



# **A Student's Guide for a Medical Mission in the Dominican Republic**

**INTERNATIONAL HEALTH ORGANIZATION of PHOENIX**

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# OUR MISSION STATEMENT

To collaborate with the international community to reduce health disparities and inequities, while providing student opportunities to gain experience in global health.

To create a future community of culturally competent physicians with a desire to serve others that transcends national borders.

# ABOUT THE TRIP

1. Provide much needed medical care for an underserved population
2. Learn about the culture and improve your Spanish
3. Develop professional relationships with classmates and practicing physicians
4. Spend time with the children at NPH
5. **But most of all: Listen, Love, and Learn**

# TRAVEL INFORMATION + TO-DOS → *this should be done!*

1. Register with STEP
2. Complete ALL STEPS of U of A Travel paperwork
3. Print and bring Travel insurance → (provided for you, evacuation only)
4. US Embassy in Santa Domingo (keep this number for emergencies w/ passport copies)
  - a. 809-221-2171
  - b. When the prompts ask you to enter the extension, enter 0 and tell the operator you have an emergency.
5. Carry a color copy of the inside front 2 pages of your passport
6. If you have them, 2 passport pictures (not essential)

# FLIGHT INFORMATION → *this should be done!*

1. You are welcome to stay late and travel, but this is not associated with U of A COM-P
2. You will have a ride to/from the Airport to NPH if you **fly/arrive with the group**

# COST BREAKDOWN

Trip deposit and your contribution to meds: **\$ 155** (Stay + internet)

Flight ticket: TBD

To get into the country at the airport: **\$10**

Housing/Food: Paid for in advance with your deposit

Personal Money: Extra food/snacks, misc. items (baseball game?)

*We will be going to the beach and out to lunch so keep this in mind.*

**Total required to bring to the DR: \$10 US dollars + personal money you want to spend**

**\*You will be able to exchange money at the Airport in Santo Domingo**

# VACCINES

## YELLOW FEVER

**Requirements:** None

**Recommendations:** None

## MALARIA

**Areas with malaria:** All areas, except none in the cities of Santiago and Santo Domingo.

**Estimated relative risk of malaria for US travelers:** Low

**Drug resistance:** None

**Malaria species:** *P. falciparum* 100%

**Recommended chemoprophylaxis:** Atovaquone-proguanil (Malarone), chloroquine, doxycycline, or mefloquine

## OTHER VACCINES

Routine, Hepatitis A & B, **Typhoid**, and Rabies

# READ THE RULES

1. You will be staying at Nuestros Pequeños Hermanos (NPH)
    - a. Cost: \$25 (US)/day. This includes meals. *THIS IS PAID*
  2. Grocery store run shortly after arrival
  3. Breakfast and dinner At NPH
  4. **Lunch:** Pack PB&J and fruit for sack lunch at clinic
  5. ***If you have dietary restrictions please let us know.***
  6. **READ THE FOLLOWING SLIDES** provided by NPH regarding the policies and facilities.  
Use the address on the last slide to fill out your travel documentation for U of A.
- 



# Nuestros Pequeños Hermanos- Dominican Republic

## Visitors Guide



We are looking forward to your visit with  
us at NPH!

# TRAVEL & ARRIVAL

## **Visas:**

The Dominican Republic does not require visas for people of most nationalities, but please check with your local government to determine accurate travel policies for the DR. Visitors from many countries will only need to get a *Tourist Card* on arrival in the DR. This costs US\$10 and lasts for 30 days, at which time you can pay to renew it if necessary.

## **Arrival:**

Our closest airports are Santo Domingo (Las Americas or Isabela) and La Romana, each located approximately one hours drive from the home. We will gladly pick you up from either of these airports but ask that you make your own transport arrangements to the home if you are arriving to an airport that is further afield. A taxi from Punta Cana airport to the home (approximately 3 hours distant) should cost around US\$100.

When you arrive there will be someone waiting for you holding a sign with your name on it. If we are late or you cannot find us, you can try calling the Visitor Coordinator or one of the chauffeurs (phone numbers can be found in the 'Contact Details' section of this handbook).



# HOUSING

We have a visitor house with eight rooms which accomidates up to 28 people. The house has a kitchen, with a fridge and stove, a washing machine, internet and several dining tables. During your stay we ask that you keep the house clean and tidy.

You will be provided with a house key when you arrive and we ask that you keep the doors to the visitor house locked at all times when nobody is inside.

Please do not invite children into your house. They know they are not allowed in or near the visitor and volunteer houses. Please be strict on this point for the good of the children and in consideration of the long-term volunteers.



## FOOD

Before you arrive you will be assigned to one of the children's houses in which you will have lunch at 1PM (around 12:30PM on weekends). You can have breakfast and dinner in the visitors house. There will be cornflakes, milk, eggs, coffee and some pasta and pasta sauce. If you would like anything above and beyond this you are welcome to buy it in San Pedro de Macoris. Please talk to the Visitor Coordinator about how and when to get into town to the supermarket and back again.

## COSTS

Here at NPH-DR we are very happy to have visitors come to share their time with us. Hosting visitors does, however, carry inherent costs. Naturally, we do not want our children to miss out on anything because of these costs and therefore ask all visitors who do not work for NPH and its affiliates to pay a daily rate of US\$30 per person to cover their accommodation, food, and transport to and from the airport. This fee can be paid directly to the Visitor Coordinator during your visit or can be paid to the organizing support office in advance.



