



Health Considerations for Immigrant and Refugee Children



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Keywords

• Immigrant • Refugee • Children • Health • Development • Behavior • Education • Trauma

Key points

- Immigrant and refugee children are at increased risk for physical, developmental, and behavioral health challenges.
- Health considerations for immigrant and refugee children should be framed within an ecological context that includes considerations of family, community, and sociocultural influences.
- It is important to understand the migration history of an immigrant child (or the history of their family), which provides context for infectious disease screening and exposure risk (including trauma).
- Discussions about child development should occur within a cultural context after building rapport and establishing trust with immigrant parents.
- Immigrant families benefit from support in understanding and navigating complex social, educational, and health care systems.

INTRODUCTION

Imagine you are a child. Imagine being forced to flee your home in the middle of night, bringing with you only what you can carry. Imagine spending your entire life in a large US city, seamlessly navigating between the languages

Disclosure Statement: Dr. Dawson-Hahn is the recipient of the Seattle Children's Center for Diversity and Health Equity Mentored Scholars Award.

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and cultures of your home and the greater community. Imagine traveling with strangers, thousands of exhausting miles, on a journey to seek safety. Imagine growing up in a metropolitan suburb, offered opportunities unavailable to your parents in their childhoods.

The experiences of immigrant and refugee children are as individual and diverse as the children themselves. These experiences and these children, however, are not uncommon. One in 4 children in the United States—nearly 18 million children and youth—lives in a family with at least 1 immigrant parent and approximately 90% of these children were born in and are citizens of the United States [1].

The US population includes more immigrants than any other nation worldwide, and there are many reasons why individuals emigrate to this country. Most immigrants live legally within the United States [2]. Many individuals come voluntarily as international migrants, seeking educational or employment opportunities. Due to escalating global conflicts, many come as asylees or refugees, seeking protection after forceful displacement from their countries of origin. Box 1 provides clarifying definitions of migration status. Refugee children are 1 subgroup of immigrant children. As such, this article refers to immigrant and refugee children as “immigrant children” unless distinctly highlighting children of refugee status.

The health considerations of immigrant children are diverse in scope and applicability, depending on a child’s specific needs and circumstances. This document offers a broad understanding of these considerations through an ecological framework that places an individual immigrant child’s health within the context of family, community, and sociocultural influences and provides a comprehensive overview of pediatric immigrant health, relevant for newly arrived and second-generation US children.

MIGRATION HISTORY

The experience of migration includes social and physical exposures and public health risk factors that can guide initial screening, management, and treatment of recently immigrated children and families. Therefore, it is imperative for providers to incorporate a migration history (Box 2) into the routine collection of a patient’s historical data. For example, children may travel through areas that have different patterns of endemic infectious diseases than the country of origin; a family also may have experienced physical abuse or kidnapping during transit, which could influence their physical and psychological health. Other factors that may affect growth and development are the duration of transit time and access to public services, such as education [3]. Health care access preceding entry often has been for acute issues or hospitalization and not for routine preventive care [4].

The location of the child’s birth provides information around available prenatal and postnatal health care services, including newborn screening. Globally, approximately one-third of children have a newborn screen [5]. Key conditions identified by newborn screening are congenital hypothyroidism, hemoglobinopathies, and metabolic acid disorders [5], for which early

Box 1: Definitions of migration status

Immigrants: individuals who have left their country of birth (country of origin) to establish residency in a new country (receiving country)

First-generation immigrants: parents and children all born in their country of origin

Second-generation immigrants: children who are born in the United States (US citizens) and have immigrant parents

Refugees: individuals outside of their country who are unable or unwilling to return home because they fear serious harm and are outside the United States when they seek protection

Secondary migration: voluntary movement of refugees to another state different from their initial state of resettlement (this movement may occur before or after public health screening)

Asylees: individuals who fit the definition of a refugee; however, they seek protection at a point of entry or once they are within the United States

Unaccompanied children: individuals under age 18 without legal status in the United States and without a legal guardian in the United States to provide care or physical custody

Unaccompanied refugee minors: refugee children under age 18 years old meeting previous definition of refugees, without a parent or guardian, and living with foster family under the protection of the Office of Refugee Resettlement

Undocumented immigrant children: children without lawful legal status in the United States with or without a guardian in the United States

Special immigrant visa: holders of this visa qualify for legal permanent residence under the US Citizenship and Immigration Services special immigrant program (most recently this includes Afghani and Iraqi families who worked for the US military)

Temporary visitors: children with permission from the government (a visa) to reside in the United States for a specified period of time due to their parents' work or education, visiting family, or tourism

Legal permanent residents: children with a green card; they qualify for many of the programs that children with US citizenship qualify for

Refugees, asylees, unaccompanied children, and unaccompanied refugee minors are required to have some form of public health screening and a civil surgeon examination to continue their lawful permanent resident eligibility process.

identification is critical to early treatment. Some US states allow children to have a newborn screen drawn even outside the traditional neonatal collection window, and providers can contact their state department of health for more information. Alternatively, providers can consider ordering relevant tests to evaluate for conditions routinely identified by newborn screen.

