Background on Potential Health Issues for Hmong Refugees from Wat Tham Krabok by Office of Global Health Affairs

Updated July 19, 2004

As the Hmong Refugees arrive new information is available on the health concerns of this population. Please check the following items:

- **Asthma**
- **Arthritis**
- **Dental Health**
- **Ear Infections**
- **Hearing Loss**
- **Immunizations and timing of the TB screening**

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 Hmong refugees from the Wat Tham Krabok 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. Cultural and regional information is taken from the Refugee Health ~ Immigrant Health Web site www3.baylor.edu/~Charles_Kemp/Infectious_Disease.htm, the Hmong Homepage www.hmongnet.org, and the Southeast Asian Action Resource Center www.searac.org to name a few.

Historical Background

The Hmong is an ethnic group that traditionally lives in the highland areas of Laos and Thailand. The CIA and US Army recruited many Hmong during the Vietnam War. After the war, Laos fell to the communist Pathet Lao movement. Thousands of Lao and Hmong crossed the Mekong River into Thailand, where refugee camps were set up.

The migration into Thailand continued steadily for many years, despite protests by Thailand that many were economic migrants, not true refugees. Most of the Hmong spent several years in refugee camps in Thailand. Eventually, nearly all of the Hmong refugees were resettled in third countries with most of them coming to the U.S. In 2001, there were almost 200,000 Hmong living in the U.S., concentrated in Minnesota, Wisconsin, California and North Carolina.

Refugee Population

For those Hmong that remained in Thailand, thousands later left the camps for fear of repatriation. Some found a home in Wat Tham Krabok, a Buddhist temple in central Thailand. Wat Tham Krabok is located two hours northeast of Bangkok. They were allowed to stay by the abbot who has since passed away. Approximately 15,000 Hmong refugees from Laos now live on the temple grounds. The resettlement program applies only to Hmong at Wat Tham Krabok and to those who had registered with Thai authorities by August 2003. Registration for resettlement would be open for a limited time and began in February 2004.

Due to concerns about drug abuse in this population, the State Department is requiring everyone over the age of 15 to take a drug test before they can begin the registration process. The International Migration Organization (IOM) is conducting the drug tests and subsequent health assessments. However, less than 1% of those screened have tested positive.

Access to Health Care
The residents of the Wat had very limited access to Western-based clinical health care prior to 2004. There was one health clinic, with a shortage of supplies and staff. Many of residents of the Wat have also indicated that they did not trust the staff at the clinic due to allegations coercion and fraud. These factors contributed to under-utilization of the clinic. Most of the residents have relied solely on traditional forms health care, as well as Thai health providers outside of the clinic. Consequently, there is little information on the health status of the camp residents.

Starting early this year (i.e., 2004), the IOM worked with the US State Department, the Centers for Disease Control and Prevention, and the Thai government to increase the staffing and resources at the clinic. Usage of the clinic has dramatically increased. For the most part the clinic is seeing patients for respiratory problems, diarrheal illnesses and skin conditions.

Composition
At the moment, we know very little about the composition of this population. From the initial registration information, approximately 50% of the population is under the age of 15, and less than 5% of the population is 65 years or older.

Language
The majority of Hmong in Wat Tham Krabok speak Hmong. Based on a small sample of the population, it is believed that about 50% are literate in Hmong. More than half of the Hmong have had no formal education. Many of the younger Hmong attended Thai primary schools but few appear to have had access to secondary schools. At present, English skills and literacy levels are relatively low with only about 10% of adults indicating that they had some English skills.[1]

Traditional medicine
As mentioned above, most of the Hmong refugees relied on traditional practices for health care. This is not surprising given that Hmong spiritual beliefs, as with other cultures, are strongly tied to their sense of well-being and health. Hmong are primarily animists who believe that all natural objects and individuals have multiple souls. Illness for the Hmong has either a non-spiritual or a spiritual cause. While all illnesses are seen to have a spiritual cause, non-spiritual influences can include harmful exposures to environmental conditions, such as extreme cold, or unsuitable food or drink. Spiritual causes of illness are believed to be due to the "loss of souls," and/or actions or misdeeds which are believed to have offended an ancestor's spirit. There are three principal types spirits: 1) Nature spirits are unseen beings of the plains, valleys, mountains, rivers, etc.; 2) House spirits inhabit the door, the central pole of the house, stove, fireplace, etc.; and 3) Ancestor spirits are the spirits of deceased family members such as parents, grandparents, and siblings.