## MEDICAL

Visitors are advised to speak with their doctor or Centers for Disease Control about any vaccinations and medicines they may need before traveling to the Dominican Republic.



## LIMITS OF POWER AND WATER

In the Dominican Republic the energy and water sources are not consistent and often unreliable. We ask for your cooperation to conserve as much as possible.

We have reserves of water which you will note when you arrive. Our water tower is in the center of the land. We provide you with large bottles of drinking water and the water for washing is treated as well.

Electricity is provided periodically throughout the day. Inverters in our buildings store this electricity and allow us to have power when necessary. Please turn unused lights off in order to conserve more.

## TRANSPORTATION AND ADDITIONAL TRAVEL

Visitors often want to take time to explore neighboring areas while they are staying with us. We understand this and encourage you to do so, but ask that you make your own travel arrangements. Our vehicles and chauffeurs are very busy each day with house business so we are unable to transport visitors for recreational purposes. Our office employees are also very busy in their work supporting the children, and often do not have time to organize excursions, hotels, and taxis for visitors.

The Travel Agency Martínez in San Pedro should be able to help you with all your arrangements. They can be found on Calle Duarte 33, near the Iberia supermarket. You may want to make arrangements before you arrive, in which case you can email them on [amartine@codetel.net.do](mailto:amartine@codetel.net.do) or call them on +1 809 529 3515. Most travel agents in the Dominican Republic will speak English.

We also have a preferred Taxi Driver, Jorge, who can arrange transport and day-trip deals to many parts of the country at a fair price. His taxi is large and fits 6 people comfortably. His phone number is +1 809 361 4426. You can also contact the Visitor Coordinator for a list of Jorge's destinations and prices. And, yes, he does speak some English!



# RULES TO RESPECT

Please remember that while you are at NPH you are a representative of our organization. Here at NPH our goal is to raise mature and responsible young people. We hope that all of our guests share this objective and come with the desire to be good role models for our children. With this desire in mind, we have set a number of policies that apply to all staff, volunteers, and visitors of NPH that have been created with the wellbeing of the children in mind and we ask that for your support in following them.

## DRESS CODE

Visitors are requested to wear appropriate clothing on NPH premises.

Please **don't wear shorts or skirts above the knee, low-rider trousers showing underwear, spaghetti straps, low-cut, transparent or very tight clothing.** In general, if you are not showing shoulders, thighs, stomach, cleavage, or underwear you will be considered appropriately dressed.

Also, visitors are also asked to **remove visible piercings and cover tattoos** when they are around the Pequeños

## BEHAVIOR

We have a curfew of 10pm for general safety purposes. Alternative arrangements can be made by discussion with the Visitor Coordinator.

Sexual relationships between non-married adults on NPH grounds are not allowed.

Alcohol is prohibited at NPH. This means that you can neither bring alcohol onsite, drink it or be intoxicated on NPH grounds.

It is completely prohibited to have a romantic or sexual relationship with one of the Pequeños, regardless of their or the visitor's age.

## GIFTS AND DONATIONS

Gifts will be warmly received but have been problematic in the past and have contributed to making the kids into 'beggars'. When visitors give directly to the children, they begin to see all visitors as a source of gifts and candy, rather than as people who have come to share their time and love with them. We are trying very hard to break this cycle, so we ask that you please help us in our efforts. All donations are greatly appreciated, but we ask that you please inform the Visitor

Coordinator of your donation so he/she can decide how and when it can be used most effectively. It is also advisable to contact the Visitor Coordinator to find out what the home's current needs are. Please remember, in any case, that the best thing you can give the kids is your time and your love.

## TIME WITH THE CHILDREN

Pequeños can only leave the grounds with visitors when it has been expressly permitted by the House Director and when accompanied by at least one other child and one of the child's caregivers

Visitors are not permitted to enter the children's bedrooms. Please play with the children in the common areas of the house (the living/dining room, the patio, or the yard)

Visitors should always ask a caregiver's permission to do any activity with one of the children, and especially when taking a child away from the group

Pequeños are not allowed in the visitor house at any time

## HELPFUL INFORMATION

### **MONEY**

You will be able to use most credit and bank cards from your home country while here in the DR. Cash machines generally offer a good exchange rate and are easy to use. Be warned, however, that card scams are relatively common here. US dollars and Euros are easy to change but more obscure currencies can be difficult.

### **LANGUAGE**

[http://www.colonialzone-dr.com/language-basic\\_spanish.html](http://www.colonialzone-dr.com/language-basic_spanish.html)

## CONTACT DETAILS

### **PHONE NUMBERS**

Office (8:00am – 4:00pm, Monday – Friday)	+1 829 962-9931
Kieran Rigney (National Director)	+1 809 842-8850
Volunteer/Visitor Coordinator	+1 829 532-1819

### **EMAIL**

The email address for the Visitor Coordinator is: [vi.do@nph.org](mailto:vi.do@nph.org)

### **POSTAL ADDRESS**

Nuestros Pequeños Hermanos  
Apdo. Postal 830  
San Pedro de Macorís  
DOMINICAN REPUBLIC

### **PHYSICAL ADDRESS**

This is the actual location of the home and the directions you should give to taxi drivers when arriving or returning to the home.