In the authors' experience, it is most helpful to ask about migration history at the first encounter because it guides initial management, it builds rapport in having a shared understanding of the patient's story (path to migration), and it is more challenging to ask later. The questions of the migration history

Box 2: Migration history question guide

Preferred language

Number of years in the United States

Location of birth

Path to the United States

Location lived in during migration

Number of years in migration

Members of the family who traveled during migration

School attendance before and during migration

Health access before and during migration

Overseas presumptive treatment receipt (if refugee, see details in text)

Location of first residence in the United States

can be readily developed into a dot phrase or template within an electronic health record and can serve as a provider prompt for discussion [6].

Eliciting a migration history also clarifies a patient's migration status (see Box 1), which helps determine what screening, presumptive treatment, immunizations, or physical examination may have occurred prior to immigration. Although a patient's migration status category maybe inquired about verbally, it is not recommended to include this documentation in the medical record [7,8]. Exceptions to the recommendation of not documenting migration status in the medical record include conducting medical or psychological affidavits for an asylum case for an attorney [7].

As part of their immigration entry process, immigrants and refugees have a medical evaluation based on technical guidelines written by the Centers for Disease Control and Prevention (CDC) [9]. These technical guidelines focus on inadmissible health conditions—for example, active tuberculosis [9]. The contents of this medical evaluation may serve as 1 data point in piecing together the broader story of a family's migration history and the child's health and growth. The American Academy of Pediatrics (AAP) policy statement on *Providing Care for Immigrant, Migrant, and Border Children* and its accompanying *Immigrant Child Health Toolkit* build on applying the CDC domestic guidelines for caring for refugees [10] to immigrant children more broadly [11]. The AAP recommends that all immigrant children have a comprehensive medical evaluation after immigration and incorporation into a medical home [11]. There is notable heterogeneity in the migration history of immigrant children welcomed into practices. Ongoing research in migration health will inform and refine postimmigration recommendations.

PHYSICAL HEALTH

The recommendations for screening, presumptive treatment, and testing in this section primarily apply to newly immigrated children; however, the history is applicable to all generations of immigrant children.

The World Health Organization (WHO) Alma-Ata agreement was updated approximately 20 years ago to include the provision of primary health care as a human right [12]. Despite this, many individuals around the world remain without routine access to primary care [13]. For children, this may mean that they are under-immunized and that anatomic abnormalities or developmental disabilities go undiagnosed and routine surveillance of growth and development are incomplete. Education about routine preventive health care [4] may be unfamiliar and require explanation for new immigrant families.

Orientation of new immigrant families to a practice and the local health care system can be helpful, including topics, such as the primary care medical home, subspecialty care, urgent and emergent care, and the importance of and right to having professional interpretation (by phone, video, or in person) in a patient's preferred language for all medical encounters [14]. All members of the health care team should maintain awareness about the wide variation in preimmigration health care experiences and in cultural differences and expectations.

Chronic disease

Even though health providers encounter the usual range of chronic diseases in immigrant children, there are a few chronic diseases that are more prevalent and are highlighted in Table 1.

Nutrition

Refugee and immigrant children are affected by both undernutrition and overnutrition, both before and after immigration [15–19]. Undernutrition—including fetal growth restriction, micronutrient deficiencies, wasting, and stunting—contributes to 45% of all child deaths under age 5 [20]. Child overweight and obesity are rising in prevalence globally and are associated with an increased burden of noncommunicable diseases in adulthood [21].

The anthropometric definitions of undernutrition and overnutrition are based on WHO [22] and CDC [23] growth parameters (Table 2). The intergenerational cycle of malnutrition, in which a malnourished mother gives birth to an infant small for gestational age, can increase the likelihood of a child being stunted [24]. Families may not know their child's birth weight or growth trajectory. Applying anthropometric definitions from growth curves requires a clear understanding of a child's age, which may be unknown or inaccurate. An age assessment tool [25] was developed in Australia as a holistic approach to determining a child's age when it is unknown. The age assessment tool includes an oral narrative, developmental and pubertal assessments, and anthropometric measures. Children, regardless of ethnicity, have the potential to achieve similar growth parameters when their nutritional needs are met, according to the Multicentre Reference Growth Study from the WHO [26].

