

## **Background on Potential Health Issues for Burmese Refugees by Office of Global Health Affairs**

### **Introduction**

This document is intended to better prepare and inform state refugee coordinators, state refugee health coordinators, local resettlement organizations and health care providers about the types of health concerns that may potentially affect the incoming Burmese refugees in Thailand. The document focuses on the most likely health problems these refugees might face.

Clinical information for this document is largely based on the National Institutes of Health MEDLINE plus Web site <http://www.medlineplus.gov>, and the CDC website at [www.cdc.gov](http://www.cdc.gov). Cultural and regional information is taken from the Refugee Health ~ Immigrant Health Web site [http://www3.baylor.edu/~Charles\\_Kemp/burman.htm](http://www3.baylor.edu/~Charles_Kemp/burman.htm).

### **Historical Background<sup>1</sup>**

Burma's history is marred by conflict and unrest. The British colonized Burma from 1824 until 1948. After World War II, the Burmese gained independence from the British in 1948. During the weak constitutional period from 1948 to 1962, Burma suffered widespread conflict and internal struggle. In 1962, the military led a coup abolishing the constitution and took control of the government. In 1988, the military and police violently suppressed demonstrations calling for change in regime. Aung San Suu Kyi assumed the role of leader of National League for Democracy (NLD), the principal opposition party, during this period.

In September 1988, the military government was overthrown and a new ruling junta called the State Law and Order Restoration Council (SLORC) was established. The military continued to violently suppress public demonstrations. During this period, thousands of people were killed and more than 10,000 students fled into the hills and border areas.

The SLORC overwhelmingly lost national parliamentary elections in 1990. However, they refused to recognize the election or call Parliament into session. The ruling junta changed its name to the State Peace and Development Council (SPDC) in 1997. In 2000, the SPDC announced it would begin talks with the political opposition led by Aung San Suu Kyi, who had been under house arrest. These talks were followed by the release of many political prisoners and some increase in political freedoms for Suu Kyi and the NLD. In 2002, she was allowed to leave her home. Unfortunately, in 2003, Suu Kyi's convoy was attacked by a group of government-affiliated militants. Suu Kyi and other members of her party were detained, and the military government forcibly closed the offices of the NLD. Since 1990, the regime has signed a series of cease-fire agreements with insurgent groups, leaving only a handful still in active opposition. In 1989, the junta changed the country's name from Burma to Myanmar. Suu Kyi asked the international community not to recognize the junta's action and to continue to call the country Burma.

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<sup>1</sup> U.S. State Department, Bureau of East Asian and Pacific Affairs, Country Profile, December 2003.

Living conditions on the border are difficult. The army continues its campaign to bring the entire country under its control causing continued migration in and out of the country. As a result of the continuing conflict, there are substantial human rights violations in Burma including murder, rape, torture, forced relocation, and forced labor of dissidents and minorities. The U.S. Committee for Refugees reports that there are approximately 276,000 Burmese refugees in Thailand.<sup>2</sup>

Infectious diseases are the leading cause of morbidity and mortality among the Burmese. Life expectancy at birth is 54.6 years for males and 59.9 years for females. The healthy life expectancy (HALE) at birth for males is 46.5 years and 51.4 years for females. The infant mortality rate is 72/1000, and child mortality per 1000 is 121 for males and 106 for females.<sup>3</sup>

### **Refugee Population**

The incoming group of Burmese refugees is expected to come in two rounds of resettlement. The first group of approximately 1,400 started arriving in the United States in June 2004. The majority of these refugees have been living in Bangkok. However, approximately 400 were living along the Thailand and Burma border in the Mae Sot area. The second round of arrivals will begin processing late in the summer of 2004. It is anticipated that there will be approximately 1500 refugees in this group and that a large number of them will be from Mae Sot.

### **Composition**

Presently, there is not a lot of information available about the composition of the incoming Burmese refugees (e.g., family size, household structures, etc.). We do have a sense of what ethnic groups are included in this population. The preliminary numbers from the state department indicate that 50% of the group of newly arriving refugees are Karen, 25% ethnic Burmese, 15% Mon, and the rest are a mix of other ethnic groups from that region.

### **Language**

The Burmese government used the educational system in its unstated policy of "Burmanization." Burmese is the only language allowed in state primary and secondary schools. Children from different ethnic groups rarely get the opportunity to study in their own language or topics related to their cultural heritage.<sup>4</sup> In regions held by other political parties, alternative texts in the appropriate languages are used, but school enrollment is still low. In the population of Burmese refugees coming in, the language skills will likely reflect their ethnic groups (i.e., Karen, Burmese, Mon, etc.). Most will likely speak some level of Burmese as well.

### **Traditional medicine**

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<sup>2</sup> Country Report: Burma, U.S. Committee for Refugees, 2002.

<sup>3</sup> CIA, 2002; Population Reference Bureau, 2002; WHO, 2002a.

<sup>4</sup> Burma UN Service Office, March 2003.

While there are many ethnic groups in Burma, the traditional ideas about family and religion as central to the culture are universal. Traditionally, the most of the Burmese ethnic groups have extended families. However, it is increasingly common among refugees and immigrants to have the nuclear family as the core. Parents are held to be sacred and one of the "five objects of worship" in Buddhism, hence disobedience to a parent is considered a sin.<sup>5</sup> There are several religions found in Burma. The most common religion is Buddhism, but there is also a large population of Christians and Muslims as well. Traditional health practices may vary between different ethnic and religious groups.

Changes in diet are commonly used to treat illness. Depending on the illness, an increase in or reduction of one or more of the six Burmese tastes (sweet, sour, hot, cold, salty, bitter) may be indicated. The herb Yesah is also commonly used medicinally.<sup>6</sup>

Often illnesses are caused by spirit possession by a Nat or an ancestor and Koro. Koro is the fear that the genitalia will recede into the body and will ultimately be fatal.<sup>7</sup> Menstrual flow is considered critical to women's health and an indication of the state of her physical and mental wellness.<sup>8</sup>

Health is considered to be harmony in and between the body, mind, and soul and the universe. The universe encompasses everyday life, socioeconomic conditions, and spiritual circumstances. This harmony is often discussed in terms of "hot" and "cold" elements or states. Illnesses are seen as either hot or cold and the treatment should then be with opposite medicines or foods.<sup>9</sup>

An individual's head is considered the highest part of the body and should not be touched by another person. However, exceptions are made for medical examinations. It also is impolite to sit in a seat higher or at the same level as an older or more respected person. Pointing fingers, hands, or a foot at another person is considered rude. It is also considered insulting to call another person with upraised index finger.<sup>10</sup>

### Special Health Needs

- **Multi-Drug Resistant Malaria:** The refugees coming from Mae Sot on the Thai-Burma border region are at high risk for malaria, in particular multi-drug resistant strains. Refugees are typically screened and treated if necessary close to their departure date due to concerns that they will become re-infected if they are screened too far in advance. To date, only Burmese refugees living in Bangkok have

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<sup>5</sup> Way, R.T. (1985). Burmese culture, personality and mental health. *Australian and New Zealand Journal of Psychiatry*, 19(3), 275-282.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> Skidmore, M. (2002). Menstrual madness: Women's health and well-being in urban Burma. *Women & Health*, 35(4), 81-99.