Souls can be separated by accident, by a frightening event, or may be taken by angered or offended spirit. If the souls are not restored, the illness could worsen and death can occur. The

[1] Ramsey County, Minnesota Delegation. Wat Tham Krabok Assessment Team Report. April 28, 2004.

Hmong rely heavily on herbal remedies, spiritual ceremonies, and forms of touching to treat a variety of maladies. Commonly used cures can include:

- Gentle pinching, cupping, and coining for nonspiritual-caused illnesses. These procedures can cause bruising, and individuals working with the Hmong should be aware of this to avoid concerns about physical abuse.
- Prayers, rituals, chants, and religious ceremonies performed by a shaman (or *txiv neebs).* Spiritual causation requires the service of a shaman to restore a person's soul or placate the offended ancestor, thereby curing the illness.
- Herbs and compounds made from roots, barks, animal parts, etc. (often called Chinese medicine because they are imported from China). Hmong already resettled in the US grow and prepare indigenous herbs in their gardens. These will usually be used as a first treatment for organic illness. If they do not bring about a cure, a shaman may be asked to remove the evil spirit.

For additional information on traditional Hmong health practices and resources, refer to www.hmonghealth.org/health/traditionalhealing/, and www.hmongstudies.org/hmontradheal.html.

Special Health Needs

- ***Immunization Status:*** It is highly probable that most of the residents in the Wat had not been adequately immunized. Numerous cases of varicella have already been reported among the Hmong refugees in Thailand. In order to prevent the spread of disease and ensure the well-being of individuals in the camp, a mass immunization campaign of the Hmong refugees was implemented in the beginning of May 2004. All eligible refugees received age-appropriate vaccinations based on the Advisory Committee on Immunization Practices (ACIP) recommendations. The following vaccines were administered in Thailand: diphtheria-tetanus-pertussis (DTP) or tetanus-diphtheria (Td), oral polio vaccine (OPV), measles-mumps-rubella (MMR), hepatitis B, and varicella (i.e., chickenpox). At this time, one dose of multiple dose vaccinations was administered; additional doses will need to be administered after resettlement. Unfortunately Haemophilus influenzae (Hib), pneumococcal and influenza were not easily obtained in Thailand and providers should plan on administering them after resettlement in the United States. Each refugee should have documentation from IOM regarding the specific vaccinations received in Thailand.

  Note: The refugees were recently given live virus vaccines, such as the 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 after the vaccination was given.

- ***Respiratory Illnesses:*** The Wat is located near a stone quarry, where several of the Hmong worked outside of the camp. The quarry produces a great deal of dust and there are reports of high numbers of respiratory conditions as a result. Please see information on Asthma listed below.

- ***Skin Conditions:*** Reports coming out of the clinic indicate that many of the residents suffer from skin conditions. In the case of scabies, the refugees will be treated before coming to the US. However, it is possible that some will still be infected when they arrive. Providers should treat them immediately to reduce the risk of infecting others.

- ***Malnutrition Related Conditions:*** Based on the findings of a delegation from Minnesota, there are some concerns about developmental delays in children 0-5 years of age.

- ***Acute Ear Infections:*** *Exams of Hmong at the Wat found high rates of ear infections.* Ear infections are common in infants and children because the tube that runs from the middle ear to the back of the throat (i.e., eustachian tube) becomes clogged. The purpose of the eustachian tube is to drain fluid and bacteria that normally occurs in the middle ear. If it becomes blocked, fluid can build up and become infected. Anything that causes the eustachian tubes and upper airways to become inflamed or irritated, or cause more fluids to be produced, can lead to a blocked eustachian tube. These include colds and sinus infections, allergies, tobacco smoke or other irritants, infected or overgrown adenoids, and excess mucus and saliva produced during teething.

- ***Hearing Loss:*** *Health exams at the Wat have found a high number of individuals with hearing loss.* There are many causes of hearing loss. They can be divided into 2 principal categories. The first is conductive loss, which occurs because of some mechanical problem, such as fluid in the ear. The three tiny bones of the ear (ossicles) may fail to conduct sound to the eardrum may fail to vibrate in response to sound. The second is nerve loss, which occurs when the nerve is injured by physical or other means. Conductive loss is often curable. However, nerve loss is not. Ear infections are the most common cause of temporary hearing loss in children. Fluid can linger in the ear following an ear infection. Although this fluid can go unnoticed, it can cause significant hearing problems in children. It is unclear at this time what are the principal causes of hearing loss among the occupants of the Wat.

