General and Optional Testing during the Domestic Medical Examination for Newly Arriving Refugees---Guidelines and Discussion

Background

On average, more than 50,000 refugees relocate to the United States annually.[1] They come from diverse regions of the world and bring with them health risks and diseases common to all refugee populations as well as some that may be unique to specific popuations. The purpose of this document is to describe general and optional testing components that do not fall into the specific disease categories of these guidelines. These guidelines are based upon principles of best practices, with references to primary literature when available.

This document differs from others in the guidelines, which recommend screening for specific disorders. The guidelines in this document include testing for abnormalities or clinical conditions that are not specific disorders but are suggestive of underlying disorders. The tests in this document may indicate either acute or chronic disorders and generally indicate need for further testing and evaluation to identify the condition causing the abnormality. Testing for chronic health conditions is important, since it is becoming increasingly clear that these conditions are common in newly arriving refugees, both children and adults.[2] Since refugee populations are diverse and are predisposed to diseases that may differ from those found in the U.S. population, the differential diagnosis and initial evaluation of abnormalities are discussed to assist the clinician.

General and Optional Tests

Many disorders may be detected by using general, nonspecific testing modalities. Preventive screening, counseling, and testing, which are routinely used in the general U.S.

population, may identify persons with or at risk for chronic disorders. In addition, the process of migration and adaptation to a new lifestyle in the U.S. generally predisposes refugees to disorders, such as hyperlipidemia and cardiovascular diseases, not commonly encountered in refugee populations on arrival. This document discusses guidelines (Table 1) for conditions commonly detected on arrival including, hematologic disorders, renal disease and metabolic disorders of adults and children. In addition, medical screening routinely recommended in the U.S. for such conditions as cardiovascular diseases and cancers should be performed. This may be done at the new refugee arrival medical evaluation or arrangements should be made for timely follow-up with primary care for testing.

Table 1. General and optional testing and for newly arrived refugees

Recommended for All Refugees	• Complete blood count with a white blood cell differential and platelets • Urinalysis (if old enough to provide a clean-catch urine specimen) • Infant metabolic screening in newborn infants, according to state guidelines
Recommended for Specific Populations	• Serum lipid profile[1] • Cancer screening[2] • Uric acid (for Hmong refugees)
Optional	• Serum chemistries and glucose

[1]See Discussion and Table 4 for population-specific information.
[2]See Discussion and Table 5 for population-specific information

DISCUSSION

1. Complete blood count with red blood cell indices, white blood cell differential, and platelet count

Who should be tested: Newly arrived refugees of all ages and ethnicities

Potential disorders detected:

A. Anemia

Anemia is a common finding in refugees of all ages and ethnicities. The prevalence of anemia in selected groups of newly arrived populations has ranged from 19% among African refugees resettling in Australia to 37% among Southeast Asian refugees resettling in the U.S..[2,3] Anemia was identified in 12% of 1,247 refugee children in Massachusetts, with children under 2 years having a rate of 29%.[4] In addition, a study in Maine found 20% of 127 refugee children were anemic at the time of their new arrival medical evalution.[5]

Anemia may result from a wide range of disease processes. Common causes of anemia in refugee populations include iron deficiency, inherited hematologic abnormalities (e.g., thalassemias, hemoglobinopathies, enzyme defects), and infectious diseases (e.g., malaria, intestinal parasitosis). The ultimate cause is often multifactorial;[6] therefore, the clinician needs to consider multiple conditions whenever anemia is detected. The complete evaluation of anemia in refugees is beyond this scope of this document, but common etiologies and initial testing are discussed below and summarized in Table 2.

