

Comprehensive health assessment for newly arrived refugee children in Australia

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Abstract: Providing appropriate and responsive care to refugees from diverse backgrounds and with unique health needs is challenging. Refugee children may present with a wide range of conditions, which may be unfamiliar to health professionals in developed countries. Additionally, refugees may experience unfamiliarity with the Australian health system and distrust of authority figures and/or medical practitioners. This article provides an overview of the priority areas in health and health management for paediatric refugee patients for paediatricians as well as other relevant health care providers caring for this group. Specific issues covered include general health assessment, infectious diseases, immunization, growth and nutrition, oral health, development and disability, mental health and child protection. Comprehensive health assessment can assist in identifying children at risk of poor health and to provide them with timely and effective care, advocacy and appropriate referral.

Key words: Australia; children; comprehensive health assessment; health needs; refugee.

A basic understanding of the health issues affecting refugee children is essential if comprehensive and effective health care is to be provided to this vulnerable group. The numbers of refugees arriving in Australia has increased considerably in recent years, with Humanitarian Program arrivals increasing from approximately 7000 in 1991 to 9000 in 2002.¹ With additional groups such as the Special Humanitarian Program and Women at Risk group, the total number of new arrivals under the Humanitarian Program is 12 000 per year, which will increase to 13 000 during the 2004/5 intake. Almost 50 000 refugees have arrived under this programme since 1997, 40% of whom are children and young people.¹

This review focuses on both Humanitarian Program entrants and those of 'refugee-like backgrounds'. It is estimated that in the year 2000, one in eight of the 32 000 entrants through the mainstream Family Migration Program were from countries from which Australia currently accepts refugees.¹ Health issues discussed here are also relevant for asylum seekers (that is, 'on-shore' refugee applicants in Australia) who may have greater needs regarding access to and eligibility for health care.² Health related to human rights, issues of health care access, eligibility and the effects of Australia's immigration policies on child health are also important and are discussed in a separate article in the Journal. Refugees and asylum seekers are dispersed throughout Australia including areas where those providing paediatric services may have little experience or training in refugee health.¹

It is often assumed that predeparture and postarrival health care is formally managed by government agencies. However, in general, Australian States and Territories have no routine postarrival health checks. In addition, predeparture screening is limited, and may vary significantly with the country of origin. Refugee children undergo the same health screening as other potential migrants prior to arrival in Australia. This consists of a general medical examination plus measurement of height, weight, and urinalysis if over 5 years of age.³ In selected high-risk cases only (if there is a history of blood transfusions or other clinical indications), testing may be conducted for Human Immunodeficiency Virus (HIV) (for those 15 years and older), syphilis, and hepatitis B serology, or Tuberculosis (TB) (chest radiography). In Australia a routine chest radiograph screen for TB is not required for migrants of any classification under 11 years of age, and Mantoux screening is not performed. For children under 11 years, TB screening is generally restricted to those with suggestive symptoms, although States and Territories vary in their approach. An assessment of vaccination status is not a requirement for entry.

While health needs of refugee children may be complex, it is possible for paediatricians and other relevant health providers caring for this group to provide a sympathetic, common sense but comprehensive initial health assessment with subsequent follow-up. It is important to consider this assessment in the ecological context within which these children receive health

care, especially with regard to resettlement challenges faced by their parents. Reviewing the most recent relevant Australian and international data available, this article outlines the more pertinent areas of the initial health assessment of refugee children. The available data on which these and other guidelines are based are limited, and there is a need for high quality research to direct appropriate service provision for refugees.

GENERAL PAEDIATRIC ASSESSMENT

Refugee children will not have undergone comprehensive health assessment prior to arrival in their resettlement country. If assessments have been undertaken, the quality of health assessment and care also varies depending on the country of origin. Furthermore, the limited formal overseas medical assessment that is carried out prior to arrival is geared toward identifying conditions which exclude entry to Australia because of a perceived unacceptable cost to the health system,⁴ it is not a comprehensive health assessment for preventive or curative care.

The initial aim of a comprehensive medical assessment for refugees is to begin to address the complex health concerns and

inadequate health care previously experienced by this group. This can be achieved by performing a detailed history and physical examination to ensure diagnosis and treatment of conditions not previously detected, as well as those treated previously but perhaps incompletely or ineffectively. This includes not only curative aspects of care but also emphasizes primary care and preventive medicine (Table 1).

