

Appendix 20: Screening during pregnancy: evidence review for newly arriving immigrants and refugees

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ABSTRACT

Background: Women of child-bearing age form one third of all immigrants and refugees to Canada. Births to these women represent more than one in five of the total births in Canada. Reports suggest some newly arrived pregnant women are at higher risk than Canadian-born women of maternal mortality, cesarean birth, social isolation, exposure to unprotected and unregulated work environments, hemoglobinopathy, female genital mutilation, and sexual abuse, among other factors. We reviewed evidence for actions to be taken by primary care practitioners to achieve optimal perinatal health among refugee and immigrant women.

Methods: We systematically assessed evidence for actions to be taken by primary care practitioners for newly arrived pregnant women.

Results: Existing guidelines for screening of pregnant women with potential hemoglobinopathy apply to this population. Clinical reviews offer suggestions concerning screening for and managing female genital mutilation and sexual abuse. No studies examine the effectiveness of screening or intervening for social isolation or exposure to unprotected and unregulated work environments, although clinicians working with newly arrived pregnant women cite these issues as common concerns. Primary care considerations specific to this population include being attentive to language barriers and to patients' fears that any requests for additional services reduce their chances of successfully remaining in Canada.

Interpretation: This evidence review highlights a serious lack of data to support preventive actions for issues important to primary care practitioners and newly arrived pregnant women in their care, particularly social isolation, exposure to unprotected and unregulated work environments, and history of sexual abuse.

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The cases

Aysha is 22 years old, gravida 1 para 0, who just arrived from Africa and is staying at the local YMCA. Before her migration, her husband disappeared and she was raped by the police officers searching for him. She seeks refugee status because she was raped and has heard that she could have genital “cutting” performed on her if she remains in her country after her child is born. She is not sure whether her genitals were mutilated when she was a young child, and she has seen a cousin die from complications of the procedure. She is currently 30 weeks pregnant and denies any relevant medical history except for the possibility of a mild anemia.

Mrs. K is 26 years old, gravida 1, who was born in Sri Lanka, has lived in Montreal for one year, and currently works in a factory. She speaks very little English; her husband speaks for her and, when he is unavailable, an interpreter. Her husband is 30 years old, was born in Sri Lanka, has lived in Montreal for six years, and currently works in a restaurant. All family members remain in Sri Lanka; they have friends in Montreal. Mrs. K is 12 weeks pregnant with a planned pregnancy and denies any relevant history. Both husband and wife have landed immigrant status.

Introduction

Every migrant woman, regardless of her status, has the fundamental right to receive complete prenatal, birth and postnatal care with dignity.¹ Evidence shows that access to pregnancy care is inadequate.²⁻⁸ Women of child-bearing age (15–44 years old) form approximately one third of all permanent resident migrants to Canada,⁹ and 22% of all births in Canada from 1996 to 2001 were to foreign-born women.¹⁰ There is no known fertility pattern by country of origin for refugees,^{11,12} although in other newly arrived groups, fertility patterns are thought to resemble that of their countries of origin. Some births to migrant women are the result of sexual abuse in the case of civil unrest, sexual abuse during their flight from civil unrest, or sexual persuasion or favours granted to those organizing their transit to receiving countries.¹³

Canadian data on maternal mortality by any migration indicator are unavailable, although data from the United Kingdom are available.¹⁴ Maternal mortality rates in the UK for black African women are 5.6 times higher than for white women; for black Caribbean are 3.7 times higher; for Middle Eastern are 2.9 times higher; for “other” are 2.5 times higher; for Bangladeshi are 2.1 times higher; for Indian are 1.9 times higher; for Chinese and other Asians are 1.3 times higher.¹⁴ Upon

investigation, these higher mortality rates were found to be related to poor overall health including unrecognized medical conditions, practitioners’ ignorance of female genital mutilation, cultural practices and attitudes of male partners, inadequate interpreter services, and suboptimal antenatal care.

Higher cesarean section rates among newly arrived (33.0%–35.8%) than among Canadian-born (26%) women have been reported. Rates are highest among those arriving from West Africa and Europe.^{15,16} Reasons for differences remain unclear.

Although pregnancy for many new arrivals can be expected to follow the same course as their counterparts in the receiving country, these women differ in their risk of several health-related indicators, which are also likely to require screening or treatment approaches different from those required by women in the receiving country. Hence, this article reviews and compiles existing evidence for pregnancy care of women who have arrived in Canada within the last 5 years. Recommendations on pregnancy care from the Canadian Collaboration for Immigrant and Refugee Health are found in Box 1.