<sup>9</sup> Refugee and Immigrant Health Web Site (Baylor University)  
[http://www3.baylor.edu/~Charles\\_Kemp/burman.htm](http://www3.baylor.edu/~Charles_Kemp/burman.htm)

<sup>10</sup> Ibid.

been screened with only one positive test. We expect this number to increase once refugees from Mae Sot begin to get ready for departure. Information about treating patients with malaria is available at [http://www.cdc.gov/malaria/diagnosis\\_treatment/tx\\_clinicians.htm](http://www.cdc.gov/malaria/diagnosis_treatment/tx_clinicians.htm). Healthcare professionals who require assistance can also call the CDC Malaria Hotline (770-488-7788).

- **Immunizations:** Because of recent outbreaks of vaccine-preventable diseases among U.S.-bound refugees and to avoid costly delays in resettlement, CDC is also recommending that Burmese refugees receive the following age-appropriate vaccines before they enter the US: diphtheria and tetanus toxoids and pertussis (DTP) vaccine, tetanus and diphtheria toxoids (Td), oral polio vaccine (OPV), measles-mumps-rubella (MMR) vaccine, hepatitis B vaccine, and varicella vaccine.<sup>11</sup>

**Note:** The refugees were recently given live virus vaccines, such as measles vaccine. Live virus vaccines can temporarily suppress tuberculin reactivity, if a tuberculin skin test is indicated and cannot be performed at the same time that the live virus vaccine is given, the tuberculin skin test should be deferred for 4-6 weeks.

## Malnutrition<sup>12</sup>

Malnutrition is a common problem among refugees and is a major contributor to a variety of health problems. Malnutrition is the result of decreased intake of one or all food groups or to decreased absorption of nutrients due to illness. Diseases and malnutrition often form a vicious cycle. Malnutrition contributes to a diminished immune system, which makes individuals more susceptible to diarrheal illnesses, that in turn leads to decreased absorption of nutrients.

- **Acute or Severe Malnutrition:** Acute malnutrition or wasting is a result of a relatively recent decline in nutritional intake. Acute or severe malnutrition is generally characterized by the following illnesses.
- **Marasmus** is due to inadequate caloric intake and is characterized by failure to gain weight, and weight loss resulting emaciation. Indications of the condition include the loss of subcutaneous fat, which causes poor turgor<sup>13</sup> and wrinkling of skin.
- **Kwashiorkor** or protein-calorie malnutrition (PCM) may be due to inadequate intake or absorption of protein in children. Kwashiorkor is most commonly seen in children around 2 years old and/or who have recently been weaned. Initial symptoms are lethargy or irritability and progress into anorexia, increased

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<sup>11</sup> Letter from CDC's Division of Global Migration and Quarantine dated June 23, 2004.

<sup>12</sup> Micronutrient Malnutrition: *Global Elimination of Micronutrient Malnutrition in the Next Century*. CDC web site <http://www.cdc.gov/nceh/globalhealth/GHAR/priorities/micronutrient/mnm.htm>

<sup>13</sup> Skin turgor is an abnormality in the skin's ability to change shape and return to normal (elasticity). Skin turgor is the skin's degree of resistance to deformation and is determined by various factors, such as the amount of fluids in the body (hydration) and age.

weakness, decreased muscle tissue, and retarded growth. If untreated, the child develops hepatomegaly,<sup>14</sup> kidney function decreases, and cardiac function is impaired. Indications of the condition include pitting edema in the legs and feet. Skin changes include dermatitis, changes in pigmentation, and changes in hair. Typically, hair is sparse, thin, and often streaked with red or gray color. The condition impairs the immune function leaving the child vulnerable to infection.

- *Cachexia* is a metabolic disorder marked by general ill health and malnutrition, with weakness and emaciation. Cachexia is common in cancer, AIDS and other severe illnesses. In cachexia, there is approximately equal loss of fat and muscle, significant loss of bone mineral content, and it does not respond to nutritional supplements or increased intake.
- *Chronic malnutrition*: Chronic malnutrition is generally a result of perinatal, childhood malnutrition or prolonged periods with insufficient intake. While many individuals who experience childhood malnutrition survive and reach adulthood, these individuals are more likely to have specific, long-term, developmental problems such as loss of intellectual potential, incomplete physical (stunting) or mental development. The greatest concern with chronically malnourished individuals is their increased vulnerability to illness due to an impaired immune system.
- *Micronutrient deficiency*: Micronutrient deficiency is another form of malnutrition that is potentially a significant issue for most refugees. This is particularly common in groups with little or limited diversity in diet. Children and women are severely affected by deficiencies in iron, vitamin A, iodine, and folate that can lead to low-birth weight, stunting, blindness, mental and developmental delay, and birth defects. In particular, iron deficient anemia is common.

### **Infectious Diseases<sup>15</sup>**

1) **Hepatitis**: Hepatitis refers to syndromes or diseases causing liver inflammation, including inflammation due to viruses and chronic alcohol abuse. Viruses causing hepatitis include Hepatitis A, B, C, E and D (delta factor). Each virus causes a distinct syndrome, though they share some symptoms and consequences. Symptoms for hepatitis include jaundice, fatigue, loss of appetite, nausea and vomiting, low-grade fever, pale or clay colored stools, dark urine, and generalized itching.

- *Hepatitis A*: Hepatitis A is transmitted by contaminated food or water, or contact with a person who is currently ill with the disease. The Hepatitis A virus is shed in the stools of an infected person during the incubation period of 15 to 45 days before symptoms occur and during the first week of illness. Blood and other bodily secretions may also be infectious. The virus does not remain in the body

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<sup>14</sup> Hepatomegaly is the enlargement of the liver beyond its normal size.

<sup>15</sup> Refugee Health ~ Immigrant Health web site  
[http://www3.baylor.edu/~Charles\\_Kemp/Infectious\\_Disease.htm](http://www3.baylor.edu/~Charles_Kemp/Infectious_Disease.htm).

after the infection has resolved, and there is no carrier state (i.e., a person who spreads the disease to others but does not become ill). The symptoms associated with Hepatitis A are similar to the flu, but the skin and eyes may become yellow (jaundiced). Risk factors include having a family member who recently had Hepatitis A and intravenous drug use. Hepatitis A is the least serious and most mild of the hepatitis diseases. Other forms of Hepatitis can become chronic illnesses, but hepatitis A does not.