Practitioners should be mindful that the initial assessment undertaken might be the first full medical review the refugee patient has experienced. It may provide a profound first impression about health care in their new country. As such, sensitivity toward the patient's gender, culture, and past experiences is very important. Conducting the consultation in an appropriate language is crucial. The skills required for working with interpreters are covered in a related paper in this edition of the Journal.

Where previous encounters with health professionals have occurred, it is important to realize that this may have been in the context of torture or trauma in some cases. Such an experience may result in distrust or anxiety when encountering health professionals in the resettlement country. Repeated consultations may be necessary to establish sufficient trust and

Table 1 Components of comprehensive health assessment for refugee children[†]

Condition/health concern	Considerations
History	
Migration history	Record countries visited in transit including refugee camps. Consider fate of family members who have not travelled from the country of origin and resulting effects on children.
Serious or chronic childhood illness	Malaria, measles, hepatitis, tuberculosis, asthma, kidney (haematuria) or cardiac problems, seizures, rheumatic heart disease
Immunization status	
Serious physical trauma	Head injuries, fractures, burns, trauma, torture
Assessment of child development milestones	
Current signs and symptoms	
Infectious and parasitic disease	Consider symptomatic and asymptomatic conditions. Record recent dietary and travel history in the presence of diarrhea and other symptoms
Nutrition, Vitamin A and anaemia	Consider type of diet, history of weight gain or losses, and growth charts. Consider failure to thrive in children <2 year and 'stunting'. Consider investigating all dark skinned children for Vitamin D deficiency. Anaemia may be related to one of the Haemoglobinopathies.
Vitamin D	Consider investigating children for Vitamin D deficiency. Vitamin D deficiency is common in darkly pigmented children or those predominantly protected from sunlight through covering for religious reasons: for example children from Africa, the Middle East and central Asia. Vitamin D deficiency rickets may present with delayed walking, leg bowing, seizures or failure to thrive. ⁶⁵ It is more common in breast-fed infants due to low maternal vitamin D levels. ⁶⁶ TB treatment may contribute to low vitamin D levels. ⁶⁷
Vitamin B	Consider Vitamin B deficiency where a finding of angular stomatitis is made as it indicates riboflavin deficiency. ⁶⁸
Thyroid disease	Consider thyroid disease related to iodine deficiency in children presenting with goitre.
Mental health	Consider nightmares and sleep disturbances, separation fears, PTSD symptoms (although not always obvious in children) and enuresis.
In addition to a thorough physical examination specifically consider the following:	
Skin integrity	Skin lesions, masses, jaundice, scars (esp. consistent with torture, such as cigarette or electrical burn scars).
Gastrointestinal	Check for hepatosplenomegaly and abdominal masses
Hearing and visual impairment	
Dental health	
Cardiovascular	
Neurodevelopment	
Additional considerations	Consideration and/or referral to appropriate holistic services including migrant resource centres (ethno-specific) health promotion services, dental and mental health services and social security. Investigations/treatment should not be initiated without fully informed consent.

[†]This table has been adapted from two sources: 1. Victorian Foundation for the Survivors of Torture, Promoting Refugee Health – A Handbook for Doctors and Other Health Care Providers Caring for People from Refugee Backgrounds, Melbourne, 2001.

2. Refugee Health Assessment, A Guide for Health Care Clinicians, Massachusetts Department of Public Health, Massachusetts, 2000.

rapport. Although a thorough history and physical examination is essential, an extended history may not be appropriate or possible at the first visit. Those working extensively with refugees advocate an approach of eliciting information gradually and opportunistically, often over the course of several visits.⁵ Paediatricians may not be the most appropriate practitioners to explore all potential sensitive issues in detail, but should be mindful of the possibility of these experiences affecting the doctor–patient relationship in unpredictable ways, as well as being a potential cause of physical and mental disorders. Although a history of experienced or witnessed trauma or torture will be important to elicit at some stage,⁶ practitioners should initially focus on less threatening historical elements such as migration history (including countries visited in transit).