Iron-deficiency anemia (IDA)

IDA, probably the most common cause of anemia in immigrant populations, is usually manifested as a microcytic anemia (Table 2). The groups most commonly affected are children and women;[7] however, refugees of both genders and all age groups are at risk. Although IDA is frequently multifactorial, it is primarily caused by deficient dietary iron. Chronic blood loss, which frequently adds to iron deficiency, is commonly caused by infection with intestinal parasites, particularly hookworm. *Helicobacter pylori* infections may lead to gastrointestinal blood loss through ulcer formation. If iron

deficiency has not been longstanding or severe, frank anemia may not result, but changes in red blood cell morphology, including microcytosis (low mean corpuscular volume, MCV) and increased red cell distribution width (RDW), may be noted. In a convenience sample of newly arrived Western, Central, and Eastern African refugees to Australia, 20% had ferritin levels that indicated iron deficiency.[2] Studies have also shown a high prevalence of iron deficiency in Southeast Asian refugees in the U.S..[8]

Iron deficiency likely increases intestinal absorption of lead.[9] To address the high prevalence of iron deficiency in refugee children and decrease their likelihood of developing elevated lead levels after arrival to the U.S., the Centers for Disease Control and Preention (CDC) recommends that all children aged 6 months to 16 years have a lead level tested and all children aged 6 to 59 months receive pediatric multivitamins following arrival (see Lead Section for more details).

Inherited anemias

Inherited hematologic disorders are common among many refugee populations. Any refugee who has anemia detected on screening should have inherited hematologic conditions considered, even if other etiologies exist (e.g., iron deficiency, particularly if not corrected with therapy). These disorders include thalassemias, hemoglobinopathies, enzyme defects, and cell membrane defects. These conditions are most common in malaria-endemic regions, since they may provide some defense against this infection. Most of these conditions are autosomal recessive (except for glucose-6-phosphate dehydrogenase deficiency, which is an X-linked disorder). Therefore, it is important to both identify symptomatic refugees who are homozygous for an abnormal gene and to

detect heterozygous carriers, since their offspring may be affected by the disease (Table 2).

Thalassemias are a group of disorders characterized by a decrease in either the alpha or beta globin chain production within red blood cells (RBCs). Globally, most people with thalassemia are born in or are descended from populations in Eastern Asia, the Philippines, Indonesia, India, Pakistan and the Middle East.[9,10] A large increase in the prevalence of all forms of thalassemia has been reported in North America, mostly as a result of immigration from Asian and Middle-Eastern groups in recent decades.[10] In California, the rate of Hemoglobin H disease (or α-thalassemia) in newborns is high for several Asian immigrant populations: 1/2500 in Chinese and Vietnamese, 1/1400 in Filipino, 1/800 in Cambodian, and 1/160 in Laotian newborns.[10]

Four conditions comprise the α-thalassemias, defined by the number of inherited deletions of the four alpha globin genes.[10] If only one deleted gene is inherited, the person is a silent carrier. Alpha-thalassemia trait occurs when two deleted genes are inherited (either [a_/a_] or [aa/__). Affected persons are asymptomatic but usually have a mild microcytic anemia. This condition is important to identify, as the red cell indices resemble IDA; however, administration of iron in alpha-thalassemia trait may be harmful to the patient. When three deleted alpha globin genes are inherited, the result is α-thalassemia (hemoglobin H disease). Affected persons present with microcytic hypochromic anemia at birth and may have aplastic or hemolytic crises throughout life as a result of viral infections. Hemoglobin H disease may present with complications of cholelithiasis or physical exam findings of splenomegaly or growth failure.[8] Roughly half of persons with hemoglobin H disease have inherited two deleted alpha globin genes,

in combination with a nondeletional mutation called the "constant spring mutation." These persons may have a more severe clinical course than those with the classic three-deletion hemoglobin H disease.[8] If a fetus inherits four deleted alpha globin genes, Hemoglobin Bart's disease results. Typically, these fetuses do not survive.[8]

Persons who have inherited one deleted beta globin gene have β-thalassemia minor (trait). These persons have mild microcytic anemia but have no symptoms related to the condition. Persons who have inherited two deleted beta globin genes have β-thalassemia major. Typically symptoms manifest at 8 to 10 months of life, after fetal hemoglobin production has stopped. These patients have severe anemia and fatigue. They may have frontal cranial bossing, other bony changes, and liver and spleen enlargement as a result of extramedullary hematopoesis. Affected persons may be jaundiced and are at increased risk of gallstone formation. This condition typically requires frequent blood transfusions and iron chelation.[8]

