

New faces from faraway places: Immigrant child health in Canada

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For the past several years, more than 50,000 children have immigrated to Canada annually. These children are particularly vulnerable in terms of their health. Although the Immigration Medical Examination provides the required medical screening, a number of additional recommendations for the medical evaluation of immigrant children can optimize their health care as they transition to life in Canada. Furthermore, a number of other issues must be specifically addressed in the care of immigrant children, such as consideration of their culture, nutritional issues and growth, psychosocial issues and immunizations. Certain groups of immigrant children, such as internationally adopted children and refugees, may be even more vulnerable and have special needs. However, despite the numerous challenges in addressing the health issues of immigrant children, there are many resources available to help paediatricians provide these children with optimal care.

Key Words: *Child; Health; Immigrant*

For the past decade, approximately 50,000 children younger than 15 years of age have immigrated to Canada each year (1). The majority of immigrants live in large urban centres; however, immigrant children can be found in communities all across the country. Although similar in many ways to Canadian-born children, immigrant children have additional needs and vulnerabilities, particularly in regard to their health. The literature indicates that immigrant children have higher mortality rates, less access to health care and disproportionately high poverty rates (2-4). Canadian paediatricians and other health care providers for children must be aware of such needs and the available local, provincial and national resources to help meet their needs.

DEMOGRAPHICS

Canada has a long immigration history. Since the early 1990s, approximately one-quarter of a million immigrants each year have made their home in Canada (1). Approximately 10% of Canadian immigrants are refugees – individuals who cross international borders because of a well-founded fear of persecution (5,6).

In 2001, 18.4% of the Canadian population was foreign-born (5). In 2003, immigrants to Canada came from 214

De nouveaux visages venus de loin : la santé des enfants immigrants au Canada

Depuis quelques années, plus de 50 000 enfants immigreront au Canada chaque année. Ces enfants sont particulièrement vulnérables en matière de santé. Bien que l'examen médical réglementaire de l'immigration procure le dépistage médical exigé, plusieurs recommandations supplémentaires pour l'évaluation médicale des enfants immigrants peuvent optimiser leurs soins tandis qu'ils font la transition vers une vie au Canada. De plus, plusieurs enjeux doivent être abordés de manière spécifique dans les soins aux enfants immigrants, tels que la prise en compte de leur culture, des problèmes d'alimentation et de croissance, des troubles psychosociaux et de l'immunisation. Certains groupes d'enfants immigrants, comme les enfants adoptés sur la scène internationale et les réfugiés, peuvent être encore plus vulnérables et avoir des besoins spéciaux. Cependant, malgré les nombreux défis pour affronter les problèmes de santé des enfants immigrants, il existe de nombreuses ressources pour aider les pédiatres à prodiguer des soins optimaux à ces enfants.

countries, with 51% emigrating from Asia and the Pacific, 20% from Africa and the Middle East, 17% from Europe and the United Kingdom, 9% from South and Central America, and 3% from the United States. Almost one-half (44%) spoke neither official language at the time of their arrival in Canada. Although the majority came to live in Ontario (54.1%), Quebec, British Columbia and Alberta each received relatively large numbers of immigrants (17.9%, 15.9% and 7.2%, respectively). All provinces and territories welcomed at least a small number of immigrants. Premigration, migration and postmigration factors all impact significantly on the health of an immigrant child (7).

HEALTH REQUIREMENTS AND ACCESS

Health requirements at entry

The Immigration Medical Examination (IME) is required for all individuals seeking permanent residence in Canada (8). It must be completed within 12 months before entry into Canada except for in-Canada refugee claimants who require completion of their IME within 60 days of their claim (9). The IME includes a history and a physical examination, a mental status examination and a limited number of laboratory tests (8). A urinalysis is required for children five years of age and older. A chest x-ray must be taken for

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anyone 11 years of age and older and for younger children with any clinical indications. Individuals 15 years of age and older must undergo testing for syphilis and HIV antibodies. HIV antibody testing is also required for children born to parents known to be HIV seropositive, international adoptees, and children who have received blood products overseas or who have other known risk factors. A serum creatinine test must be performed for individuals with hypertension, diabetes, autoimmune problems, persistent proteinuria or known kidney disorders. Individuals seeking to immigrate to Canada may be deemed medically inadmissible if their health status could be a danger to public health or safety, or if they may "cause excessive demand on health or social services" (10).