Malnutrition[2]

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. Site visits earlier this year indicated that there is potentially a high incidence of protein malnutrition in children 2 years of age and older.[3]

- *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[4] 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

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[2] 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

[3] Ramsey County, Minnesota Delegation. Wat Tham Krabok Assessment Team Report. April 28, 2004.

[4] 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.

2 years old and/or who have recently been weaned. Initial symptoms are lethargy or irritability and progress into anorexia, increased weakness, decreased muscle tissue, and retarded growth. If untreated, the child develops hepatomegaly,[5] 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.

Chronic Diseases

1) **Arthritis:** *Exams of Hmong at the Wat have shown a high incidence of arthritis in this population.* Arthritis involves inflammation of one or more joints and the breakdown of cartilage. Cartilage normally protects the joint, allowing for smooth movement. Cartilage also absorbs shock when pressure is placed on the joint, like when you walk or otherwise bear weight. Without the usual amount of cartilage, the bones rub together, causing pain, swelling, and stiffness. Individuals with arthritis may experience joint pain, joint swelling, stiffness (especially in the morning), warmth around a joint, redness of the skin around a joint, and reduced ability to move the joint.

2) **Asthma:** *Preliminary exams of some of the Hmong at the Wat indicate that approximately 25% suffer from asthma.* Asthma is a disease in which inflammation of the airways causes airflow into and out of the lungs to be restricted. When an asthma attack occurs, the muscles of the bronchial tree become tight and the lining of the air passages swells, reducing airflow and producing the characteristic wheezing sound. Mucus production is increased. Some people with asthma have periodic wheezing attacks separated by symptom-free periods. Others have chronic shortness of breath with episodes of increased shortness of breath. Other asthmatics may have cough as their predominant symptom. Asthma attacks can last minutes to days, and can become dangerous if the airflow becomes severely restricted. In sensitive individuals, asthma symptoms can be triggered by inhaled

[5] Hepatomegaly is the enlargement of the liver beyond its normal size.

allergens (allergy triggers), such as pet dander, dust mites, cockroach allergens, molds, or pollens. Asthma symptoms can also be triggered by respiratory infections, exercise, cold air, tobacco smoke and other pollutants, stress, food, or drug allergies. Aspirin and other non-steroidal anti-inflammatory medications (NSAIDS) provoke asthma in some patients.

Infectious Diseases[6]

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.[7]

   - *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 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 the Hmong and other Southeast Asians have high rates of chronic hepatitis B infection. 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.

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[6] Refugee Health ~ Immigrant Health web site http://www3.baylor.edu/~Charles_Kemp/Infectious_Disease.htm.

[7] Louisirirotchanakul S et al. The prevalence of viral hepatitis among the Hmong people of northern Thailand. Southeast Asian J Trop Med Public Health 2002;33:837-844.; Ishida T et al. Prevalence of hepatitis B and C virus infection in rural ethnic populations of Northern Thailand. J Clin Viro 2002;24:31-35.

ii. All Hmong 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.

- *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:** The rate of HIV among the Hmong at the Wat is unknown. However, the rate of HIV/AIDS among the general population in Thailand is 1,042/100,000. 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, crytococcus, 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 sudden onset 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**: The rate of syphilis among the Hmong is unknown. 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 conjuntivitis (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 Hmong are unknown. All refugees 15 years and older will have a chest x-ray. Refugees less 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. Of the refugees tested to-date, the TB rate among the Hmong at the Wat is below 3%. 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.[8]

10) **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 Hmong are at a high risk for parasitic infections. To address this concern, they will be treated for intestinal parasites before they depart. All the Hmong will be given with 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/.

[8] October 16, 2003 letter from Tony Perez, CDC and CDC October 2003 TB Notice.

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 inflamation 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. Clonorchiasis has been reported in non-endemic areas (including the United States). In such cases, the infection is found in Asian immigrants, or 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. Individuals with normal immune systems there are typically no symptoms. For individuals with compromised immunity, symptoms can include chest pain, dry cough, headache, nasea, 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, exhaustation, 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 tapeworm 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) **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.

11) **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.

12) **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.

13) **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.

14) **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.

15) **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.

16) **Malaria**: Malaria is caused by the protozoas (*Plasmodium falciporum*, *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.