Immigrant and refugee children may experience comorbid micronutrient deficiencies, especially if they have experienced severe acute malnutrition or chronic malnutrition. Common micronutrient deficiencies are described in Table 3, and deficiencies in zinc, vitamin C, and other B vitamins should be considered in other rare scenarios. Based on elicited patient history, the authors

Table 1

Clinical pearls for selected chronic diseases

Chronic Disease	Clinical Pearls
Thyroid disease	<ul style="list-style-type: none"> • Contributes to abnormalities in child growth [75]. Congenital hypothyroidism leads to intellectual disability [76]. • May be undiagnosed in new immigrant children due to the lack of routine newborn screening in many settings globally [5]. • There is an uneven distribution of iodine throughout the world, which contributes to differences in etiologies in thyroid disease for children coming from different regions [77,78].
Cerebral palsy	<ul style="list-style-type: none"> • One of the most common causes of childhood physical disability. The overall prevalence of cerebral palsy globally is 2.11 per 1000 live births [79] and has been reported to be higher in some low-income countries (2.9 per 1000 live births) [80]. • Although preterm birth is a leading cause of cerebral palsy in many high-income countries [81], it is not a leading cause of cerebral palsy in low-income countries [80]. • Etiology of cerebral palsy includes brain injuries through the early childhood years and cerebral infections (including cerebral malaria) [80]. • When children establish care in their medical home after immigration with a diagnosis of cerebral palsy, it is prudent to assess whether they have characteristics of other neurologic disorders. In the authors' clinical practices, the authors have met children misdiagnosed with cerebral palsy who had spinal muscular atrophy and other conditions missed because of the limited opportunity for testing and lack of pediatric providers or specialists with familiarity with these conditions. • Children with cerebral palsy may not have had access to physical or occupational therapy or to adaptive equipment prior to immigration.
Sickle cell anemia	<ul style="list-style-type: none"> • Highly prevalent in global regions with a high burden of malaria. Nigeria, the Democratic Republic of Congo, and India are estimated to represent 57% of the annual cases of sickle cell anemia diagnosed in newborns [82]. • Routine universal screening for sickle cell anemia is not commonplace globally [5,83,84]. • Inquire about a history of multiple transfusions or need for pain medications (due to sickle cell pain crises). • A hemoglobin electrophoresis is a routine component of our tiered screening among children from countries with a high prevalence of sickle cell anemia or with a concerning history [32].
Thalassemias	<ul style="list-style-type: none"> • Highly prevalent genetic conditions. They are most prevalent in the Mediterranean, Middle East, Indian Peninsula, sub-Saharan Africa, and Southeast Asia [85,86]. • Not routinely screened for in settings without routine newborn screening [5,84]. • Varying degrees of anemia from thalassemia minor to transfusion-dependent and nontransfusion-dependent thalassemia; affected individuals also may experience growth impairment, bone disease, and endocrine abnormalities [85]. • Children with thalassemia are at risk for iron overload due to multiple transfusions, increased intestinal absorption of iron, and ineffective erythropoiesis [85]. • A hemoglobin electrophoresis is a routine component of our tiered screening [32].

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Table 1
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Chronic Disease	Clinical Pearls
Glucose-6-phosphate dehydrogenase deficiency	<ul style="list-style-type: none"> • X-linked enzyme disorder that is more common in low-income countries near the equator [84]. It is more common in highly malaria endemic areas [87]. • May not be diagnosed in a community that does not have routine universal newborn screening [84,86], including in the United States, where it is not screened for in all states [88]. • Glucose-6-phosphate dehydrogenase deficiency places affected individuals at increased risk of hemolysis from insults, including febrile illnesses, fava beans, and certain oxidative drugs (including primaquine) [89,90]. • Immigrant children with a family history of jaundice, splenomegaly, cholelithiasis, anemia, or hemolytic anemia secondary to an infection should be tested for glucose-6-phosphate dehydrogenase with the rapid fluorescent spot test [87].
Rheumatic heart disease	<ul style="list-style-type: none"> • Found primarily in low-income and middle-income countries. • Sequelae of untreated streptococcal pharyngitis. • The global burden of rheumatic heart disease was found to be 10 per 1000 people in South Asia and central sub-Saharan Africa and 15 per 1000 people in Oceania [91]. • Clinical diagnosis of rheumatic heart disease is based on auscultating a pathologic valvular murmur on physical examination and is associated most often with mitral valve pathology confirmed by echocardiogram [92].

recommend optional and tiered screening for micronutrient deficiencies (other than iron, which should be screened routinely).

Oral health

Children of immigrant status, especially refugee children, may present with significant oral health care needs. Regional differences in dietary practices, natural sources of fluoride-containing drinking water, cultural beliefs/practices, and access to professional care influence a child's risk for dental decay [27]. African children have significantly lower dental caries and fewer untreated caries compared with similarly aged children from Eastern Europe, Asia, and the Middle East [27]. The prevalence of caries in African immigrant children is half that of either white or African American children, although their rate of untreated caries is comparable to that of African American children [28].

