

Information for Emergency **Medicine Volunteers** **2018-2019**

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The Volunteer Culture of Health Frontiers

(Adapted from remarks by Hakon Torjesen at the Health Frontiers Board Meeting, March 23, 2006)

It's hard in a single phrase to sum up an organization, but here's a try:
Health Frontiers is **"an all-volunteer outreach of health professionals"**.

Most non-profits have worthy goals and try hard to pursue them. But they are also driven by other imperatives: always to meet the payroll, and as a result they allow their mission to tilt toward where "funds are available." In Health Frontiers we also have high goals, but our driving imperative is where "volunteers are available." Our aim is to help an extended circle of volunteer health professionals engage selected opportunities in global and domestic health that would be lost without a volunteer effort. Such programs are often even more compelling than the fundable ones. Consider our training on the special needs of children in disasters, or the residency programs in Laos, or the chloroquine study in Uganda. All are examples of compelling needs that fell outside the current priorities of available funding.

How "available" are volunteers? Here Health Frontiers has a stunning answer. For the past dozen years in our Laos program, highly trained American health specialists have competed for the opportunity to give up six figure incomes and spend a year or more working in Laos on a small living stipend. And last month Karen Olness had more volunteers than she could take to Pakistan for the three weeks that nine volunteers from the US and Thailand spent teaching,,, this in hurting cities that conventional wisdom would judge to be so dangerous that hazard pay would surely be needed to attract any paid workers.

Why are volunteers so available? Two answers suggest themselves. First, the current state of "managed care" in the US and elsewhere makes it difficult for many health professionals to realize the high ideals that led them to careers in medicine. A year of "meaning" in Laos can trump a high-salary year in a troubled industry. Secondly, in our affluent society, a growing minority of people are looking for ways more satisfying than increased consumption to spend their resources. Health Frontiers is attractive to such people, some with skills to share, others with wealth to share.

In conventional non-profits, volunteers can provide a low cost way to get the work done. But they are almost always directed by paid executives. At Health Frontiers, no paid person anywhere ever outranks the volunteer. The rare case where HF pays a salary would be like Novalinh, in Laos, who provides the administrative support for the volunteer team. This is at the heart of the "volunteer culture" of Health Frontiers. It attracts a higher caliber of professionals than are usually available to conventional non-profits, and they accomplish their missions at a small fraction of the conventional cost.

The volunteer culture also permeates our fund raising. It has been 18 months since HF had any grant funding. Instead, we are now relying on voluntary contributions from a growing list of regular supporters. We do no formal fund raising, and we will look for a close mission and culture fit in any grant applications. We still have some reserve funds.

We all hope this approach can keep us going for while. But we see compelling needs and opportunities ahead, in Malawi and elsewhere, and we do not know how much we can grow without diluting our culture. We need now to begin assembling a larger team of key givers and doers, who can help us test the upper limits of growth in an all-volunteer culture. We may prove that there is no limit to such growth. Or we may be looking for that elusive point at which the greatest benefits of growth and volunteerism are in perfect balance. We have interesting days ahead.

Considerations for Volunteering in Laos

Considerations for Volunteering Laos

Health Frontiers welcomes short-term volunteers including faculty and residents. Health Frontiers *cannot* provide any financial support to short-term volunteers. Staff can assist with travel plans to/from Laos as well as arranging accommodations.

Our team in Laos is small, comprised of two full-time volunteer coordinator and one full-time Lao staff. The coordinators and staff are generally very busy with numerous activities. They will provide appropriate orientation to all volunteers and support as needed, and will include visiting volunteers in social activities when possible. However, once oriented, volunteers are expected to get around independently and are responsible for arranging their own activities outside of the hospital, including evenings and weekends. Also, please remember that you may be staying or visiting the home of our volunteer coordinator, and be respectful of their personal time and space. Health Frontiers staff are not expected to assist volunteers with travel within Laos or vacation plans.

Short-term volunteers should not have expectations of completing any sort of research project during their visit. This is because designing/completing a project during a short time is generally considered unrealistic especially with the expectations that all research is done with approval from the Lao government and collaboration with Lao colleagues. Questions about this can be directed to the Laos Project Director.

The Emergency Medicine Residency Program

The emergency medicine residency program is a 3 year training program which started in September 2017 with a first class of 8 residents. Health Frontiers is supporting the University of Health Sciences, the Lao physicians, and the teaching hospitals in Vientiane to get the residency off to the best possible start. The exact schedule for the residents is currently still being determined and as this is a new residency program things are likely to be fluid and flexible in the first few months and years.

The EM residents will do the majority of their rotations at three teaching hospitals in Vientiane as well as the National Children's Hospital. As of yet there are no physicians trained in emergency medicine in Lao PDR so residents will be supervised by specialists in other fields of medicine relevant to ER, who are often already working in the emergency room. Up until now the emergency rooms have been split between surgery and internal medicine, but the new residents will be expected to see every type of patient that presents to the emergency room.

At request of the Lao colleagues, the curriculum has been written based on a 12 month modular system. The topics that will be covered by month are:

September:

- Intro to EM

October:

- Resuscitation and Shock

November:

- Pulmonary

December:

- Cardiology

January:

- Trauma/EMS system
- Disaster/mass casualty

February:

- Pediatrics

March:

- OB/GYN
- Genitourinary

April:

- ENT
- Ophthalmology
- Dental

May:

- Renal
- GI
- Endocrinology
- Rheumatology

June:

- Infectious Diseases
- Hematology
- Dermatology

July:

- Neurology
- Neurosurgery

August:

- Psychiatry
- Social
- Toxicology

The general topics will repeat each year but get more complex each year.
An integrated curriculum has been written to give a detailed and structured teaching guide.