#### English

Nuestros Pequeños Hermanos  
Behind Batey Nuevo  
On the highway towards Ramon Santana  
San Pedro de Macorís

#### Spanish

Nuestros Pequeños Hermanos  
Detrás de Batey Nuevo  
En la carretera a Ramón Santana  
San Pedro de Macorís



# TENTATIVE SCHEDULE

**Sunday:** Arrive in Santo Domingo and NPH. Introduction and Clinic planning.

**Monday:** Clinic

**Tuesday:** Clinic

**Wednesday:** Clinic

**Thursday:** Clinic

**Friday:** Tentative beach day with the disabled children of NPH

**...and beyond:** Extra travel not related to U of A.

Future debrief session with IHOP leadership

# CLINIC DAYS



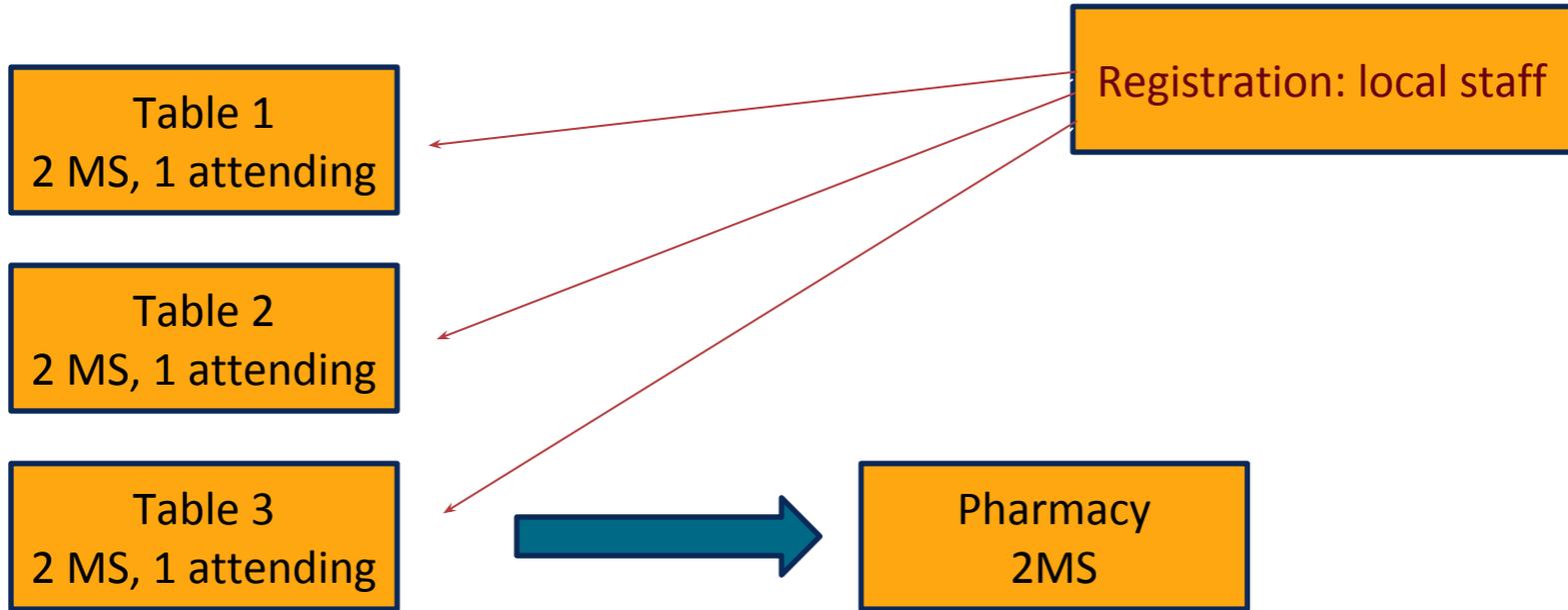
# WHERE ARE WE WORKING?

Each clinic day, you will drive to a local community (batey) to provide compassionate medical care. You will bring everything you need with you to set up clinic each day. This includes tables, chairs, lunch, water, medical equipment, medications etc.

## WHAT IS A BATEY?

A batey is a village composed mainly of Haitian sugar cane cutters and their families living in deep poverty. Haitians in the Dominican Republic work for very little money and are discriminated against in many ways. There is a lengthy history between Haiti and the Dominican Republic, and brushing up on some Caribbean history may help you better understand the cultural dynamic.

# CLINIC LAYOUT



# CLINIC SET-UP REQUIRES YOUR PARTICIPATION!



# MEDICATIONS

Our medication list differs for each trip, however use this [link](#) to familiarize yourselves with the most common medications, their indications, and contraindications.