Immunizations and infectious diseases

The burden of infectious disease varies widely across geographic regions. Health Profiles [29,30] specific to regions of origin and transit can inform public-health grounded care. Ideally, recommendations for infectious disease screening for immigrant children correlates with a child's countries of origin,

Table 2
Anthropometric definitions of nutritional status categories

Nutritional Status Category	Age <2 Years (World Health Organization Definitions)	Age 2 Years to 18 Years (Centers for Disease Control and Prevention Definitions)
Severe acute malnutrition (severe wasting)	Weight-for-length \leq 1st percentile	BMI 1st percentile
Moderate acute malnutrition (moderate wasting)	Weight-for-length \leq 2.3rd and $>$ 1st percentile	BMI \leq 5th percentile and $>$ 1st percentile
Healthy	Weight-for-length $>$ 2.3rd percentile and $<$ 97.7th percentile	BMI $>$ 5th percentile and \leq 85th percentile
Overweight/obese	Weight-for-length \geq 97.7th percentile	BMI $>$ 85th percentile
Chronic malnutrition ^a (stunting)	Length-for-age \leq 2.3rd percentile	Height-for-age $<$ 5th percentile

Abbreviation: BMI, body mass index.

The $<$ 1st percentile is equal to a z score of -3.00 , 2.3rd percentile is equal to z score of -2.00 , 5th percentile is equal to z score of -1.65 , 85th percentile is equal to a z score of 1.04 , 95th percentile is equal to a z score of 1.65 , and 97.7th percentile is equal to a z score of 2.00 .

^aChildren classified into the wasting, healthy weight, or overweight/obese categories also could be classified into the height/length-for-age category of stunting.

through transit and departure. In the absence of this information, it is helpful to utilize the best existing evidence (Table 4) [31,32].

Immigrant children applying for a visa overseas or an adjustment of their status to become legal permanent residents are required to provide proof of vaccinations as part of their related medical examination [33]. Those lacking the necessary vaccinations have to receive immunizations based on the Advisory Committee on Immunization Practices (ACIP) recommendations [34]. Immigrant children who do not apply for a visa before entry to the United States may be unimmunized or under-immunized and should have an evaluation of their immunization status when they establish care in a primary care medical home. Refugee children are not required to have immunizations for US entry. The CDC, however, in partnership with the US State Department, began a vaccination program for US-bound refugees in 2013 that starts their ACIP-recommended immunizations prior to US resettlement [34]. Variations in cultural beliefs and immunization requirements for immigration may partially explain different patterns of immunizations across countries of origin [34].

Exposures

War/conflict

Children growing up in settings of war/conflict are at risk for physical and mental health consequences. Physical injuries may include burns, loss of limbs, traumatic brain injury (TBI), and other blast injuries [35]. Depending on regional resources, children may not have access to imaging for injuries,

Table 3
Clinical pearls for selected micronutrient deficiencies

Micronutrient	Clinical pearls
Iron	<ul style="list-style-type: none"> • Iron deficiency accounts for 50% of anemia globally [93]. • Increased risk of iron deficiency due to food scarcity, parasitic disease, prematurity, and exclusive breastfeeding without intake or iron-fortified foods. • Iron deficiency is associated with impaired neurodevelopmental outcomes [94]. • The authors recommend routine screening with a complete blood cell count and zinc protoporphyrin/heme ratio [95].
Iodine	<ul style="list-style-type: none"> • Most common preventable cause of cognitive disability globally [78] • Differential access to iodine globally [78] • Iodine deficiency can lead to hypothyroidism or hyperthyroidism [77].
Vitamin A	<ul style="list-style-type: none"> • Leading cause worldwide of preventable childhood blindness [96] • Associated with an increased risk of mortality from measles and diarrhea • Clinical features include poor night vision, impaired bone growth, impaired immunity.
Vitamin B ₁₂	<ul style="list-style-type: none"> • Most common in southern Asia and sub-Saharan Africa • Causes megaloblastic anemia, peripheral neuropathy, and other neurologic signs • Individuals most at risk are those who consume diet without meat, eggs, and dairy products (the major dietary sources) [97]
Vitamin D	<ul style="list-style-type: none"> • Increased risk may be due to poor diet quality, prolonged periods of time inside due to concern for safety, higher melanin in the skin, and decreased skin exposure to sunlight due to clothing [98] • Disturbance in vitamin D production, absorption, or metabolism can cause the development of rickets [99]

appropriate assessment for mild-to-moderate TBI, or recommended therapy, such as that to prevent burn-related contractures [36]. The long-term sequelae of TBI include neurocognitive impairment and mood disorders and are particularly important to consider.

Despite the strong stance of the United Nations against chemical weapons [37], their use has been reported most recently in Syria [38]. Exposure to sarin, a nerve toxin, can cause seizures and cholinergic crisis in the short-term or long-term morbidity due to organophosphorus ester-induced delayed neurotoxicity in those who survive [39]. Tear gas, used for crowd and riot control globally and domestically, is associated with lung, cutaneous, and ocular complications in adults [40]. Although the acute and chronic impact on children is unknown, it is reasonable to anticipate that children experience the same or more serious physical health effects, along with potential mental health problems.