- *Hepatitis B*: While we do not know the exact prevalence of Hepatitis B in this population, research has shown that the Burmese typically have about 15% rates of chronic hepatitis B infection.<sup>16</sup> Hepatitis B surface antigen carrier rates in the tropics are 40 times greater than in the West. Persons from Southeast Asia are also at high risk of perinatal transmission. The majority of people infected with Hepatitis B get rid of the virus within 6 months. However, approximately 10% of people infected with the Hepatitis B virus develop a chronic, life-long infection. Domestic health exams of recent arrivals have identified several individuals who are chronic Hepatitis B carriers in this population. People with chronic infection may have symptoms, but many of these patients never develop symptoms. These patients are sometimes referred to as "carriers" and can spread the disease to others. Having chronic hepatitis B increases the chance of permanent liver damage, including cirrhosis (scarring of the liver) and liver cancer. Perinatal transmission is common. Typically only pregnant women are tested for or vaccinated against Hepatitis B before resettlement.

The CDC has recommended the following steps after they arrive in the United States.

- i. Refugees who did not complete the vaccination series in Thailand should complete the series on arrival to the United States.
- ii. All refugees should be tested for hepatitis B virus infection upon arrival to the United States. This testing should include, at a minimum, testing for hepatitis B surface antigen (HBsAg), a marker of chronic infection, and antibody to hepatitis B core antigen (anti-HBc), a marker of past infection. Because hepatitis B vaccine can transiently cause a positive HBsAg test, testing for hepatitis B markers should not be done within a month of receipt of a dose of hepatitis B vaccine.
- iii. All chronically infected persons should be referred for appropriate medical follow-up and counseled about how to reduce the risk of transmission to others.
- iv. All household members and sexual contacts of chronically infected refugees should be fully immunized against hepatitis B if they are susceptible (anti-HBc-negative).

For additional information on hepatitis B, go to <http://www.cdc.gov/hepatitis>.

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<sup>16</sup> Refugee Health ~ Immigrant Health web site  
[http://www3.baylor.edu/~Charles\\_Kemp/Infectious\\_Disease.htm](http://www3.baylor.edu/~Charles_Kemp/Infectious_Disease.htm).

- *Hepatitis C*: Hepatitis C is sometimes referred to as non-A or non-B and causes inflammation of the liver. Many infected individuals do not have symptoms and the disease is detected during blood tests for a routine physical or other medical procedure. Individuals at risk for the disease include those who have injected street drugs or shared a needle with infected person, had sex with multiple partners, had sex with a person who has hepatitis C, shared personal items (e.g., toothbrushes and razors) with someone who has hepatitis C, and infants born to hepatitis C infected mothers.
- *Hepatitis D (delta agent)*: Hepatitis D infection involves a defective viral agent that causes symptoms only in individuals with the hepatitis B infection. Hepatitis D virus may increase the severity of an acute hepatitis B infection or cause symptoms in previously asymptomatic hepatitis B carriers. Prompt recognition and treatment of hepatitis B infection can help prevent hepatitis D.

2) **HIV/AIDS**: While the rate of HIV among the Burmese is unknown, we do have some preliminary findings from the overseas health assessment. This indicates that the rate of HIV+ Burmese refugees from Bangkok is about 1%. The rate among the Burmese coming from Mae Sot is about 2%. HIV/AIDS is considered a class A, excludable condition for entry into the United States. Refugees 15 years or older are tested for HIV prior to entering the United States. Refugees younger than 15 are only tested if there is reason to suspect they may have HIV, such as a parent who is HIV positive. HIV positive refugees are frequently given waivers and are allowed to resettle in the United States.

*Pregnant and Breastfeeding Mothers*: Pregnant HIV positive women need to be advised about the use of antiretroviral drugs as means to prevent passing the disease onto their child. Additionally, HIV positive mothers should be advised about the dangers of breastfeeding for the same reason. The CDC states that most of the risk factors regarding perinatal HIV transmission were identified before the recommended use of Zidovudine (ZDV/AZT) or nevirapine to prevent perinatal transmission. Most infections transmitted through breast-feeding probably occurred during the first few weeks to months of life. Risk factors during breast-feeding include viral load in breast milk, subclinical or clinical mastitis, maternal seroconversion during the lactation period and breast abscesses. It would be important information to know if the HIV-infected woman or infant ever received ZDV and/or nevirapine. The following information regarding breast-feeding and HIV/AIDS may be useful:

<http://www.hawaii.edu/hivandaids/FAQ%20on%20Breastfeeding%20and%20HIVAIDS.pdf>.

HIV infection is a viral infection caused by a virus (HIV) that gradually destroys the immune system, resulting in hard-to-fight secondary infections. Acute HIV infection may have symptoms resembling mononucleosis or the flu and typically occurs within 2 - 4 weeks of exposure. Infected individuals generally convert from HIV negative to HIV positive within 3 months of exposure. While infected individuals may have no

symptoms for up to 10 years, they can still transmit the infection to others. Most individuals infected with HIV will progress to AIDS if not treated. However, there is a tiny subset of patients, called non-progressors, who develop AIDS very slowly, or never at all. Any symptoms of illness may occur, since infections can occur throughout the body. Special symptoms relating to HIV infection include sore throat, mouth sores (including candidal infection), muscular stiffness or aching, headache, diarrhea, swollen lymph glands, fever, fatigue, various types of rashes (including seborheic dermatitis) and frequent vaginal yeast infections.

As mentioned above, the principal issue with HIV/AIDS is the susceptibility of infected individuals to secondary opportunistic infections. The most common secondary infections with this disease are pneumocystis carinii pneumonia, candidiasis, cytomegalovirus infection, toxoplasmosis, cryptococcus, cryptosporidium enterocolitis and mycobacterium avium complex (MAC). Infected individuals may also develop HIV dementia, HIV lipodystrophy and chronic wasting from HIV infection.

- 3) **Leptospirosis:** Leptospirosis is caused by exposure to the bacteria, which can be found in fresh water contaminated by animal urine. Leptospirosis varies from asymptomatic to a severe or fatal illness. There are two common forms anicteric and icteric (or Weil's syndrome). Anicteric leptospirosis is the more common and milder form and often has two phases. The first phase of anicteric leptospirosis is typically characterized by the sudden onset of high fever with chills, headache, coloration of the eyelids, cough and pulmonary chest pain, abdominal pain, nausea and vomiting, and muscle pain. This phase ends after about a week with no further problems. However, the patient may have a second phase during which the symptoms recur after one to three days and are milder than the first phase. Patients may also develop a form of meningitis. Meningitis is characterized by headaches, fever and inflammation of the lining of the brain.

