Chapter 3
Overview of Domestic Screening

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Overview of Refugee Screening Guidelines

This chapter provides a brief overview of recommendations for the initial screening of refugees newly arrived in the United States. These recommendations are based on guidelines published by Centers for Disease Control and Prevention (CDC) and include a general outline on performing a history and physical examination and obtaining relevant laboratory tests [1]. Details of screening and management of specific diseases follow in subsequent chapters.

Overseas Medical Examination

In accordance with Title IV, Chapter 2 of the Immigration and Nationality Act [2], all refugees accepted to resettle into the United States are required to undergo a medical examination before they enter the country. Panel physicians appointed by the US consulate, who follow the technical instructions provided by the Division of Global Migration and Quarantine (DGMQ) of CDC, conduct the examination. The examination is designed to identify individuals with health conditions that are either grounds for inadmissibility into the country or are significant and need notification of

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consular authorities. In recent years, the majority of overseas medical examinations have been performed by the International Organization for Migration, an international agency based in Switzerland.

The laws and regulations governing refugee resettlement define health conditions designated as "Class A" to include communicable diseases of public health significance, drug abuse, and mental or physical health conditions with harmful behaviors. Refugees with Class A conditions are denied entry into the United States unless treatment is completed and there is no further risk to the public health. The list of infectious Class A conditions includes active infectious tuberculosis, lepromatous leprosy, untreated syphilis, and other sexually transmitted diseases (chancroid, gonorrhea, granuloma inguinale, lymphogranuloma venereum). When no longer infectious, refugees with Class A conditions may be reclassified as Class B or receive a waiver allowing travel to the United States and including specification for follow-up in the United States. Other health conditions, at the discretion of the overseas panel physician, may be designated as "Class B" if they are deemed to confer significant disability or deviation from normal functioning. Refugees with Class B conditions usually require follow-up evaluation and treatment soon after arrival in the United States. Examples of Class B conditions are noninfectious tuberculosis and the tuberculoid form of leprosy. It should be noted, however, that the government designates holders of other visa categories also as eligible for domestic refugee services. These people frequently will not have received overseas health screening; examples include Haitian and Cuban entrants and recipients of political asylum. A detailed listing of the federal laws and regulations governing overseas medical screening and the definitions of Class A and B conditions can be found on the CDC website [3].

During the overseas medical exam, panel physicians perform a history and physical examination. The screening for applicants 15 years of age and older will also include a test for syphilis and a chest radiograph to screen for tuberculosis. Children aged 2–14 years will have only either a tuberculin skin test or gamma-interferon release assay to test for tuberculosis, but no test for syphilis. Further evaluation for tuberculosis will depend on the results of these initial tests and risk factors such as known HIV disease and/or exposures to an individual with active, infectious tuberculosis. Refugees may also be administered prophylactic treatment for locally endemic diseases. In particular, the CDC has an extensive program for presumptive treatment of soil-transmitted intestinal helminths (with single-dose albendazole), strongyloidiasis (with ivermectin), and schistosomiasis (with praziquantel). In addition to these, in Sub-Saharan Africa, the regimen includes use of artemether–lumefantrine for malaria. The presumptive treatment program has now been implemented in Sub-Saharan Africa for all four conditions, in East Asia for intestinal helminths and strongyloidiasis, and in the Middle East for helminths only. Details of the program as of Dec 2013 can be found on the CDC website [4].

Domestic Medical Examination

A screening medical examination is recommended by CDC after arrival, and this is strongly encouraged by the Office of Refugee Resettlement (ORR). This exam is

important for several reasons. Of primary importance is the imperative to ensure that refugees start their new lives in the United States in good health. Addressing immediate health concerns can be especially valuable for refugees who may not have had access to adequate medical care. Refugees come from varied backgrounds and circumstances. Prior medical care received by individuals can be widely different. Many refugees have not received routine, preventive medical care before arriving in the United States, and the initial visit should be an opportunity to provide education on preventive health care. The initial encounter can also help the newly arrived refugee develop trust in the provider and the medical system. Familiarizing the refugee with local health care delivery systems is important for continued care. In addition, the domestic health screening continues the public health rationale behind screening by looking for conditions that may have consequences for public health such as latent tuberculosis and chronic hepatitis B virus infection.