The reference book for the residency will be:

Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8e

Judith E. Tintinalli, J. Stephan Stapczynski, O. John Ma, Donald M. Yealy, Garth D. Meckler, David M. Cline

Training Sites

Mahosot Hospital is likely to be the main site for resident educational activities and is located within walking distance of the Health Frontiers office. It has a busy ER with about 15 beds, that sees about 150 patients per day. It is the only ER currently doing a simple form of triage and with a functional EMR.

Lectures for the EM residents will mainly take place at Mahosot.

The resident's also have their resident room at Mahosot hospital.

Setthathirath Hospital is a fifteen minute ride by car, motorbike or tuk-tuk. This hospital is newer and funded by the Japanese government. They will be opening up a new ER in 2018/19. The current ER is small with approximately 8 beds and limited capabilities.

Mitthaphab Hospital, located 25 minutes away by bus, motorbike or car, is considered the center for trauma care in Vientiane, and in theory has neurosurgery available. It is a busy ER with approximately 20 beds and also sees around 120-150 patients per day.

National Children's Hospital, located next door to Mitthaphab Hospital is a new, modern facility funded by KOIKA (Korean organization)

Didactics Schedule

Workdays are 8am - 4pm Monday - Friday

The current proposed schedule is:

Monday: **Resident Case Presentation/Topic Review** (1:00-4PM every other week), **Simulation Lab** (Once a month 1:00-4PM), **Journal Club** (Once a month on Monday 1:00-4PM)

Tuesday: **Didactic lecture** (1:00-4PM)

Thursday: **Didactic lecture** (1:30-4PM)

English Class

Monday and Wednesday: **Beginners** (4:30 – 6PM)

Tuesday and Thursday: **Advanced** (4:30-6PM)

Role of Visitors

We would ask that all visitors plan to be in Lao a minimum of **4 weeks**.

Visiting residents are encouraged to accompany the Lao residents in their regular activities and schedule. Emergency medicine is a brand new concept here so sharing your resident experiences, eg sharing what is the role of an EM physician and resident, how the ER works where you train, how you study, what resources you use etc. is very useful.

Visiting faculty will be encouraged to help with the didactic teaching but lay the focus on bedside teaching and simulation training.

Foreign physicians are not able to have any medical or patient responsibility in Laos and so all visitors are in a teaching role only. Bedside teaching is, however, allowed and encouraged.

We would like to remind all visitors that the same high standards are expected of visiting physicians here as they would be in their home country.

The Lao workday is typically from 8am to 4pm.

Weekends are free days for our visitors to rest, relax and enjoy Vientiane. It is not possible to do any organised teaching or training in the weekends. If you are working with a resident and they are on duty it may be possible to accompany them to work in the weekend or evening as well. This is up to you to arrange. Please discuss with the EM coordinator before taking an evening or weekend shift as we will have to ask special permission from the director of the ER.

Recommendations for Visiting Lecturers

Format:

You will likely be giving lectures in one of three venues:

- **Resident lecture** – informal, given in hospital conference room, expect 8-15 participants, some teachers may attend
- **Grand Rounds** – more formal, given in amphitheater at medical school, expect 20-50 attendees of different backgrounds (currently not happening for EM)
- **Pre-planned short course** – didactic or practical training for specific groups of care providers, done on-site in the hospitals. You will be asked to prepare all the materials for this prior to arriving in Lao.

Time

- Resident lectures – 3 hours
- Grand Rounds – up to 2 hours, including questions and discussion
- Pre-planned short course - variable

Remember that a lecture given here will take longer than in your home institution due to the language barrier (see below). Expect to take twice as long as you would for an English-speaking audience.

Language

You are expected to teach in English. A minority of the Lao doctors speak English well, and often the information would be more effective if spoken in Lao. Most of the ER residents are slowly getting used to reading presentations in English but will often work together to translate if they are confused. Typically residents are expected to type their own Power Point presentations in English but present in Lao, this skill is still in a very basic stage.

For Grand Rounds we can usually arrange for a Lao teacher who is proficient in English to translate. At resident lectures this is not always possible, so a senior resident with the best English language ability will translate difficult concepts. For pre-planned short courses, we will attempt to identify a translator ahead of time, although this is not always possible.

While time-consuming, translation is beneficial not only to the audience but also the person translating – in converting the information to their own language they will learn more, and are essentially teaching.

Things to remember:

- Review your presentation and make sure you are using the simplest English possible
- Avoid abbreviations and acronyms that may be unfamiliar to Lao doctors

Content

Things to consider when preparing your presentation:

- Many of the doctors you will be teaching are great clinicians, but missed out on good training in pathophysiology and basic sciences. Don't assume they have the background you do. Reviewing physiology, if relevant to your talk, may be necessary and is encouraged.
- Use pictures and visual diagrams whenever possible. They are exceedingly useful when trying to teach about anatomical diseases and pathophysiology. The level of understanding and retention is MUCH higher if simple pictures are used to reinforce concepts. Incredibly detailed images may be confusing.
- Consider starting with definitions of terms you will use frequently in your presentation, which will reinforce English medical terminology.
- Please try to make the presentation relevant for clinicians in Laos:
 - Try to choose topics relevant to pathology seen in tropical countries – if you are unsure, feel free to ask.
 - Remember that many investigations/treatments that we think are indispensable are not available here.

- You are still encouraged to present your “gold standard” of evaluation and treatment, since the doctors like to learn what is done elsewhere and will some day have more diagnostic tests and treatments available in Laos.
- The residents love multiple-choice questions! Consider ending with review questions or cases to highlight important points, assess knowledge and encourage participation.

Handout

We strongly recommend that you provide a handout – otherwise the residents tend to write everything down and cannot pay attention. You can print your Power Point slides or provide a word document. Handouts can be printed and photocopied when you arrive.

AV Equipment

Overhead projectors and slide projectors are available.

An LCD projector and computer are always available for Grand Rounds and (almost) always available for resident lectures. Therefore, Power Point presentations are encouraged.