Box 1: Recommendations on pregnancy from the Canadian Collaboration for Immigrant and Refugee Health

Develop and study interventions to reduce social isolation given the risk for maternal morbidity and small-for-gestational-age infants.

Basis of recommendation

- **Balance of benefits and harms:** Pregnant immigrant and refugee women face elevated risk of social isolation (15% v. 7.5% for Canadian-born women), which is associated with maternal morbidity and small-for-gestational-age infants. However, social interventions could cause harm when no evidence shows such interventions will work. Therefore, the Guideline Committee recommends development and study of interventions for pregnant immigrant and refugee women who are socially isolated.
- **Quality of evidence:** Very low, no intervention evidence available
- **Values and preferences:** The Guideline Committee attributed more value to preventing uncertain harms than to providing uncertain benefits in unstudied social interventions.

Methods

We used the 14-step approach developed by the Canadian Collaboration for Immigrant and Refugee Health team.¹⁷ An initial clinician summary table and logic model were drafted on the basis of the writing

group's clinical experiences (Appendix 3). Evidence to support or refute the drafts was searched. We limited the literature search to the most salient issues for newly arrived pregnant women (given the vast number of pregnancy issues that could be examined) as systematically as possible by focusing on issues with evidence of disease burden affecting this population more than other pregnant women, on suggestions that clinical responses for this population should differ from responses for other pregnant women, and on issues for which a concurrent evidence review was not already being conducted by the Canadian Collaboration for Immigrant and Refugee Health.

Search strategy for systematic reviews and guidelines and population-specific literature

The search strategy was developed for the Ovid platform in conjunction with a librarian and included MEDLINE, MEDLINE In-Process, EMBASE, CINAHL, HealthStar, Cochrane Database of Systematic Reviews, Database of Reviews of Effectiveness, and American College of Physicians Journal Club for the years 1996–2007. Relevant Canadian professional associations, Canadian health departments and websites of international agencies concerned with migrant perinatal health were searched. This search included the publication and statistical sections of these websites and keyword searches for “pregnancy” and “migrant or immigrant.” Organizations included the Society of Obstetricians and Gynaecologists of Canada; the Association of Women's Health, Obstetric and Neonatal Nurses; the Registered Nurses Association of Ontario; the Canadian Association of Midwives; Health Canada's Public Health Agency of Canada; the Canadian Perinatal Surveillance System; Statistics Canada; Citizenship and Immigration Canada; the United Nations High Commissioner for Refugees; the United Nations Population Fund; the Reproductive Health Response in Conflict Consortium; and the World Health Organization. Reports on guidelines and systematic reviews were selected for inclusion, and reports on population-specific considerations were also identified. Guidelines were assessed using the Appraisal of Guidelines for Research and Evaluation checklist for clinical practice guidelines.¹⁷

We established inclusion and exclusion criteria (Box 2) to ensure we focused on the most important health issues for newly arrived pregnant immigrant and refugee women. Literature in any language was considered. Inclusion criteria addressed type of report, relevance and specific topics. Each full-text article meeting inclusion criteria was distributed to the group and reviewed. Each

group member was responsible for a particular subsection of the literature. Review of this literature, in conjunction with population-specific clinical considerations, was used to define exclusion criteria.

An updating search, focusing on randomized controlled trials and systematic reviews during the period Jan. 1, 2007–Jan. 1, 2010, was conducted to determine whether any recent publications would change the position of the recommendation.

Box 2: Identifying the most important health issues for newly arrived pregnant immigrant and refugee women

Inclusion criteria

- Guidelines, systematic reviews, clinical reviews
- Relevant to treatment or screening during pregnancy
- Specific topics: diabetes or overweight, psychosocial disorders or violence, prenatal blood screening for infection, vaccination, prenatal supplements, work exposure, or female genital mutilation

Exclusion criteria

- Insufficient evidence of greater prevalence or of the need for different screening or treatment approaches for newly arrived pregnant women compared with other women
- Similar theme in other recommendations from the Canadian Collaboration for Immigrant and Refugee Health

Synthesis of evidence and values

Quality assessment and updating of systematic reviews were planned but not carried out because of an absence of relevant systematic reviews in the literature. Clinical considerations for preventive actions and research priorities were based primarily on guidelines and clinical reviews (Box 3).

