Humanitarian eye care missions: Helpful and educational

Melanie Hamiel
Pacific University

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Humanitarian Eye Care Missions: Helpful and Educational

By

Melanie Hamiel

A thesis submitted to the faculty of the
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Advisor:
J.P. Lowery, O. D.
Melanie L. Hamiel

Advisor: J.P. Lowery, O. D.
Abstract

This paper will show how students participating in eye care missions are able to help those in need and simultaneously gain an incredible educational experience. This paper also will show how Amigos can become an avenue for doctors to serve populations with an unmet need for eye care while earning continuing education credit.

Key words: continuing education, education, humanitarian mission, Lions Club, eye care, Amigos Eye Care, Latin America, Mexico, Central America, South America, and Fiji.
A longstanding goal of all optometric education programs has been to increase both the number and quality of patient encounters for students. Relevant clinical experience is most effective during the time when the basic science knowledge of the didactic program is fresh in a young practitioner’s head. Service learning is an excellent way to provide such an experience. What is service learning? How is it different from what we do every day in clinical optometry? A humanitarian service learning experience has additional elements that raise the quality of several aspects of the educational experience. When we expand our care to populations whose eye care needs would otherwise be unmet, there are high experiential rewards associated with both the clinical and humanitarian aspects of the mission. Many know and agree that these missions are an excellent way to increase the number of patients new clinicians see. However, the same numbers of trips are being scheduled year after year. The number of planned trips should be increasing with the rising global population. Clinical missions require planning and dedication from the students and doctors involved. With enough effort and desire to both help the people of the world and our future optometrists, this can be accomplished.

Before boarding the plane to travel to another country for an eye care mission, many things need to be done and thought through in order to have a successful trip. The first thing to be considered is the location and the population to be served. The destination of the mission must be chosen very carefully. The place and the people being served play a vital role in the success of the mission. Much forethought needs to occur before sending volunteers to a particular site.

The first step is in the learning experience is researching different populations to determine where there is an unmet need for eye care. To determine need the following are
to be assessed: prevalence of disease, prevalence of uncorrected error and a shortage of local resources, frequently less research needs to be done due to a simple request from a non-government organizations or government agencies. For an example of what the students look for in a location, a well-qualified site is Honduras. There are about 0.29 eye care professionals for every 10,000 people whereas in the United States there are 1.6 for every 10,000 people. Two-thirds of the developing nations’ populations, which includes Honduras, have a risk for blindness. This statistic is 4-6 times the rate of blindness in the United States. The people of Honduras and similar communities are an excellent population to serve on a need basis and from an educational standpoint.

The stability of the country and the safety of U.S. visitors must also be discussed before departing. Is the host country in turmoil or undergoing a civil war? Does the country have animosity towards outsiders, especially Americans? Will the students and doctors be welcomed visitors? If the answer to the first two questions is yes, then a new country to help must be found. The answers to these questions and others may be answered by keeping up with current events, contacting the U.S. traveler’s bureau, and contacting the U.S. embassy of the country in question.

The next step is finding a good contact to work with, someone who has experience and who is dependable. The contact in the host country plays a vital role in the mission. He is responsible for finding and the exact location of the clinic, and possibly locating the volunteer host families or alternative places to stay. He also assists in finding interpreters, if needed, as well as transportation for workers and patients.

The contact person also may serve as a relay person between the volunteers and the officials of the country dealing with the legal issues involved when doing an eye care
mission. These issues may include prescription guidelines for spectacles and
pharmaceuticals and management of diseases. The students and advisors organizing the
trip may ask themselves the following questions when searching for a site and a person to
work with at the site: “Have the contacts been hosts to other missions in the past?” “Do
the hosts know English and the native languages?” and “If needed, are there enough
interpreters?” Being directly in contact with someone who is native to the country and
also working with national officials opens a student’s eyes to a world much bigger than
what is seen in clinics in the school system.

Some contacts that have been used in the past include: Foreign Lions clubs,
Northwest Medical Teams, V.O.S.H., I Care International and Rotary Club International.