# University of Arizona Dominican Republic Clinic H+P

Batey: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_\_  
 Last Name First Name M F DOB: \_\_\_\_/\_\_\_\_/\_\_\_\_

MEDICAL HISTORY	DESCRIPTION
-----------------	-------------

Significant PMHx?  
 Current medical issues?  
 Medications  
 Allergies  
 Immunizations UTD NOT UTD  
 Last deworming

CHIEF COMPLAINT/HPI:

PHYSICAL EXAM		Ht	Wt
HR	RR	BP /	Temp
General			
HEENT			
CV			
Lungs			
Abdomen			
MSK			
Skin			
Neuro			
DX			
TX			

**IMPORTANT**

- Abscess/cellulitis
- Allergies
- Anemia
- Arthritis/MSK Pain
- Asthma
- Conjunctivitis
- Diarrhea
- Fever
- GI Upset
- HA
- HTN
- NI Exam
- Otitis Media
- Pharyngitis
- Pneumonia
- Pregnancy
- Scabies
- Skin Rash
- Tinea
- URI
- UTI
- Vaginitis
- Worms
- Other

Signature: \_\_\_\_\_ / \_\_\_\_\_  
 Student Attending

## HISTORY & PHYSICAL FORM

# PHARMACY ORDERS

DIAGNOSIS	PRESCRIPTION	DIAGNOSIS	PRESCRIPTION	
Abscess/Infection		Pharyngitis		
>2yo <4yo	Amoxicillin 125mg/5ml: 1 tsp. BID x10	> 6mo < 2yo	Amoxicillin 125mg/5ml: 1 tsp. BID x 10	QD-once a day
>4yo -8yo	Cephalexin 250 mg: 1 tab QD x 7	2-6yo	Amoxicillin 250mg/5ml: 1 tsp. BID x 10	BID- 2x day
>8yo	Cephalexin 500 mg: 1 tab BID x 7		Amoxicillin 250mg tab: 1 tab BID x 10	TID- 3x day
Anemia		>6yo <16yo	Amoxicillin 500 mg tab: 1 tab BID x 7	PRN - As needed
>4yo	Ferrous sulphate 325mg : 1 tab QD x 30	>16yo	Ciprofloxacin 500mg: 1 tab po BID x 5	PO- by mouth
Arthritis/Joints	***take with food	Pneumonia		
>6yo- 12yo	Ibuprofen 200 mg: 1 tabs q8 hrs PRN pain	> 6mo -2yo	Amoxicillin 125mg/5ml: 1 tsp. BID x 10	
>12yo	Ibuprofen 200 mg: 1-2 tabs q8 hrs PRN pain	>2-6yo	Amoxicillin 250mg tab: 1 tab BID x 10	
		>6yo <16yo	Amoxicillin 500 mg tab: 1 tab BID x 7	
		>16yo	Ciprofloxacin 500mg: 1 tab po BID x 5	
Diarrhea (acute/chronic)		Skin rash		
<6yo	no antibiotics	herpes	Acyclovir 200mg: 1 tab q day x 7 days	
6yo-15yo	Metronidazole 250 mg: 2 tab TID x 7	bacterial	Antibiotic cream: apply to area BID	
>16yo	Ciprofloxacin 500mg: 1 tab BID x 5	fungal	Anti-fungal cream: apply BID	
Conjunctivitis		Teeth Decay		
infectious	Gentamycin ophthal sol: 1 drop each eye BID	<6yo	Metronidazole 250 mg: 1 tab BID x 7	NOTES TO PHARMACY
allergic	Visine drops: use PRN	>6yo	Metronidazole 250 mg: 2 tab TID x 7	
Dehydration (all ages)	Oral rehydration: 1 sachet every 4 hrs x 6	Tinea Capitis		
Fever/HA/Pain	PLEASE CIRCLE SELECTION AT LEFT	<2yo	Anti-fungal cream: apply BID	
>2mo <1yo	Acetaminophen drops Q8 PRN fever	>2yo	Griseofulvin 125 mg tab: 2 tab QD x 30	
1yo-2yo	Acetaminophen susp 1 tsp Q8 PRN fever	Tinea corporis	Anti-fungal cream: apply BID	
3yo-5yo	Acetaminophen 80 mg: 2 tab Q4 hr PRN	Tuberculosis	refer to local TB clinic and physician	
6yo-11yo	Acetaminophen 325 mg: 1 tab Q4 hr PRN	UTI		
>11yo	Acetaminophen 500 mg 1 tab Q4 hr PRN	>4yo <6yo	Amoxicillin 250mg/5ml: 1 tsp. BID x 10	
GI Upset		6yo-16yo	Amoxicillin 250mg tab: 1 tab BID x 10	
>10yo	Antacid tab: 1 tab after meals PRN x 30	>16yo	Amoxicillin 500 mg tab: 1 tab BID x 7	
Impetigo/Cellulitis			Ciprofloxacin 500mg: 1 tab BID x 5	
>2yo <4yo	Amoxicillin 125mg/5ml: 1 tsp. BID x10	Vaginitis	Fluconazole 200mg PO x1 (**not if pregnant)	
4yo-6yo	Cephalexin 250 mg: 1 tab BID x 7	Worms		
>6yo	Cephalexin 500 mg: 1 tab BID x 7	>2yo	**do not use if pregnant prophylaxis: Mebendazole 400 mg x1	PREGNANT
Otitis Externa	***use gent. ophthalmic solution	Vitamins		YES _____
	Gentamicin solution: 1 drop each ear BID	>1yo-6yo	chewable vitamins 1 QD x30	NO _____
Otitis Media				
>6mo < 2yo	Amoxicillin 125mg/5ml: 1 tsp. BID x10			
2-6yo	Amoxicillin 250mg/5ml: 1 tsp. BID x 10			

# MED COUNT

## **WHAT IS THE MED COUNT?**

Med count is the counting of the number of doses of each medication that are left after dispensing each clinic day. We log these numbers to see how much and of which medications we used at each community. Interesting.