Results

The search for guidelines and systematic reviews on pregnancy specific to immigrants and refugees yielded approximately 20 titles; none were systematic reviews. The same search for the general population, after removal of duplicates and irrelevant titles, returned 251 titles. After applying exclusion criteria, our group removed diabetes and overweight, infection and vaccination, and prenatal supplements from further consideration. Psychosocial concerns were restricted to considerations of social isolation; violence was restricted to considerations of sexual abuse; and prenatal blood

screening was restricted to hemoglobinopathy. Work exposure and female genital mutilation remained as factors to consider in their entirety. Of the 251 apparently relevant articles, only four fulfilled inclusion criteria. Of these, a further three were subsequently excluded because they lacked specificity for the screening or treatment intervention under consideration. The American College of Obstetricians and Gynecologists's Committee on Obstetrics published clinical guidelines in 2007 and the Society of Obstetricians and Gynaecologists of Canada published clinical guidelines in 2008, both focused on hemoglobinopathy (Appendix 1).

How do pregnancy-related issues affect immigrants and refugees?

Social isolation: Social isolation affects many newly arrived women.^{12,18,19} One Canadian report shows that, after birth, 14.7% of asylum seekers and 7.7% of refugee women live alone, while no non-refugee immigrant women and 2.7% of Canadian-born women live alone.¹⁵ Perceived lack of social support was reported among 15.4% of immigrants versus 7.2% of Canadian-born women.²⁰ Lack of psychosocial resources in non-migrants has been found to lead to small-for-gestational-age infants.²¹

Sexual abuse: Sexual abuse is common in armed conflict and in armed conflict/internal strife. Abuse is sometimes used to dominate; sexual torture can be used as a method of interrogation; refugee camp guards and male refugees sometimes regard unaccompanied women and girls as common sexual property. Violence and rape among refugee women in camps ranges from 24.4% to 40.0%.²² Many (23%–50%) refugee women also report violence at the hands of their husbands.²² Pregnancy-related effects include unwanted pregnancies, sexually transmitted infections, chronic pelvic infection, reproductive tract trauma, psychological trauma, social rejection, and mistreatment or abandonment of resulting infants.¹³ Canada accepts 10 000–15 000 female refugees per year.⁹

Hemoglobinopathy: Hemoglobinopathy (predominantly thalassemia and sickle-cell anemia) is more common among newly arrived women from certain regions of the world.^{23–26} These cases are common in those whose ancestors came from areas where malaria is endemic, including Africa, the Mediterranean basin, the Middle East, the Indian subcontinent, southeast Asia, and southern China.²⁵ One in four residents in Ontario belongs to an ethnic group that has a high frequency for carriers of hemoglobinopathy.²⁴ Hemoglobinopathy can lead to serious maternal complications, severe anemia in infants, and painful vaso-occlusive crises.²⁵ More than

300 000 children born worldwide are affected with severe hemoglobinopathy.²⁵

Exposure to hazards in the workplace: Newly arrived women are often exposed to unprotected and unregulated work environments.^{12,19} Most newly arrived women in Canada report working in sales or services (37.3%) and in processing or manufacturing (17.9%),²⁷ where risk of adverse pregnancy outcomes is great.²⁸ Their lack of knowledge of employee rights exaggerates these exposures such that protective leave or risk reduction at work is not assured,²⁹ resulting in greater risk to them and their newborns than to their native-born counterparts in the receiving country.

Female genital mutilation: Prevalence of female genital mutilation ranges from 5% to 97% among women in countries where it is practiced.³⁰ There are four types of female genital mutilation: type I (excision of the prepuce, with or without excision of all or part of the clitoris), type II (excision of the clitoris with partial or total removal of the labia minora), type III (excision of part or all of the external genitalia and stitching or narrowing of the vaginal opening, also called “infibulation”), and type IV (“unclassified” can include pricking, piercing, incising, stretching, cauterizing, scraping, cutting, introducing corrosive substances, or other methods). Type III causes a mechanical barrier to delivery; however, types I, II, and IV can produce severe vulval and vaginal scarring that can also obstruct delivery.³¹ Types II and III are associated with greater risks of cesarean section, postpartum hemorrhage, extended hospital stay, infant resuscitation, and stillbirth or early neonatal death, and female genital mutilation is estimated to lead to one to two extra perinatal deaths per 100 births per year.³² An estimated 15% of all circumcised women have undergone type III mutilation.³³ Canadian migration trends show high numbers of female arrivals (19.5% of those who received permanent resident status in 2006) from countries where female genital mutilation is common.⁹ Most (80%–90%) of all cases of female genital mutilation in Djibouti, Somalia and Sudan are type III.³³ Caregivers attending Somali births in Canada have been found to lack knowledge of female genital mutilation and manifest unprofessional attitudes toward these women.³⁴

Does screening decrease pregnancy-related morbidity and mortality?