Clinic location within the country and city or cities to be visited needs to be
carefully thought through. With the help of the in-country contact, a good location can be
located and reserved. The clinic must be accessible to the patients who need to be served.
Without patients, there would be no purpose for the mission. Transportation for patients,
if necessary, should be arranged. Appropriate building layout is needed for a triage set-
up. Each station has different needs regarding electricity, lighting, seating, space, etc.
The case history station needs a few tables set up near the entrance to the “clinic” with a
wide open space, such as the outdoors, because the line can become quite long.

These complicated logistics need to be thought through and in the process, the
students better understand which tests require certain lighting and specific equipment. In
addition, going through this pre-trip thought process better prepares them to be leaders in
eye-care missions in the future. A few ideas on what should be thought through regarding
the clinic layout are as follows.
The visual acuities station needs adequate light without glare. It is best to do outside in the shade or indoors in a well-lit room. Twenty feet of space is necessary in front of each chart. The ophthalmoscopy station requires a dark room. If the only rooms available have windows, black plastic bags work well to cover the windows.

The autorefraction station requires a power source and a table for the autorefraction. If possible, a darker area works well to allow the pupils to dilate and makes obtaining autorefraction readings easier. The retinoscopy station requires enough length to perform retinoscopy with a distant target at about 20 feet, and the station needs to have enough space for the examiners, patients, retinoscopy racks and trial lens set. This area needs to be nearly as dark as the ophthalmoscopy station. The special testing station also requires a power source for the BIO, desk lamps, and enough space for the retinoscopy racks, BIO lenses, pharmaceuticals, and other equipment.

The dispensing station requires a larger work area. It may become quite hectic here and many people are walking around. The space must be large enough for the tables that hold the entire library of glasses, space to walk between the tables, and chairs for the patients to sit in as well as room beside the chairs to form a line of waiting patients. A well-lit area is essential because this space may be in use after the sun goes down at night. A power source here is needed for the salt pan.

After choosing a country, finding people in the country to serve, and identifying a location or multiple locations to set up the clinic, many glasses must be located, verified, and packaged to ship or to bring along. Glasses are a necessity on an eye care mission trip. The range of spectacle correction needs to match the population being served, which means research of the area’s refractive conditions must be done in advance. Arranging
the glasses in an orderly manner provides for a better flowing dispensary. There are many different places to find glasses. Some typical sources include: the Oregon Sight and Hearing Foundation, Lions Club, VOSH, The United Way, and from doctors offices in the area where glasses recycling bins have been set up.

Once the glasses have been obtained, their prescriptions must be verified. It is very important that the glasses be verified correctly to give the patients the best vision possible and to allow the dispensary to “get it right” for the patient on the first attempt. Proper instruction for those verifying the lenses allows this to happen. At the instruction session, they learn to verify lenses and also to think about each prescription as to whether it falls into the criteria set for acceptable glasses. The criteria excludes glasses with oblique axes, greater than 1D of anisometropia, trifocals, no cylinder over 0.75 D, etc. Volunteers verifying glasses include students, doctors, and those serving time in the women’s prison.

The next step is to package the glasses into boxes, which will not only protect the glasses when traveling but also organize them to allow finding specific prescriptions in the dispensary an easier task. When creating the library of glasses, the population of people served needs to be kept in mind. Different areas of the world have different needs. For example, those in Central America, South America, and Mexico, need more hyperopic corrections than in Eastern Europe and also the United States. The main concern over this statistic is the fact that the U. S. supplies most of the glasses for these missions and the glasses coming in as donations are not matching up with the refractive conditions encountered when in Latin America. When looking at the Mexican population, around 74% were diagnosed with hyperopia, compared to about 18% in the US, and 16%
with myopia, compared to 19% in the US.\textsuperscript{1} When Venezuela, Ecuador and Honduras were examined and compared to the United States population, around 29% were diagnosed with hyperopia, 5.3% with myopia and 66% with emmetropia.\textsuperscript{4}