The second form of this disease, Icteric leptospirosis is the more severe form and has the same symptoms as anicteric leptospirosis as described above. However, after about one week, the patient may experience a decrease in the functioning of their kidneys, pulmonary complications, jaundice (yellowing of the skin), and/or hemorrhaging.

- 4) **Measles:** Measles is a highly contagious viral illness and is spread by contact with droplets from the nose, mouth, or throat of an infected person. The virus incubates for 8 to 12 days before symptoms typically appear. Symptoms include sore throat, runny nose, cough, muscle pain, fever, bloodshot eyes (conjunctivitis), tiny white spots inside the mouth (called Koplik's spots), light sensitivity, and itching rash. The rash appears around the 5th day, starts at the head progressing downward, and can last 4 to 7 days. The rash appears as both flat discolored areas and solid red elevated areas that eventually merge together.

- 5) **Melioidosis:** Melioidosis is a bacterial infection that causes fevers and pulmonary infections that may range from bronchitis to inflammation of the lungs and bronchial tubes caused by inhaling foreign material (e.g., food, drink, vomit, etc.). This may progress to form a collection of pus in the lungs (lung abscess). The bacteria may also spread to the blood stream causing chills and fevers. Pus may begin to form pockets in lymphatic system and may break in the skin. The disease may also recur many years after the initial infection.
- 6) **Mycetoma** (also known as maduramycosis): Mycetoma is a fungal infection. The infection usually starts when a break in the skin comes into contact with contaminated soil or plants. The foot is the most common site of infection, leading to "madura foot." The infection starts as a small abscess (pocket of pus), small solid, usually conical elevation of the skin (papule), and progresses to larger and multiple abscesses with sinus cavity, which may cause destruction of the patient's deep tissue, connective tissue, and bones. Secondary infections are common.
- 7) **Syphilis:** Initial information from the overseas health assessments indicate that the rate of syphilis among the Burmese is less than 1%. All refugees 15 years of age and older will have serological testing for syphilis. Persons who test positive are treated. The most common form of syphilis is the venereal disease. There are several stages of the disease. The first generally occurs about 2 - 3 weeks after the initial exposure and is characterized by painless sores, called chancres. The sores typically disappear within 4 - 6 weeks. Some individuals may not notice the sores particularly if they are located in the rectum or cervix. If the disease goes untreated, a third of those infected progress to the second stage about 2 - 8 weeks after the appearance of the original chancre. This is the most contagious stage of the disease. In the second stage, the bacteria may spread into the bloodstream causing symptoms such as skin rashes primarily on the palms and soles, as well as lesions in the mouth, vagina, penis, swollen lymph nodes, and fever. This stage can last just a few weeks or a year and is followed by a latent phase, which may last for years and is characterized by the absence of symptoms. The final stage of syphilis is called tertiary syphilis and is characterized by brain or central nervous system involvement, cardiovascular involvement with inflammation of the aorta, and destructive lesions of the skin and bones.
- 8) **Trachoma:** Trachoma is caused by infection with the bacteria Chlamydia trachomatis and has an incubation period of 5 to 12 days. Trachoma is passed by direct contact with the eye or nose-throat secretions from infected individuals, but can also be spread by objects contaminated with these secretions, such as towels or clothes. The condition begins as conjunctivitis (commonly known as "pink eye"), which if untreated may become chronic and lead to scarring. The eyelids can become severely irritated, causing the eyelashes to turn in and rub against the cornea, which causes eye ulcers, further scarring, visual loss, and even blindness. Although the disease generally affects children, the consequences may not be evident until later in life.

- 9) **Tuberculosis:** The estimated incidence of tuberculosis in the general population in Thailand is 141 cases per 100,000; however, the rates among the Burmese are unknown. All refugees 15 years and older will have a chest x-ray. Refugees less than 15 years of age will be tested, depending on history and risk factors. Refugees are screened for TB as part of their health assessment before coming to the United States. If a refugee tests positive for active TB, they are immediately treated and are not able to travel until the TB is no longer active.

TB is a chronic infection - most commonly pulmonary. The infection is usually acquired through inhalation of infected droplets expelled by cough from a person with active disease. Most cases (85%) of TB are pulmonary. Pulmonary symptoms include cough, chest pain, and spitting up blood. Constitutional symptoms are often present in pulmonary disease, and include fever, chills, night sweats, fatigue, decreased appetite, and weight loss. Symptoms of extra pulmonary TB depend on the site(s) of infection. Nonpulmonary TB should not be ignored when screening refugees. The treatment of TB is complex and rapidly evolving. Treatment is according to (a) classification of disease, e.g., exposure without infection, infection without disease, current TB disease, previous TB disease, or TB suspected; (b) whether disease is drug-resistant; (c) immune status of the patient; and (d) other factors.

Information about testing and treatment for LTBI may be obtained at the CDC's Division of TB Elimination Web sites:

- Targeted testing and treatment:  
<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr4906a1.htm>
- Fact Sheets: Treatment of LTBI:  
<http://www.cdc.gov/nchstp/tb/pubs/tbfactsheets/250110.htm>
- Revised recommendations against the use of Rifampin and Pyrazinamide for treatment of LTBI: <http://www.cdc.gov/mmwr/PDF/wk/mm5231.pdf> or <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5231a4.htm>
- Broader guidance on diagnosing and treating TB:  
<http://www.cdc.gov/mmwr/PDF/rr/rr5211.pdf> or <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5211a1.htm>

All diagnosed Class A and symptomatic Class B1 TB cases are being treated with a full course of directly observed therapy (DOT) for at least six months. There are also cases of TB and HIV co-infection. A notation of the health assessment and treatment received overseas will be entered on the U.S. Department of State medical examination forms (DS-2053, DS-3024, DS-3025 and DS-3026) that will accompany the refugees.<sup>17</sup>

- 10) **Typhus:** Typhus is caused by one of two organisms, *Rickettsia prowazekii* (epidemic typhus and Brill disease) and *Rickettsia typhi* (murine or endemic typhus). Epidemic typhus occurs in areas where hygiene is poor. It is commonly spread by

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<sup>17</sup> October 16, 2003 letter from Tony Perez, CDC and CDC October 2003 TB Notice.

lice. Symptoms of the illness include severe headache, high fever (104 degrees Fahrenheit), cough, severe muscle pain, chills, falling blood pressure, stupor, delirium, and a rash. The rash begins on the chest and spreads to the rest of trunk and extremities, but not to palms and soles. Early in the illness the rash is faint, rose colored and fades with pressure. Later the rash becomes lesions, which are dull, red, and do not fade.

