Clinical Care

What screening resources are recommended for immigrant children?
Are some diseases or conditions more prevalent among immigrant children?
How do I communicate with families that are not English proficient?
WHAT SCREENING RESOURCES ARE AVAILABLE FOR IMMIGRANT/NEWLY ARRIVED CHILDREN?

According to the 2013 AAP Policy, Providing Care for Immigrant, Migrant, and Border Children (May 2013), pediatricians should use available screening and diagnostic protocols for evaluating foreign-born children for infectious diseases and other medical conditions. Additional screenings commonly required for school entry, including lead testing, vision, and hearing screenings, should be provided for all age appropriate children. The Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics (AAP) Red Book offer resources with detailed discussions (please see the mental health section of the toolkit for details). If follow-up can be ensured, the comprehensive evaluation does not need to be completed in the first 1-2 visits and some elements can be deferred until a trusting relationship with the family has been established.

Finally, throughout this document, a case study will demonstrate how this process was successfully used in a general pediatric practice setting.

Considerations for the Initial Screening of Immigrant Children

- **Birth country/ethnicity, country/countries of transit and length of time living in these countries, time in the United States**
- **Medical records, if available, including vaccine records**
- **Past medical history, including prenatal serology results of mother/health of mother, birth setting (home/medical facility), gestational age at birth, history of female genital cutting (FGC), other traditional cutting, transfusions, surgeries, tattoos**
- **Sexual history, including whether history of sexual abuse**
- **Nutrition history, including foods available, to determine risk for specific micronutrient deficiencies**
- **Use of complementary and alternative medications**
- **Environmental hazard exposure history, including possible lead exposure risks**
- **Tobacco, alcohol, opium/heroin, betel nut, khat, other drug use**
- **Allergies**
- **Dental history**
- **Education: last year of school completed and literacy level of patient/parents as applicable, potential learning difficulty and/or need for special education**
- **Social history—including family structure, support in US, school environment, individuals who live in the same home as the child, primary care taker**
The specific health risks of immigrant children depend on the child’s country/region of origin and experiences prior to arrival in the United States. Each child should be evaluated within the context of unique predisposing factors and experiences.

Infectious Disease

Infectious diseases are among the most common health issues encountered in immigrant children. Testing for tuberculosis by tuberculin skin testing or interferon gamma release assay (regardless of history of BCG vaccine) should be universally applied in all immigrant children. If there is no documentation of prenatal or parents’ lab results, children should also be screened for hepatitis B (regardless of vaccine history), HIV, and syphilis. Other infectious diseases may be evident with a review of systems (hematuria suggesting glomerulonephritis, diarrhea, malabsorption, or failure to thrive). In the setting of immunosuppression (most commonly associated with corticosteroid use) strongyloides parasites may infiltrate internal organs and unexpectedly manifest as hyperinfection syndrome with associated high rates of morbidity and mortality. Eosinophilia may be present with strongyloides infections, however, its absence does not rule out infection. Ova and parasite testing is very insensitive for detecting strongyloides, given that shedding may occur intermittently and at unpredictable times.

Soil-transmitted helminths

The most common soil-transmitted helminth infections are Ascaris lumbricoidea, whipworm (Trichuris trichiura), and hookworm (Necator americanus, Ancylostoma duodenale). Transmission of Ascaris and whipworm occurs via ingestion of soil contaminated with these helminths in human feces, and infection with hookworm occurs primarily through direct contact between skin (such as bare feet) and contaminated soil. Infections may be asymptomatic or may cause abdominal pain, diarrhea, nausea/vomiting, or anemia due to malabsorption or blood loss. Infections with soil-transmitted helminths may be diagnosed by stool ova and parasite examination, for which, ideally, three samples should be obtained at least 24 hours apart to increase sensitivity. Treatment of choice is albendazole; however clinicians should confirm that patients do not have a history of seizures or other neurologic deficits (which may be indicative of neurocysticercosis) prior to treatment.

Giardia intestinalis

Giardia, a protozoan, may be asymptomatic, cause bouts of acute symptoms such as watery diarrhea and abdominal pain, or cause prolonged symptoms including foul-smelling stools, abdominal distention, anorexia, malabsorption, or failure to thrive. Neither stool ova and parasite examination nor eosinophilia are sensitive for detecting Giardia. Other infections such as Ancylostoma duodenale (hookworm) or stronger infections with strongyloides infections, however, its absence does not rule out infection. Ova and parasite testing is very insensitive for detecting strongyloides, given that shedding may occur intermittently and at unpredictable times.

ARE SOME DISEASES OR CONDITIONS MORE PREVALENT AMONG IMMIGRANT CHILDREN?