Although the topics are recognized as an issue in the literature, no guidelines or systematic reviews on the topics of social isolation and exposure to unprotected work environments were specific to pregnant women.

Most provinces in Canada and the federal government have produced information booklets through their employment or human rights departments,³⁵⁻³⁸ and a national website provides links to provincial information (www.workrights.ca). These booklets are available in French in Quebec and English in the other provinces. Currently, no screening tools or interventions focus specifically on social isolation or exposure to unprotected work environments among pregnant women.

A review of how child sexual abuse influences adult women perinatally provides a synthesis of the clinical issues of concern.³⁹ These include higher-risk behaviour during pregnancy and disturbance of delivery by sudden memories of sexual abuse. Prenatal care can be compromised as a result of avoiding situations that trigger memories.

Clinical considerations

Are immigrants screened for pregnancy?

Many but not all migrants to Canada undergo a medical examination as well as urinalysis, serologic test for syphilis, HIV testing, and chest x-ray examination as mandated by Citizenship and Immigration Canada.⁴⁰ No specific actions related to pregnancy per se are taken, although pregnancy might be identified during the process.

How can we facilitate implementation?

Issues that should be considered are the patient's interest in screening and treating these conditions,^{26,41} access to care in terms of eligibility for services,^{42,43} language and cultural considerations,⁴⁴⁻⁴⁷ and care providers' challenges of interacting in culturally sensitive ways about these issues.^{34,48-53}

Primary care practitioners in the author group noted that the woman's health and pregnancy history might be incorrect or incomplete for several reasons. She could fear jeopardizing her asylum or claimant application (e.g., if the application states she has no other children, she might not want to report now that she has other children); her records from the previous country might be unavailable; she could have delayed the start of prenatal care. These issues could be particularly important in determining the appropriateness of a cesarean birth.

Newly arrived women less readily obtain prenatal testing for several reasons.^{26,54} Treatment preferences and expectations are often based on what was done in the country of origin, which could differ from Canadian care (e.g., expectation of a greater number of ultrasound examinations). The procedures themselves could be

unacceptable (e.g., amniocentesis) or the notion of statistical probability might not be well understood. Further, if the testing must be paid for and families have limited resources, they could be unable to have the tests done.

In some countries of origin, marriages at either extremes of age are encouraged. This can leave young mothers without role models regarding the health-promoting aspects of pregnancy or older mothers with increased health risks associated with age. Closely spaced pregnancies (resulting in physical health problems and difficult social integration) are another culturally driven consideration.

Barriers to care in Canada include the three-month waiting period for provincial coverage for immigrants in certain provinces, limited numbers of clinicians accepting the Interim Federal Health Program plan, migrants' lack of awareness of available health services, and language barriers.⁶⁻⁸ In Ontario, the province receiving the greatest number of newly arrived people, there is no exception with respect to prenatal care to the 3-month delay in eligibility.⁴ Delayed prenatal care in Ontario has been found to be as high as 60% in migrant pregnant women.⁵⁵

Other recommendations

Female genital mutilation: Recommendations by the World Health Organization are available,³¹ as is a review of clinical practice.⁵⁶ Descriptions of physical findings of female genital mutilation of various types that permit screening by examination are well described in both reports. Guidelines for care in cases of female genital mutilation were published by Health Canada,⁵⁷ although no evidence of effectiveness of suggested interventions was provided. Clinicians could review "What Somali women say about giving birth in Canada,"³⁴ which provides suggestions for providing more respectful and less interventionist care, greater sensitivity for cross-cultural practices.

Sexual abuse: Health Canada's guidelines on family-centred maternity and newborn care (2000)⁵⁷ recommend using the ALPHA form⁵⁸ to assess current and past abuse (including sexual abuse), although sensitivity and specificity (and other measures) are not provided for this tool. A review of partner violence found that data are insufficient to support routine screening for violence in pregnant women because data on the potential harms or benefits of this screening are unavailable.⁵⁹ No recommendations are available specific to the screening and care of sexual abuse victims during pregnancy, a time

during which bodily changes and vaginal examinations can elicit untoward memories of sexual abuses.