The IME represents the medical requirements for immigration; however, it is quite limited in its scope. Consequently, a more thorough evaluation should be undertaken when an immigrant child is first seen by a medical practitioner in Canada (9,11,12).

Access

Access to health care can be a significant issue for some immigrants. Guendelman et al (3) demonstrated that 52% of foreign-born children were medically uninsured compared with 20% of American-born children. In Canada, permanent residents can claim health care coverage, although a three-month waiting period is applied in British Columbia, Ontario, Quebec and New Brunswick. Refugee claimants are eligible for emergency and essential health care services through the Interim Federal Health Program.

HISTORY-TAKING

Medical history

The initial medical examination should include a thorough history and physical examination, as well as appropriate tests and follow-up visits because a complete evaluation may require several visits to the physician. It is helpful to request that the family bring all documentation of past immunizations, growth charts, medical records and current medications. It is also important to review contact information with each visit to facilitate follow-up communication.

The medical history of an immigrant child may be much more complex than that of a Canadian-born child because it includes all of the details of the child's 'life story', including those from before birth through his or her entire journey to Canada (9). In addition to details of the pregnancy and perinatal history, dietary history, growth and development status, medications, allergies, immunization status and medical history, which are all components of a standard paediatric history, the immigrant child's history also requires details regarding exposures to infections and toxins that may cause later illness. Medical records should be reviewed carefully to evaluate the accuracy of the information. Specific information regarding the details of travel from the country of origin, including time spent in refugee camps or transit centres and significant separations or losses of family members, should be obtained from refugees (13). A thorough review of systems, including a sexual history for adolescents, is needed. Finally,

an evaluation with anticipatory guidance regarding issues of safety, injury prevention and discipline should be included.

Medical evaluations should involve a cultural interpreter who can facilitate both language and cultural communications. The use of professional interpreters has been shown to increase patient satisfaction and delivery of care, as well as decrease errors in interpretation (14-16). Furthermore, ad hoc interpreters, such as other hospital staff and family members, especially children, should be discouraged because their use has been associated with errors that have greater likelihood of having clinical consequences (16).

Psychosocial issues

Many risk factors have been identified for the development of adjustment difficulties in immigrant children (9). The immigrant's journey may have involved significant personal stresses and losses, and his or her transition to Canadian life may be coloured by concerns about finances, immigration status, learning a new language and loss of a social support network. In particular, immigrant parents may be underemployed because their job experiences and qualifications may not be recognized in their host country (17,18). Changes in status and difficulties in meeting the family's basic needs may cause stress for the parents and increasing pressure for the children to succeed in the host country.

Refugee children are at increased risk for post-traumatic stress disorder, which may be evidenced by changes in mood, school performance, sleeping patterns or social habits. However, immigration does not always result in psychosocial problems. Beiser et al (19) found that immigrant children in Canada had fewer emotional and behavioural problems than Canadian-born children matched for socioeconomic status.

Culture

Knowledge of the family's cultural and religious beliefs, as well as traditional medical practices, should be elicited with the help of the cultural interpreter. An immigrant child and his or her family will bring their language, cultural normative values, health beliefs and an understanding of folk illnesses to each interaction with a Canadian health care provider (20). Although some of these beliefs may not correspond to our traditional scientific understanding of illness, a failure to recognize them may result in poor outcomes for the child and the family (21). A number of models have been created to facilitate discussion of the family's understanding and the cultural context of their child's illness that can help the physician to provide culturally appropriate health care (11,21,22).

Immunizations

Close attention must be paid to an immigrant child's immunization history. In many cases, documentation of previous immunizations may be lacking or suspect, and most developing countries follow the World Health Organization's Expanded Programme on Immunization Plus, which varies significantly from most vaccine schedules in developed countries in its

use of bacille Calmette-Guérin, oral poliovirus and yellow fever vaccines. In addition, the Expanded Programme on Immunization Plus does not include the newer vaccines, such as the conjugate meningococcal, pneumococcal and *Haemophilus influenzae* type b vaccines, as well as the varicella vaccine and the acellular pertussis vaccine. Country-specific vaccine-preventable disease statistics and immunization schedules can be found on the World Health Organization's Web site (23), and a listing of international vaccine names is also available on-line (24).