The hemoglobinopathies are conditions characterized by production of abnormal globin chains. Perhaps the most widely known of these conditions is sickle cell disease, due to replacement of glutamic acid by a valine at the sixth amino acid position of the beta chain. Globally, 80% of persons affected by sickle cell disease live in or have origins in Central Africa. The condition also affects persons from Central and South America, the Arabian Peninsula, Middle East, India, and Eastern Mediterranean.[11]

Hemoglobin E trait, caused by substitution of a lysine by a glutamic acid at position 26 of the beta chain, is another hemoglobinopathy that is frequently present in certain refugee groups, particularly from Southeast Asia. Both heterozygotes and homozygotes are asymptomatic but have hypochromic microcytosis and mild anemia.[12]

However, in persons who are carriers of both the hemoglobin E gene and the beta-thalassemia gene deletion, severe anemia may result. The prevalence of hemoglobin E is very high in areas of Southeast Asia – nearly 60% in regions of Thailand, Laos, and Cambodia.[10] In California, 25% of Cambodian newborns and just over 10% of Thai and Laotian newborns are hemoglobin E carriers.[10] Hemoglobin E is also seen in a large number of persons from Indonesia, Bangladesh, Northeast India, Sri Lanka, and parts of the Middle East.[8,12] As with the thalassemias, hemoglobin E red cell indices are similar to IDA; however, unless the patient is also iron deficient, administration of iron will not improve the condition and may be harmful.

Glucose-6-phosphate dehydrogenase (G6PD) is an enzyme present in red blood cells. G6PD deficiency is the most common inherited enzyme deficiency, affecting over 400 million people globally. In certain circumstances it may cause acute hemolytic anemia. The geographic distribution of this condition matches that of the thalassemias listed above, but the condition is particularly common in Southeast Asia.[11] The enzymatic function of G6PD helps recycle glutathione inside RBCs. Glutathione is important for preventing oxidative damage to RBCs, which can occur when hemoglobin interacts with oxidizing agents. RBCs become rigid, resulting in their hemolytic destruction in the spleen and other reticuloendothelial organs. Intravascular hemolysis may also occur. Since the gene that codes for G6PD is located on the X chromosome, males are typically more severely affected than females. Most persons with G6PD deficiency are asymptomatic until exposed to oxidizing medications. Examples of particular concern for refugee populations include sulfas, primaquine for malaria, and dapsone, which is commonly used for leprosy and as a prophylactic agent in HIV-

infected persons. Laboratory findings during an acute hemolytic event include normocytic anemia, increased reticulocyte count, normal liver enzymes, and an elevated indirect bilirubin. A urinalysis may be heme positive without RBCs on microscopic examination.[8]

To prevent an acute hemolytic episode, any refugee from a high-risk area should be tested for G6PD activity before oxidizing medications are prescribed. In addition, the new arrival medical exam should include historical questions to identify past episodes of hemolysis, including prolonged or unusually severe neonatal jaundice, recurrent episodes of anemia, hemoglobinuria, jaundice, or gallstones. A positive history for any of these conditions warrants testing for G6PD deficiency if the patient comes from a high-prevalence area prior to use of any oxidizing agents.[8]

B. Eosinophilia

Eosinophilia may be defined as an eosinophil percentage exceeding 5% or an absolute eosinophil count (AEC) exceeding 400 eosinophils/mm^3 (some authors use AEC of $\geq$ 500 mm^3). The AEC is generally a better reference, as frequently a patient will have a normal eosinophil percentage when the AEC is elevated, indicating an infection or other condition. If laboratory reports do not include the AEC, it can calculated by multiplying the total white blood count by the eosinophil percent.