## **WHY SHOULD I CARE?**

IHOP wants to be efficient about which medications and their quantities that we purchase and bring down each trip. These numbers can help us identify trends and more accurately order medicines for the next trip (effectively doing the most good for the most number of people).

## **WHY SHOULD I HELP?**

Fortunately we are able to bring down a lot of different medications that can drastically improve the lives of the patients that we see. We need your participation to get these doses counted quickly, and the more help we have, the faster it goes.

# CLINIC LAYOUT

Click on this [link](#) to get access to the ROS in Spanish.

1. It is suggested that you print and/or laminate this and bring it to clinic as a reference
2. Try to have this and some other key phrases memorized (“ Where is your pain...” “Tell me when this started” etc.)
3. You’ll find that you get more out of the experience if you work on improving your Spanish instead of relying completely on the translators. Yes there are translators.
4. Your patients appreciate when you try to speak their language 😊
5. If you don’t know any Spanish, that is OKAY too! Don’t let this be a stress, just do your best!

**Uh, What do I  
pack?**



# PACKING LIST

## CLOTHES

(Remember NPH has modesty requirements, “No shorts or skirts above the knee, spaghetti straps, low cut or tight clothing. In general keep shoulders, thighs, stomachs and cleavage covered”) No Laundry. You will sweat in your clothes and they will not dry in the humidity.

1. Scrubs (We have 4 days of clinic 😊)
2. Beach wear for our day with the kiddos
3. Casual wear for the evenings
4. Clothes to play soccer/ exercise in
5. One or two outfits for church (optional) or dancing (optional)

## PERSONAL MEDICINE

1. “Poopsie bag”: Imodium and some toilet paper/wipes.
2. Ibuprofen, Benadryl, Zofran, etc.
3. Any Rx's you need

## FOR CLINIC

1. Hand sanitizer for your station
2. Sphygmomanometer (If you have one)
3. Oto/ophthalmoscopes (above)
4. Stethoscope and Pen light
5. Stickers for the kids
6. Pens
7. Clipboard

## WHAT IS PROVIDED?

1. One towel
2. Bed sheets
3. Dinner and Breakfast Foods
4. Water
5. Dinnerware/cups

# PACKING LIST

## OTHER

1. **Passport and ID** (a fanny pack or passport protector is helpful to keep all important documents/cards on your person)
2. Print off the Travel insurance (for evacuation only)
3. Carry a color copy of the inside front 2 pages of your passport (not *with* your passport - take a picture for your phone, too)
4. Cash (see cost section for breakdown)
5. Spanish/English medical dictionary (If you have one)
6. Lock for your luggage
7. Books/cards/dominos
8. Flashlight/headlamp
9. Shower Sandals (Flip flops)
10. Sun screen/Bug spray
11. Sunglasses
12. Water bottle
13. Small bag/day pack for clinic
14. Snacks and food that you want to bring
15. Journal (if you like)

# APPROVED DONATION ITEMS

Deodorant

Shampoo & Conditioner

Toothbrush, tooth paste, and floss

Underwear

Bras

Combs

Hair ties

Sanitary napkins (the girls here do not use tampons)

Nail clippers

Hand sanitizer

Bar soap

Lotion

Shower caps

Razors

*\*You have the option of leaving your shoes/extra hygiene products for NPH on the last day as well*



KEEP  
CALM  
AND  
DON'T  
GIVE UP



A

MESSAGE

From Previous  
Years

# PREVIOUS STUDENT INPUT

## WHAT DID YOU ENJOY THE MOST ABOUT THE TRIP?

"The opportunity to travel abroad and serve on a medical mission trip. I loved the interaction, the structure, the people, the location...it was all wonderful."

"The one on one time with the patients. I also enjoyed the group cohesiveness. Overall it was an amazing trip."

"I loved working with patients and getting to know them and see how they live. That interaction made the trip so meaningful."

"What I enjoyed most about the trip was being able to see real patients. Until this point since we've started school, we've only been able to see standardized patients in doctoring, and Wesley only just started up right before we left. I found everything that we've been learning come together when a real patient is in front of me. So I got to see real patients, real pathologies, real diagnoses, etc. I also enjoyed staying at NPH as it allowed our entire trip to involve some service."

# PREVIOUS STUDENT INPUT

## WHAT DID YOU ENJOY THE MOST ABOUT THE TRIP?

“Clinics at the Bateys”

“I really enjoyed working in groups in the clinics. Pairing up in twos was extremely helpful for me both as far as communicating across the language barrier as well as in learning from each others' exam flows and skills.”

“I would need pages! The professionalism, collegiality and just plain kindness on the part of all IHOP participants under very trying conditions would have to be at the top of the list.” (Previous faculty)

“The teaching experience” (Previous faculty)

**THANKS FOR READING!**  
**GET EXCITED!**

The following slides are from Dr. Beyda's DR Orientation lecture. We thought you might like to have all of this information in one place, so we placed some of his medical slides here for your leisurely review.

# Undernutrition in Children

## Wasting (too thin)

In stable situations, prevalence of wasting is likely to **fluctuate seasonally**, reflecting food security (such as a regular “hungry season”) and disease patterns (especially diarrhea and malaria).