An increasing body of literature now focuses on best practices in the vaccination of immigrant and internationally adopted children. A recent study (25) of immigrants to the United States demonstrated that 88% of individuals with a history of chicken pox had varicella antibodies; however, 65% of those without a history of the illness had also developed antibodies. Therefore, a history of varicella disease may mislead the clinician and leave a child either unprotected or vaccinated unnecessarily. A cost analysis of varicella serotyping found that immunization without assessing antibody status was cost effective up to four years of age, but serotyping before immunization was cost effective for children five years of age and older if follow-up was assured for any required immunizations (26). The American Academy of Pediatrics recommends performing routine serological testing only for hepatitis B, and beginning age-appropriate routine or catch-up schedules for the remaining vaccine-preventable diseases among internationally adopted children (27). The Canadian guideline is to start the appropriate immunization schedule without antibody determination for those children without reliable vaccine records because most of the currently used vaccines have few adverse effects following repeat doses (28). For children who may develop an adverse reaction to a vaccine containing diphtheria and tetanus toxoids, appropriate serology can inform decisions regarding the need for additional doses.

PHYSICAL EXAMINATION

In addition to a routine physical examination, the physician must observe closely for signs of undiagnosed chronic diseases or congenital infection. The dermatological examination may provide significant information, such as the presence of bacille Calmette-Guérin scars, evidence of female genital cutting, scarification, or evidence of traditional medical practices such as coining or cupping. Assessments of the child's nutritional status, vision and hearing, and dental health should be undertaken.

INVESTIGATIONS

A number of screening tests are recommended in the initial evaluation of immigrant children, depending on their epidemiological risks and clinical suspicion of disease from their history and physical examination. These include a tuberculin skin test if the child were travelling from or through tuberculosis endemic areas, a complete blood count with a differential to look for anemia and eosinophilia, a urinalysis, and serology for hepatitis B (hepatitis B surface antigen and

antibodies to hepatitis B surface and core antigens), hepatitis C, HIV and syphilis. Sickle cell and glucose-6-phosphate dehydrogenase screening plus a hemoglobin electrophoresis should be requested if the child is of African, Asian or Mediterranean descent.

Some experts recommend that one to three stool examinations for ova and parasites be obtained for all immigrant, refugee or internationally adopted children, while others advocate the routine treatment of all immigrants with a single empirical dose of albendazole, a broad-spectrum anti-helminthic drug (9,11-13,27,29). Although a recent cost-effectiveness analysis supports presumptive albendazole therapy for intestinal parasites for most immigrants, there are few data for such empirical therapy in children (30). Consequently, a reasonable approach is to screen those children presenting with gastrointestinal or other symptoms of intestinal parasites and those who may be at increased risk, such as refugees and international adoptees, by sending stools for culture and ova and parasites (29,31,32).

Other laboratory tests should include cultures for sexually transmitted diseases if clinically indicated. Geltman et al (33) found that elevated lead levels were almost three times more common among refugees than among children born in the United States, with 11% of refugees having elevated levels. Although no Canadian data are available for comparison, lead level screening should be considered in children with recurrent or chronic abdominal pain, anemia, developmental delay or behavioural problems (9,34). Finally, newborn screening is uncommon in many less developed countries; therefore, testing for hypothyroidism in internationally adopted infants and children with developmental delay should also be considered (32).

SPECIAL HEALTH ISSUES

Dental health

Immigrant children often come from countries where dental care may not be routinely available. One study of elementary school-aged immigrant children found dental disease among over 75%, with more than twice as many dental caries in primary teeth than the national average (35). Emergency dental care is covered by the Interim Federal Health Program; however, it is not covered by provincial health plans. Anticipatory guidance regarding dental hygiene is an important component of caring for immigrant children.

Nutrition and growth

A review of any previous growth charts, a good dietary history, and current measurements of height, weight and head circumference should be documented during the initial evaluation of an immigrant child. The physician must observe the child for any signs of malnutrition including syndromes of undernutrition (marasmus and kwashiorkor) and overnutrition (obesity) and the consequences of each. Children who are undernourished may also be at risk of vitamin deficiencies.