INFECTIOUS DISEASE

Although it is important to be aware of likely endemic infections in refugee children, most do not have significant public health implications; the main motivation for their detection is to minimize their consequent impact on the child's health. Infections in refugee children rarely pose a risk to the health of the wider community, although may provide useful epidemiological data. For example, children with active tuberculosis are seldom infectious to others, but such infection is a sentinel event representing ongoing active transmission within a community that should prompt urgent investigation of a source. Moreover, due to the sensitivities and possible stigmatization surrounding screening of refugees,⁷ individual assessment based on sound epidemiological and clinical analysis should be the main reason for conducting diagnostic testing procedures.

Infections are frequently found in refugee children and, depending on their country of origin, these may be unfamiliar to health professionals in developed countries.^{8–13} These include vaccine-preventable infections seen less frequently in developed countries, such as diphtheria and measles. In addition, 'non-infectious' problems, such as blindness or developmental delay may have an infectious cause. Published data outlining likely infections by country of origin^{9,14} can assist in the approach taken to health assessment and in diagnosing symptomatic illness. However, they are not easily extrapolated to refugees who may have spent many years in refugee camps in transit countries where access to preventive health services, and exposure to outbreaks of infectious disease, nutritional deficiencies and local disease epidemiology may be different to those conditions likely to be acquired in their country of origin.

However, certain 'core' infectious diseases should be considered in refugee children (Table 2) as they may be life-threatening or have major implications if left untreated.¹⁴ Infections such as gastrointestinal infestations including *Trichuris trichiuria* and *Enterobius vermicularis*^{8,12} are prevalent and the treatments available are safe and inexpensive. It is therefore cost-effective to treat empirically and follow up with microbiological diagnosis only if symptoms persist.

Due consideration should be given to ensuring that the results of diagnostic tests and treatment (undertaken before and after resettlement) are followed-up after health assessment. Many infections are asymptomatic and refugee families often change residence repeatedly after arrival. In addition, counselling prior to and following HIV testing should be considered a high priority. HIV counselling is time-consuming and requires special skills. Repeat visits and referral to health professionals with HIV counselling skills may be required to address this issue in practice. Specialist referral may also need to be

considered (for example for management of malaria, TB, HIV or Hepatitis B and C).

IMMUNIZATION

There are no pre or postarrival vaccination requirements for child refugees arriving in Australia. Most come from countries where vaccination schedules offer fewer vaccines than the Australian Standard Vaccination Schedule (ASVS). Arrivals from some developing countries are at higher risk of vaccine preventable diseases in their new countries. For example, rubella cases are more common among unvaccinated foreign-born young adults compared to the local population.¹⁵

All refugee children are eligible for all vaccinations listed on the ASVS, free of charge, including those without access to Medicare. Every health encounter should be seen as an opportunity to check and update vaccination status. Where a child has no written documentation to verify previous immunization, a 'catch-up' schedule should be implemented.¹⁶ Verbal immunization histories can be relatively unreliable.¹⁷ Serological testing to determine need for particular vaccinations is not recommended. Examination of the deltoid region for a BCG scar should be performed and BCG given if a Mantoux test is negative and no scar is present. Immunization history should be determined using written records wherever possible, and recent immunization history verified from the Australian Childhood Immunisation Register (ACIR). Based on immunization history a plan should be made for completing the catch-up schedule.

Personal vaccination record cards should be issued or updated whenever vaccinations are given. All vaccinations administered to children less than 7 years of age should be registered with the ACIR. This includes those children not enrolled with Medicare, and vaccinations documented prearrival.

School entry immunization certificates can be issued where there is documentation, regardless of the country of administration. Alternatively the family may sign a statutory declaration form if the child has been fully vaccinated and records are unavailable. The booklet *Understanding Childhood Immunisation* is a useful general vaccination information source aimed at parents and is available in 15 languages.¹⁸

GROWTH AND NUTRITION

Refugee children are at high risk of growth and nutritional problems. In addition, specific issues may arise depending on the country of origin. All paediatric refugees should have their height, weight and body mass index (BMI) measured and followed over time. Growth retardation is more common in children from developing countries^{19,20} although many children experience catch-up growth within one year of resettlement.²¹ Evidence suggests that refugee children have similar growth potential and over time their growth status should approach that of the children in the resettlement country.²² Obesity is an uncommon problem in refugee children upon arrival but increases with length of time following resettlement.^{23,24} Assistance with accessing a culturally familiar diet in new surroundings may reduce the risk of poor nutrition and obesity following resettlement. Precocious puberty may be seen in girls moving from developing to developed countries.²⁵