Hemoglobinopathy: Two practice recommendations are available for hemoglobinopathy, those of the Society of Obstetricians and Gynaecologists of Canada from 2001²⁵ and of the American College of Obstetricians and Gynecologists from 2007.⁶⁰

The Society of Obstetricians and Gynaecologists of Canada's guidelines²⁵ recommend that those who do not originate from northern Europe should be considered at high risk for hemoglobinopathy. The guidelines recommend screening for both α - and β -thalassemia by testing for a low erythrocyte mean corpuscular volume (< 80 fL). If results are positive, additional tests should be carried out for a definitive diagnosis.

The American College of Obstetricians and Gynecologists' guidelines (based on level A scientific evidence, i.e., good and consistent)⁶⁰ note that "Individuals of African, Southeast Asian, and Mediterranean descent are at increased risk for being carriers of hemoglobinopathies and should be offered carrier screening and, if both parents are determined to be carriers, genetic counseling." "A complete blood count and hemoglobin electrophoresis are appropriate laboratory tests for screening for hemoglobinopathies." Solubility tests alone are inadequate for screening because they fail to identify important transmissible hemoglobin gene abnormalities affecting fetal outcome." "Couples at risk for having a child with sickle cell disease or thalassemia should be offered genetic counseling to review prenatal testing and reproduction options. Prenatal diagnosis of hemoglobinopathies is best accomplished by DNA analysis of cultured amniocytes or chorionic villi."

The American College of Obstetricians and Gynecologists' guidelines on hemoglobinopathy and the World Health Organization report on female genital mutilation were assessed using the Appraisal of Guidelines for Research and Evaluation instrument (www.agreertrust.org). Results are summarized in Appendix 2.

The cases revisited

When seeing Aysha, reassure her that medical consultations are confidential and that no information will be communicated to immigration authorities without her consent. Assess her support system in Canada: does she have friends, someone to share an apartment, someone who can accompany her for the birth? Some organizations can offer "doula" accompaniment. Assess the genitalia during the gynecological examination for

any signs of mutilation. If Aysha has been infibulated (female genital mutilation type III) and you are uncomfortable about caring for a woman with this condition, consider referring her to an experienced obstetrician. Screen for sexually transmitted infections. Ask Aysha whether she would agree to have a male provider for the delivery. Although it is impossible to guarantee a female doctor for the birth, some efforts can be made to accommodate women who have been raped. Refer Aysha to community resources for help in acquiring items needed for the baby. Assess Aysha's needs for treatment of major depression or post-traumatic stress disorder. Offer to write a letter of support for her immigration hearing and consider requesting iron studies and hemoglobin electrophoresis if Aysha is anemic.

When seeing Mrs. K, assess her social support system: Will someone from her family or a close friend be with her at the time of delivery? Some men are uncomfortable in the delivery room and tend not to translate information for their wives. Consider writing a letter of support to have Mrs. K's mother or mother-in-law come for a few weeks to months around the time of the delivery. Assess the work that Mrs. K is doing: Is there a risk for her or the baby during the pregnancy? Is she entitled to "workmen's compensation" (in Quebec) or other arrangements for her workplace to be safe? Ask whether Mrs. K. might be at risk of being laid off if her employer learns that she is pregnant. It is always better for the woman to present a medical certificate with recommendations to her employer as she announces her pregnancy than to announce the pregnancy before she has a medical certificate. Consider screening for sexually transmitted diseases and performing iron studies and hemoglobin electrophoresis if Mrs. K is anemic.

Conclusion and research needs

Of the pregnancy-related factors identified here, only screening for hemoglobinopathy can be informed by practice guidelines based on "good and consistent" science. Screening for female genital mutilation by physical examination has been described through a panel of technical experts from the World Health Organization. No data show the effectiveness of screening or treatment during pregnancy for social isolation, exposure to unprotected and unregulated work environments, or sexual abuse, although the prevalence of these issues among immigrants and refugees suggests that at least a minimal amount of information be sought and responsive follow-up be given to newly arrived pregnant women. Particular emphasis needs to be placed

on assessment and care for social isolation and for unprotected and unregulated work environments, as these two issues are likely to be most common in primary care.