Lead

Immigrant children (refugee children, in particular) are at increased risk for elevated blood lead levels due to acute and chronic exposures. Lead absorption also is increased with anemia and malnutrition. Conduits for exposure include

Table 4

Infectious diseases to consider in the care of immigrant children

Infectious Diseases	Clinical Pearls	Routine Screening vs Optional Screening Vs Presumptive Treatment (Screening Test)	Presumptive Treatment ^{a,c} from Region of Origin or Transit
Soil-transmitted helminths (ascariasis, hookworm, whipworm)	<ul style="list-style-type: none"> • Infection may be asymptomatic or may have abdominal pain, vomiting, diarrhea, or anemia and fatigue. 	Presumptive treatment with albendazole (3 stool ova and parasites)	Asia, Middle East, North Africa, Latin American, Caribbean, sub-Saharan Africa
Strongyloidiasis	<ul style="list-style-type: none"> • Can persist asymptotically for decades because it can replicate in a human host. • Patient may have eosinophilia; however, it is neither sensitive nor specific for <i>Strongyloides</i> [100] • Hyperinfection syndrome can occur unexpectedly and many years after parasite acquisition in the setting of immunosuppression, including from steroids. 	Presumptive treatment with ivermectin (<i>Strongyloides</i> IgG)	Asia, Middle East, North Africa, Latin American, Caribbean, sub-Saharan Africa ^c
Schistosomiasis	<ul style="list-style-type: none"> • Latent disease may persist for up to 25 y [101]. • Patient may have eosinophilia; however, it is neither sensitive nor specific for schistosomiasis [100]. 	Presumptive treatment with raziquantel ^p (schistosomiasis IgG)	Sub-Saharan Africa
Malaria	<ul style="list-style-type: none"> • Young children are at greatest risk in highly endemic areas to poor health outcomes. • Immigrants and refugees have arrived with malaria [102]. 	Presumptive treatment with atovaquone-proguanil or artemether-lumefantrine (rapid diagnostic test or thick and thin smears)	Sub-Saharan Africa
Giardia	<ul style="list-style-type: none"> • May be asymptomatic or lead to acute symptoms of diarrhea and abdominal pain or chronic symptoms of failure-to thrive, malabsorption, anorexia [32] 	Optional (giardia stool antigen)	

<i>Helicobacter pylori</i>	<ul style="list-style-type: none"> • More than half of the world's population is infected. Prevalence estimates are highest in Central and Western Africa, Central Asia, and South America [103]. • Multigenerational colonization is common [104]. • Presenting symptoms in children may include nausea, regurgitation, vomiting, abdominal pain. 	Optional (<i>H pylori</i> stool antigen)
Tuberculosis	<ul style="list-style-type: none"> • Consider in children with poor appetite or poor growth. • Children are more likely to convert latent tuberculosis infection to active disease, particularly in the first year of life [105]. • Children experience higher rates of extrapulmonary disease than adults [106]. 	Routine (QuantiFERON (if >2 y old) or tuberculin skin test)
HIV	<ul style="list-style-type: none"> • Not universally screened for during pregnancy globally • Children whose mothers have immigrated may be at higher risk [107]. 	Routine (HIV ELISA [HIV-1 and HIV-2]); if child <18 mo, order HIV polymerase chain reaction)
Syphilis	<ul style="list-style-type: none"> • Commonly asymptomatic latent infection [108] 	Routine if child >13 y old (syphilis enzyme immunoassay)
Hepatitis B	<ul style="list-style-type: none"> • Chronic disease is asymptomatic. • Testing is recommended even if vaccinated before immigration [109]. 	Routine (hepatitis B surface antigen)
Hepatitis C	<ul style="list-style-type: none"> • Screen individuals with concern for high risk: blood transfusion, surgery prior to immigration, tattoo, intravenous drug use, maternal history. • Treatable condition 	Optional (hepatitis C antibody)

^aPresumptive treatment will be done overseas for the majority of immigrant children with refugee status [110]; however, it is unlikely that children with other statuses will have had presumptive treatment. For children who have not had presumptive treatment overseas, their geographic region of origin or travel may warrant presumptive treatment paralleling the CDC guidelines for the care of refugees from similar regions [110]. Recommendations for presumptive treatment are listed by country of origin or residence in transit.

^bChildren coming from neurocystercosis endemic areas should be ruled out for disease if they have seizures or neurologic deficits before presumptive treatment with praziquantel.

