's feelings.[485,490] However, these same studies identified several harms, including feeling that the practitioner is too busy or not interested, feeling judged and being disappointed by the practitioner's response, increased anxiety, concerns about privacy,[484] breaches of confidentiality and legal repercussions, fear of being reported to child protective services,[485] and concern about or actual increased risk of retaliation or further harm from the partner.[485]

Relative benefits and harms of treatment

The strongest evidence for treatment has come from studies of the Experimental Social Innovation and Dissemination program,[491,492] which reported decreased physical and emotional abuse at 12–24 months follow-up and improvement of women's quality of life at 12 months follow-up. Ramsay and coworkers[472] reported that, while promising, the results were inconclusive. In Table 15B, we report the efficacy of the Experimental Social Innovation and Dissemination advocacy and counselling intervention program in decreasing the incidence of intimate partner violence[475] in an ethnically

Table 15A: Summary of findings on screening for intimate partner violence to reduce morbidity due to such violence

Patient or population: English-speaking female patients
Settings: Health care settings in Ontario
Intervention: Screening for intimate partner violence
Comparison: No screening
Source: Macmillan HL, Wathen CN, Jamieson E, et al. Screening for intimate partner violence in health care settings: a randomized trial. *JAMA* 2009;302:493-501.[478]

	Absolute effect					
Outcome (18-mo follow-up)	Risk for control group	Difference with screening (95% CI)	Relative effect (95% CI)	No. of participants (studies)	GRADE quality of evidence	Comments (95% CI)
Intimate partner violence, by Composite Abuse Scale	530 per 1000	74 fewer per 1000 (159 fewer to 32 more per 1000)	RR 0.86 (0.70–1.06)*	379 (1)	Moderate†‡	NNT not statistically significant
Post-traumatic stress disorder screening, by SPAN (startle, physically upset by reminders, anger, numbness)	601 per 1000	162 fewer per 1000 (246 to 66 fewer per 1000)	RR 0.73 (0.59–0.89)*	379 (1)	Moderate†‡	NNT 7 (5–16)
Quality of life, by WHO Brief	Mean score 52.7	Mean score 5.8 higher (2.14 to 9.46 higher)	NA	379 (1)	Moderate†§	NA
Depression	Mean score 24.4	Mean score 3.4 lower (5.8 to 1.0 lower)	NA	379 (1)	Moderate†§	NA

Note: CI = confidence interval; GRADE = Grading of Recommendations Assessment, Development and Evaluation; NA = not applicable; NNT = number needed to treat; RR = relative risk; WHO = World Health Organization.
*Calculated using Review Manager on the basis of observed counts.
†Only one study.
‡Dichotomous outcome: total number of events was less than 300.
§Continuous outcome: total population size was less than 400.

diverse sample of women who had spent at least one night in a shelter.

Clinical considerations

What are potential implementation issues?

Signs and symptoms of intimate partner violence differ significantly among women. They may be absent in some women or be of a psychological (depression, anxiety, suicidal ideation, alcohol or drug abuse), social (social isolation) and/or physical (injuries, bruises and aches) nature in other women. Patient–physician rapport thus remains a key element in the detection of intimate partner violence.

Recently settled immigrant women in Canada are more likely to report intimate partner violence to the police than women in the general population but are less likely to use social services.[494] Barriers to help-seeking included fear of deportation or not accessing Canadian citizenship, lack of knowledge of services or language-specific services, experiences of racism or discrimination.[494] Culturally specific perceptions of spousal relationships, gender roles, negative experiences with authorities, aggression and abuse may affect reporting and disclosure.[485] Involvement with police or criminal proceedings may put immigrant women at risk of losing their sponsorship agreements.[485,494]

Intimate partner violence is now considered a form of child maltreatment. Women may delay disclosure of violence because of fear of losing custody of their children (child protection services often cite the mother's failure to protect her children).[485,494] In addition, some women feel coerced into staying in a shelter to keep custody of their children. Although this may protect them from further intimate partner violence, it may also isolate them from extended family and community networks that might otherwise be integrated effectively into the intervention plan.[458]

Services that can defuse conflict situations and reduce family stress include social welfare, reliable childcare, safe housing, language classes, and other educational and vocational training opportunities. Community grassroots organizations can provide information and support groups in appropriate languages and in a culturally competent manner.[495–498] Research is beginning to show benefits when screening and interventions target women with specific conditions, for example pregnancy, mental illness and substance abuse, but this work has yet to consider the immigrant context.

Recommendations of other groups

National clinical preventive screening committees, the Canadian Task Force on Preventive Health Care, the UK National Screening Committee and the US Preventive Services Task Force have not found sufficient evidence to recommend for or against screening all women for intimate partner violence.[476–478] The UK National Screening Committee concluded that "screening for domestic violence should not be introduced" in periodic health examinations. The American Medical Association, the American Academy of Family Physicians and the American College of Obstetricians and Gynecologists have recommended routinely screening all women for intimate partner violence.[479] However, these organizations have not based their recommendations on systematic reviews of effectiveness. Our guidelines

Table 15B: Summary of findings for advocacy programs to prevent further intimate partner violence

Patient or population: Women in a Midwest shelter program for women with abusive partners who had (i) spent at least one night in the shelter and (ii) planned on staying in the general vicinity for the first three months after leaving the shelter
Setting: Community setting
Intervention: Advocacy programs
Comparison: No advocacy program
Sources: Wathen CN, Macmillan HL. Interventions for violence against women: scientific review. *JAMA* 2003;289:589-600.[475] Sullivan CM, Bybee DI. Reducing violence using community-based advocacy for women with abusive partners. *J Consult Clin Psychol* 1999;67:43-53.[491]

Outcome	Absolute effect, mean score: Risk for control group	Absolute effect, mean score: Difference with advocacy programs (95% CI)	No. of participants (studies)	GRADE quality of evidence
Self-reported severity or frequency of abuse (scale 0–3; follow-up 24 mo)	0.85	0.15 higher	265 (1)[493]	Low*†‡
Effectiveness in obtaining community resources (scale 1–4; follow-up 10 wk)	2.7	0.50 higher (0.34 higher to 0.66 higher)	265 (1)	Low*†‡
Quality of life (scale 1–7; follow-up 24 mo)	4.94§	0.25 higher (0.02 lower to 0.52 higher)	265 (1)	Low*†‡
Depression (scale 0–3; follow-up 24 mo)	2.00	0.08 lower (0.24 lower to 0.08 higher)	265 (1)	Low*†‡

Note: CI = confidence interval; GRADE = Grading of Recommendations Assessment, Development and Evaluation.
*Only one study.
†Concerns about directness and applicability only to women seen in primary care who have been in a shelter.
‡Fewer than 300 events.
§ Postintervention scores.

highlight the paucity of data on the effectiveness of screening programs and the concern for potential harms from routine screening.

Take-home messages

- The rate of reporting of intimate partner violence is lower among recently settled immigrant women than among longer-term immigrants and Canadian-born women.
- Linguistic barriers, financial dependencies, fear of losing custody of children and limited knowledge of laws and health services constitute significant barriers to both disclosure and adherence to interventions among immigrant and refugee women.
- To decrease the rate of abuse, practitioners should refer women who report spending at least one night in a shelter to a structured program of patient-centred (advocacy) support services.

For the complete evidence review for intimate partner violence in immigrant populations, see Appendix 13, available at www.cmaj.ca/lookup/suppl/doi:10.1503/cmaj.090313/-/DC1.

More detailed information and resources on cultural aspects of intimate partner violence can be found at: www.mmhrc.ca.

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