**11) Typhoid and paratyphoid fever (or enteric fever):** Typhoid fever is an acute, systemic febrile illness. Typhoid is usually spread by feces-contaminated food or water. A vaccine is available but is not completely effective. Incubation is highly variable, ranging from 3-60 days. The illness starts with the gradual onset of steadily increasing and then persistently high fever. Children may experience abrupt onset. Early symptoms are fever, chills, malaise, headache, sore throat, cough, and abdominal pain, constipation or diarrhea, and a rash. The rash is characteristic only of typhoid and called "rose spots," which appear in some cases of typhoid. Rose spots are small (1/4 inch) red spots that appear most often on the abdomen and chest. As the illness progresses, the patient will experience physical and mental exhaustion, swelling in the abdomen, enlarged liver, loss of appetite, and weight loss are common. Untreated typhoid may result in complications in any of the body systems. The severity of illness varies according to immunocompetence, infectious dose of microorganisms, and other factors.

### **Parasites**

Due to their living conditions, the refugees are often at high risk for parasitic infections. To address this concern, they will be treated for intestinal parasites before they depart. Refugees are given albendazole, which is a broad spectrum treatment. Those with allergies to albendazole and women in the first trimester of their pregnancy will not be treated. While albendazole is successful with most intestinal parasites it may not be effective in treating giardia, or patients with a high parasitic load.

In some regions, refugees are only tested for parasites during their initial health assessment in the United States if they show symptoms during the health examination. As a result, there have been cases of refugees going untreated for parasites. We highly recommend that all refugees be tested for parasites regardless of the presence of symptoms. For additional information on parasitic infections go to <http://www.cdc.gov/ncidod/dpd/>.

1) **Amebiasis:** Amebiasis is an amebic gastrointestinal infection (sometimes affecting other systems) that may be asymptomatic, chronic, or acute. About 90% of infected persons are asymptomatic. This ameba can live in the large intestine (colon) without causing disease. However, it can invade the colon wall causing inflammation of the colon, acute dysentery, or chronic diarrhea. The infection can also spread through the blood to the liver and rarely, to the lungs, brain or other organs. There are two basic types of amebiasis: intestinal and extraintestinal disease, which may exist at the same time. In intestinal amebiasis common signs and symptoms are fever, gradual onset of colicky abdominal pain, increased number of stools (usually

containing mucous and blood), jaundice, loss of appetite, weight loss, and difficulty passing stool. Severe infections may have an acute onset and be characterized by severe abdominal pain, frequent and profuse bloody diarrhea, more rapid weight loss, and the potential for dehydration. Rarely, a form of chronic inflammation of the colon (colonitis) develops which can look like irritable bowel disease. The most common extraintestinal amebiasis is a buildup of pus on the liver (hepatic abscess). Symptoms of hepatic abscess include a gradual or acute onset of fever, right upper quadrant pain (sometimes radiating to the right shoulder), hepatomegaly and tenderness, nausea and vomiting, anorexia, weight loss, and malaise. Tenderness between the ribs is common. Prompt treatment is necessary to prevent the hepatic abscess from rupturing. Other extraintestinal infections can also occur around the anus, and rare metastatic infections to the brain, lungs, and genitalia.

- 2) **Angiostrongyliasis:** Angiostrongyliasis includes several distinct roundworm infections. The first is a nematode called the rat lungworm infection and can often go undetected by standard tests. Larvae migrate to the central nervous system and may cause meningoencephalitis. Symptoms may include severe headache (most common symptom), stiff neck, low-grade fever, nausea, vomiting, abdominal discomfort, a pricking sensation on the trunk and extremities, and other neurologic signs, including facial paralysis on one side of the face. The second nematode infection affects the gastrointestinal tract with effects on the skin (cutaneous), intestines, and lungs (pulmonary). In some cases, it is possible for patients to have numerous reinfection (or hyperinfection) where the larvae produced are by the parasitic worms already in the body. Cutaneous symptoms include edema, inflammation, and itching. Intestinal symptoms include abdominal pain, fever, malaise, anorexia, nausea, vomiting, and weight loss. Pulmonary symptoms include cough, wheezing, low-grade fever, and spitting blood. Hyperinfection syndrome includes severe pulmonary, cardiac, neurologic symptoms, potentially progressing to blood poisoning and death.
- 3) **Capillariasis:** Capillariasis is a nematode infection of the intestines. Most infections are the result of eating infected raw fish. Onset is quick and includes abdominal pain and watery diarrhea. The patient may become re-infected by larvae from the previous infection. The second infection may cause ongoing disease of the intestinal tract, protein loss, and can severely inhibit the patients' ability to absorb nutrition.
- 4) **Chikungunya:** This infection is transmitted by mosquitoes and has an incubation period of approximately 2-4 days. It resembles Dengue. The acute symptoms last for 3-10 days and can include an abrupt onset fever, headache, joint pain, nausea, vomiting, abdominal pain, sore throat, enlarged lymph nodes, rash, and malaise. Joint pain may remain a problem for weeks to several months after the acute phase. Fever and convulsions may occur in young children.
- 5) **Cholera:** Cholera is an acute illness characterized by watery diarrhea. The toxin released by the bacteria causes increased secretion of water and chloride ions in the intestine, which can produce massive diarrhea. Death can result from the severe

dehydration brought on by the diarrhea. Cholera occurs in epidemics when conditions of poor sanitation, crowding, war, and famine are present. The infection is acquired by ingesting contaminated food or water and has been associated with shellfish, especially raw oysters. The most acute symptoms are the sudden onset of watery diarrhea (up to 1 liter (quart) per hour) which has a "rice water" appearance and has a "fishy" odor. The stool is watery with flecks of "rice" in it. The patient may also have a rapid pulse, dry skin, dry mouth, excessive thirst, "glassy" or sunken eyes, no tears, lethargy, unusual sleepiness or tiredness, low urine output, sunken "soft spots" (fontanelles) in infants, abdominal cramps, nausea and vomiting.