Eosinophilia in a newly arrived refugee most likely indicates the presence of a parasitic infection (see Presumptive Treatment and Medical Screening for Parasites in Newly Arriving Refugees: www.cdc.gov/ncidod/dq/refugee/rh_guide/ip/overseas.htm), although other etiologies such as allergies, medication reactions, and atopy, among others, may account for the finding (Table 2).

C. Thrombocytopenia

A variety of conditions may cause thrombocytopenia, including many infectious diseases, although a discussion of the complete differential diagnosis and evaluation of thrombocytopenia is beyond this text. However, some conditions rare in the general US population, may be common in certain groups of refugees and are noted here. These include any tropical infection that may cause hypersplenism (especially schistosomiasis, visceral leishmaniasis and malaria, or, more rarely, brucellosis). In addition, certain infections that may not elicit clinical symptoms during the examination may cause thrombocytopenia through other mechanisms, such as HIV infection (up to 40% of infected persons will have low platelet counts) or acute infection with malaria in a semi-immune person.[8]

D. Other Conditions

A CBC with differential may reveal clues to a wide range of other, less common disorders such as malignancy (e.g., leukemia), vitamin deficiencies indicated by megaloblastic anemia (e.g., B12, folate), anemia of chronic disease, and endocrinopathies (e.g. thyroid disease) (Table 2).

Initial evaluation of anemia and follow-up testing:

If anemia is present, the cause should be sought (Table 2). The large number of differential diagnoses and often multifactorial causes mean that an anemia cannot be assumed to be due to common iron deficiency.[6]

All patients with a microcytotic anemia should have iron studies checked. If iron deficiency is not present or is unresponsive to therapy, hemoglobin electrophoresis should be performed to identify thalassemias and hemoglobinopathies. Alpha-thalassemia trait cannot be diagnosed by hemoglobin electrophoresis beyond the newborn age; it can only be inferred as the cause of non-iron-responsive microcytic anemia in a person with a normal hemoglobin electrophoresis and no other identifiable etiology of microcytic anemia.[8]

Additional tests to consider include blood lead levels for any person with anemia or microcytosis (although blood lead testing is routinely recommended in children 6 months to 16 years; see Lead Section). In addition, given the very high infection rates, *H. pylori,* which results in peptic ulcer disease, should be considered in persons with microcytic anemias, especially among those who do not respond well to iron replacement or who have abdominal complaints.[13]

If eosinophilia is detected, the necessary follow-up testing depends on the type of pre-departure parasite treatment the refugee received (See Presumptive Treatment and Medical Screening for Parasites in Newly Arriving Refugees www.cdc.gov/ncidod/dq/refugee/rh_guide/ip/overseas.htm).

The evaluation of thrombocytopenia may be quite extensive. Any refugee from a malaria-endemic country should be tested for malaria as an initial step. Initial or repeat testing for HIV should be considered. When thrombocytopenia and splenomegaly are present, the patient should be referred to a specialist for evaluation for infections (e.g., schistosomiasis, leishmaniasis, malaria), as well as other etiologies, such as malignancy.

Table 2. Common causes of anemia in refugees and recommended initial testing

Anemia	**Common etiologies in refugees**	**Frequent initial laboratory investigations**
Following a careful history and physical examination, most clinicians will begin evaluation with a Peripheral Blood Smear for morphology. An initial differential diagnosis may be generated by using the red blood cell indices.		
Microcytic anemia[1]	• Iron-deficiency anemia[2] • Thalassemias and hemoglobinopathies	• Iron studies (serum iron, total iron binding capacity, iron saturation, ferritin) • Reticulocyte count • Hemoglobin electrophoresis[3] • Lead level[4]

Normocytic anemia[1]	• Chronic diseases
	  • Hepatic or renal disease
	  • Neoplasms
	  • Collagen vascular disease
	  • Infections
	  o Protozoal (e.g., malaria, leishmaniasis)
	  o Bacterial (e.g., tuberculosis)
	  o Viral (e.g., hepatitis, mononucleosis)
		History-directed
		o Reticulocyte count