Models of Care

Care coordination for a newly arrived refugee can be challenging. The results of the overseas medical exam are transmitted to the local health provider, through the state health department. At present, for arriving refugees, the information is transmitted via the CDC's Electronic Disease Notification (EDN) system or in paper form by the referring local resettlement agency or the refugee himself/herself. When refugees with complex medical problems are anticipated, active communication between local medical providers, local resettlement agencies, and public health departments before the refugee's arrival is necessary to plan for appropriate care.

The Bureau of Population, Refugees, and Migration (PRM), US Department of State, sets a goal of 30 days from arrival for linkage with a health care provider. The Office of Refugee Resettlement (ORR), part of the Administration for Children and Families, Department of Health and Human Services, is the federal agency responsible for providing resettlement and placement services. ORR requires medical services be arranged for by the local resettlement agency within 90 days of arrival as a condition of funding the agency.

There is no single model for domestic health assessments of refugees. Refugee resettlement agencies often serve a crucial facilitative role in helping the refugee enter the system very quickly after arrival in the United States. States may contract with a network of community providers. In most cases, state programs utilize clinics at county and local health departments or private, not-for-profit clinics such as those at federally qualified community health centers and academic medical centers. A more limited number of states rely on a mix of funding streams, including the above federal sources as well as state funds.

Each states' system for domestic screening usually depends on the funding stream utilized to support it. Funding for the domestic refugee exam comes from different sources [5]. ORR provides refugee medical assistance (RMA) and other public health discretionary grants that may also be used to support medical screening and preventive services. By regulation, all refugees are eligible for cash and medical

assistance (Medicaid) for up to 8 months after arrival in the United States. For those not categorically eligible for Medicaid, the RMA funding stream supports their coverage. Some states rely on their Medicaid programs to reimburse medical practitioners who perform the domestic health assessment. Other states, through agreements negotiated with ORR, will instead use RMA funding to reimburse directly for all components of their domestic health screening program through special programs administered by their public health departments. The Affordable Care Act (ACA) may enable more refugees to be eligible for Medicaid or refugees may be able to purchase an affordable insurance plan in the new health care marketplace.

Components of Domestic Medical Exam

During the domestic medical exam, all overseas documentation should be reviewed. It can provide corroborative data on the refugee's health status. It also contains information on screening tests, immunizations, and prophylactic treatment.

History

It should be made clear to the refugee that the process of history and physical examination is for the benefit of the refugee's health. In addition, it is important to educate the refugee that the health assessment will start them on the process of meeting immunization requirements for school enrollment, adjustment of legal status (i.e., applying for legal permanent residence, a.k.a. a "green card"), and some employment. It is important that the refugee understand that the assessment is otherwise unrelated to the immigration legal process and no one will be returned to their home country because of diagnosis or treatment of a medical condition.

As in any new patient evaluation, a detailed history should include any current symptoms, currently active medical conditions, past medical problems, surgeries, medications, allergies, and family history of heritable conditions. Current symptoms may indicate underlying infectious disease such as tuberculosis or malaria. Specific examples of symptoms are fever, weight loss, night sweats, pulmonary complaints, abdominal pain, diarrhea, and skin lesions. Sexual history should be obtained in a culturally sensitive manner to screen for risk of sexually transmitted diseases (STDs), although historically the prevalence of STDs in refugees is quite low [6].

The initial visit also serves as an important opportunity to begin to address chronic conditions such as diabetes, hypertension, and somatic complaints such as low back pain and headache that have not been treated before or, if treated, may not have received proper evaluation and ongoing care. Accurate past medical history may be difficult to obtain as the notion of what conditions are considered significant can vary in refugee populations when compared to western norms; therefore, specific questions on hospitalizations, medications, and other forms of treatments should be asked. Medication history should include use of traditional herbal

substances that may contain toxic ingredients such as lead and arsenic. This is particularly relevant for refugee children who have a substantially increased prevalence of elevated blood lead levels compared to US-born children [7]. Vaccination history should be obtained, though this is often not useful in adults who typically do not have records of their childhood vaccinations. Only valid, written documentation of vaccines that adhere to US or World Health Organization schedules should be accepted. Anecdotal reports of diseases (particularly measles) or immunizations should not be considered valid proof of immunity to vaccine-preventable diseases, with the exception of chicken pox.