- 6) **Clonorchiasis:** Clonorchiasis is an infection of the Chinese liver fluke (*Clonorchis sinensis*) that invades bile ducts of the liver after ingestion in uncooked fish. When present in large numbers it causes severe systemic reactions including edema, liver enlargement, and diarrhea. Infection is found following ingestion of imported, undercooked or pickled freshwater fish containing larva.
- 7) **Cryptococcosis:** Cryptococcosis is a fungus that is ordinarily found in soil and is inhaled. The infection begins in the lungs and spreads to the central nervous system. Once in the central nervous system it can result in meningitis and in some cases spread throughout the body. Immunocompromised persons are at increased risk. For individuals with normal immune systems, there are typically no symptoms. For individuals with compromised immunity, symptoms can include chest pain, dry cough, headache, nausea, confusion, blurred or double vision (diplopia), fatigue, fever, unusual and excessive night sweats, swollen glands, prolonged bleeding, bruising easily, rashes, weight loss, decreased appetite, abdominal pain and/or swelling, weakness, bone pain or tenderness of the breastbone (sternum), and numbness and tingling.
- 8) **Cryptosporidiosis:** Cryptosporidium enteritis is an infection of the small intestine that is caused by the parasite cryptosporidium. This parasite causes diarrhea in all age groups. It more significantly impacts individuals with compromised immune systems. The major source of this infection is contaminated water. Outbreaks have been linked to contaminated public water supplies, drinking unpasteurized cider, and swimming in contaminated pools and lakes. Young children, animal handlers, people with close contacts of infected individuals, and men who have sex with men are at higher risk. Symptoms include watery diarrhea several times a day, abdominal cramping, nausea, exhaustion, and in severe cases, malnutrition and weight loss.
- 9) **Cysticercosis:** Cysticercosis is an infection that creates cysts in different areas in the body. The infection is caused by a parasite called the pork tapeworm. If these worms are found in the intestine, they cause a different disease that is called teniasis. Cysticercosis is caused by swallowing eggs from tapeworms in contaminated food. Potential sources of the infections include eating pork, fruits, and vegetables contaminated due to unhealthy food preparation. The disease can also be spread by contact with infected people or fecal matter. The infection can cause seizures, eye infections, spine infections, and other complications but most often,

the worms remain in muscle and do not cause symptoms. Symptoms depend on where the infection is found.

- 10) **Dengue Fever:** Dengue fever is caused by several related viruses (four different arboviruses). It is transmitted by the bite of mosquitoes. Dengue fever begins with sudden onset of a high fever, often to 104 to 105 degrees Fahrenheit, headache, and slightly later the appearance of severe joint and muscle pains. A flat, red rash may appear over most of the body early during the fever. A second rash, measles-like in appearance, appears later in the disease. Infected people may have increased skin sensitivity and are very uncomfortable. Dengue fever should not be confused with Dengue hemorrhagic fever, which is a separate disease and frequently fatal.
- 11) **Dengue Hemorrhagic Fever:** Dengue hemorrhagic fever is a severe, potentially fatal infection. Dengue hemorrhagic fever occurs when the patient contracts a different Dengue virus after previous infection(s) by another type. Risk factors for Dengue hemorrhagic fever include having antibodies to dengue virus from prior infection and being younger than 12 and/or female. Early symptoms of Dengue hemorrhagic fever are similar to those of Dengue fever, but after several days the patient becomes irritable, restless, and sweaty. These symptoms are followed by a shock-like state. Bleeding may appear as pinpoint spots of blood on the skin and larger patches of blood under the skin. Shock may cause death. If the patient survives, recovery begins after a one-day crisis period.
- 12) **Filariasis:** Filariasis is an infectious disease caused by two round worm parasites – *Wuchereria bancrofti* or *Brugia malayi*. The larval form of the parasite is transmitted to humans by the bite of a mosquito. These invade the lymphatic system where they mature and reproduce. Symptoms are primarily a response to adult worms which cause inflammation. Chronic inflammation may progress to hardening of the lymphatic vessels (fibrosis) and obstruction of the lymph flow. It is characterized by swollen lymph nodes (lymphadenopathy) and chronic lymphatic obstruction. Over extended periods of time obstruction of the flow of body fluid may cause profoundly swollen areas of the body (elephantiasis), especially the legs and external genitals.
- 13) **Gnathostomiasis:** Gnathostomiasis is a disease caused by an immature roundworm called *Gnathostoma*. People become infected by eating undercooked fish or poultry or drinking water containing the worm's larvae. Initial symptoms are nausea, vomiting, pain in the upper right abdomen, enlargement of the liver, and fever. This is followed 2-4 weeks later by diffuse painless, itching under the skin and swelling. The swelling may migrate, wax and wane, or appear to be spreading and is caused by the movement of the immature worms. This swelling usually is found on an arm or leg, but may also occur in the eyelid or may also affect visceral organs. The worm can infect nerve trunk resulting in nerve root pain, paralysis, severe headache, and/or signs of cerebral hemorrhage.

- 14) **Helminthiasis:** There are several parasites that fit into the helminthiasis group. Some of examples of worms that are called helminthiasis are aschelminthes, cestoda, nematoda, and trematoda.
- 15) **Hookworm:** Hookworms are intestinal parasites whose larvae are transmitted from soil through the skin, principally affecting the small intestine and lungs. The larvae penetrate the skin, where an itchy rash called ground itch may develop. They migrate to the lungs via the bloodstream, enter the airways and cause coughing. After travel from the lungs into the throat the larva are swallowed. When the larvae are swallowed, they infect the small intestine and develop into adult worms. Adult worms and larvae are excreted in the feces. Symptoms include itchy rash, cough, fever, bloody sputum, loss of appetite, nausea, vomiting, diarrhea, abdominal discomfort, increased gas production, pallor, fatigue, eggs and blood in the stool. Most people have no symptoms once the worms enter the intestines. However, iron deficiency anemia caused by loss of blood may result from heavy infestation. Infants and children may experience severe anemia, protein deficiency, and developmental delays.
- 16) **Leishmaniasis:** Leishmania is a protozoa parasite species transmitted by sandflies, and the parasite migrates to the bone marrow, spleen, and lymph nodes. There are several forms of the disease. The most common are cutaneous (affecting the skin) and visceral (systemic) leishmaniasis. The cutaneous form of the disease affects the mucous membranes and typically causes ulcers on the skin. The visceral form attacks the immune system, resulting in increased risk to other infections. Incubation is usually 2-6 months or longer and relapse may occur as many as 10 years after first episode. Systemic infection in children usually begins suddenly with vomiting, diarrhea, fever and cough. In adults, the fever can last for 2 weeks to 2 months and is accompanied by fatigue, weakness and loss of appetite. The skin can become grayish, dark, dry, and flaky. Death often occurs within 2 years due to other infections.
- 17) **Leprosy:** Leprosy is is characterized by disfiguring skin lesions, peripheral nerve damage, and progressive debilitation. The organism that causes leprosy is a difficult disease to transmit and has a long incubation period. The length of the incubation period makes it difficult to determine where or when the disease was contracted. Children are more susceptible than adults to contracting the disease. Leprosy has two common forms, tuberculoid and lepromatous. Both forms produce lesions on the skin, but the lepromatous form is more severe, producing large disfiguring lumps or nodules. All forms of the disease eventually cause nerve damage in the extremities such as sensory loss in the skin and muscle weakness. People with long-term leprosy may lose the use of their hands or feet due to repeated injury resulting from lack of sensation. There are treatments for the condition and isolation of victims is unnecessary. Recently a drug-resistant form of the disease has emerged. Symptoms include spots where the skin color is lighter than normal, skin lesions, and a decreased sensation to touch, heat, or muscle pain.