Infectious Disease

Infectious diseases are among the most common health issues encountered in immigrant children. Testing for tuberculosis by tuberculin skin testing or interferon gamma release assay (regardless of history of BCG vaccine) should be universally applied in all immigrant children. If there is no documentation of prenatal or parents’ lab results, children should also be screened for hepatitis B (regardless of vaccine history), HIV, and syphilis. Other infectious diseases may be evident with a review of systems (hematuria suggesting schistosomiasis in a child from sub-Saharan Africa), or performance of physical examination (characteristic rash of scabies, or splenomegaly in hyperreactive malaria syndrome) however, some will need specific screening to identify.

Inadequate immunization status (insufficient number, inadequate serologic response due to improper storage of vaccinations, or severe malnutrition) places immigrant children at risk for vaccine-preventable illness. Immunizations should be initiated immediately according to recommended schedules for infants, children, and adolescents.
low levels¹⁴. Serology for IgG antibodies against strongyloides is the testing of choice for diagnosis. Ivermectin is the treatment of choice but should not be used in patients from **Loa loa**-endemic regions **unless co-infection has been ruled out**²⁸ (see CDC domestic refugee screening guidelines for further info).

**Schistosomiasis**

_Schistosoma_ organisms, the trematode flatworm, are spread via parasites in contaminated fresh water. _Schistosoma_ species are endemic in many areas of Africa; distribution requires snail vectors, infected human reservoirs, and fresh water sources. Infection, also known as bilharzia, is contingent upon environmental exposure with organisms penetrating skin, therefore, children tend to be at risk of infection only once they are crawling or walking. Acute infection may present with fever, abdominal pain, hepatosplenomegaly, rash, or lymphadenopathy. Skin penetration may cause a pruritic, papular dermatitis similar to “swimmer’s itch.” Infection with _Schistosoma haemotobium_ may lead to bladder inflammation (with associated dysuria, hematuria, secondary urinary tract infections, and pelvic pain), fibrosis, and ultimately, increased risk of bladder cancer or renal failure. Chronic infection with intestinal forms of schistosoma (_S. mansoni_) may ultimately lead to portal hypertension. Eosinophilia may be present with schistosoma infections, however, its absence does not rule out infection. Ova and parasite testing is also insensitive for diagnosis. Blood schistosoma IgG antibody testing is the diagnostic method of choice. Treatment of choice is praziquantel. If seizures or neurologic deficits of unknown etiology are present, neurocysticercosis* must be ruled out with neuroimaging prior to treatment with praziquantel.

**Malaria**

Malaria classically presents with high fevers, chills, rigors, sweats, and headache. Although five species of malaria infect humans, _Plasmodium falciparum_ causes the most significant morbidity and mortality and is hyper- and holo-endemic in some areas of sub-Saharan Africa. For newly arrived immigrants from areas in sub-Saharan Africa where _P. falciparum_ is endemic, CDC currently recommends presumptive treatment, particularly for specific refugee populations from areas that have greater than 40% endemicity (dark red on the endemicity map) for malaria infection.¹⁵ For immigrants from regions outside of sub-Saharan Africa as well as immigrants from sub-Saharan Africa who are not presumptively treated, evaluation for malaria should be based on symptoms. Screening with thin and thick blood smears in asymptomatic patients has low sensitivity. Performing daily smears over three days increases sensitivity. PCR testing is available through CDC, particularly in cases of symptomatic infants or pregnant teens and women. A Rapid Diagnostic Test (RDT) is now available in the U.S and offers an alternate way of quickly establishing the diagnosis of malaria infection by detecting specific malaria antigens in blood. Although the use of the RDT does not eliminate the need for malaria microscopy, it can reduce diagnostic delay that may occur in some clinical settings due to challenges in accessing timely microscopic evaluation.¹⁸ Presumptive treatment for _P. falciparum_ is with atovoquone-proguanil or artemether-lumefantrine.

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**Table 1: Infectious diseases to consider in immigrant children**

*Please refer to Medical Screening and Treatment Checklist for tiered approach to appropriate work-up*