The social history is usually more detailed for refugees. Their travel and asylum history should be reviewed as many refugees have passed through at least one intermediate country in their journey from their country of origin to the United States. Where a refugee has lived and what they experienced along the way may be the most important predictors of their health status. Some refugees have lived for many years in a country of temporary asylum before permanent resettlement. This information helps assess for environmental exposures, nutritional deficiencies due to living in refugee camps, and occupational risks in addition to physical and mental trauma including torture and other exposure to violence. Also, the refugee's recent history of multiple upheavals and losses can provide clues to psychological problems. Appropriate ways to assess for trauma and torture are provided in Chap. 14.

The refugee's current social situation is very important for assessing the risk of psychological problems arising from resettlement stressors. Educational level, work history, language fluency, current support network, family structure, and employment potential are all factors in determining risk of poor adjustment to a new society.

Lastly, the substance use history should include, in addition to tobacco and alcohol, the use of traditional recreational substances such as betel nut (used in Asia) and khat (used in Africa) that can have unrecognized toxic potential.

Physical Examination

As in any new patient evaluation, a complete and thorough physical exam should be performed on all refugees. Whenever possible, requests for examiners of the same gender should be honored. As with the history, the purpose of the exam should be explained at the outset. For many refugees, this may be the first time a complete physical exam is being done. It is not uncommon to detect previously undiagnosed hypertension in a refugee on the initial medical visit. The exam should include screening for vision, hearing, and oral and dental abnormalities. Previously undiagnosed abnormalities in these areas are common in newly arrived refugees, and oral health problems, in particular, are among the most prevalent diagnoses in refugee health screening [8, 9]. An external genital exam can offer important information on practices such as female genital cutting; however, in most instances, it may not be appropriate at the initial screening visit. This is especially true when the patient has a history of sexual abuse or such examination violates cultural norms of gender interaction and religion. In some cultures, genital and pelvic examinations of young

unmarried women are considered inappropriate, and in these cases, their wishes should be respected. Many men and women from other cultures also will prefer having a clinician from the same gender to perform genital examinations. (Screening for STDs and HIV can be accomplished without genital examination through the use of urine-amplified DNA probes for gonorrhea and chlamydia, serum testing for syphilis, and salivary or serum testing for HIV.)

Skin exam is important to identify both localized and systemic diseases as well as evidence of physical trauma. It can also reveal traditional healing techniques, such as burns, cutting, and coining that may indicate past disease. Cardiac auscultation may reveal undiagnosed congenital heart disease or rheumatic heart disease that is more common in developing countries. Other important components of the exam are a careful respiratory examination, an abdominal examination for assessment of hepatic and splenic enlargement, a musculoskeletal exam for assessment of physical trauma and injuries, and a full lymph node exam. An assessment of the patient's mental status may indicate a need for further psychiatric evaluation.

A complete history and physical examination can identify important acute and chronic health issues that may need to be addressed or triaged at the initial medical visit. When performed thoroughly and with cultural competence, it can engender the development of trust and comfort with the provider and the local health care delivery services. Development of trust is perhaps the most important role of the health assessment.

Laboratory Tests

A complete blood count (CBC) with five-cell differential is recommended for all refugees. The prevalence of anemia is high among refugee populations [10] and can result from multiple etiologies, but usually nutritional. Iron deficiency is often the cause of microcytic anemia, which can also be from chronic blood loss due to hookworm infection and gastric ulcers. Some recent refugee populations appear to have a somewhat high prevalence of *Helicobacter pylori* infection that can lead to ulcer formation and blood loss. Other nutritional deficiencies such as vitamin B12 can also be the cause for macrocytic anemia and has been frequently noted in Bhutanese refugees [11]. It is important to recognize, however, that B12 deficiency can cause important neuropsychiatric and other symptoms without evidence of macrocytosis or anemia [12]. Thalassemias may also cause anemia and are seen more frequently in recent refugee arrivals from South Asia and the Middle East [13]. When patients have an alpha or beta thalassemia trait, they have no active symptoms and a mild microcytic anemia detected on the CBC is the only clinical sign. A very low mean corpuscular volume (microcytosis) in the setting of high absolute number of red blood cells and normal red cell distribution width (RDW) is strongly associated with thalassemia traits. In contrast, an elevated RDW may still suggest concurrent iron deficiency. Sickle cell anemia and trait is seen in people of African origin, and hemoglobin E disease is seen in parts of South Asia and the Middle East [14]. Glucose-6-phosphate-dehydrogenase deficiency, which is commonly seen in

Southeast Asians [13], is of particular importance in refugees as certain oxidizing medications used for malaria such as primaquine can lead to hemolysis.