17) **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 get 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. Many prescription products are available. The most commonly used cream is Elimite (permethrin). In difficult cases, an oral antibiotic called ivermectin may be used. Itching may persist after treatment begins, but will disappear if treatment continues exactly as your health care provider prescribes. Itching can be minimized by cool soaks and calamine lotions. Your doctor may additionally recommend an oral antihistamine.

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) **Strongylodiasis**: Strongylodiasis 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.

18) **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.

19) **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.

20) **Trematodes** (flukes): Trematodes are a class of parasitic flatworms. (See schistosomiasis, clonorchiasis and opisthorchiasis.)

21) **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.

22) **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

Preliminary exams of the Hmong at the Wat indicate that 60% have serious dental health problems. 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.

Reproductive health

There are several traditional practices during pregnancy that providers should be aware of and sensitive to. Women will often take medications made from plants to prevent vomiting and nausea, to strengthen the fetus and prevent miscarriage, and to provide energy to the baby and themselves. It is also common to have a shaman perform rituals that would protect the mother and baby from harm during delivery. Hmong women have been known to refuse vaginal examinations, particularly if they are performed by male providers. Mothers and mothers-in-law often help with the birth. which generally occurs in the squatting position. The husband helps cut the cord and wash the newborn infant. Women prefer natural tearing and healing to episiotomies. A woman requiring a Caesarean section under general anaesthetic may have concerns that when her body is cut under an anaesthetic, her soul will be lost. The placenta is required for reincarnation and so is usually buried at the place of birth. Women may prefer the hospital to bury the placenta or may ask to take it with them. Traditionally, the placenta is buried in the home. After the delivery, it is customary to stay warm for three days post-partum, and touching cold water post-partum is prohibited. Traditionally, women eat hot rice and chicken soup with special herbs for 30 days after the delivery. As a result, Hmong women may refuse the hospital diet. [9, 10, 11, 12]

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[9] Urban Coalition's 1996 survey of Southeast Asian women.
www.laofamily.org/health/popups/trad_med.htm

[10] Rice PL, Ly B and Lumley J. Soul Loss (Poob plig) following a caesarean operation.
www.stolaf.edu/people/cdr/hmong/hmong-au/huplig.htm.

[11] Multicultural Access Unit. 1996. Culture and Health Care.
Health Department of Western Australia.

[12] Community Health Profiles: Hmong. Queensland Government.
www.health.qld.gov.au/hssb/cultdiv/cultdif/hmong.htm.

Mental Health

As with many other refugee groups, this population of Hmong 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.[13]

At this time, there is little information (mostly anecdotal) available about the mental health status of the Hmong presently in Wat Tham Krabok, Thailand – the "Wat Hmong". Rates of psychiatric disorders and substance addiction are not available, but percentages of diagnosable disorders and levels of distress and psychosocial adjustment problems will probably be within the typical range.[14] There have been conflicting reports about high rates of illegal drug use in Wat Tham Krabok. However, drug testing is to occur early in the clearance process.

As reflected in many recent reports newspaper accounts, many Hmong-Americans and American public officials are visiting the Wat[15]. Although we have not found specific psychosocial assessments or mental health assessment reports, the available reports and news stories are valuable sources of general information about the history of the Wat Hmong and the living conditions and stressors in Wat Tham Krabok[16]. It is highly recommended that providers learn as much as possible about this history and recent living conditions.

In addition to reviewing Hmong history and the Wat Tram Krakok experience, providers should also review what we have learned about providing services to the previously resettled Hmong. There are many available resources on Hmong culture and history. Also, we now have the benefit of trained Hmong mental health professionals in the U.S. and other technical assistance

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[13] 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.

[14] In every population, 1-3% of the population have a psychiatric disorder (e.g., major depression, schizophrenia, etc.). In post-conflict and refugee situations, the # may increase due to psychic trauma and persistent stress - this group includes conditions that may require clinical interventions (i.e., depression, severe anxiety, PTSD, substance abuse). The two groups combined make up the total percentage of population with psychiatric diagnoses who may benefit from clinical services.

[15] Excellent sources of information with links to various articles, for example, www.hndlink.org, www.searac.org, and www.hmongtoday.com.