<table>
<thead>
<tr>
<th>M tuberculosis</th>
<th>Typhoid fever (<em>Salmonella Typhi</em>) among recently arrived febrile patients</th>
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<tr>
<td><em>M Bovis</em></td>
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<td>HIV 1, 2</td>
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<td>Viral hepatitis</td>
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<td>• Hepatitis A</td>
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<td>• Hepatitis B</td>
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<td>• Hepatitis C (overseas surgery, transfusion, female genital mutilation, traditional cutting, tattoos, sexual abuse)¹²</td>
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<td>• Hepatitis D (chronic carriers of Hepatitis B)</td>
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<td>Parasitic infections</td>
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<td>• Soil-transmitted helminths</td>
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<tr>
<td>– Roundworm (<em>Ascaris lumbricoides</em>)</td>
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<td>– Whipworm (<em>Trichuris trichura</em>)</td>
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<td>– Hookworm (<em>Necator americanus, Ancylostoma duodenale</em>)</td>
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<tr>
<td>• Strongyloides stercoralis (nematode)</td>
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<td>• <em>Entamoeba histolytica</em></td>
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<td>• <em>Giardia intestinalis</em></td>
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<td>• Cryptosporidium</td>
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<td>• <em>Taenia solium</em> (cysticercosis, pork tapeworm)</td>
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<td>• <em>Toxocara canis and visceral larva migrans</em></td>
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<tr>
<td>Malaria</td>
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<td>Geographically specific infections:</td>
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<tr>
<td>• <em>Schistosoma</em> spp. (trematode)</td>
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<tr>
<td>• <em>Opisthorchis</em> species</td>
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<tr>
<td>• Chagas Disease— (<em>Trypanosoma cruzi</em>)</td>
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<td>• <em>Coccidioidomycosis</em></td>
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<td>Sexually Transmitted Infections</td>
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<tr>
<td>• <em>Gonococcus</em></td>
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<td>• <em>Chlamydia</em></td>
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<td>• Syphilis</td>
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<td>Skin infections-</td>
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<td>• Scabies</td>
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<td>• Lice</td>
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<td>• Impetigo</td>
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<td>• cutaneous larva migrans</td>
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<td>Helicobacter pylori</td>
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Nutritional Issues

Immigrant children may present with under-nutrition and malnutrition, including wasting and stunting. Overweight and obesity are increasingly prevalent concerns among immigrant children. A detailed dietary history, complete physical examination, and thoughtful laboratory evaluation can help clinicians to detect particular nutritional issues.

Throughout the world, iron deficiency is the most common nutritional issue. Among immigrant children with anemia, it is important to also consider undiagnosed hemoglobinopathies, particularly for children of African, Southeast Asian, East Asian, Hispanic or Mediterranean ethnicities. Vitamin D deficiency is also common among immigrant children, particularly in those with growth delay, poor vitamin D intake or limited sun exposure due to geography, veiling, or institutionalization. Other micronutrients that may be deficient among immigrant children in resource-limited settings include vitamin A, zinc, vitamin B12, iodine, vitamin B3 (niacin), tryptophan, vitamin B1 (thiamine) or vitamin C. Refer to AAP Pediatric Nutrition handbook or CDC domestic refugee screening guidelines with further details regarding signs, symptoms and regional risks for specific micronutrient deficiencies.

Toxic and Environmental Exposures

As a result of living conditions in home countries and/or impoverished living conditions in the United States, toxin exposure is common among immigrant children. Lead exposure is the most widespread toxin exposure among immigrant children. Exposures prior to arrival in the U.S. may include leaded gasoline, contaminated home remedies or traditional cosmetics, leaded ceramic glazes, the use of car batteries as a domestic power source, leaded cookware, or air pollution. After arrival in the U.S., exposures may include many of the same items, in addition to lead paint in older homes in the US. A number of culture-specific exposures have been associated with elevated blood lead levels in children; see Table 1 in the CDC refugee guidelines for further detail regarding lead exposure. The CDC offers comprehensive guidelines and a Toolkit regarding prevention of lead poisoning among refugee children.

A comprehensive medical history may reveal other potential hazardous environmental exposures. Prenatal exposure to alcohol may be associated with fetal alcohol syndrome that was not previously diagnosed. It is important to inquire about the use of non-prescribed medications as well as traditional treatments or herbal remedies obtained overseas or locally. Migrant children are also at particular risk for health problems related to workplace injuries.

Other General Health Issues

Many immigrant children may have lacked access to pediatric medical care and their mothers may have had home births without prenatal medical screenings, including testing for hepatitis B, HIV, and syphilis. Dental problems, including dental caries or more serious dental diseases, are pervasive in immigrant children, given scant, if any access to dental preventive care and treatment in their countries of origin. Undiagnosed vision and hearing problems may be present. Other medical issues, such as thyroid disease, congenital defects, or genetic conditions, may be present and require subspecialty care. Overweight/obese immigrant children may be increasingly at risk for chronic conditions such as hypertension, diabetes, and cardiovascular disease.

It is important to inquire about history of female genital cutting (also known as female genital mutilation, female circumcision) and parents’ beliefs regarding this practice, particularly if a child is from Africa (where female genital cutting is practiced in over 27 countries) or parts of the Middle East. Using a culturally sensitive and non-judgmental approach, pediatricians should discuss the illegality of female genital cutting in the US with families, including the illegality of sending children back to country of origin for the procedure (sometimes referred to as “vacation cutting”) educate families about significant morbidity and mortality associated with this practice.