^cAmong children from areas in sub-Saharan Africa with endemicity of *Loa loa* (Angola, Cameroon, Central African Republic, Chad, Republic of Congo, Democratic Republic of Congo, Equatorial Guinea, Gabon, Nigeria, and South Sudan), it is not recommended that they be treated with ivermectin presumptively for *Strongyloides* because it has been associated with encephalopathy in individuals with a high microfilarial load [111]. Children arriving from this region should either have a daytime (10:00 AM to 2:00 PM) Giemsa-stained blood smear or be treated with high-dose albendazole if *Loa loa* cannot be ruled out [111].

traditional medicines, cosmetic products, cookware, in-home use of car batteries as power sources, and leaded gasoline [41,42]. Lead exposure also may occur from exposure to munitions being present in areas where children play. A child's risk for lead exposure is stratified by country of origin and pre-emigration locations [31]. Screening for lead exposure as per CDC guidelines [43] is important because elevated blood lead levels are associated with toxicity, including irreversible neurocognitive and behavioral sequelae.

Female genital cutting

WHO defines female genital cutting (also known as circumcision or mutilation) as a procedure that intentionally alters or causes injury to the female genitalia for nonmedical reasons [44]. At least 200 million children and women have been affected globally and 3 million girls are reported at risk [44]. Female genital cutting is most frequently reported in northern sub-Saharan Africa, the Middle East, and India. Due to the illegality of the procedure in the United States [45], girls sometimes are sent back to their country of origin for vacation cutting. Complications include infection, bleeding, and urinary retention. Longer-term complications include urinary, psychological, dermatologic, fertility, and sexual function-related problems [45].

Violence/exploitation/trafficking

Violence toward immigrant children comes in many forms and risks are pervasive throughout the migration process. Forms of violence include state action (such as migration enforcement or detention), employer (forced child labor), peer-to-peer (bullying and school abuse), familial (domestic violence), the general public (xenophobia), and child smuggling or trafficking [46]. Available data indicate that trafficking affects children worldwide, and 1 in 3 detected victims is a child [47]. Exposure to violence is one of the most predictive risk factors for adverse mental health outcomes in immigrant children.

Xenophobia

Immigrant families experience xenophobia and racism on their path to migration and after immigration. Both xenophobia and racism are social determinants of health, with long-term implications for mental and physical health as well as access to health services [48]. Changes in politics, policy, or global events may increase bullying or harassment [49] and should be considered in supporting an immigrant child's health over the long term.

DEVELOPMENTAL HEALTH

One in 6 children in the United States is reported to have 1 or more developmental delays or disabilities [50]. Although there are no reliable and representative data on the global prevalence of childhood developmental disabilities, research indicates that hundreds of millions of children worldwide are not meeting their developmental potential and may not have access to interventions that could positively alter their developmental trajectories [51,52].

Although they come from widely varying backgrounds, children of immigrant status are at increased risk for developmental delays and disabilities. This risk is influenced by many factors preimmigration and postimmigration (Box 3). Acknowledging a child's migration history (or the migration history of the family) is particularly important. Many children have experienced significant, cumulative stressors and adverse experiences during critical periods of cognitive, language, and social-emotional development. Such toxic stress and trauma increase a child's risk for poor developmental outcomes [53].

It often is challenging to assess the developmental status of an immigrant child. Many cultural communities do not monitor a child's developmental progress or track developmental milestones, as in the United States. The word, *development*, does not even exist in all languages, sometimes making communication of this concept difficult [54].

The AAP highlights the importance of early childhood developmental screening through the use of standardized developmental assessments [55]. Various cultural considerations have an impact on the feasibility and effectiveness of standardized developmental screening for immigrant children. Such considerations include use of translated tools and interpreters, cultural connection/relevance to the questions being asked, a caregiver's foundational literacy or educational status (in their preferred language), and a caregiver's rapport with a child's health care provider. The AAP does not endorse any specific standardized developmental screening tool but does provide a comprehensive database for provider use [56]. Despite the limitations of standardized screening for children of immigrant status, these assessments provide opportunities for structured attention and discussion of developmental status. Increasing conversations around typical and atypical child development may promote increased awareness and identification of developmental concerns within diverse cultural communities.

Although parents/caregivers of immigrant children may not specifically track their child's acquisition of developmental milestones, most are aware of their child's developmental path and whether this path adheres to cultural expectations and is consistent with that of peers or older siblings. Parents of immigrant children, however, may not spontaneously disclose developmental concerns. In

Box 3: Influences on child development

Heredity and genetic considerations (including family history of consanguinity)

Nutritional status

Physical health

Exposures (infections, toxins, trauma)

Family safety and stability

Early childhood learning environment

Educational opportunities

Opportunities for community integration

many cultural communities, having a child with a developmental disability is viewed as a curse on the family, leading to the child and family being ostracized from the larger community. A family thus may choose to withhold concerns because of fear of isolation or of how such disclosure may have an impact on their family's security within the United States, given the increased scrutiny of immigration status.

Many families emigrate from resource-poor settings, believing there is nothing to be done for their child or worrying that identification and disclosure of their child's disability will prevent their child from going to school, as was the custom in their countries of origin and transit. Although some parents understand that they have greater access to developmental or educational interventions in the United States, others may not realize the breadth of supports that their child is now entitled to receive.