Finally – remember to be flexible! Schedules often change and lectures may be canceled, change format and will always take longer than you anticipated. This is normal. No matter what, the residents are extremely appreciative of your efforts and teaching.

HEALTH FRONTIERS LAOS PROJECT SUGGESTIONS FOR VISITING EDUCATORS March 2018

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ACCEPTED EVIDENCE-BASED BEST PRACTICES FOR TEACHING

- **Set clear lesson goals** – data supports this as a teaching best practice. Begin presentations with a list of clear learning goals.
- **Check for understanding** – teachers often ask questions when presenting, but the questions are

not always used to assess learner understanding. Specifically tailor questions to check whether learners have understood your information, before moving on to the next part of the lesson.

- **Summarize with pictures and graphs** – a picture can be worth a thousand words, in particular in medical education
- **Provide opportunities for students to practice** – practice can solidify concepts, and helps learners retain knowledge and skills
- **Be flexible about how long it takes to learn** – learners vary widely in baseline knowledge and skills, and in how rapidly they acquire new knowledge. Given enough time, everyone can learn!
- **Get learners working together in productive ways** – each group member should be responsible for at least one task
- **Teach strategies, not just content** - there are strategies underpinning the effective execution of many tasks which should be taught alongside didactic content
- **Nurture meta-cognition** – meta-cognition involves learner consideration about options, choices and results. Encourage this!
- **Provide feedback**

MEDICAL EDUCATION IN LAOS

Teaching residents and medical students in Laos can be extremely rewarding. In Lao culture, the professor is a venerated social role. Doctors from the provinces, in particular, have had limited access to educational resources and are consequently very grateful for the donated time of visiting educators. Lao doctors are eager to learn, and willing to help one another learn. Most are highly engaged in the learning process. There are, however, unique issues to consider when creating a lecture or workshop for Laos.

- No gross anatomy in Lao medical school, consequently understanding of anatomical relationships/anatomy foundation is a weak area for many Lao doctors
- No medical textbooks written in Laotian or other Lao ethnic languages, which underscores the lack of accessible foundational medical information in Lao language
- Language barriers between teachers and learners are very common
- Learner levels and access to baseline medical information varies widely
- Many expensive medications and diagnostics do not exist in Laos. Some exist but are unaffordable for most patients. Diagnostic and management recommendations made in lectures or workshops should take in-country resources into account.
- Labs are available in Laos, but results are not always accurate. Many patients cannot afford daily labs. Be sensitive to these issues when teaching about diagnostic work-up and medical management.

SPECIFIC SUGGESTIONS FOR DIDACTIC PRESENTATIONS

Strategies for success when teaching Lao doctors in the classroom take educational best practices into account.

- 1) **Suggest that visiting faculty review proposed talks with someone who is very familiar with the Laos residents who will be attending the talk.** This could be the Health Frontiers field representative, or the emergency medicine resident coordinator.
- 2) **Prepare to spend twice as long (or longer) to deliver a PowerPoint presentation.** Speaking carefully and slowly is highly recommended. Concepts should be repeated for emphasis. Check for learner understanding frequently. Language barriers, and the need for translation of concepts into Lao language for selected learners, is common. If your goal is to clearly communicate

information to everyone in the room, expect it will take longer.

- 3) **Spoken and written language barriers are very common.** Identify a resident with more advanced English who can serve as translator for more difficult concepts. Interrupt your presentation after key points and ask this resident to translate. Frequently check understanding. Limit the amount of words on your slides.
- 4) **Set clear learning goals at the beginning of your presentation.** This is helpful for keeping a focus, and not taking on topics that are too broad. It is a good idea to ask participants at the beginning of the talk what are the aspects of the topic that interests them most. Then be sure to check in with learners to make sure they learned what you hoped to teach.
- 5) **Use pictures whenever possible.** Cadaver study does not occur in Lao medical school. Many Lao doctors have only a rudimentary understanding of anatomy. When speaking on any topic, providing visual images and anatomic diagrams in addition to text can help learners develop a basic understanding of anatomical relationships, which allows them better understand physiology and pathophysiology.
- 6) **Encourage Lao doctors to ask questions throughout your presentation.** While this can feel interruptive, comprehension will drastically improve if you take time to clarify issues which are confusing to learners. Frequently check understanding.
- 7) **Take time to learn about local diagnostic and therapeutic resources.** While Lao doctors love to hear about technological advances in the diagnosis and treatment of disease, they also need practical, relevant information they can use in their daily work. Speaking about expensive new medications or imaging options that do not exist in Laos might be interesting but may not translate into improvements in practice.
- 8) **Layer information.** Recognize many Lao doctors lack a comprehensive, basic foundation of medical knowledge. Help build that foundation during your presentations. Layer information – include basic pathophysiology, exam findings, diagnostic and treatment recommendations. Be careful and purposeful in your teaching. Be complete.
- 9) **Be comprehensive when teaching about medications.** Many Lao doctors are aware of medications, but not aware of major side effects and contraindications. Include this information when you present.
- 10) **Practice concepts in small groups, using case-based learning.** It is extremely effective to follow PowerPoint didactics with cases. Lao doctors do well learning in groups. Assign a case to each group. Make sure everyone has a role.
- 11) **Don't shame learners for wrong answers or medical mistakes.** Lao doctors are doing the best they can in a very low-resource environment. Promote best practices. Understand shaming a learner, or the Lao health system as a whole, will not result in practice improvement.

SPECIFIC SUGGESTIONS FOR ROUNDING WITH LAO DOCTORS ON WARDS

It is very exciting to see patients with Lao residents and medical students. Your role is to be a coach and mentor, NOT the physician responsible for direct medical decision-making. Make sure the Lao doctors understand your role.