18) **Malaria:** The region along the Thai-Burmese border, where Mae Sot is located, is an endemic area with multidrug resistant malaria. Both falciparum and vivax malaria are known to occur in this area. Since refugees may have previously traveled to or resided in the border camps, CDC recommends that all Burmese refugees undergo rapid diagnostic testing for malaria and initiate appropriate treatment before resettlement. Malaria is caused by the protozoas (*Plasmodium falciparum*, *P. vivax*, *P. ovale*, and *P. malariae*) and is generally transmitted by mosquito bite. Malaria is usually characterized by sudden onset of high fever, sweating, chills, uncontrollable shaking, headache, and enlargement of the spleen. Fever tends to wax and wane in 48-72 hour cycles, though cycles may be irregular. Onset may also be insidious, with less dramatic symptoms such as fever, headache, difficulty breathing, abdominal pain, nausea, diarrhea, muscle pain, and enlargement of the spleen. Cerebral malaria, which is life-threatening, is characterized by gradual onset of severe headache, drowsiness, delirium, and coma. Seizures may also occur and are most common in children. Children are at higher risk of dying from malaria. Treatment depends on the organism, immune status of the patient, and severity of the attack.

19) **Paragonimiasis:** Paragonimiasis is caused by a parasitic flatworms or flukes. Humans become infected by handling or eating crustaceans or when food preparation utensils have been contaminated. After the cysts are eaten, the immature flukes are released into the intestine, where they penetrate the wall and migrate to other tissues. They usually travel to the lungs, but sometimes go to abdominal organs or the nervous system. The adult worms develop after about 6 weeks and start producing eggs, which are subsequently coughed up in sputum. The symptoms are very similar to pulmonary TB, although up to a quarter of people affected show no signs of illness at all. The presence of the adult worms in the lungs causes a mild fever and a cough. The cough may start off dry but will begin to produce mucus with blood-stained sputum. Chest pain often occurs and night sweats are common. As the length of infection increases, the patient may begin to experience shortness of breath, weakness and weight loss. The lung flukes can survive for a number of years if left untreated. When they eventually die, the cysts close up, leaving long-term scarring.

20) **Scabies (*Sarcoptes scabiei*):** Scabies is a significant problem for this population. They are treated for it before they enter the country. However, scabies is very difficult to completely eradicate, and service providers should be aware of it as a potential issue. Scabies is a contagious skin disease caused by very small mites. The mites that cause scabies burrow into the skin and deposit their eggs forming a characteristic burrow that looks like a pencil mark. Eggs mature in 21 days. The itchy rash is an allergic response to the mite. Mites maybe more widespread on a baby's skin causing pimples over the trunk, or small blisters over the palms and soles. In young children, the head, neck, shoulders, palms, and soles are involved. In older children and adults, hands, wrists, genitals, and abdomen are involved. It is spread by direct contact with infected individuals and less often by sharing clothing or bedding. Symptoms include itching (especially at night), thin, pencil-mark lines on the skin, rashes, and/or abrasions of the skin from scratching and digging. The

objective of treatment is to eliminate the infestation. There is no known home remedy. Prescription creams and lotions are applied all over the body. It may be necessary to treat the whole family or sexual partners of infected individuals, even if no symptoms are present. Itching may persist after treatment begins, but will disappear if treatment continues exactly as prescribed. Itching can be minimized by cool soaks and calamine lotions.

- 1) **Schistosoma:** Schistosoma infections are caused by a worm that is contracted through contact with contaminated water and swims freely in open bodies of water. The parasite burrows into the skin, matures into another larval stage (schistosomula), and then migrates to the lungs and liver (where it matures into the adult form). The adult worm then migrates to various parts of the body such as the bladder, rectum, intestines, liver, portal venous system, spleen, and lungs. Symptoms vary with the species of worm and the phase of infection and include; itching, rashes, fever, chills, lymph node enlargement, liver and spleen enlargement, frequent and painful urination (dysuria), blood in urine (hematuria), abdominal pain and diarrhea (which may be bloody). It is also common for a salmonella infection to be concurrent with the schistosomiasis and is resistant to treatment unless the schistosomiasis is also treated. Regardless of whether there is blood in the urine test, refugees should be tested for schistosoma.

In cases with a prolonged infection, insoluble protein fibers are deposited in tissues and organs, impairing their function. Although the acute and early chronic lesions regress under antiparasitic treatment, chronic sequelae are irreversible.

*S.hematobium* infection causes fibrosis and calcification of the ova in the tissue of the lower urinary tract. This leads to obstruction, reflux, infection, and stone formation in the kidneys. The interstitial nephritis may appear to be tubular dysfunction syndrome before progressing to end-stage renal disease. It is common for precancerous lesions to form on the bladder.

- 2) **Strongyloidiasis:** Strongyloidiasis is a nematode or roundworm infection by *Strongyloides stercoralis* following larval penetration of the skin. A small number of infected persons are asymptomatic. Symptoms on the skin may occur at the site of penetration (often feet), and include inflammation, serpiginous or urticarial tracts, and itching. Intestinal manifestations follow those on the skin, and include abdominal pain, nausea, flatulence, and diarrhea. Larval migration to lungs results in a variety of pulmonary symptoms, ranging from cough to pneumonia, pleural effusion, and miliary abscesses. Hyperinfection syndrome causes life-threatening CNS, cardiac, and wide-ranging gastrointestinal problems.

- 21) **Thalassemias:** Thalassemias are hereditary disorders characterized by defective production of hemoglobin. This leads to low production, and over destruction, of red blood cells. Hemoglobin contains two chains, alpha and beta globin. Alpha thalassemias occur most commonly in people from southeast Asia and China, and are caused by deletion of a gene or genes from the globin chain. The most severe form of alpha thalassemia causes a stillborn fetus. Genetic defects can be inherited

that cause imbalances in the production of either chain. Beta thalassemias are caused by a mutation in the beta-globin chain. Genes must be inherited from both parents to acquire the major form of the disease. If one gene is inherited, the person will be a carrier of the disease, but will not have symptoms. (This is the minor form.) In the major form, children are normal at birth, but develop anemia during the first year of life. Growth failure, bone deformities, and enlarged liver and spleen are some of the problems that can occur. Blood transfusions may modify some of the disease manifestation, but iron overload from the transfusions can cause damage to the heart, liver, and endocrine systems. The mild form of beta thalassemia produces small red blood cells, with no symptoms. Risk factors include a family history of thalassemia and an ethnic background susceptible to the disease.