TABLE 1
On-line resources for immigrant child health

General	
Immigrant Health Research: The Metropolis Project	www.canada.metropolis.net/
United Nations High Commissioner for Refugees	www.unhcr.ch/cgi-bin/texis/vtx/home
United States Committee for Refugees	www.refugees.org/
Citizenship and Immigration Canada (including a list by province of local immigrant-serving organizations)	www.cic.gc.ca/ (www.cic.gc.ca/english/newcomer/ welcome/wel-20e.html)
On-line journal: Children of Immigrant Families	www.futureofchildren.org/pubs- info2825/pubs-info.htm?doc_id =240166
Health-related	
World Health Organization	www.who.int/csr/don/en/
Health Canada/Santé Canada: Public Health Agency of Canada, Travel Medicine Program	www.phac-aspc.gc.ca/tmp-pmv/ index.html
Centers for Disease Control and Prevention, National Center for Infectious Diseases Traveler's Health	www.cdc.gov/travel/index.htm
Minnesota's Refugee Health Program	www.health.state.mn.us/divs/idepc/ refugee/
Culture-related	
Cultures Canada	www.culturescanada.ca/
Affiliation of Multicultural Societies and Service Agencies of British Columbia	www.amssa.org/index.htm
National Center for Cultural Competence	gucchd.georgetown.edu/nccc/
EthnoMed (University of Washington, Seattle, Washington)	www.ethnomed.org/
DiversityRx (Language and Cultural Competence)	www.diversityrx.org/

Infectious diseases

Infectious diseases are common causes of morbidity and mortality in the countries of origin of many immigrants (36). Because many of these infections may be latent at the time of immigration, screening for the most common of these pathogens is recommended (37). In addition, the differential diagnosis for any presenting complaint in an immigrant child must include all illnesses for which the child is at risk, based on the epidemiology in his or her countries of origin and transit. For example, although the differential diagnosis of fever in a child who has recently arrived from Sub-Saharan Africa is extensive, malaria must be the presumed diagnosis until it has been ruled out. Immigrants are also at significantly increased risk of acquiring infectious diseases when they return to their home countries to visit friends and relatives (VFRs) (38,39).

Special groups

Among immigrant children, members of certain groups are particularly vulnerable, such as refugees, victims of torture and unaccompanied minors (40,41). These individuals have additional needs that must be addressed on their arrival to Canada.

More than 2100 children were adopted internationally by Canadian families in 2003 (42). Although most of the issues regarding immigrant children are also applicable to the international adoptee, a growing body of literature is available regarding this unique group of immigrant children and their special needs (9,11,13,31,32,43-46). In particular, many internationally adopted children have spent significant amounts of time in orphanages, resulting in high rates of infectious diseases, such as hepatitis B, intestinal parasites and tuberculosis, as well as growth and developmental delay related to physical and emotional deprivation (31,46). Furthermore, these children frequently exhibit emotional and behavioural problems, including issues related to feeding, sleep and attachment (45).

RESOURCES AND RESPONSE

Although the immigrant child may present a complex challenge for the health care provider, there are many resources available to provide assistance. The Canadian government offers several programs for immigrants and refugees that can be accessed through Citizenship and Immigration Canada (5). The Canadian Paediatric Society has published an excellent resource entitled *Children and Youth New to Canada: A Health Care Guide* (9), which provides an overview of issues relevant to immigrant child health. A number of resources are also available on-line (Table 1).

Several models have been developed for immigrant and refugee health programs. Some essential components of successful models include multidisciplinary teams with paediatric health care providers, mental health staff, nursing and social service providers with cross-cultural expertise, and trained medical interpreters (12). It is particularly helpful if some members of the team are of different ethnic and cultural backgrounds because some immigrants are more confident in the skills of health professionals from their own ethnic group (47). One Canadian example of this is the North Hamilton Community Health Centre's Immigrant/Refugee Health Program, which integrates the provision of primary health care with settlement and language services by community health workers (48). In addition, a number of Canadian paediatric health care centres are now providing or developing special clinics for immigrant children.

At a national level, a number of initiatives could improve the health of children who have immigrated to Canada. DesMeules et al (49) describe a new research initiative linking Canadian health and immigrant databases to evaluate the health outcomes of immigrant subgroups. Paediatricians who care for immigrant children could also develop a national database to share data and resources. From such a resource, evidence-based clinical guidelines could be developed to reflect best practices for the care of immigrant children. However, until such a resource is created, paediatricians can still provide excellent care by taking a detailed, culturally appropriate history and performing a physical examination, taking into account all of the special issues raised by the child's life story.

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