- 1) **Help them organize their presentations.** Make sure they obtain a complete History of Present Illness, Allergy list, Past Medical and Surgical History, Social History, Medication list and Review of Systems.
- 2) **Repeat physical exams yourself to be sure all major findings have been identified.**
- 3) **Review lab results, remembering labs in Laos can be inaccurate.** Discuss this possibility with the Lao doctors if something does not make sense.
- 4) **Help Lao trainees list suggest a comprehensive differential diagnosis.** Expand on the differential if there are major omissions.
- 5) **Share your opinion on the stated management plan without shaming.** Offer ideas, guidance and support.
- 6) **Provide feedback.** Identify good practices and areas for improvement for individual residents and students.
- 7) **Remember that many Lao patients cannot afford diagnostics, labs or certain medications.** Do the best you can, given the low-resource environment. Describe optimal care without shaming their existing system. Realize there have been extraordinary improvements over the last decade.

Below is a list of medical attending best practices (Elements of Good Teaching) from the University of Toronto, based on comprehensive and systematic review. Consider these!

Best Practices in Teacher Assessment - University of Toronto

pg.postmd.utoronto.ca/.../07/BestPracticesTeacherAssessment2010.pdf

Health Situation in Laos

Laos is a very poor country and health indicators, although improving, are among the worst in the world. For up-to-date information you can refer to the following websites:

UNICEF: <http://www.unicef.org/infobycountry/laopdr.html>

WHO: <http://www.who.int/countries/lao/en/> (view “selected indicators”)

Currently the majority of health services provided in Laos are fee-for-service. Health care is expensive for most of the poor, rural Lao patients. Middle-class and wealthier people from Vientiane are better able to afford hospitalization, diagnostic testing and drugs. Services that remain free of charge include immunizations, basic antenatal care visits, TB treatment, and HIV treatment. Funding comes from donors or UN agencies (Global Fund, UNICEF, MSF).

Patients commonly present late in their course of illness, and often leave the hospital before their work-up or treatment is completed. Certain antibiotics, imaging studies (especially CT scans) and diagnostic tests (TSH and T4) are very expensive. Dialysis is unaffordable for many patients despite a high prevalence of acute and chronic renal failure in the country. There are only a few available treatments for pediatric malignancies in Laos and none for adult malignancies. The few available treatments are sponsored by Korea. The few families with financial resources go to Thailand. Access to health care is hampered by geography, transportation, limited resources in rural areas, limited health care workers in rural areas, cost, discrimination against minority populations, and technology.

There is widespread use of traditional medicines (many of which contain corticosteroids and NSAIDS). There is not currently good integration between more traditional medical practices and care provided by doctors with Western training.

Prior to arriving at the hospital, patients commonly have sought care from traditional doctors or local centers. Often, they have already had some form of oral or IV treatment, including antibiotics. Follow-up is complicated, since many patients are told to return to the hospital and are seen in the hallway or a meeting room. Patients may also go from hospital to hospital seeking treatment. In early 2008, ambulances began to be used in the capital city and since 2017 also in the city of Pakse, largely by volunteer ambulance services. The first and the largest of these is Vientiane Rescue, 1623. Pre-hospital services are, however, still severely limited but efforts are being made to improve and improve the collaboration with the hospitals. The volunteer ambulance services are free.

Most of the doctors practicing in Laos are generalists who received no post-graduate training after medical school. In addition, many feel not well-prepared by their medical education to feel confident taking care of patients. Prior to the implementation of our residency programs, only a handful of doctors had done post-graduate or fellowship training in foreign countries. The HF residency programs are the only training programs for pediatricians, internists and now emergency medicine specialists in Laos. Departments of OB/GYN, Surgery, ENT, Anesthesia, Ophthalmology and Radiology are developing, have some good teachers and have their own residency programs supported by various international organizations.

Common diseases and presentations in the ER.

The patients presenting to the ER in Vientiane Capital, like other places in the world, can vary greatly from very minor presentations to very severe and life-threatening presentations. Cases are often more complicated due to late presentation and prior treatment at district or provincial hospitals. Underlying chronic diseases such as renal failure, cirrhosis, hepatitis B, diabetes and hypertension increase the complexity of acute illnesses.

In addition to pneumonia, sepsis, pyelonephritis, meningitis and gallbladder disease, the differential diagnosis of febrile illness in adults typically includes the following: **typhoid fever, malaria** (in patients living outside of Vientiane), **dengue** (seasonal), **leptospirosis, murine typhus, scrub typhus** and **melioidosis**. These are good diseases to read up on before coming, as they are common. **Tuberculosis** is endemic but often difficult to diagnose. **Intestinal parasites** (especially opisthorchis, ascaris and strongyloides) are routinely found on stool exam. At present we are seeing only a small number of patients with **AIDS**, though prevalence is likely to increase. Many Lao doctors have difficulty asking patients about HIV risk factors and advocating for HIV testing. **Paragonimus** is in the differential for pleural effusion and atypical pulmonary disease.

Common non-infectious diseases include diabetes, nephrolithiasis, cholelithiasis, cirrhosis from viral hepatitis and alcohol, peptic ulcer disease, GI bleeding, acute and chronic kidney failure, nephrotic syndrome, severe lupus, rheumatoid arthritis, hypertension, ischemic and hemorrhagic strokes, thyroid disease, myocardial infarction, chronic valvular disease, pleural effusion and pancytopenia. Common malignancies include hepatocellular carcinoma, cholangiocarcinoma (high prevalence due to raw fermented fish sauce in diet), lung cancer, lymphoma, other hematologic cancers and spinal metastases.

Pancytopenia is very common but difficult to work up given limited hematologic lab services, although bone marrow aspirations are done frequently and there are several previous HF residents who have now completed fellowship training in Hematology/Oncology in both adults and pediatrics.

Common diseases on the pediatric ward

The current immunization policy in Laos (**EPI** – Expanded Immunization Policy) includes: **HepB** and **BCG** at birth. **DTwP, Hib, HepB, pneumococcal conjugated** and **OPV** at 6, 10, and 14 weeks, and **Measles** and **Rubella** at 9 months. **Japanese encephalitis** at 9 months. Vitamin **A** supplements begin at 6 months of age and should be given every 6 months until 5 years of age, but this does not often happen. Vaccination rates are also very low, titers are even lower than expected due to poor storage of vaccines.

As previously mentioned, pediatric patients are often quite complicated, due to their late presentation, prior treatment at district or provincial hospitals, and lack of clear history or medical records. Also many cases are complicated by chronic malnutrition and/or TB.

The most common infectious diseases are the same anywhere: **diarrheal disease** and **respiratory infections**. Also common are **meningitis, encephalitis, pharyngitis**, and **neonatal sepsis**. Most vaccine-preventable diseases are still seen here, including **tetanus**,

diphtheria, pertussis and measles. There have been no reported cases of wild polio since the 1990's, but many cases of vaccine-derived polio in 2015. Acute flaccid paralysis should be reported for polio testing. The vaccine-preventable diseases listed above should also be reported.

The differential diagnosis of febrile illness in children typically includes the following: **typhoid fever, malaria** (outside of Vientiane capital), **dengue** (seasonal), **leptospirosis, scrub typhus, melioidosis.** These are good diseases to read up on before coming. **Tuberculosis** is of course endemic and common, but often is difficult to diagnose. **Intestinal parasites** are commonly found on stool exam. **HIV** is beginning to be diagnosed more frequently; however a strong cultural stigma continues to limit investigation and diagnosis.

Common non-infectious diseases include **thalassemia, nephrotic syndrome, asthma, congenital and rheumatic heart disease, infantile beri-beri** (caused by maternal vitamin B1 deficiency, due to widely practiced food taboos during pregnancy/nursing), and many other diseases that commonly affect children in Western countries. **Malnutrition** is very common. Almost 50% of Lao children are stunted (World Food Program, 2006). Developmental problems are common but often under-diagnosed and treatment options are quite limited. Often patients will never have a formal diagnosis at the time of discharge.

Diagnostic Services

- CBC with differential, Na, K, Ca, glucose, LFTs, albumin, ferritin, BUN/Cr, PT/PTT, ESR, CRP (qualitative) and UA are available/affordable at all sites.
- Blood gases are rarely done, but are available in the ICUs.
- Anti-DS DNA, ANA, RF and ASO titers are available at certain hospitals
- CK can be done, troponins are available in the ICUs.
- TSH and free T4 can be done, but cost is high
- Reticulocyte count can be done.
- There is no ability to measure drug levels in blood or urine
- There is no ability to measure serum or urine osmolality or urine electrolytes.
- HBS Ag, HCV antibody and HIV antibody are available .
- Stool O&P, malaria smears, AFB smears, blood cultures and evaluation of CSF and other body fluids are available. The microbiology laboratory at Mahosot provides outstanding service because it is sponsored by Wellcome Trust. 24-hour service is available and blood, urine, CSF and fluid cultures are free patients at Settathirath, Mahosot, and Mittaphab. Blood cultures cost 130,000 Kip (~\$14) if done at Settathirath.
- Specimens can be sent for pathology to the University of Health Sciences.
- PPD tests are available inconsistently. It is dependent on which hospital and how many patients need PPD during a given week. Geneexpert is a reliable TB test that is available at Mahosot and other hospitals.
- Bone marrow aspirate is frequently done, but biopsy is not available.
- X-rays, abdominal and renal ultrasounds are available and affordable at all three hospitals. Radiologists are generally reliable and provide a written interpretation with completed studies (almost always in French). CT scans can be done at Mahosot and Mitthaphab but are very expensive (\$80-\$90). MRI scans can be done at Mittaphab

and are very expensive.

- MRI is available in Thailand for approximately \$300
- Formal echocardiograms are done at Mahosot; bedside echos are done by some of the residents and by ward doctors at Setthathirath.
- EKGs are readily available everywhere.
- Mahosot subspecialists perform EGD, colonoscopy, bronchoscopy, and liver biopsy
- Kidney biopsy is **not** available.
- Frequently the Micro lab will be doing studies and offer different tests for free or will pay for services to get their studies done (CT scan before CSF culture, etc)

Laboratory services in the provinces are much more limited compared to this.

Treatment

Medications for common medical problems are generally available and generally affordable.

- Commonly used antibiotics include penicillin, amoxicillin/ampicillin, ceftriaxone, cloxacillin, gentamicin, fluoroquinolones, doxycycline, bactrim, flagyl, chloramphenicol, ceftazidime, erythro and azithromycin, anti-malarials, anti-TB and anti-parasite drugs. Meropenem and imepenem are sometimes available, as is vancomycin, but all are expensive.
- Cardiovascular drugs include IV heparin, aspirin, digoxin, oral nitroglycerine, oral B-blockers (including carvedilol), furosemide, ACE inhibitors, statins, dihydropyridine CCBs, HCTZ, spironolactone, oral amiodarone, dopamine, dobutamine and a coumadin analogue.
- Streptokinase is expensive but available at Mahosot. Cardiac cath lab is not yet available but is being built. A cardiologist is currently abroad to train to be able to perform cardiac catheterization here in Laos.
- IV dexamethasone, prednisone, prednisolone and cyclophosphamide are the available immunosuppressives
- Also readily available are NSAIDs, PPIs, metformin, sulfonyleureas, regular and NPH insulin (which are expensive), phenytoin, carbamazepine, vitamins, nebulized ventolin, oral salbutamol, PTU/methimazole, mannitol.
- Antiretrovirals are available at Mahosot and Setthathirath
- Lamivudine can be used to treat hepatitis B, but viral loads are not available.
- Kayexalate is only available at Mittaphab
- Recently, phenobarbital is available in the country.
- There is a blood bank in Vientiane, though blood products of the necessary blood type are not always available. Blood is also not commonly available in the ERs.

Health and Safety Advisory for Laos Volunteers

Thank you for volunteering with the Health Frontiers Laos project. Volunteers are responsible for obtaining current information on health and safety prior to their departure. In this document we provide links to several sources of information that we suggest you review prior to your departure.

On arrival in Vientiane, you will be required to sign a Waiver of Liability, releasing any claim of action against Health Frontiers for any injury, theft or illness you may incur. By signing this Waiver, you will also acknowledge that you have read and understand this document and the advice given.

You are required to provide proof of adequate medical insurance before coming to Laos. This should include evacuation coverage as for any serious illness or accident you will have to be evacuated to Thailand or back to your home country.

Health

For the most updated and complete recommendations for travel to Laos, you are advised to visit the updated CDC website:

<http://wwwn.cdc.gov/travel/destinationLaos.aspx>

On this site it is recommended you visit a travel doctor at least 2-3 months prior to your visit to allow any vaccinations time to take effect. The following vaccinations are currently recommended for travel to Laos:

- Travelers should be up to date on MMR, DPT and polio immunizations
- Hepatitis A
- Hepatitis B
- Typhoid Fever
- Yellow Fever is not present in Laos, but if you are traveling to Laos *from* a country where yellow fever is present you should carry proof of vaccination.

The following vaccines may be recommended based on length of stay and areas visited, and should be discussed with a travel doctor:

- Rabies
- Japanese Encephalitis

Malaria: According to the CDC there is no risk of malaria in the city of Vientiane, however risk exists in all other areas of the country and in many other parts of Southeast Asia. Chloroquine resistance is high, so prophylaxis with **malarone** (atovaquone/proguanil) or **doxycycline** is currently recommended for travel outside of Vientiane. (Mefloquine can be used but *only in limited areas due to resistance* – see CDC website for more information). You should consult the CDC website and your physician to determine the best choice of malaria prophylaxis for you and your family.

Please still take mosquito precautions and wear mosquito repellent. **Dengue Fever is very common** in Vientiane and most of South East Asia with seasonal increases during the rainy season..

Please also note recommendations on use of insect repellent and bednets when traveling to malaria-endemic areas. Prevention of malaria can also be effectively accomplished using insect repellent, which will help prevent other mosquito-borne infections such as **Dengue** Fever, as well as bednets treated with permethrin if staying outside of Vientiane in a malaria endemic area.

<http://wwwn.cdc.gov/travel/contentMosquitoTick.aspx>

You can also visit the CDC website for updated information on **Avian Influenza** as well as **seasonal influenza** virus and vaccine recommendations.

<http://wwwnc.cdc.gov/travel/yellowbook/2010/chapter-2/influenza-seasonal-avian-pandemic.aspx>

Water

Drink lots of water!

Don't drink the tap water. It is fine to brush your teeth with it but don't drink it.

Please bring a refillable water bottle and try to avoid buying small plastic bottles as much as possible. We are trying to set a good environmental example.

Medication

If you have an specific medication requirements, please contact us. We can let you know whether it is available at the pharmacies here or whether it is recommended that you bring it from home.

You are able to find most common medications at the pharmacies in Vientiane.

Safety

From the CDC website:

Motor vehicle crashes are a leading cause of injury among travelers. Protect yourself from motor vehicle injuries: avoid drinking and driving; wear your safety belt and place children in age-appropriate restraints in the back seat; follow the local customs and laws regarding pedestrian safety and vehicle speed; obey the rules of the road; and **use helmets on bikes, motorcycles, and motor bikes** .

The above safety recommendations from the CDC should be observed by both *drivers and passengers*. Please consider carefully before choosing to drive a motorized vehicle – consider what your insurance covers (if anything) and the legal responsibility you would have in the event of an accident in Vientiane.

Be aware that if you choose to drive a motorbike, most insurance companies will not cover

you in case of an accident unless you hold a valid motorbike license in your home country.

It is worthwhile applying for an international driver's license before coming to Laos. In most countries this is a very simple procedure if you hold a valid driver's license in that country.

Many volunteers choose to get around by bicycle while in Laos *and are responsible for their own safety*. Bicycle helmets may be available at some shops in Vientiane. Lightweight motorcycle helmets are available. However, if you plan to ride a rented or borrowed bicycle in Laos, it is highly recommended that you **BRING YOUR OWN HELMET** and wear it while riding at all times.

Be aware that road traffic laws are not often obeyed, especially after dark. Be aware and expect the unexpected.

If you are involved in a road traffic accident in Laos, remember to stay calm, if able contact your Health Frontiers coordinator, and do not move the vehicles at all. The insurance company and police will come and assess the accident site. Try to take your own pictures and get the names of any officials who are involved with assessing the accident.

For other safety concerns, we advise you to visit the **State Department** website before your date of travel. Specific cautions are noted for common tourist destinations outside of Vientiane, so please review if you plan to travel during your visit.

<http://travel.state.gov/travel/>

“Travel Warnings” will indicate if there is a current warning issued by the U.S. government against traveling to Laos (as of August, 2016 Foreigners are advised not to travel by road to Luang Prabang, on either the new or old roads, flying is ok).

Be sure to review the Country Specific Travel information for Laos. Important information is here regarding crime and personal protection:

Crime: There has been an upsurge in the number of petty thefts and break-ins in Vientiane, affecting both Lao and expatriates. Many of these have involved purse-snatchings by people riding motorcycles. The increase in crime has been associated with use of illicit drugs in Vientiane. While most of these were non-violent crimes, in some cases the perpetrators have carried weapons. While Health Frontiers **cannot guarantee** that any measure will be completely effective in preventing such incidents, the **following precautions are strongly recommended:**

- Stay in housing recommended by Health Frontiers.
- Don't carry a purse or bag easily snatched.
- Avoid riding a bicycle alone in Vientiane, especially at night.
- If you choose to ride a bicycle, do NOT ride with anything in the basket that may draw attention, and leave all valuables at home.
- Avoid walking alone in Vientiane at night.
- If you need to go somewhere with your passport, significant amounts of cash or other valuables, we recommend you go by tuk-tuk with a recommended driver.

- Lock all valuables you will not be needing in the safe at the Health Frontiers office.
- If anyone confronts you, give them your stuff. Do not fight back. Your health is worth more than your stuff.

If you plan to travel outside of Vientiane, particularly north to Vang Vieng, Luang Prabang or Luang Nam Tha, please refer to the most recent State Department Public Announcements available at the above web address and discuss with the Health Frontiers team before planning your travel to help ensure a safe journey for you and your companions.

Criminal Penalties: Review the latest **State Department** recommendations and warnings for travelers to Laos at <http://travel.state.gov>. In particular, read carefully those activities that are *illegal* in Laos and subject to legal enforcement by Lao authorities, including sexual relationships with Lao persons (unless married), use of illicit drugs, driving under influence of alcohol, religious proselytizing, and responsibility for traffic accidents. Note that criminal penalties may harsh, and that Health Frontiers cannot assist volunteers detained or arrested due to illegal activities. Health Frontiers expects that volunteers will read and understand this and will engage in behavior that is professional, and adheres to the local laws and cultural norms.

Ambulance: Vientiane Rescue: 1623

If you have any further questions or concerns about this information, please contact Céline Jacobs: jacobs.celine@gmail.com

Timeline for Visitors and Visiting Teams 2017-2018

Step 1:

- Video call meeting with EM coordinators for Health Frontiers to get a brief summary of the medical system in Lao and the work Health Frontiers does there, to discuss proposed plans, to answer any questions that you may have, and to make sure that everyone is on the same page.
- Submit your CV, a copy of your passport ID page and 2 letters of recommendation.

Step 2: At least 3 months in advance:

- Submit full proposal with proposed teaching topics, outline of course, and timeline, for review and approval.
- Submit all teaching materials.

This allows enough time for translation, planning the course from the Lao side, and any changes that might need to be made to fit the Lao context.

- Make sure your country qualifies for visa on arrival to Laos.

Step 3: At least 2 months in advance:

- Submit a copy of medical license for each member of the team that will be traveling to Laos (+ CV and copy of passport if not already submitted) in order to obtain appropriate hospital permissions.
- Make sure vaccinations are up to date.
- Read through Health Frontiers general information for volunteers and health and safety information at: <http://www.healthfrontiers.org/volunteer.html>

Step 4: At least 1 month in advance:

- Submit flight and accommodation arrangements and proof of travel insurance/evacuation insurance to Health Frontiers.
- Submit exact work dates for Vientiane. If you plan to take any dates off during your time here, you need to notify us before so we can schedule it in.

Step 5: Before departure:

- Make sure you have a digital copy of your passport and other important documents.
- Consider making a laminated copy of your passport ID page and driver's license to carry with you on a day to day basis in Laos so you can leave the real documents safely at the HF house or your guest house.
- Make sure you have USD and passport photos for visa on arrival (see below)

On Arrival in Vientiane you will be asked to complete and sign the following documents:

- Complete Emergency Contact form (see appendix A)
- Complete Waiver of Liability form (see appendix B)

Visa Requirements: Most nationalities can get a visa on arrival to Laos. Please check that you are eligible for visa on arrival. Prices vary depending on your passport country and visa

fees should be paid in US dollars so please make sure you have enough US dollars with you. Prices range from around 20-45 USD for a 30 day visa depending on your passport country. Remember to also bring two passport photos for the visa on arrival.

Life in Vientiane

Life in Vientiane is quiet compared to other Southeast Asian capitals but in many ways that makes it much more pleasant. It is a great place to live and work.

Weather

Laos is hot and humid and it takes some getting used to. The monsoon season typically stretches from May to October. From October onwards is the dry season and the air gets progressively more and more polluted as time goes on. Temperatures during the winter months are much more bearable, It still gets hot during the day but not as humid and it cools off nicely at night. The last few months of the dry season get very very hot with temperatures above 40 C on a regular basis and no relief from the heat at night.

Dress Code

In accordance with Lao culture, dress should be modest. Short shorts, short skirts and tank tops are generally not appropriate in any setting. For the hospital, men should plan on wearing **long pants and short-sleeve shirts**, and women should plan to wear **long skirts (below the knee) and short-sleeve shirts**. All female Lao physicians/staff wear traditional Lao skirts – there may some available through HF to borrow or they can be made at the market, but they are not required. Also consider bringing a short, light-weight **white coat** (your long, heavy white coat may not be appropriate for the climate) or inquire if there is one at HF you can borrow. Finally, wear casual, comfortable shoes that are easy to slide on and off – shoes are removed prior to entering all homes and also in all ICU settings. Casual sandals are acceptable.

Please dress respectfully at all times when in Lao. While you will see other foreigners dressed badly, this is considered disrespectful by the Lao. Especially if you visit any temple or religious sights make sure you knees and shoulders are covered.

There may be an opportunity for you to visit some of Lao's beautiful lakes, rivers and waterfalls. If you are swimming in a public place, please wear a top and shorts over any swimwear. The exception to this would be swimming at hotel pools.

Computer/Internet Access

Wireless access is available at the HF house and at some guest houses so bringing a lap-top is recommended. There are also local internet cafes available. Please avoid downloading large files including audio/video files when using the HF connection.

Housing

We anticipate you will find Vientiane to be a peaceful and beautiful city during your stay in Laos. The Health Frontiers office is located adjacent to the Mekong River in a particularly pretty and quiet part of the city. One minute's walk from the front door and you'll find yourself strolling along the banks of the Mekong. There are numerous restaurants in walking

distance as well as markets selling Western food and toiletry products.

HF House – Guest rooms are available in the HF house. Cost is \$20/night. Money goes directly to the HF House Fund to support house operations. Guests would have a semi-private bathroom, access to the kitchen and wireless internet. These rooms are not always available - please inquire if you are interested in this option.

Staying in Vientiane

Most planned lectures will be at Mahosot Hospital, so you want to look for a hotel walking distance from there. Anything in the downtown area is between 10-20 minute walk.



The Red circle is Mahosot Hospital

The Blue circle is the Downtown area. This is a great place to stay because there are lots of places to eat and explore and it's close to the night market so lots of things to do in the evening.

Within the green circle is probably the area that I would say is reasonably walkable from Mahosot hospital (obviously closer is better).

Villa Manoly Guesthouse

A guesthouse where many HF volunteers have stayed in the past. Closer to the HF house and walking distance to Mahosot hospital but on the other side of the hospital than downtown. Quiet. Swimming Pool. Hard mattresses and poor wifi apparently.

Mandala Boutique Hotel

A fancier place next door to the Manoly. No pool.

Family Boutique Hotel

Nice guesthouse recommended by a friend. No pool.

Sunbeam Hotel

Our last team stayed here. Nice location in downtown so close to many restaurants and night market. Still walkable to the hospital (+-15mins) No pool.

Hotel Khamvongsa

A mid-ranged priced guesthouse in downtown with great ratings. No pool.

Phonepaseuth Hotel

Very cheap simple hotel in downtown. No pool. Haven't had anyone stay here but found it on Expedia and the reviews look pretty good.

Green Park Boutique Hotel

On the expensive side but a beautiful boutique hotel with swimming pool.

Ansara Hotel

A previous visiting team stayed here. A beautiful boutique hotel in downtown with a pool. It's again in the higher price range.

There are also some of the mid-range hotel chains in Vientiane like the Ibis (pretty close to hospital) and a Best Western.

Health Frontiers program coordinators will be happy to help you find suitable accommodation.

Please be aware that depending on where you stay Laos can be very loud, if you are a light sleeper or easily bothered by noise bring earplugs.

Laundry can be done at the HF house. Laundry services are also offered by many hotels and by local residents at low cost.

Food

Almost every kind of food imaginable is available in Vientiane, from delicious Lao street food to French fine dining and everything in between. Your Health Frontiers coordinator will be happy to give you recommendations.

Food delivery is available from several main restaurants: www.chompa-delivery.com (have to register and drop a googlemap pin of your location)

Cellphones

Lao sim cards can be easily purchased and are pretty cheap. You will need to register your passport details when you buy a sim card. Top-up cards can be purchased at any M-point or many other small stores. Data is a lot cheaper if you purchase a data plan using your credit. Your Health Frontiers coordinator can show you how to do this.

Other Budget Considerations

- Visa on arrival = \$20-45

- Airfare from U.S. usually about \$1000-\$2000
- Food = about \$250/month depending on what kind of restaurants you decide to visit.
- Other expenses such as transportation within Vientiane are minimal
- Souvenirs/gifts

ATM machines are available widely available in Vientiane, Luang Prabang and a few in other areas in Laos, they do charge fees. The local grocery store will exchange USD for KIP at a good exchange rate, but always ask the rate first. ATM machines are abundant in Thailand if you will be traveling through. Travelers checks and US cash can easily be changed in Laos for local currency. Credit cards can be used at some establishments including restaurants, travel agencies and some souvenir stores but not in the local market and generally a 3-5% service fee is added to credit card transactions.

You are encouraged to keep any extra cash, your passport and valuables in the safe at Health Frontiers.

Maps

Maps of Vientiane can be downloaded at www.hobomaps.com

Maps.me is a great app to have. Works like GoogleMaps but you download the map of the area you want beforehand and then you don't need wifi.

If you have any questions or concerns please feel free to contact us at any time.

Céline Jacobs: jacobs.celine@gmail.com

Kristiana Kaufmann: kristiana.kaufmann@gmail.com

For more information, visit the Health Frontiers website:

www.healthfrontiers.org

Other interesting links:

COPE visitor center: www.copelaos.org

US travel info: <https://travel.state.gov/content/passports/en/country/laos.html>

Canadian travel info: <https://travel.gc.ca/destinations/laos>

Travelfish travel guide: <https://www.travelfish.org/country/laos>

Vientiane Social Facebook Group

JCLao (insurance company but also expat news source): www.jclao.com

**Health Frontiers – Laos Project
Volunteer Emergency Contact Information**

Name of Volunteer:
Date of birth:
Institution/Residency Program:
Dates of Travel:
Flight Information (<i>if available</i>):
Health/Evacuation Insurance:
EMERGENCY CONTACT INFORMATION: Please list at least one family member/friend as well as one contact at your program/place of employment that we can contact in case of emergency.
1) Name: Relation: Email address: Phone Number: Alternate Phone Number:

2) Name:

Relation:

Email address:

Phone Number:

Alternate Phone Number:

3) Name:

Relation:

Email address:

Phone Number:

Alternate Phone Number:

Please provide any important medical information, including medical conditions, allergies and prescription medications that would be needed in case of emergency (*please note providing this information is voluntary, not required*):

WAIVER OF LIABILITY

Important: Read Carefully Before Signing

In consideration of the opportunity afforded me to participate in the Health Frontiers project located in Laos, and recognizing that I may be subjected to known or unknown dangers in the course of my participation, now, therefore, I, the undersigned, do knowingly, freely, and voluntarily waive and release (on behalf of myself, my family, my heirs, successors and representatives) any claim, right, or cause of action of any kind whatsoever, arising out of such participation by myself and my family, from which any liability may or could accrue to Health Frontiers, a Minnesota non-profit organization, or its directors, officers, employees or agents, past, present, or future.

Dr.

Date (YYYY-MM-DD)