Thrombocytopenia can be seen in conditions that cause hypersplenism in malaria or schistosomiasis, both of which are more endemic in Sub-Saharan Africa [15]. Isolated hypersplenism in an otherwise asymptomatic patient from Sub-Saharan Africa is suggestive of tropical splenomegaly syndrome due to chronic infection with falciparum malaria. Clinicians should have a high suspicion for current or recent infection in a newly arrived refugee with eosinophilia, though other causes also have to be considered.

A urinalysis can be used to screen for hematuria caused by *Schistosoma haematobium*, which is prevalent in refugees from Sub-Saharan Africa [15]. It is also useful for picking up undiagnosed glucosuria and proteinuria.

There is no evidence for cost-effectiveness of routine testing of serum chemistries, mainly glucose, transaminases, blood urea nitrogen, and creatinine. However, providers may consider ordering these tests to facilitate the transition to primary care for refugees with evidence of renal or hepatic abnormalities. As noted, liver or renal disease may rarely be indicative of chronic parasitic infections, malaria, or extrapulmonary tuberculosis. Renal disease can also detect complications of diabetes and hypertension in refugees with these conditions. In addition, a hemoglobin A1c level may be appropriate for helping to triage a refugee with known or newly diagnosed diabetes.

Research has documented high prevalence of nutritional deficiencies in refugees. Recent concerns have centered around vitamins B12 (in Nepali Bhutanese) [11] and D (in all refugee populations) [16]. Clinicians should consider a test for B12 level in Bhutanese or other refugees with macrocytosis or symptoms suggestive of deficiency. For vitamin D, all refugees should be started on repletion treatment for 8–12 weeks, after which a level may be checked.

Cardiovascular risk assessment by screening for diabetes and hyperlipidemia and cancer screening is recommended according to the US preventive task force guidelines. Higher suspicion should be maintained for malignancies that are more common in developing countries such as esophageal and liver cancers. Preventive screening does not have to be done at the initial visit for all refugees, but the screening visit can be used as a starting point for this discussion, especially if the refugee's source of future health care is uncertain.

Pregnancy testing should be done for all reproductive-age females especially prior to administration of live viral vaccines and if any pharmacological treatment is planned. While pregnancy testing is not mandatory for vaccinating females of child-bearing years, most adult medical practitioners would prefer to have a documented test. Given the importance of these vaccines, as demonstrated by the case of congenital rubella in an African refugee born in New Hampshire, pregnancy testing should be encouraged if it facilitates immunization of young women [17].

Other important screening includes testing for hepatitis B surface antigen and antibodies as well as tuberculosis. Screening for these as well as HIV and other sexually transmitted diseases, intestinal parasitic infections, immunity to vaccine-preventable diseases, and lead testing in children are discussed in later chapters.

Table 3.1 provides a summary of screening recommendations.

Table 3.1 Screening examination

History
Review predeparture information
Obtain information on past and current social circumstances
Focus on symptoms indicating highly prevalent infectious diseases
Screen for mental health problems
Ask about use of herbal medicine and traditional treatments
Physical exam
Routine exam including vital signs
Pay special attention to hepatosplenomegaly, lymph node enlargement, skin lesions, past genital procedures, and dental and vision exam
Laboratory evaluation
CBC with five-cell differential
Interferon gamma assay or tuberculin skin testing
Hepatitis B serologies
HIV 1 and 2 antibodies
Lead in children
Vaccine titers
Stool parasite testing as indicated
Urine chlamydia and gonorrhea
Optional tests based on risk factors
Urinalysis
Vitamin B12
Vitamin D
Hepatitis C antibody
Complete metabolic profile
HbA1c
Fasting lipid profile

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