Key points

- Women newly arrived to Canada are responsible for an important percentage of total births.
- In hopes of reducing maternal morbidity and infants who are small for their gestational age, further development and study is required of interventions to address social isolation of immigrants and refugees who are pregnant.
- We lack data to support actions to be taken by primary care practitioners related to these disparities.

Box 3: Grading of Recommendations Assessment, Development and Evaluation Working Group grades of evidence (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 could 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.

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Clinical preventive guidelines for newly arrived immigrants and refugees

This document provides the review details for the CMAJ CCIRH Screening during pregnancy paper. The series was developed by the Canadian Collaboration for Immigrant and Refugee Health and published at www.cmaj.ca.

Appendix 1: Figure 1

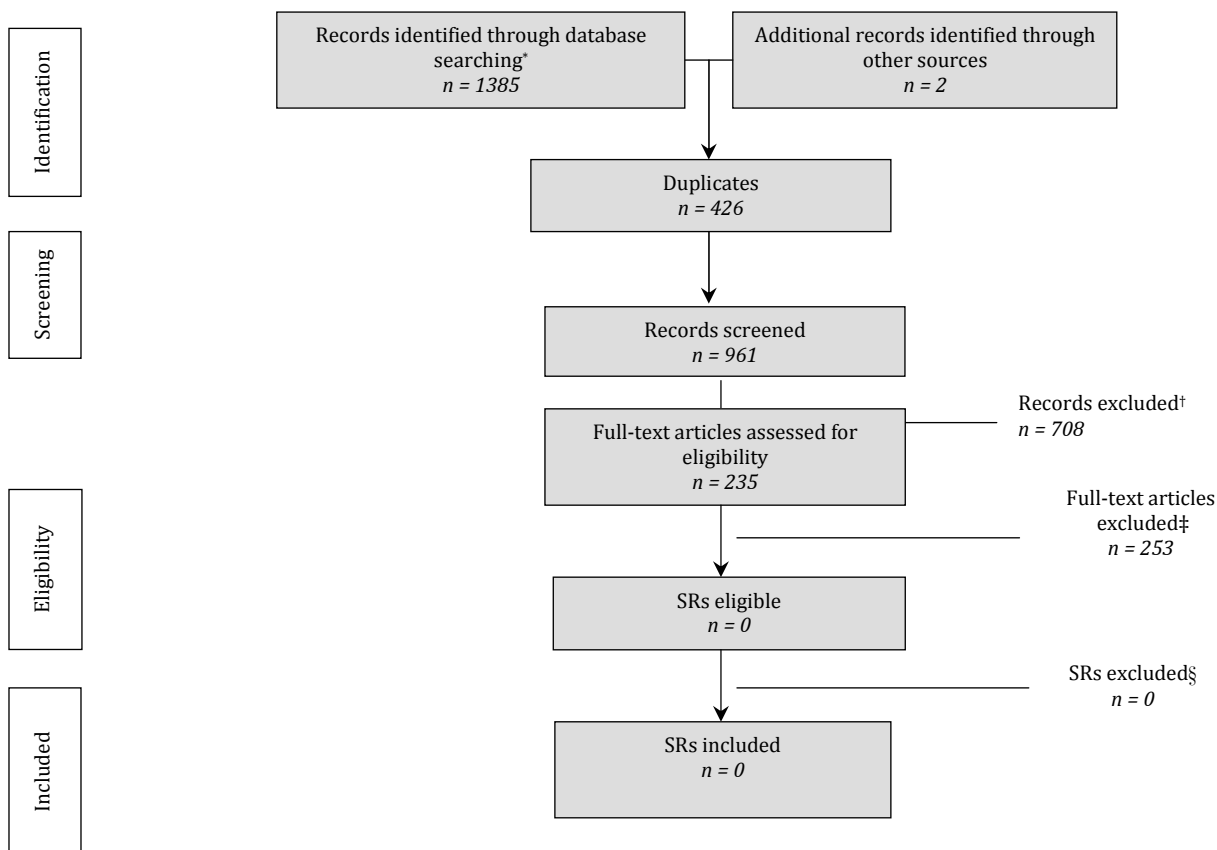


Figure 1: Search and selection of data on pregnancy. SR = systematic review. *48 hits were specific to immigrants and refugees and 1337 hits were specific for the general population. †20 hits specific to immigrants and refugees were not SRs, and 688 hits specific for the general population were irrelevant. ‡111 citations did not meet inclusion criteria; 136 met exclusion criteria, three were excluded for lack of specificity; three specific for the general population were included but were not SRs. §Low quality or lack of national sample, availability of more recent data or lack of relevance to immigrant health status.