Children should be referred for further nutritional assessment where there is more than two centile discrepancy in the growth chart between height and weight, or where serial measurements of growth fail to show adequate weight or height

Table 2 Recommended infectious disease investigations[†]

Infectious disease	Assessment	Indications/comments
HIV 1 and 2	Blood DNA PCR (if < 2 years). HIV serology (if > 2 years)	Testing is indicated in children who have signs and symptoms of HIV, have HIV positive mothers, have received blood or blood products or have been sexually abused. ^{4,69} Consider testing for HIV if coinfection with hepatitis B and C and other vertically transmitted infections, such as syphilis. HIV testing, as with other interventions, should only be conducted with fully informed consent. Particular emphasis should be given to the availability of anti-HIV therapies in Australia (which are often not available in the country of origin) and the resultant more optimistic prognosis. In addition, it should be stressed that HIV status should not prejudice visa status.
Tuberculosis	Mantoux test	Testing indicated in all children from high prevalence countries, or where there is a clinical suspicion of disease. Note there is a high risk of infection/disseminated disease in unimmunized children exposed to MTB early in life. Universal BCG vaccine for neonates is best practice in developing countries. False negative Mantoux tests are common in young children (less than 4 years), malnourished and immunocompromised children. Treatment therefore may be necessary on clinical and radiological grounds or where there is a high likelihood of TB exposure (i.e. family members with TB disease). Consider coinfection with HIV. Mantoux-positive children should be referred for treatment/prophylaxis under specialist supervision.
Hepatitis B and Hepatitis C	Serology/antigen detection	Indicated in all children. Unvaccinated household contacts of HBV positive children need vaccination. Positive results require specialist referral.
Syphilis	Both non-treponemal (VDRL/RPR) and treponemal tests	Indicated in all children. Maternal serological testing if available may aid diagnosis in children < 18 months. Positive results require specialist referral.
Malaria	Thick and thin blood films. Antigen detection (P.falciparum more reliable than other species)	Indicated in children from endemic areas (including in transit). If symptomatic, obtain three thick smears to screen for malarial parasites. Consider that the child may be asymptomatic. Urgent specialist referral if positive.
Schistosomiasis	Serology, stool and urine microscopy	Serology indicated in children from endemic areas. Specialist referral indicated if positive.
Strongyloides	Serology, stool microscopy	Indicated in symptomatic children.
Gastrointestinal parasites	Stool microscopy	Indicated, if symptoms persist after treatment. Consider other diagnoses, especially <i>Helicobacter pylori</i> if gastrointestinal symptoms persist.
Specific infections	Diagnostic tests vary – seek advice	Assessment of other infections should be guided by specific history (e.g. sexual abuse, developmental delay) or physical findings. Many 'non-infectious' signs may have an undiagnosed infectious aetiology.

[†]Pre and post test counselling must accompany, syphilis, hepatitis B and HIV serology and Mantoux testing.

Treatment options and doses, refer to the latest Australian Antibiotic guidelines (Therapeutic guidelines: antibiotic. 11th ed. Melbourne: Therapeutic Guidelines Limited, 2000).

gain.²⁶ Growth charts are derived from Caucasian data and single centile parameters may not be easily interpreted in other populations; serial measurements are essential to monitor growth status.

Micronutrient deficiencies are relatively common. Anaemia, iron deficiency and vitamin A deficiency are prevalent in all refugee children, regardless of country of origin.^{12,19,27} Table 1 includes a description of the management issues surrounding the main micronutrient deficiencies.

Anaemia is a significant problem among refugee children.^{12,19} It is more common in younger children^{10,20} and has a complex aetiology. The high prevalence of anaemia may be due to iron or other nutrient deficiency²⁸ and/or parasitic disease (including gastro-intestinal infestations and malaria).^{12,27} Haemoglobinopathies such as thalassaemia and sickle cell anaemia also contribute to anaemia, are prevalent in different ethnic groups and can be asymptomatic.²⁹ Conducting routine full blood count, iron and folate studies and tests to diagnose the underlying cause is therefore appropriate in this context and haemoglobin electrophoresis may also be necessary.