- 22) **Trichuriasis** (trichocephaliasis or whipworm): Trichuriasis is a nematode or roundworm infection with *Trichuris trichiura*. Severe infections may result in abdominal cramping, nausea, vomiting, flatulence, diarrhea, painful bowel movements, and weight loss. Mild infections are usually asymptomatic.
- 23) **Trematodes** (flukes): Trematodes are a class of parasitic flatworms. (See schistosomiasis, clonorchiasis and opisthorchiasis.)
- 24) **Tropical sprue**: Tropical sprue is a malabsorption disorder of unknown origin. The main symptom is diarrhea, which may improve on leaving tropical areas, or may appear years after leaving the tropics. Common manifestations are indigestion, pallor, excessive flatus/gas and abdominal cramps, irritability, numbness, muscle cramps, anorexia, abdominal distension, and weight loss. In children, sprue most often presents with growth failure and delayed skeletal maturation. Please note that the disorder may occur years after leaving the tropics.
- 25) **Yaws**: Yaws is an infection caused by the *Treponema pertenue* bacteria, which is closely related to the organism that causes syphilis. Yaws is not sexually transmitted. Yaws primarily affects the skin, bones, and joints, and mainly affects children in rural, warm, tropical areas. Yaws is transmitted by direct contact with skin lesions of infected people. Approximately two to four weeks after infection, the child develops a sore "mother yaw" where the organism entered the skin. The sore appears as a "raspberry-like" growth or group of papules at the site of infection and is usually painless. These lesions may persist for months. Additional lesions may appear shortly before or after the mother yaw heals. Children may also develop inflammation of the bones and fingers. The final stage involves destructive lesions of the skin and bones which can lead to severe disfigurement and disability. Symptoms include skin lesions, fever may be present in secondary yaws, bone pain/bone destruction (saber shins) and finger inflammation.

### **Oral Health Care**

Most of the refugees have never had any dental health care and as a result one of the most prevalent personal health problem faced by refugees are oral and dental health conditions such as periodontal disease, caries, gingivitis and calculus, and tooth decay.

## Mental Health

As with many other refugee groups, Burmese refugees will arrive for resettlement with a substantial health burden secondary to their pre-migration experience, migratory experience and life in refugee camps. Refugee epidemiology of infectious and parasitic diseases, psychiatric disorders, and chronic diseases can be said to proceed in stages based on the context of the forced migratory experience. Infectious and parasitic diseases are associated with pre-migration experiences and exposure to risk factors in the country of origin. Chronic diseases are associated with pre-migration experiences and exposure to risk factors on the host country (in this case the intermediary host, Thailand). Forced displacement and torture constitutes two of the most extreme forms of human stress, with the potential for long-term suffering. Mental health problems, and some psychiatric disorders, can be thought of as linking pre and post-migration experiences with the experience of migration itself.<sup>18</sup>

Although there are approximately 1-2 million Burmese refugees and illegal migrants in Thailand (approximately 120,000 live in camps on the Thai-Burmese border<sup>19</sup>; the majority of refugees come from areas in eastern Burma populated by minority ethnic groups. These refugees are primarily Káren ethnic group<sup>20</sup>, others include Shan, Karenni, Mon and Tavoyan), few attempts have been made to examine mental health issues in this refugee population. One study, documenting exposure to human rights violations among Burmese refugees in Thailand<sup>21</sup>, concluded that refugees had experienced forced labor, forced relocation, and killing of family members. Another study that measured self-reported mental health and social functioning of Burmese political exiles in Bangkok concluded that this group had been adversely affected by severe trauma<sup>22</sup>. From May 20 through June 20, 2001, Cardozo and colleagues conducted a population-based assessment of the major mental health problems, specifically PTSD, depression, anxiety and functioning, in the Karenni refugee population<sup>23</sup>. At that time, neither surveys nor interventions had dealt with mental health issues in this specific population. In June 2001, they assessed mental health problems among Karenni refugees residing in camps in Mae Hong Son, Thailand, to determine the prevalence of mental illness, identify risk factors, and develop a culturally appropriate intervention program. A systematic random sample was used with stratification for the three camps; 495 people aged 15 years or older from 317 households participated. The authors constructed a questionnaire that included demographic characteristics, culture-specific symptoms of mental illness, the Hopkins Symptoms Checklist-25, the Harvard Trauma Questionnaire, and selected questions

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<sup>18</sup> Palinkas, L.A. et al, *The journey to wellness: Stages of refugee health promotion and disease prevention*, Journal of Immigrant Health, Vol. 5, No. 1, January 2003.

<sup>19</sup> United States Agency for International Development (USAID) Burma (2001). Introduction. Available: <http://www.usaid.gov/pubs/bj2001/ane/mm/>

<sup>20</sup> American Refugee Committee International (ARC). ARC Programs Thailand. Available: <http://www.archq.org/thailand.shtml>

<sup>21</sup> Draminsky Petersen, H., et al. *Human rights violations in Burma/Myanmar*, Danish Medical Bulletin, 47, 2000.

<sup>22</sup> Allden, K, et al. *Burmese political dissidents in Thailand: Trauma and survival among young adults in exile*. American Journal of Public Health, 86, 1996.

<sup>23</sup> Lopes Cardozo, B, et al, *Karenni refugees living in Thai-Burmese border camps: Traumatic experiences, mental health outcomes, and social functioning*. Social Science and Medicine, 58, 2004.

from the SF-36 Health Survey. Mental health outcome scores indicated elevated levels of depression and anxiety symptoms; post-traumatic stress disorder (PTSD) scores were comparable to scores in other communities affected by war and persecution. Psychosocial risk factors for poorer mental health and social functioning outcomes were insufficient food, higher number of trauma events, previous mental illness, and landmine injuries.

Despite extensive traumatic experiences and high rates of anxiety and depressive symptoms, it was noted that the refugees appeared to function relatively well as a whole. An important finding was the self-identified important coping mechanism of talking to family and friends. It was recommended that modifications in refugee policy may improve social functioning, and innovative mental health and psychosocial programs need to be implemented, monitored, and evaluated for efficacy -- particularly community-based programs rather than health facility-based programs. This study highlights the fact that much needs to be learned about Burmese concepts of mental health and well-being. Although the Burmese language has words for depression and anxiety and the Karenni and Karen languages appear to have words for conditions that may be similar to depression and anxiety, these conditions and their manifestations are not clearly defined.

Finally, from other sources, it should also be noted that there are reports that the Burmese Army has used rape as a weapon as part of the campaign of ethnic warfare<sup>24</sup>. In June 2002, the Shan Human Rights Network and the Shan Human Rights Foundation produced a report entitled *License to Rape*, detailing 173 incidents of rape and other forms of sexual violence involving 625 Shan girls and women, mostly between 1996 and 2001<sup>25</sup>.

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<sup>24</sup> Refugees International. Burmese Army Uses Rape as a Weapon in Ethnic Conflict. Available: <http://www.refugeesinternational.org/cgi-bin/ri/bulletin?bc+00455>

<sup>25</sup> Available: [http://www.shanland.org/HR/Publication/LtoR/license\\_to\\_rape.htm](http://www.shanland.org/HR/Publication/LtoR/license_to_rape.htm)