The same challenge presents when preparing to serve other places. When researching the population on the islands of Fiji, the most common refractive condition was emmetropia where 64.9% were diagnosed. This was followed by low hyperopia and the least of the three was low myopia where less than 4% of the population was diagnosed with this condition.\textsuperscript{2}

The Latin American countries, the islands of Fiji, and many other countries in the world have a great portion of their respective populations that require sun protection. Many work outdoors and need to protect their eyes from the damaging wind and ultraviolet radiation that are causing those workers to develop debilitating conditions, such as pterygiums and trachoma. If possible, more sun wear should be taken to those areas where people are more exposed to these elements. The actual age breakdown of the expected population to be served is taken into account. For example, how many children will be seen? Will it be an even split of men and women? Will many presbyopes be helped requiring more bifocals?

In order to ensure that the glasses not only make it to the country, but are also usable, they should possibly be sent ahead of time if possible. Also, the necessary paperwork must be filled and sent off to the country’s officials ahead of time to avoid having the glasses confiscated at the border. Without glasses, the mission trip is much less effective.
Another necessary process is choosing, locating and packing pharmaceuticals. Choosing the medications that would be most needed in the population served requires some research of the common medical concerns in the area. Different areas have different needs.

For example, some areas of the world have a higher incidence of glaucoma. This blinding disease needs to be managed to prevent a further decline in vision. When attempting to treat the disease, doctors or medical personal need to be contacted to manage the patient and monitor the pressure, vision, and visual fields of the patient. Other countries have different conditions that plague the area. Ecuador, for example, has a high incidence of onchocerciasis with about 10.5% of the population effected. For a trip to this country, more diethylcarbamazine would be needed for this condition than would be needed in another country. Medications need to be chosen according the expected conditions that will be encountered.

It is also very important to know when and when not to dispense certain medications. Due to the limited case histories, it is vital that the students know the possible side effects and make sure that the right questions are asked before dispensing.

Pharmaceuticals must be packaged and inventoried. The inventory list must be readily accessible by those in charge of the boxes on the trip. Research must be done to ensure all required steps are taken concerning the foreign country’s laws and regulations of medications entering the country to avoid complications at the border.

Next, the necessary equipment must be chosen, located and carefully packaged for travel. All trips require about the same equipment. If a special study is to be
conducted on the trip requiring extra equipment, the usual and extra equipment needs to be packed.

At a triage clinic, many different doctors are examining different aspects of the same patient. In order to ensure that the clinic will flow smoothly, clearly organized intake and exam forms must be created. The forms need to be made before departing for the mission. Careful thought must go into organizing the forms to provide room for recording all the necessary information to give the patients the best care. They need to be designed in an orderly manner so the form matches the flow of the clinic, making it easier for the many different volunteers involved to make sense of the data collected on each patient.

On missions led by schools of optometry, the students take on different roles depending on their experience. First year students are more likely to work in the dispensary and take visual acuities, while second and third year students work in the ophthalmoscopy, deep fundus exam, and the retinoscopy stations. The great part about a trip is that the students learn from their patients and quite a bit from helping each other. If an eye condition is encountered that is rarely seen in the clinics at their school, they will share the patient’s signs and symptoms with their colleagues. If this is an unknown condition, they work together to figure out what the problem is and solve it. This way, all students benefit from the trip.

Many more things may come up before departing, but one more vital thing needs to be done before leaving on the mission. The workers need to be prepared for cultural experience. Although every trip is never void of unexpected happenings, volunteers should be prepared as thoroughly as possible before leaving on the mission. Regarding
the food served, what is suitable to eat and drink and what should be avoided should be discussed. Volunteers should research the current weather in the country and pack accordingly. They should be prepared for illness due to food and other infections that may be encountered and bring the proper antibiotics.

They need to know as much of the language as possible. Interpreters are useful, and sometimes a must. However, if the volunteers know the language, it is possible to see more patients. If the volunteers are able to speak the native language, the relationships formed between the volunteers and patients are stronger because they can get to know each other better. At the very least, they should be taught the survival words such as: hello, good-bye, please, thank you, restroom, water, etc. They should be informed of specific customs dealing with behavior, clothing, etc. The volunteers need to remember that they are guests who are there to serve, not offend.