Vitamin A deficiency is widespread in developing countries and particularly prevalent among preschool children, causing xerophthalmia, blindness and anaemia but may be asymptomatic.³⁰ Empirical treatment for children from countries with high rates of vitamin A deficiency should be considered.

DENTAL HEALTH

Dental disease is highly prevalent among immigrant and refugee populations in Australia^{31,32} as well as other western industrialized countries.^{33,34} Common oral health problems include dental caries, periodontal disease (gum disease), functional malocclusion and dentofacial trauma.^{31,34} Under-nutrition and poor nutrition both prior to and following resettlement are thought to contribute to poor dental health.³⁵ Other factors include cost of treatment, fear of authority, cultural isolation, lack of communication and language skills, and alternative beliefs about dental health care.^{36–39} Moreover dental problems may be among the physical consequences of torture or beatings and seeking dental care can in itself be a traumatic experience.⁴⁰

Reduced access to dental health care during and after resettlement can contribute to poor dental health.^{32,41} Although most new arrivals have access to Medicare, this does not include standard dental care. A low priority is often placed on dental care during the migration process.³⁷ Medical practitioners can assist by ensuring parents are aware of the importance of oral health care and promotion and of how to access care for their child. Health professionals should be familiar with public dental clinic arrangements in their locality. Local refugee health networks may also include dentists.

DEVELOPMENT AND DISABILITY

Due to the disruption of migration and resettlement, refugee children may experience delays in their developmental progress and may be more vulnerable to developmental disabilities compared to children from the wider population.

A combination of biological, environmental, social and emotional factors are associated with a child's developmental progress^{42,43} with refugee children experiencing greater risk in all areas. Biological factors to consider include malnutrition, hearing damage through exposure to explosions, or other physical trauma impacting on motor development.

Potential social and environmental factors include trans-cultural issues, parenting and opportunity to play and learn. The impact of emotional trauma on a refugee child's development is well recognized.^{44,45} Refugee children may have experienced the multiple traumas of displacement, uncertainty regarding future life, the loss of their parent(s) or the parent(s) may have become physically and/or emotionally disabled or preoccupied with basic survival. There may not therefore be the same opportunity for parental input. When the focus has previously been on survival and protection from physical danger, the opportunities to play, learn and form normal peer relationships are more limited. Furthermore, inadequate physical surroundings following resettlement such as overcrowding or homelessness may further impact upon developmental progress.

The prevalence of developmental disability as determined by mental disorders, psychological symptoms and social problems in western communities is estimated to be as high as 27%.⁴⁶ Given the additional negative exposures refugee children encounter, the prevalence of developmental disability may be greater. However, children with significant existing disabilities whose families apply to settle in Australia may be refused immigration on health grounds.⁴

Practitioners should ensure that refugee children have an appraisal of their developmental progress as part of their overall health assessment. Realistically, this is likely to be achieved during follow-up visits rather than the first encounter given the language and cultural barriers that may initially be experienced. It is important to identify areas requiring support through the provision of developmentally appropriate environments, optimally challenging activities or more specific therapies such as speech therapy or language classes.⁴⁷

Evidence suggests that with appropriate intervention refugee children can achieve their fullest potential.⁴⁸ Initial assessment and identification of problems forms a basis for advanced preparation of the most appropriate intervention and guidance through the developmental process.

MENTAL HEALTH

Refugee children are at risk of common psychiatric disorders that occur across the lifespan of the individual. These include post-traumatic stress disorder (PTSD), depression and anxiety. In addition, the consequences of extreme and chronic malnutrition, chronic infection and brain injury may also impact upon the development of neuro-psychiatric disorders such as epilepsy or developmental delay.

Refugee children manifest mental health problems and can exhibit certain age-specific reactions. During middle childhood, mental problems may present as internalizing spectrum disorders such as anxiety, depression, separation anxiety, or enuresis. Alternatively, they may present as externalizing spectrum disorders such as oppositional defiant or conduct disorder.⁴⁹ Increasing evidence suggests such problems can become

chronic.^{50,51} A study of refugee children, found high levels of psychosocial impairment on arrival in the United States, with 50% diagnosed with PTSD and 48% with depression.⁵² After 12 years, high rates of PTSD persisted (35%). However, there is evidence for positive adaptational outcomes on measures of depression (12%) and functional status such as school performance. Hence a mix of vulnerability and resiliency factors need to be considered.