## Stunting (too short)

Levels of stunting in a country tend to **change gradually** depending on changes in poverty levels and whether targeted nutrition programs are working effectively.

## Underweight (for age)

Levels of underweight are more **sensitive to acute fluctuations** in food security and health conditions as this measure also reflects wasting. (The first two measures are more precise.)

# Malnutrition:

Pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients

## **Kwashiorkor:**

Refers to severe protein deficiency. This often occurs after weaning between the ages of 18 to 24 months. If left untreated, it can cause the child to have a swollen abdomen, edema, hair loss and a lowered immune system. Presence of bilateral pedal EDEMA is indicative of Kwashiorkor



## **Marasmus:**

Generally refers to an extreme lack in calories often beginning before twelve months of age.



**Stunted children appear “normal”** (and indeed might be the “norm”) in many communities. Stunting is therefore not always viewed as a public health concern.

However, children who are stunted face increased risk of death from infectious disease.

Stunting is also a key marker for the underlying processes in early life that can lead to poor growth, the inability to learn, and other adverse outcomes.

They have increased risk of high blood pressure, high glucose concentrations, and non-communicable diseases in later life.

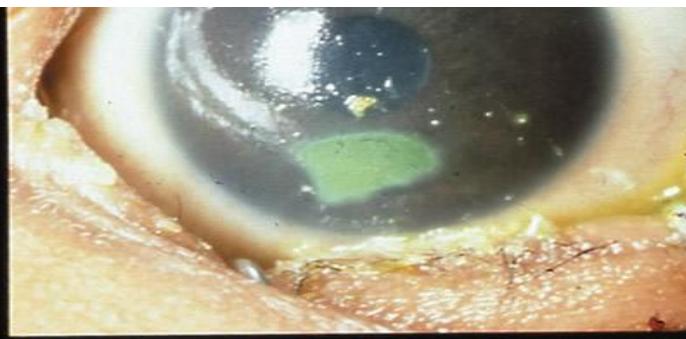
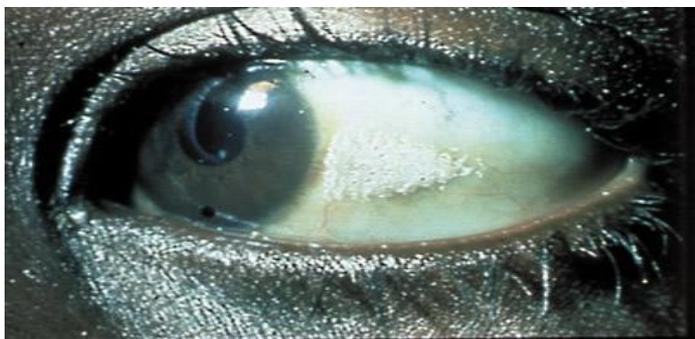


Stunting can “look normal.” The girl on the left of the photograph is 26 months old and the girl on the right is 52 months old.

# Vitamin deficiencies

David H. Beyda, MD

NUTRIENT	SIGNS AND SYMPTOMS OF DEFICIENCY
<b>Fat-Soluble Vitamins</b>	
Vitamin A (retinol)	Nightblindness, xerosis, Bitot's spot, keratomalacia, perifollicular hyperkeratosis, anorexia, bone changes.
Vitamin D	Osteomalacia in adults; rickets in children. Deformity of bone and pathologic fractures.
Vitamin E	Neurologic syndromes including areflexia, gait disturbances, paresis of gaze. May contribute to hemolytic anemia and retrolental fibroplasia in premature infants.
Vitamin K	Hypothrombinemia and hemorrhagic disease.
<b>Water-Soluble Vitamins</b>	
Vitamin C	Scurvy. In adults, fatigue, aching bones, joints, and muscles, perifollicular hemorrhages, bleeding gums, failed wound healing. In infants and elderly, bone changes, bleeding gums, anemia.
Thiamine (vitamin B <sub>1</sub> )	CV (wet) beriberi: edema, heart failure. Neurologic (dry) beriberi: Wernicke's encephalopathy, peripheral neuropathies, lactic acidosis with carbohydrate loading.
Riboflavin (vitamin B <sub>2</sub> )	Reddened, greasy scaly, pruritic skin in the oroaculogenital areas; seborrheic dermatitis, dyssebacea (shark skin), angular stomatitis, cheilosis, magenta tongue.
Niacin	Pellagra, photosensitive dermatitis, diarrhea, mucosal inflammation, dementia, beefy red tongue.
Vitamin B <sub>6</sub>	Seborrheic dermatitis, glossitis, cheilosis, angular stomatitis, peripheral neuropathy. In infants, convulsions.
Folate	Megaloblastic anemia, glossitis, diarrhea.
Vitamin B <sub>12</sub> (cobalamin)	Megaloblastic anemia, glossitis, anorexia, sensory neuropathy, dementia.
Biotin	Scaly dermatitis, alopecia.





# Vitamin B<sub>3</sub>



An inability to absorb niacin (vitamin B<sub>3</sub>) or the amino acid tryptophan may cause pellagra, a disease characterized by scaly sores, mucosal changes and mental symptoms

 ADAM.