Given the increased challenges associated with eliciting and assessing an immigrant child's developmental status, clinical pearls guiding surveillance and screening may be helpful (Table 5). As concerns are identified, a child should be referred to a subspecialist trained in developmental and behavioral pediatrics, neurodevelopmental disabilities, or pediatric physical medicine and rehabilitation for further evaluation. A child under age 3 years can access early intervention services in their state, whereas the home school district is a resource for children over age 3 years.

BEHAVIORAL/MENTAL HEALTH

An immigrant child's behavioral/mental health is also strongly influenced by experiences and exposures. Behaviors provide valuable insight into an immigrant child's overall well-being and family functioning. In younger children, close attention to eating, sleeping, and toileting patterns may reveal underlying psychological stressors. In older children, it often is helpful to elicit additional information about school engagement/performance and peer interactions.

Overall, immigrant children are well adjusted and their behavioral/mental health care should reflect the care provided to all children in the pediatric medical home [32]. The AAP highlights 4 key elements of special consideration in the pediatric immigrant mental health assessment [57]:

1. Screening for trauma and adversities
2. Influence of acculturation
3. Consideration of changing social support structure
4. Resilience

Screening for trauma

Immigrant children may experience trauma at any point in their journey from country of origin to living in the United States. Children of refugee status and children who have been separated from their families (including unaccompanied minors and immigrant children in foster care) are at particular risk for traumatic exposures, as are children who are detained in Department of

Table 5

Clinical pearls for developmental surveillance and screening of refugee children

Build rapport/establish trust.	Maintain continuity of care over several visits. Express empathy.
Ask questions about child development at every visit.	Do not assume that parents will spontaneously disclose concerns; use examples and visual supports when possible.
Appreciate a cultural context.	Offer explanation for the term, development, such as, "the way your child moves, speaks, learns, or behaves." Ask questions about how child development is understood within a parents' community. Ask questions to appreciate parental expectations. Recognize potential societal implication of having a child with a developmental concern.
Designate specific clinical time for screening.	Results are likely to be more informative if providers directly administer screening tools (versus a parent completing independently).
Use an interpreter (in person, when possible).	Translations of screening tools may be helpful if available in preferred languages AND if parents are literate in preferred language.
Explain the roles of early intervention or educational service providers	Many families do not have a cultural context for therapists and special educators. They benefit from support in understanding and navigating early intervention and educational systems.

Homeland Security facilities [57,58]. Immigrant children may face increased risk for targeted discrimination, microaggressions, and bullying within their receiving country (Table 6). Additional complexity arises with multiple identities—such as being an immigrant youth with a disability or an immigrant youth who identifies as lesbian, gay, bisexual, or transgender—and, depending on cultural and community contexts, the intersection of multiple identities may increase a child's or adolescent's risk for adverse experiences. Pediatric providers must remain attentive to this increased risk and offer routine and ongoing surveillance for trauma, with further assessment as necessary. Taking time to establish trust with parents and youth is critical to supporting those with trauma histories. Standardized mental health screening instruments may be useful but only some instruments offer translations, whereas others are available only in English [57]. Skilled medical interpreters can be helpful, but parents or youth may be hesitant to disclose information, especially if the interpreter is a member of their local cultural community.

Influence of acculturation

Understanding the influence of acculturation on a child's mental health requires an appreciation for multigenerational experiences. The mental health stressors of first-generation immigrants are not identical to stressors experienced by second-generation or third-generation immigrants. First-generation immigrants may have more recent trauma related to their migration journeys

but be reluctant to disclose experiences due to cultural expectations or fear of deportation. Second-generation children may experience distress associated with persistent poverty, intergenerational conflicts, parental legal status, and societal discrimination. Research indicates that second-generation children demonstrate increased mental health service utilization compared with first-generation immigrant children [57].

Considerations of changing social support structure

The process of migration often leads to loss of familiar support networks, including extended family and community [57]. Within the receiving country, families may experience shifts in traditional roles and expectations, because children often acculturate more quickly than adults to their new home.

Resilience

Several studies have examined risk and protective factors influencing the mental health and resiliency of immigrant children, in particular displaced and refugee children (see Table 6) [59,60]. Healthy families with positive interpersonal connectedness are key to mitigating mental health difficulties. Adaptive responses promote biculturalism and bilingualism with the integration of values from the culture of origin and the receiving culture [57].

Table 6
Risk and protective factors for immigrant child mental health^a

Risk factors	Protective factors
Individual <ul style="list-style-type: none"> • Exposure to premigration violence • Exposure to postmigration violence • Female gender 	Individual ^b <ul style="list-style-type: none"> • Temperament (eg, easy going, stress-reactive) • Intellectual functioning/academic achievement • Executive functioning skills (in particular, self-regulation/inhibitory control skills) • Sense of self-efficacy and positive self-concept • Belief in higher power/religiosity or belief that life has meaning
Family <ul style="list-style-type: none"> • Parental exposure to violence • Parental mental health concerns • Poor financial support • Single-parent household • Unaccompanied by caregiver 	Family <ul style="list-style-type: none"> • High parental support and family cohesion • Positive school experience (self-reported) • Same ethnic origin foster care
Community <ul style="list-style-type: none"> • Perceived discrimination • Multiple relocations/changes in residence in host country 	Community <ul style="list-style-type: none"> • Support from friends (self-reported)

^aSpecific to displaced refugee children [59].