Developmental delays may be undetected or detected at a later age among immigrant children. Pediatricians who care for immigrant children should conduct careful developmental surveillance and screening at regular intervals as recommended by the AAP. Developmental screening requires consideration of important issues by families, medical providers, interpreters, and school/child care personnel. Questionnaires and screening tools should be administered using validated translations or with the help of trained interpreter staff when possible. Appropriate referral for early intervention services and/or psychoeducational evaluation should be initiated as soon as a concern is identified.
Mental Health

Mental health merits particular attention in immigrant populations. Stressful experiences may take place prior to departing from one's country of origin, during transit or upon arrival to the United States. Sensitive and trauma-informed approaches to care are essential. In addition, immigrant children and families may experience discrimination and fear within the United States, and acculturation may place stress upon children, adolescents, and families. Immigrant children may also have mental health conditions that are prevalent among the general U.S. population, such as depression, anxiety, posttraumatic stress disorder, somatization, sleep disturbance, and substance abuse. Mental health services should be sought for the entire family when appropriate. See Immigrant Health Toolkit Mental Health Section for further details.

*Cysticercosis is a parasitic tissue infection caused by larval cysts of *Taenia solium*, also known as the pork tapeworm. These cysts can infect the brain (neurocysticercosis), which may present as seizures or neurologic deficits in children. It may also manifest as cysts in the muscles and other tissues. Presumptive treatment with praziquantel or albendazole in the setting of neurocysticercosis is contraindicated without concomitant anti-epileptic and steroid pre-treatment because these drugs may provoke significant brain inflammation and seizures. If child has history of seizures or neurologic deficits of unknown cause, do not treat with praziquantel or albendazole until the presence of neurocysticercosis has been eliminated through neuroimaging.

HOW DO I COMMUNICATE WITH FAMILIES THAT ARE NOT ENGLISH PROFICIENT?

Language access is critical for ensuring that immigrant children and families are able to access and use health care services. 82 percent of immigrant children are fluent English speakers, however 40% of immigrant children live with at least one parent that does not speak English fluently. Approximately 24 percent of immigrant children live in a linguistically isolated household where no one over age 13 speaks English fluently in the home.

Families that are not fluent in English and cannot access language supports may be deterred from even making appointments for health care services. In health care settings, language barriers can lead to inadequate communication that may cause confusion, dissatisfaction, and medical errors. Language barriers have been linked to less routine and timely care for children whose parent’s primary language at home is not English.

Language barriers can occur in clinical settings from the outpatient clinic to the intensive care unit, or in non-clinical settings, like administrative, billing, and legal departments.

Trained medical interpreters can help pediatricians communicate with families that do not speak English or have limited English proficiency.

Trained medical interpreters are valuable assets to the health care team and essential bridges to navigating language barriers. Trained medical interpreters may include trained bi-lingual staff, on-staff interpreters, contract interpreters, or telephone interpreters.

On-staff interpreters are employed by the practice solely for interpreter services.

Contract interpreters are not employed by the practice, and provide services on an on-call basis.

Telephone interpreters provide interpreter services through telephone language lines, often providing interpretation for less commonly requested languages.

Although less common than telephone services, interpretation services can also be provided through Video Medical Interpretation.

Best practices for working with medical interpreters:

- Treat interpreters as an important member of the health care team.
- Provide the interpreter with a brief summary of the patient and briefly share what is anticipated and will be covered during the visit.
- Establish and maintain eye contact with the parent or patient.
- Speak slowly, clearly, and concisely, with appropriate for interpretation. Try to avoid jargon.
- Avoid interrupting the interpreter once the session has started.
- Pay attention to the parent and patient’s body language and other non-verbal cues.
- De-brief with the interpreter after the patient visit.
Best practices for working with families with limited English proficiency

Determine a family’s preferred language. To determine the patient’s or family’s language of preference, provide a brief language identification document with a simple sentence in many different languages.

Unless you are fluent in the patient’s preferred language, do not attempt to speak that language with a patient.

Avoid using family members, particularly children, as interpreters. Untrained interpreters may not accurately interpret information which may lead to misunderstandings, misdiagnoses, and medical errors. The most common interpretation errors involve omissions and editing of information. Children should not be used for interpretation for a variety of reasons including the potential for errors, omissions, and the potential for burdening the child or creating role reversal within the family.

Take caution when asking patients to read English-language information or to complete forms in English, when English is not their primary language.

Resources

AAP Culturally Effective Care Toolkit: Interpretive Services 

Language Access Assessment and Planning Tool for Federally Conducted and Federally Assisted Programs


Health education materials for family members about common conditions affecting pediatric patient populations in multiple languages

https://ethnomed.org/patient-education/pediatric-health-topics

National Culturally and Linguistically Appropriate Services (CLAS) Standards in Health and Health Care


References