Beefy red tongue

Pellagra



Chelosis



Seborrheic dermatitis



# Vitamin B12



Geographic tongue



Glossitis



Alopecia



Scaly dermatitis

## Loss of Essential Electrolytes and Fluids

*Dehydration is the leading cause of death among children with diarrhea.*  
Water and electrolytes are lost mainly through watery stool.

Additional water and electrolytes are lost through vomiting.  
Water loss also increases with fever.

**The physical signs of dehydration** (decreased skin elasticity, dry mucous membranes, sunken eyes) **appear when the fluid deficit approaches 5% of body weight.**

**When the fluid deficit reaches 8% to 10% of body weight, dehydration becomes severe; anuria, hypotension, a feeble pulse, cool and moist extremities, and other signs of hypovolemic shock appear.**

**A fluid deficit exceeding 10% of body weight causes rapid death** from circulatory collapse.



# Oral Rehydration Therapy

Historically, Oral Rehydration Therapy (ORT) with a solution containing glucose, sodium, potassium, and sodium bicarbonate as a chemical base has been promoted as a mainstay of the primary intervention chosen by the World Health Organization's Control of Diarrheal Diseases (CDD) program to reduce mortality caused by diarrhea.

This solution was prepared from a pre-packaged powder to be dissolved in a given quantity of water and was called *Oral Rehydration Salts (ORS)*

Give all children with diarrhea:

- Rehydration therapy to treat or prevent dehydration
  - More fluids than usual to compensate for fluids lost through loose stools
- Do NOT stop feeding during diarrhea.



# Cellulitis (infection of dermal and subcutaneous tissue)

- Caused by group A streptococcus and *S. aureus* in healthy adults
- Usually follows some discernible wound
- Tinea pedis (fungal infection of foot is common portal of entry) for lower extremity cellulitis
- Cardinal features: erythema (redness), warmth, edema and pain
- May have fever, mildly elevated WBC with left shift
- Diagnosis:
  - Clinical impression due to low yi causative organisms
- Treatment: 1<sup>st</sup> generation cephalosp



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# Tinea capitis (scalp)

- Range of presentations: Usually has hair loss + pink scaly, grey patch, black dot, diffuse pustules or boggy tumor (kerion)
- Primarily pediatric condition
- Treatment: griseofulvin (treatment of choice, longest safety record, no laboratory monitoring)



**YOU WILL SEE TONS  
OF THIS!**

# Body - Tinea corporis

Presentation: Pink, scaly plaque. Often the border is raised. Plaque can be round (confluent), arcuate or annular (ring-shaped). May have vesicles, especially after treatment with topical steroids.

Treatment:

Localized disease – topical anti-fungal

Widespread disease - oral anti-fungal  
(fluconazole, ketaconazole, itraconazole, terbinafine, griseofulvin)



# Feet – Tinea pedis

Presentation: Limited disease favors two web spaces, especially between lateral toes. Pink, scaly patches can extend onto dorsal or plantar surface. May have vesicles or bullae.