[16] For example: The facility is now surrounded by barbed wire and patrolled by the military. There is no running water. About ½ of the Wat Hmong are under the age of 15. See: Minnesota Public Radio: *St. Paul Delegation visits Hmong Refugee Camp*, http://news.mpr.org/featues/2004/02/07_randolpht_visit and *Derivations of the Hmong Diaspora*, www.chiangmail.com/news/hmong-article

sources.[17] There are a number of excellent sources for information about Hmong mental health and use of Western-based modalities of care.[18]

As in many cultures, the Hmong understanding of health closely links physical, emotional and spiritual well-being. It is important for health care provider to understand this holistic view of health. The following items are examples of the traditional Hmong beliefs about wellness. [19, 20]

- Nyuab or Difficult Liver. Excessive worry; may often become confused and cry.
- Tu Siab or Broken Liver. Feelings of guilt or grief.
- Siab Luv or Short Liver. Suddenly appearing aggressive or demonstrating a change from mild manner to an extremely bad temper, angry.
- Khŏ Siab or Murmuring Liver. "Nervous" habits; e.g. constant coughing, humming, whistling, shaking of head, and often talking about death or suicide.
- Lwj Siab or Rotten Liver. Unable to accomplish goals, unhappy with present life, may exhibit of loss of memory and delusions.
- Some sources of suffering and mental problems.
    - Sin, Curse or Evil spirit possession (Sudden Unexpected Nocturnal Death Syndrome among healthy Hmong refugees has been attributed to nightmare or attack by an evil spirit that threatens to press the life out of its victim. Additionally, Hmong may not make direct compliments or show great admiration for loved ones since this may attack the attention of evil spirits and arouse their envy. As a result of this envy, the evil spirits may take away loved ones).
    - Devilish Bewitchment or charming.
    - Punishment from God for wrongdoing.
    - A woman seeing the mask during the traditional masquerade parade.
    - Swearing falsely by the Bible, the sun, or any object considered sacred.
    - Use of drugs to aid in acquiring knowledge or intensive studying.
    - Substance abuse for other reasons.

Important issues & recommendations for the Western-trained health professional[21]:

1. Establishment of trust is extremely important.

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[17] The Federal Refugee Mental Health Program (RMHP) has participated in community assessments and projects related to Hmong murder-suicide, suicide, and youth violence in the U.S. RMHP is a source for referrals to Hmong health professionals, other Hmong experts and technical assistance. For further information contact: jtuskan@samhsa.gov.

[18] For example see: (1) Westermeyer, J., *Qualitative and Quantitative Research among Hmong Refugees; An Analysis*, in Ahearn, FL Jr. Ed. Psychosocial Wellness of Refugees: Issues in Qualitative and Quantitative Research. New York: Berghahn Books, 2000; (2) Barrett, B, et al. Hmong/Medicine Interactions: Improving Cross-cultural Health Care, Cultural Competence Vol. 30, No. 3, pp. 179-184, 1998.

[19] Conference on Hmong Mental Health, W.R. Davies University Center, University of Wisconsin-Eau Claire, March 18-20, 1998 (Pang Cher Vue, organizer).

[20] Yee, B.W.K., *Health and Health Care of Southeast Asian American Elders: Vietnamese, Cambodian, Hmong and Laotian Elders*, at: www.stanford.edu/group/ethoger/southeastasian

[21] Adapted from: Lee, S *Comparative Study, Stress Social Support Systems and Gender Differences in Reported Stressful Life Events Among Hmong Adolescents and Adults.* Paper presented at the Conference on Hmong Mental Health, W.R. Davies University Center, University of Wisconsin-Eau Claire, March 18-20, 1998.

2. When assessing a client, take into consideration the family and clan structure: e.g., What is the clan? What is the family's involvement? Who is recognized family head? Who is in trouble or having difficulties?
3. Incorporate ideas and suggestions from family members and relevant persons in the individual's life, who have perceived power and authority, into assessments and treatment plans.
4. Use biological-psychological-educational approach (holistic approach).
5. Consider the individual as part of the collective whole.
6. Along with a cultural broker, provide education on Western constructs of distress and psychiatric symptoms and diagnoses and relate these to traditional constructs.
7. Mobilize and work within and with the family's cultural strengths, indigenous resilience, and traditional or spiritual healers (shaman, medicine man, church leader).
8. Avoid demonstrative expressions of power and authority -- many Hmong distrust people in high authority.
9. Consider asking the individual to put feelings in writing during and after counseling or educational sessions. Hmong do not verbally express feelings openly.
10. Be flexible and be ready to use a Hmong leader, community leader, or someone else the individual trusts to help bridge the gap between Western and traditional cognitive domains involving health and well-being.