Macrocytic anemia[1]	• Vitamin B-12 deficiency • Folate deficiency • Medications • Alcohol • Thyroid disease • Liver disease • HIV infection	• Serum B12 and folate levels • Red blood cell folate level • Thyroid function tests • Reticulocyte count

[1]Commonly multifactorial in refugees. If high, RDW may have mixed microcytic, normocytic and/or macrocytic etiologies.
[2]Many etiologies, including nutritional, direct blood loss (e.g., menses, ulcer disease, carcinoma, hookworm infection), chronic disease.
[3]If no iron deficiency or if iron-deficiency anemia is not completely corrected with iron therapy.
[4]Particularly important in children. Not an etiology of anemia rather a consequence of iron deficiency.

Note: G-6-PD does not cause anemia unless oxidative stress induces hemolytic anemia. It should be checked in populations, particularly Southeast Asian populations, before medications are prescribed with oxidizing potential (e.g., sulfa agents, primaquine).

2. Urinalysis

Who should be tested:

Currently there is no evidence the routine urinalysis is a cost-effective screening examination. It may be considered in newly arrived refugees of all ages and ethnicities who are developmentally mature enough to provide a clean-catch urine specimen. A bag specimen may be checked for younger children, if clinically indicated, with confirmation of positive findings by catheterization.[5] This recommendation is more conservative than the current American Academy of Pediatric guidelines for children residing in the U.S., because of the higher prevalences of specific conditions that may be detected in refugee children (e.g., *Schistosoma haematobium*).

Potential disorders detected:

A. *Schistosoma haematobium*

Schistosoma haematobium is parasite present in Africa and the Middle East. In some populations (e.g., persons living in endemic areas of Nigeria and Ghana), infection rates may exceed 90%.[15,16,17] Infection presents with intermittent microcytic or gross hematuria, which may be accompanied by dysuria and/or increased frequency. Infection is highly associated with squamous cell carcinoma of the bladder.[6] Although the infection is frequently accompanied by an AEC, confirmation is made by schistosomiasis serologies and/or urine ova and parasite examination. Schistosomiasis in refugees is

discussed further in the pntestinal parasites document of the guidelines (www.cdc.gov/ncidod/dq/refugee/rh_guide/ip/overseas.htm)

B. Renal Diseases

Although not a primary reason for a screening urinalysis, clues to the presence of many different types of systemic and renal disease may be incidentally revealed, and abnormal results should be investigated.

C. Systemic Diseases

A positive dipstick for glucose is suggestive of diabetes. Although there is no evidence to support formal screening of non-immigrant adults for diabetes by fasting glucose measurements, refugee populations have never been studied. Newly arriving refugees constitute a medically vulnerable population in which realities such as lack of awareness, difficulties of navigating complicated health-care systems, and sporadic medical insurance coverage, may sway the balance in favor of screening for asymptomatic diabetes. Although urinalysis is inferior to fasting blood glucose, the presence of glucosuria is very suggestive of diabetes.

D. Sexually Transmitted Infections (STIs)

A urinalysis can give clues to the presence of sexually transmitted infections. A positive dipstick for leukocyte esterase and/or increased numbers of white blood cells in the microscopic exam is suggestive of Chlamydia or Gonoccocal infection. However, because of its low sensitivity this test should not be considered an effective screening

method for these infections. For example, in one study, the presence of leukocyte esterase was only 61% sensitive for Chlamydia infections in males.[14]

3. Chemistries

No evidence supports universal screening of asymptomatic refugees for electrolyte and other chemistry abnormalities. However, a basic panel including blood urea nitrogen (BUN) and creatinine should be considered if indicated by signs, symptoms or co-morbidities. It may also be considered in certain groups with high rates of chronic renal disease, such as the Hmong. In addition, uric acid in Hmong refugees may be considered since the this population is known to have a very high prevalence rate of hyperuricemia and related diseases such as gout and end-stage renal disease.

4. Newborn Screening

There is no evidence the newborn screening is beneficial in screening refugee young infants or children. However, if a newborn refugee infant is seen for refugee medical screening, a newborn screening panel, as dictated by the respective state, should be performed.