^bChildren with variety of adverse life experiences [60].

Vicarious trauma/secondary traumatic stress

Providers who work closely with immigrant children and their families, and have opportunities to hear their narratives, are at elevated risk for vicarious trauma. Mindful attention to this risk allows providers to engage in resilience-building strategies, including

1. Psychoeducation: learning the signs and symptoms of secondary traumatic stress
2. Skills training: learning specific tools to prevent or target the signs and symptoms
3. Supervision: connecting with other professionals to share and discuss experiences [61]

EDUCATION

Early childhood education

Research highlights the immediate and long-term benefits of high-quality early childhood education programs (ECEPs) for all children [62]. These programs are particularly valuable for children of immigrant status, given their increased developmental and behavioral risks. ECEPs establish a solid foundation for school readiness through promotion of healthy physical, cognitive, socioemotional, and language development [63,64]. ECEPs also build literacy skills by providing language instruction in the receiving country's majority language. Evidence shows that young immigrant children may benefit even more than their native-born peers from participation in high-quality ECEPs [65] and that participation reduces future disparities (academic, employment, income, and overall health) between these 2 groups [66].

High-quality ECEPs are additionally valuable for their role in supporting integration and inclusion of entire immigrant families. Parents/caregivers are able to build meaningful relationships with community partners who facilitate immigrant parents' understanding and navigation of complex health, social, and educational systems [67].

Given the clear benefits of ECEPs for immigrant children, pediatric providers should remain thoughtful of the barriers that interfere with program access and participation. These barriers are strikingly common to the overall immigrant experience and include lack of awareness of service options, cultural and linguistic barriers, difficulties in finding reliable/affordable transportation, conflicting schedules (with parents' work hours), cost of services/difficulty accessing financial assistance, distrust of providers, and concerns connected to legal status [63]. Addressing these barriers with immigrant families will benefit children and their families through improved care coordination, social cohesion, and self-efficacy.

Elementary and secondary education

All children, regardless of immigration status, have the right to receive a free public education under the US Constitution [68]. The US Department of Education provides clear mandates in support of the successful civic,

linguistic, and economic integration of immigrant children and their families [68]. The Department of Education Office of English Language Acquisition guides state policies in supporting English learners (ELs) through dedicated curricula that incorporate languages and cultures of origin, because research does not support a “1 child, 1 language” approach to learning [69]. Even with this focus, however, states and local school districts may struggle to effectively teach ELs, and, consequently, immigrant children often lag behind peers in academic achievement [70]. ELs have a national graduation rate of 63% compared with an overall national graduation rate of 82% [70].

As discussed previously, school-aged immigrant children, especially refugee children, commonly experience significant educational disruption prior to emigration. More than 4 million refugee children worldwide currently are not in school, with 500,000 children added to this group in the past year [71]. Educational disruption places immigrant children at an academic disadvantage compared with US peers and creates challenges for educators in understanding the complex interplay of factors contributing to a child’s learning differences. Differences may result from limited English proficiency, absent or interrupted educational exposure, developmental disabilities, effects of past traumatic experiences, inadequate EL programs, or any combination of these influences.

Assessing immigrant ELs for language or learning disabilities is challenging. Recommendations from the Individuals with Disabilities Education Act and the American Speech-Language-Hearing Association describe the importance of conducting assessments in a child’s preferred language using interpreters and translations, gathering information from a variety of sources, and using alternative assessment procedures—such as dynamic assessment (test-teach-retest) [72]. Evaluation by a developmental subspecialist also can be helpful.

Parents of immigrant children are likely to benefit from support in navigating US educational systems and expectations, particularly if their child receives special education. Parents may need reassurance of their child’s school enrollment, because children with disabilities are not uniformly educated worldwide. Parents also are likely to benefit from guidance and support regarding the role they play in their child’s education, especially as an advocate, an unfamiliar role for many immigrant families.

SUMMARY

Health considerations for immigrant and refugee children are vast, diverse, and complex. Thoughtful attention to the physical, developmental, educational, and behavioral health of immigrant children demands a broader appreciation for their experiences, exposures, and roles within their families, communities, and society. Supporting immigrant and refugee children requires intentional, interdisciplinary partnerships across social, educational, legal, political, and health care systems [73], with an emphasis on a

2-generation approach: addressing the needs of children is key to the success of their parents and vice versa [74]. Immigrant and refugee children require attention and advocacy.

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