Most refugee children live in low income countries of the developing world, and few have access to specialized clinical services for mental health problems. The main focus of interventions in such settings is to create environments that promote mental health and reduce the risk factors to poor outcomes. Examples of a community approach include reunion of families, providing adequate welcome on arrival, ensuring appropriate fostering or mentoring of unaccompanied minors, establishing a safe environment that reduces risk of exploitation and abuse, supporting parents in their capacity to care for children, and providing educational, social and leisure activities for children and adolescents. These interventions are relevant in the Australian context, but the availability of expertise also makes it possible to offer early detection and intervention for more severe psychiatric disorders.

Refugee children and adolescents who are identified as experiencing ongoing post-traumatic stress symptoms should be referred to specialist torture and trauma services. These have been established across all States and Territories in Australia. Common presenting symptoms that should alert the treating physician or other health provider and that should be specifically sought on history include anxiety, enuresis and sleep disorders.

CHILD PROTECTION

Child abuse and neglect occur in all societies, cultural and socioeconomic groups. Many difficulties exist in the ascertainment of rates of abuse and neglect among different countries of origin. Contributing factors include recognition, reporting, and cultural differences. Lower socio-economic status, particularly severe poverty, is a risk factor for physical abuse of children.⁵³ Refugees, who are often subject to these stresses, are therefore potentially at greater risk, although few published data exist to confirm this.

Refugee children and their parents are at higher risk of having been exposed to violence in their country of origin or while displaced. Relatively high rates of past physical and sexual abuse have been reported by refugees at processing centres.⁵⁴ Refugee camps have high rates of abuse, with unaccompanied refugee children particularly vulnerable.^{55,56} In detention centres, children may be exposed to violence and confinement or involved in hunger strikes.^{57,58}

Refugee children need to be assessed for evidence of previous, recent or ongoing abuse. Problems can occur with the interpretation of what is acceptable behaviour or practice in one culture and what would be construed as child abuse in another. Potential to diagnose the effects of traditional health practices used by refugees as physical abuse also exists and should be viewed as being harmful to the child.⁵⁹

In addition, practitioners should recognize that the prevalence of female genital mutilation (FGM) in certain African countries including parts of Somalia, Sudan, Sierra Leone, Ethiopia, Eritrea and Djibouti is over 90% (anecdotal information only; no published studies. Excerpted from Nahid Toubia's *Female Genital Mutilation: A Call for Global Action*, 1993). FGM is a highly complex socio-cultural practice requiring

much sensitivity, and there is now widespread international consensus that this practice is consistent with child abuse.^{60,61} Most Australian States and Territories have specific legislation prohibiting FGM. In those States where certain professionals (for example police, teachers, nurses, and doctors) are mandated to report child abuse under the child protection laws, this requirement usually applies where FGM has recently been performed, or where a child is believed to be at risk (whether it is anticipated to be performed in Australia or elsewhere).⁵

Practitioners should be familiar with the guide produced by the Royal Australian College of Obstetricians and Gynaecologists.⁶² It is appropriate to refer the child to a GP or midwife who has experience and training in assisting women who have undergone FGM, which may be surgically reversible. Children should be referred to the local child protection services if other abuse is suspected.

ONGOING CARE – LINKING REFUGEE FAMILIES WITH EXISTING SERVICES

There is an urgent need to link new arrivals to suitable primary health care providers. Continuity of medical care has proved a challenge as studies have revealed most refugee families have no regular health care provider.⁶³ Insufficient understanding of health services and inability to access health information compound underutilization of health services and the use of a regular medical provider. Practitioners should consider referral to a community health centre or migrant resource centre (located in all Australian States and Territories), which have expertise in refugee health issues, can provide language services and are locally situated for ongoing care and management. Similarly, some States and Territories of Australia have Refugee and Asylum Seeker Networks which can provide information on suitable local services.⁶⁴

CONCLUSION

Refugee children clearly have specific health needs that require careful consideration and with which health professionals in developed countries may be unfamiliar. Attention from treating clinicians to the key areas outlined above can facilitate effective and comprehensive health assessment and advocacy for this complex and at-risk group of children.

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