5. Cardiovascular and lipid disorder screening

Refugees should be screened for the cardiovascular and lipid disorders in accordance with the US Preventive Services Task Force (USPSTF) guidelines (Table 3).[18] Although blood pressure and nonfasting serum lipid testing can be performed at the new-arrival medical screening examination, other screening tests recommended by the

USPSTF may not be conducted at this visit but should be done in a reasonable time frame after arrival. Adults found to have hyperlipidemia and/or hypertension should be formally screened for diabetes with fasting blood glucose measurement, in accordance with USPSTF guidelines, and should be referred for long-term management.

Table 3. United States Preventative Services Task Force Guidelines for routine medical screening for lipid disorders, hypertension and abdominal aortic aneurysm.

Lipid disorders	• Screen and treat men ≥ 35 years and women ≥ 45 years of age for lipid disorders by obtaining, at the minimum, total cholesterol and high-density lipoprotein levels. These can be checked in a non-fasting state. • Screen and treat men 20 to 35 years and women 20 to 45 years of age if they have increased risk for coronary heart disease (diabetes, tobacco use, hypertension, family history of cardiovascular disease before age 50 in male relatives or age 60 in female relatives, or a family history suggestive of familial hyperlipidemia)
Hypertension	• Screen men and women ≥ 18 years[1]
Abdominal aortic aneurysm	• Screen by ultrasonography men aged 65 to 75 years of age if they have ever smoked

Adapted from USPSTF[18]

[1]All refugees should have an initial blood pressure checked at the new arrival medical evaluation.

Through acculturation, refugees may acquire diets and lifestyles that increase their risks of obesity, diabetes, and cardiovascular diseases. Because of competing concerns of settling in a new country, the new arrival screening visit is not the ideal setting to discuss regular exercise and healthy diets, but the importance of yearly preventive visits should be discussed, and persons with disease may be identified. Given clinical latitude, for refugees who are especially well adjusted, it is appropriate to discuss likely future issues such as obesity on diet and exercise. Translated and culturally sensitive education materials should be distributed when available.

6. Cancer Screening

Immigrants are less likely than the general U.S. population to receive screening tests for cervical, breast and colorectal cancers in the U.S..[19] Foreign-born populations may be adversely effected due to a large health-care disparity in screening for cancers and experience worse disease outcomes.[19] Many factors, particularly limited access to care and cultural barriers, account for these disparities. Interestingly, socioeconomic factors, including education and income levels, do not appear to strongly influence the likelihood of refugees obtaining appropriate screening tests.[19]

Refugees, as with all U.S. populations, should receive preventive screening according to USPSTF Cancer Screening Guidelines (Table 4). The new arrival medical screening examination may not be the ideal time to perform invasive medical screening examinations (e.g., pelvic examinations), since many refugees have experienced sexual assault or other traumatic events. However, if an appropriate environment can be created, trust can be established, cultural norms respected, and the risk of re-traumatizing a refugee minimized, the visit does present a possible opportunity to provide more invasive cancer screening. Even when invasive examinations are not possible, measures can be taken during new arrival screening to promote access to future health care and reduce cultural barriers, which may increase cancer screening in refugee populations. Such measures include identifying a primary care provider, explaining the importance of annual preventive care visits (promoting the message that medical care is for prevention and not just disease), and utilizing professional interpreters to help educate refugees on the benefits of preventive screening in a culturally sensitive manner. In addition,

behavioral risks can be addressed, such as avoiding the use of tobacco, alcohol, and other substances (e.g., kot, betel nut) which predispose toward cancer.

Refugee populations are at a disproportionally increased risk for cancers that occur in the developing world, such as cancers of the liver, esophagus, and stomach.[20,21,22,23] There are no specific guidelines in the U.S. for screening for cancers that occur disproportionally in migrants from the developing world, so the clinician must have a low threshold for investigation and early identification of cancers that are common in these populations but not encountered frequently in the U.S.