Appendix 2: Summary of appraisal with the Appraisal of Guidelines for Research and Evaluation Appraisal Instrument for Selected Guidelines Related to Pregnancy

Appendix 2: Summary of appraisal with the Appraisal of Guidelines for Research and Evaluation appraisal instrument for selected guidelines related to pregnancy								
Topic	Author	Type of Document	Scope & Purpose	Stakeholder Involvement	Rigour Development	Clarity & Presentation	Applicability	Editorial Independence
Hemoglobinopathies	ACOG Committee on Obstetrics, 2007 ¹	Guidelines	89%	58%	57%	83%	44%	67%
Female genital mutilation	World Health Organization, 2001 ²	Report	78%	75%	48%	83%	67%	33%

Appendix 3: Screening During Pregnancy Evidence Based Clinician Summary Table

Develop and study interventions to reduce social isolation given the risk for maternal morbidity and small-for-gestational-age infants.

Prevalence: From 1996 to 2001, foreign-born women were responsible for 22% of all births in Canada. Social isolation affects 15% of pregnant immigrant and refugee women.

Burden of Illness: Canadian data on maternal mortality by any migration indicator are not available. Data from the United Kingdom show maternal mortality rates for Black African women are 5.6 times higher than white women; Black Caribbean 3.7 times; Middle Eastern 2.9 times; 'other' 2.5 times; Bangladeshi 2.1 times; Indian 1.9 times; Chinese and other Asian 1.3 times. Higher caesarean section rates (33.0%-35.8 %) among newly-arrived women compared to Canadian-born (26%) have been reported with rates highest among those arriving from West Africa and Europe.

Access to Care: Language barriers and cultural considerations play an important role. Accessibility to care may be limited due to of eligibility for health services. Patient fears that requests for additional services may reduce their chances of successfully remaining in Canada.

Key Risk Factors for Adverse Outcomes During Pregnancy: Lack of psychosocial resources in non-migrants has been associated with small for gestational age infants. Hemoglobinopathies (predominantly thalassemia and sickle cell disease) are more common in women whose ancestors came from areas where malaria is endemic, including Africa, the Mediterranean basin, the Middle East, the Indian subcontinent, southeast Asia, and southern China. Exposure to unprotected/unregulated work environments is common in newly arrived women. Most newly arrived women in Canada report working in sales/services (37.3%) and processing/manufacturing occupations (17.9%), where risk of adverse pregnancy outcomes is greater. Their lack of knowledge of employee rights exaggerates these exposures, resulting in greater risk to them and their newborn than their receiving country counterparts.

Female genital mutilation prevalence ranges from 5% to 97% among women in countries where it is practiced. Canadian migration trends show high numbers of female arrivals (19.5 % of those who received permanent resident status in 2006) from countries where female genital mutilation is commonly practiced 80-90% of all female genital mutilation in Djibouti, Somalia and Sudan is type III.

Screening Test: There are no screening tools with reported sensitivity and specificity for social isolation and unprotected work environments.

Treatment: Of the pregnancy-related factors identified for this review, only screening for hemoglobinopathies can be informed by practice guidelines based on 'good and consistent' science, while screening for female genital cutting by physical exam has been described through a panel of WHO technical experts. There are no data on the effectiveness of screening or treatment during pregnancy for social isolation, exposure to unprotected/ unregulated work environments, or sexual abuse although the prevalence of these issues in this population suggests that at least a minimal amount of information be sought and responsive follow-up be given to newly arrived pregnant women.

Special Considerations:

- Although no clinical action recommendation is made to address social isolation, pregnant women may benefit from other established antenatal screening: diabetes, depression, HIV, hepatitis B, hepatitis C, syphilis, iron deficiency, hemoglobinopathies, rubella and varicella susceptibility. Remaining alert for risks of unprotected/unregulated work environments and sexual abuse may also be beneficial.
- Barriers to care access in Canada include the three-month waiting period for provincial coverage for immigrants in certain provinces. In Ontario, the province receiving the greatest number of newly-arrived people, there is no exception with respect to prenatal care to the three-month delay in eligibility. Delayed prenatal care in Ontario has been found to be as high as 60% in migrant pregnant women.
- Female Genital Mutilation requires culturally appropriate care during pregnancy: providing less interventionist care, greater sensitivity for cross-cultural practices.