Once the group has arrived and the clinic is set up, the volunteers need to begin to think as triage clinicians. There is a certain way of thinking that goes on in a triage care setting which differs from a standard clinic at a university in the United States. In every station, the volunteers must be thinking on their feet. They don’t have tomorrow or next week to call the patient back in for another measurement. They are not able to make a “doctor redo” if the patient cannot see out of his glasses in a week or even a day.

The case history station sets the stage for the entire experience for the patient and all those working with the patient. It is important for those running this station to know the language of the patients being helped. It is equally important that they be trained to ask the appropriate questions to gather all pertinent information and to guide the rest of
the volunteers in the right direction to solve the patient's chief complaint. It is here that
the problem-focused exam sequence begins.

The visual acuity station needs to have trained workers move patients through at a
steady pace. The consistency of the recording is important because the results of this
station let the other workers down the road know how to solve the patient's problem.
Students and local residents trained by the volunteers run this station. All need to be able
to push the patients equally, getting approximately standardized end results. The workers
here need to be able to decide if the patients are malingering, not trying very hard, or
trying as hard as they can.

The retinoscopy station is especially important in writing prescriptions for
children. The students and doctors working this station need to calculate the patients’
refractive errors using lens racks and therefore optical crosses. The doctor or student then
writes a prescription based from the retinoscopy findings and the autorefraction (if a
measurement is taken). If the true refractive error can not be corrected with lenses
available, a prescription that is slightly altered may be written to allow the dispensary to
find a pair of glasses that are the best available from the limited choices in the library.
This is where the doctors’ or students’ expertise comes into play. They may write down
exactly what they found and then may give a second choice prescription in case the first
is not available. The person choosing the prescription must be able to know what
approximate Rx will be accepted by the patient and give him the clearest possible vision.

The ophthalmoscopy station gives the examiner the opportunity to view many
eyes. After looking at many eyes, the examiner will have seen many variations of normal
and also diseased and other abnormal eyes.
All stations require the workers to think on their feet, as this is the only moment that the patient will be coming through the clinic. If the patient needs additional care, such as seeing an ophthalmologist or primary care physician, the patient needs to be placed on a referral list at that time to be seen as soon as an ophthalmology team is in the area or referred to an ophthalmologist permanently in the area. There is no way to wait and call the patient the next day. Once he has left the clinic, unless a specific contact for the patient has been established, the patient can not be contacted.

Students learn how to break bad news to patients and also are able to share the joys that some patients feel after going through the clinic. In the dispensary, workers must choose the closest Rx to the patients' refractive conditions. They must be aware of every aspect of each patient's case. Not only should the refractive error be corrected as closely as possible, but also the functional aspects of the patient's life need to be reviewed.

For example, if a person has no visual complaints at far and came only for reading glasses, he should be prescribed reading glasses only even, if according to our usual standards, his distance vision could be improved with correction. If a patient has a refractive condition that can only be corrected with a pair of lenses in a bifocal, that patient may be given the bifocal even if all he needs is his distance vision corrected.

To test your knowledge, here is a dispensing dilemma typical to a mission trip. A 42-year-old male presents with 20/40 distance visual acuities OD, OS, and OU, and 20/200 at 40 cm. He complains of a little distance blur. His refractive error is +2.00-1.00X 090 OD and +2.75-0.50 X 095 OS. Your choices for an Rx are as follows: a) +2.00 DS OU  b) +3.00 DS OU  c) +1.75 DS OD and +2.25 DS OS or d) +2.00-0.75 X 020 OD and +2.50-1.00 X 178.
Choice ‘c’ is the best choice because it is the closest to his spherical equivalent and it will solve his chief complaint and should help him out a little at near, too.