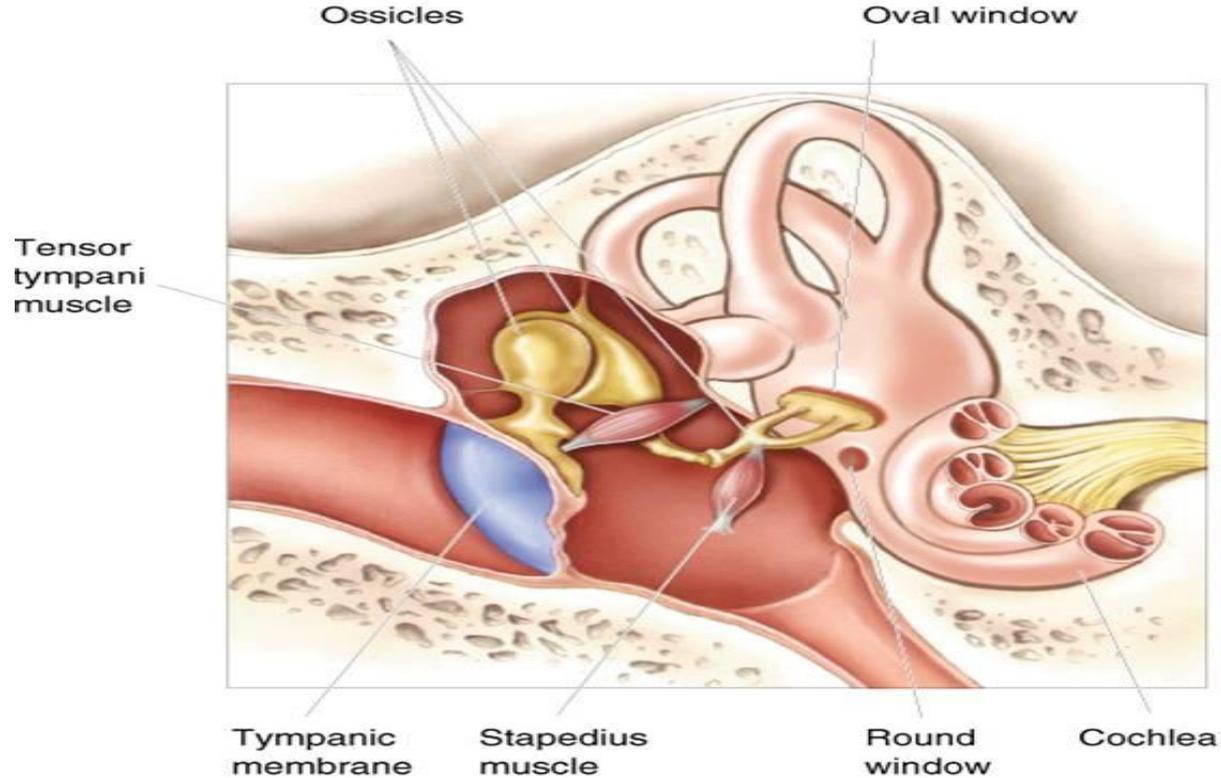
Treatment: Topical anti-fungal



# Ear infections



# Tympanic Membrane and Cavity



# Normal Eardrum



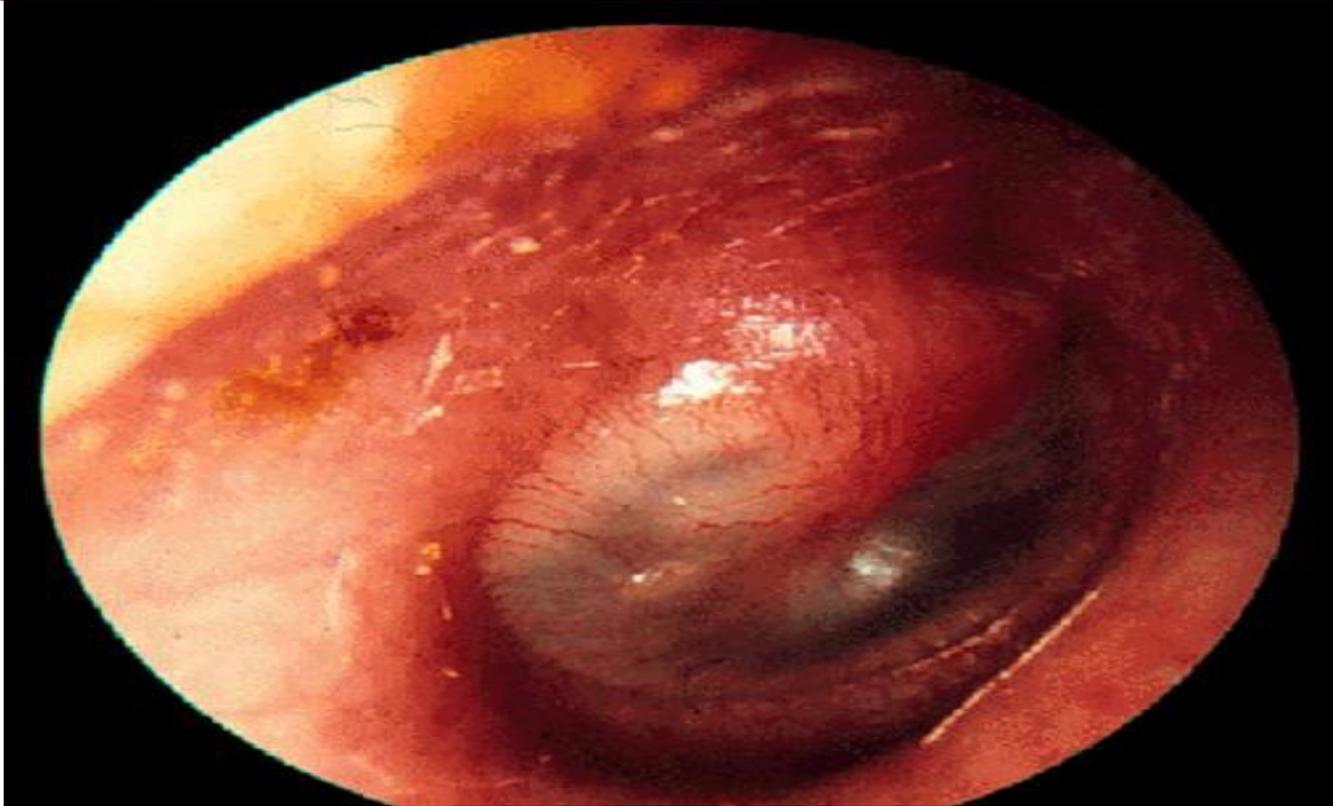
# Middle Ear-Acute Otitis Media

- Acute inflammation of the middle ear.
- Usually results from an upper respiratory infection that extends from the nasopharynx.
- During an infection of the nasopharynx, bacteria may reach the middle ear by ascending through the eustachian tube. This may also be caused by a viral infection.
- Acute suppurative otitis media is one of the most common infections of childhood, usually caused by pyogenic bacteria via the E. tube.

# Middle Ear-Acute Otitis Media

- Strep. pneumoniae is the most common agent in all age groups (30-40%). H. influenza causes about 20% of cases, but less frequent with increasing age. If a purulent exudate accumulates within the middle ear, the eardrum may rupture and the pus is discharged. In most cases, the infection is self-limited.
- Acute mastoiditis is a rare complication sometimes seen in inadequately treated cases or cases with no treatment was done. This may lead to infection of the inner ear, meningitis, or cerebral abscesses, which may be fatal.

# Acute Otitis Media with Red Bulging Membranes



# Acute Otitis Media with Purulent Exudate Behind Membrane