Two extremely prevalent predisposing medical conditions, hepatitis B and *H. pylori*, are noted here. Hepatitis B is the leading cause of hepatocarcinoma worldwide. Although screening guidelines are under development for hepatocarcinoma in hepatitis B-infected persons in the U.S., they are not published yet. Persons with known hepatitis B infection should be referred for possible treatment. In addition, follow-up should be arranged for infected persons to be screened on at least a semi-annual basis for early detection of disease by imaging (i.e., right upper quadrant ultrasound) and blood tests (alpha-fetoprotein and aspartate aminotransferase). Refugees also have extremely high rates of *H. pylori* infection, which increases risk for gastric cancer.[24] Eradication therapy for *H. pylori* may decrease this risk, especially if administered before the appearance of precancerous lesions. However, experts to date have not recommended screening asymptomatic persons in high-risk populations; thus, clinical judgment must be used when working in populations with very high rates of infection and high rates of gastric carcinoma.

Table 4. Summary of USPSTF cancer screening guidelines[18]

Cervical Cancer	• Women should be screened with cervical cytology (Papanicolaou smears) at least every 3 years starting at age 21 or within 3 years of onset of sexual activity (whichever comes first). (Since the sensitivity of a single smear may be 60%-80%, most organizations suggest obtaining annual smears until 2 or 3 consecutive negative results are obtained before spacing screening to every 3 years.) • Screening can be discontinued after age 65 in women with previous negative screenings. • Screening is not required in women who have had a total hysterectomy for benign disease.
Breast cancer	• Women ≥ 40 years of age should receive mammograms, with or without clinical breast exams, every 1 to 2 years.
Colorectal cancer	• Men and women ≥ 50 years of age should be screened by one of the following methods: o Fecal occult blood testing of 3 consecutive stools annually o Flexible sigmoidoscopy or double-contrast barium enema every 5 years o Colonoscopy every 10 years

7. Female Genital Cutting (also known as female circumcision, female genital mutilation, and female genital excision)

Female genital cutting refers to all procedures involving partial or total removal of female genitalia or other injury to female genital organs for any cultural, religious or otherwise nontherapeutic reasons. This practice is very common in many refugee populations, particularly those from East Africa (i.e. Somalia, Ethiopia, Sudan), although the practice is pervasive throughout the world. This controversial practice is considered a human rights violation by many, and its performance is illegal in the U.S. in persons under 18

years of age. The World Health Organization (WHO) has condemned and is making efforts to end the practice. The practice clearly poses adverse medical consequences, including direct complications from the procedure (anesthesia or sedation complications, bleeding, acute infection), increased risk of the death for both mother and infant in subsequent pregnancies, post-traumatic stress disorder, and urinary tract infections, among others. In addition, there may be adverse consequences for the woman's sexual well-being.

An external genital examination performed on a female will reveal whether she has undergone this procedure. Although this examination is required on the overseas medical evaluation, it may not have been performed, and the domestic medical screening evaluation presents an opportunity to identify women who have had the procedure. The exam may also provide opportunities to interrupt the practice in future generations. When the practice is identified, the clinician should record what type of procedure was performed (Table 5). Culturally sensitive counseling and educational materials should be offered and, when necessary, referrals provided (e.g., for complications or post-traumatic stress disorder). The refugee can be informed that the procedure is illegal in the U.S.

More detailed information regarding female genital cutting is available from the World Health Organization at: http://www.who.int/reproductive-health/fgm/

Table 5. World Health Organization Categorization of Female Genital Cutting

Type I	Partial or total removal of the clitoris (clitorectomy).
Type II	Partial or total removal of the clitoris and the labia minora, with

	or without excision of the labia majora.
Type III	Narrowing of the vaginal orifice with creation of a covering seal by cutting and appositioning the labia minora and/or majora (infibulation), with or without excision of the clitoris.
Type IV	All other harmful procedures to the female genitalia for nonmedical purposes (e.g., piercing, incising, pricking, scraping and cauterization)

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