All throughout the trip as well as in life back in the United States, the student must learn to interact with all types of people. The dispensary is where the students interact with the public the most, and this station is where the patients are very happy with their experience or very disappointed. This station receives most of the biggest complaints and also gets to see and hear the most enthusiastic cheers of joy from those whose eyesight has been improved dramatically. The complaints heard in the dispensaries on trips are the same we hear at home, but the joys are perhaps not as commonly heard at home.

The diseases, binocular conditions, and refractive errors seen on these mission trips provide students with a greater optometric educational experience than they would have if they had not gone on an Amigos mission. Mexico is a common destination for Amigos volunteers to serve. On a trip to Mexico in January of 2002, the group of nine optometry students, three optometrists and Lions Club members, saw more than 2,000 patients in five days. Three days were spent in San Blas, Nyarit, one day in Puerto Vallarta, and one day in Las Varas.¹ When in Mexico, the volunteers collectively saw many patients with systemic and ocular conditions. Some of the conditions reported are displayed in the table below to show a typical amount of possible diseases and conditions our future O.D.’s could be exposed to.
<table>
<thead>
<tr>
<th>Systemic Condition</th>
<th>Prevalence</th>
<th>Ocular Condition</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Mellitus</td>
<td>17</td>
<td>Toxoplasmosis</td>
<td>5</td>
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<tr>
<td>Severe heart conditions</td>
<td>3</td>
<td>Myopic Degeneration</td>
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<td>Hypertension</td>
<td>25</td>
<td>Hypertension</td>
<td>25</td>
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<td>Pterygium</td>
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<td>(mod-severe)</td>
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<tr>
<td>Cataracts</td>
<td></td>
<td>136</td>
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<tr>
<td>Diabetic retinopathy</td>
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<td>3</td>
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<tr>
<td>Nystagmus</td>
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<td>3</td>
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<tr>
<td>Glaucoma</td>
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<td>4</td>
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<td>AMD</td>
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<tr>
<td>Tilted disc</td>
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<td></td>
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<tr>
<td>Papilledema</td>
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<td>Papillary atrophy</td>
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<td>Anisocoria</td>
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<td>Duane’s Retraction Syndrome</td>
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<td>Retinitis Punctata Albescens</td>
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<td>APD</td>
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<td>Corneal Scar</td>
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<td>Chorioretinal atrophy</td>
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<tr>
<td>Optic Atrophy</td>
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<tr>
<td>Ocular Motor Apraxia</td>
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<td>Conjunctivitis</td>
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<tr>
<td>Esotropes</td>
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<td>Exotropes</td>
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Many referrals are made on mission trips. This trip was no exception. There were 28 patients referred for cataract surgery, three for glaucoma surgery, one for strabismus surgery, one for retinitis pigmentosa, and one for a retinal detachment. Being able to examine many eyes, normal and abnormal, helps the students learn and grow as clinicians.

Overall, the students' educational and emotional experience on these volunteer trips is one that they will never forget and will help them throughout their life in their daily activities as well in their clinical practices of the future.

Missions have the capability to provide an excellent way for students to gain more from their optometric education than they would if they did not attend any trips or screenings. In addition, they provide a way for doctors of optometry to receive their continuing education credit by attending a trip along with a pre- or post-trip lecture.

I am proposing that Amigos provide a lecture before the trip on a condition or group of conditions that are common in the area they are going to visit or after the trip on some condition or finding seen on the trip. The doctors gaining the continuing education credit will benefit, as will Amigos as a whole. The doctors would pay Amigos for the lecture and fulfill some of their obligation to take in hours of continuing education each year. The quality of education would be the top in the field because it would be coming from a learning institution. Amigos will be able to offer this incentive to doctors to entice them into going on the trips. This offer may help out Amigos in having enough doctors on each mission. The doctors will gain emotional and motivational growth when traveling to these foreign nations experiencing new cultures and encountering all kinds of beautiful people.
These mission trips play a vital role in serving communities around the world preserving vision and preventing disease. In addition, the people of the countries visited give the workers who travel to their villages many gifts including learning a new culture, meeting and working with new people, and learning a whole lot about the global field of optometry. These experiences will help the students become better clinicians at home and abroad.
REFERENCES:


