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# **A Brave New World: USING TELEMEDICINE TO ADDRESS CHILDREN'S HEALTH IN THE GLOBAL COMMUNITY**

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# International Telemedicine and eHealth: Transforming Systems of Care in the Global Community



**Reasons to do International Telehealth**  
*Most health issues are global!*

# **THE EARTH IS BUT ONE COUNTRY**

**And Mankind Its Citizens**



**JOHN HUDDLESTON**



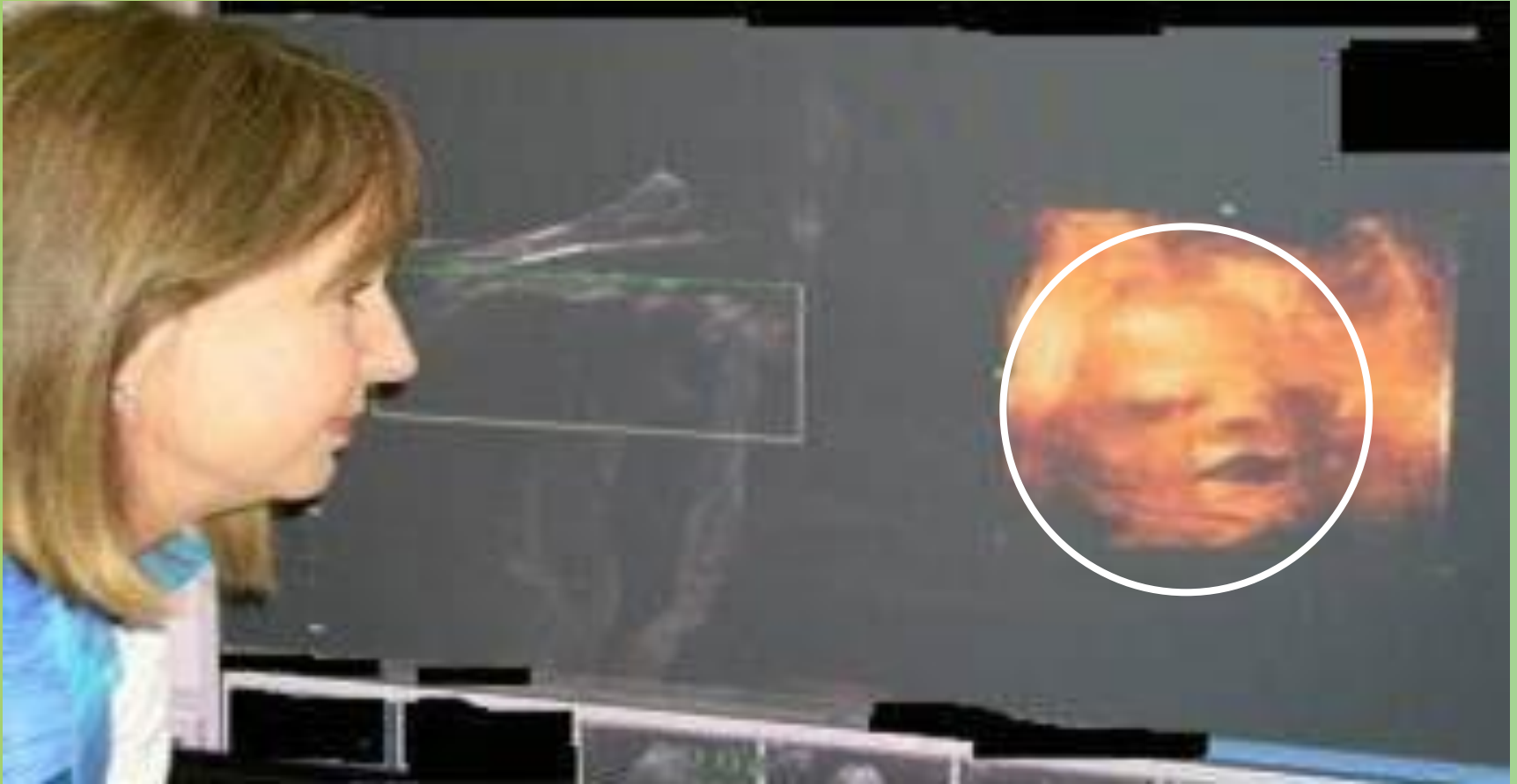




# *The Brave New World*

- During this remarkable period of health system transformation advanced broadband communication networks of networks along with the advances in technologies will be critical in supporting expanding health applications:
  - telemedicine,
  - health information exchange,
  - remote monitoring,
  - knowledge sharing, education, training
  - research
  - public health
  - disaster preparedness and response

# Direct Patient Care



Maternal Fetal Medicine-High Risk Pregnancy



# Providing Specialty Services

- In the Office: The “Durango Model” complementing in-person specialty care and consultation with virtual care (Taos, NM)



- Subspecialty consultations between specialists and filling gaps for unusual medical problems and limited local resources or capacity UNM-CU: “The Bone Marrow Patient”

# Combining Training and Education along with Direct Patient Consultation and Triage



*Engaging Communities to Prepare  
for Pediatric Emergencies*



<https://emed.unm.edu/pem/programs/child-ready-program/program-information/index.html>





*Engaging Communities to Prepare  
for Pediatric Emergencies*



- At the University of New Mexico, the Virtual Pediatric Emergency Department Telehealth Network program connects hospitals, providers, and patients

- Education and simulation
- Triage and consultation



# Other Triage Models

- Neonatal Transport and The Mayo Model
  - Triage and stabilization for NICU consults or transfers/transports



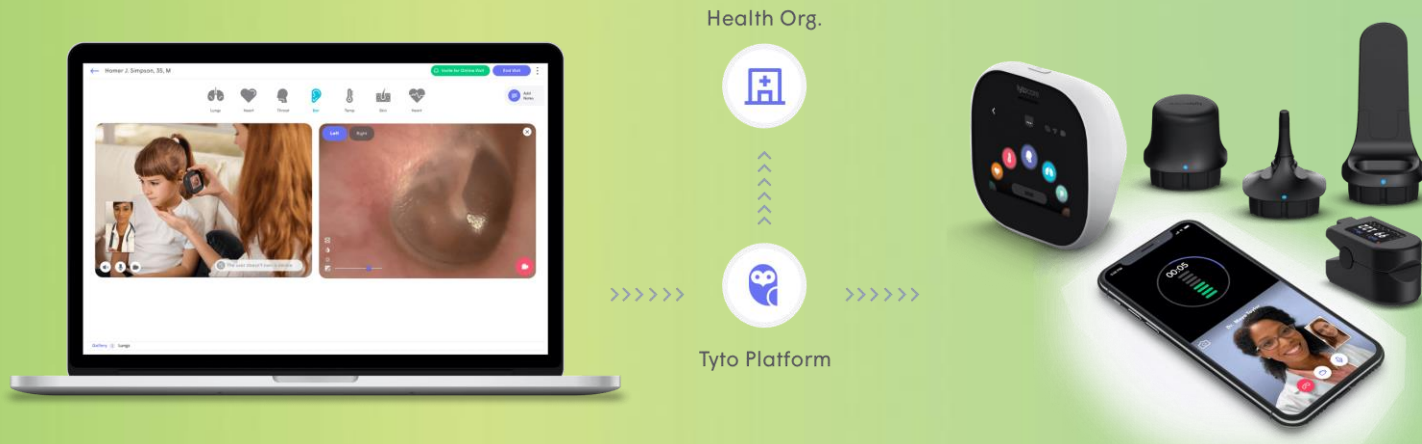


# Direct to the Patient Telemedicine at Home

- Using direct videoconference links for patient evaluation and management
- Need to Follow Reasonable Standards of Care similar to an in-person exam
- Need to educate parents in assisting the examination



# Smart Phone “Snap-Ons” or Blue Tooth to Mobile Devices



Clinician Dashboard



Exam Device and App



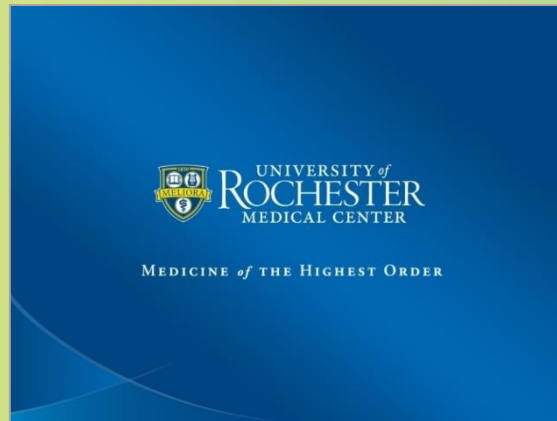


# ***Video Family Visitation***



# School-Based Health Centers

- Telehealth assistants at the school or child care center provide the link to examine the eyes, ears, throat, lungs, and skin
- Videoconferencing provides the “face-to-face” interaction
- “Getting providers to think of their desktop computer as an exam room is the trick”





# ***School Based Health Centers***











# Cook Children's: Tele-Genetics



- 429 bed hospital
- 500+ physicians
- 30+ specialties
- Regional clinics hours away

	Abilene
	Amarillo
	El Paso
	Midland
	San Angelo
	Waco

# “Tele-psychiatry”



# Involving the Adolescent Patient





# Reaching the Young Patient



# Engaging the Younger Patient



# The Child and the Family





# Case Reviews for Consultation and Education

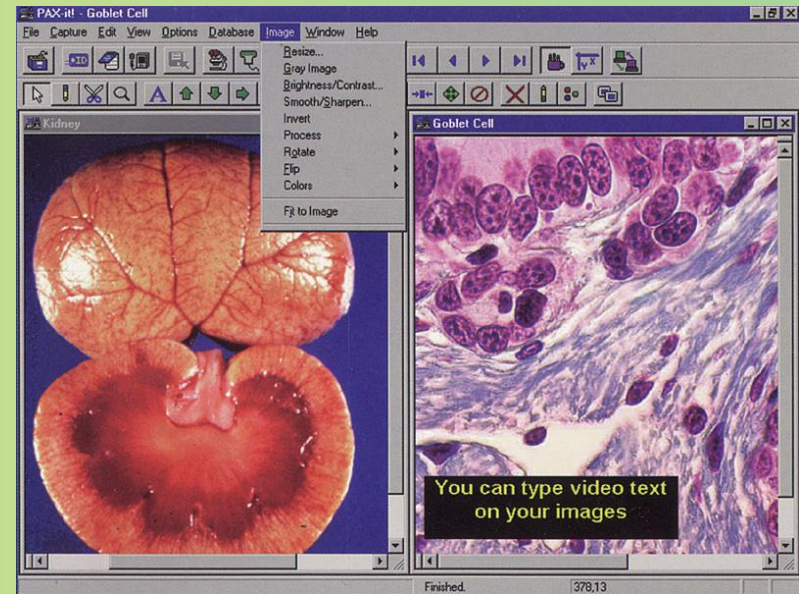


# “Store and Forward”

- Capturing an image and **storing** it to then be **forwarded** for review by a medical specialists
- Examples include teleradiology, telepathology and teledermatology, tele-ophthalmology and retinal scans



**Teleradiology and Image Transfer**



**Web-Based Portals**







# Store and Forward Tele-dermatology



# Diabetic Retinopathy, Retinopathy of Prematurity and Retinal Scans





# Web-based Solutions:

**Swinfen Charitable Trust (SCT)**  
**Medecins Sans Frontieres (MSF)**



Local healthcare providers can send clinical photos, a patient's history and any other relevant material (such as X-rays, Ultrasound. photos). A secure web-based messaging system is used (see example below). This allows referring practitioners access to a panel of specialists in a wide range of disciplines to obtain possible diagnoses and management recommendations

Example from SCT



([www.swinfencharitabletrust.org](http://www.swinfencharitabletrust.org))

(<https://www.msf.org>)



# Cell Phone Applications



## Child Ready Home Safety App

# Distributed Medical Intelligence

## Sharing Knowledge and Experience

- Knowledge Sharing Networks/Just in Time/On Demand
- Evidence based-Best Practices
- Put into Realistic Context
- Based on Available Resources
- Addressing Mutual Needs and Interests
- Applying the most Appropriate Technologies



# Additional Pediatric Telehealth Initiatives

- **SPROUT:** Supporting Pediatric Research on Outcomes and Utilization of Telehealth
  - Collaborative Telehealth Research Network
- **SEARCH:** Society for Education and the Advancement of Research in Connected Health
- **American Telemedicine Association:** <http://www.americantelemed.org>
  - Pediatric SIG,
  - International SIG
- **American Academy Of Pediatrics:**
  - Section On Telehealth Care (SOTC) and
  - Council On Clinical Information Technology (COCIT)
- **HRSA Regional Telehealth Resource Centers:**
  - [Southwest Telehealth Resource Center | Your Connection to Telehealth in the Southwest \(southwesttrc.org\)](#)





# UKRAINE



<https://www.telehealth4ukraine.org>









# Tele-Supervision/Tele-mentoring



# Ecuador



# La Lancha Medica en la Amazonia













# ¡CUIDADO CON EL... DENGUE HEMORRÁGICO!

¡ELIMINE EL  
MOSQUITO  
QUE LO  
TRANSMITE!  
ELIMINARLO ESTÁ EN SUS MANOS



MINISTERIO DE SALUD PÚBLICA

# HEPATITIS

EPIDEMIA  
SILENCIOSA



Conózcala, hágase la prueba,  
solicite información sobre  
tratamiento.

- ¿Tiene de hepatitis o es medicación renal crónica en progreso de dialisis?
- ¿Recibió transfusiones de sangre antes de 1983 en Quito y 1987 en Guayaquil o en el extranjero antes de 1990?
- ¿Es trabajador de la salud y se ha pinchado accidentalmente o ha manipulado derivados de la sangre?
- ¿Se ha realizado tatuajes en condiciones inspeccionadas?
- ¿Se ha injectado con agujas compartidas?
- ¿Se ha perforado los oídos o se ha colocado "piercing" en cualquier parte del cuerpo?
- ¿Ha compartido cachibolas de alfileres o cepillos de dientes?
- ¿Ha tenido múltiples compañeros sexuales o ha padecido de Hepatitis B o SIDA?

Si usted está dentro de alguno de estos grupos de riesgo, consulte a su médico e insista en que le realicen un examen de laboratorio para Hepatitis por Virus C (HVC).  
**COMUNIQUESE PARA MAYOR INFORMACION: 022505607 ext 144 / 158**

Ministerio de Salud Pública

Cruz Roja Ecuatoriana

## EL PALUDISMO Es transmitido por el Mosquito ANOFELES



En la sangre de las personas  
existen los parásitos de  
este enfermedad.

Los mosquitos  
se infectan  
picando a las  
personas.

Después los mosquitos infectados  
al picar a las personas hacen que  
transmiten el paludismo.

Las personas que viven en zonas y ecuatoriales pueden tener paludismo. Este problema se resuelve al tomar ATENCIÓN MÉDICA que dura 4 días o menos de 3 a 5 días y se repite cada 24 a 48 horas. CADA CASO DE PALUDISMO requiere de dosis de medicamentos por eso, las personas se deben enterar, se deben... Y SI NO SE CURAN A TIEMPO PUEDEN MORIR!

### ¿QUÉ HACER?

- A las primeras fiebres y escalofríos ir a los Centros de Salud Hospitalarios o a los Laboratorios del Servicio de Salud.

### EXÁMENES

En los Centros de Salud hacen un examen rápido, sencillo y seguro, para saber si las fiebres y escalofríos son causados por el PALUDISMO.

### TRATAMIENTO

Si los exámenes indican que tienen paludismo, los enfermos reciben tratamiento inmediato y eficaz para la curación completa.

**EXÁMENES, Y TRATAMIENTOS SON GRATUITOS.**

### PERO HAY DOS PROBLEMAS!

- Las personas con fiebres y escalofríos... no van a tiempo a recibir atención médica. Este problema se resuelve al tomar ATENCIÓN MÉDICA que dura 4 días o menos de 3 a 5 días y se repite cada 24 a 48 horas. CADA CASO DE PALUDISMO requiere de dosis de medicamentos por eso, las personas se deben enterar, se deben... Y SI NO SE CURAN A TIEMPO PUEDEN MORIR!
- Los enfermos creen que tomando solamente las primeras pastillas se están curando, y no terminan el tratamiento y eso causa que vuelvan a enfermar. Este problema se resuelve al tomar ATENCIÓN MÉDICA que dura 4 días o menos de 3 a 5 días y se repite cada 24 a 48 horas. CADA CASO DE PALUDISMO requiere de dosis de medicamentos por eso, las personas se deben enterar, se deben... Y SI NO SE CURAN A TIEMPO PUEDEN MORIR!

## ALGODON PUMA - TUBERCULOSIS

INKUAPAS "ALGODON - PUMASHKA" UNKUY SHUK  
ALI-MIKUSHA TIAK RUNA AKHAY IKUSHA MANA MIRARINCHO  
CHAIKA ANMI ALGODON PUMA PUNURAY  
CHASNA TUNUY TINNA USHAN QUILLAUNARA HUATAUNARA  
SHINCHI RUNA AKPIKA CHAY UNKUY MANA  
INKUAPAS LKCHARINKACHU

SHU RUNA MANA ALI MIKUSHA SHINCHITA TARABAKPI  
MANA ALI HUASITA CHARIKPI, SHUK SHAMI HUAKLICHIK  
SAMPAYACHIK UNKUKUNATA CHARIKPI CHAY UNKUY  
ZHAS MIRARIK O LKCHARISHAKA ASHAGA  
UNKUCHIN, HUAKLICHINMI PAIHUA SILLUKUNAHUA.

ALGODON PUMA NISHKA UNKUYA CHARIKPIKA SINTICHINMI:

- MANA ALI YACHIN SAMPAYACHIN
- TUTAUNA UMPICHIN
- ANSA CALENTURA SHAMUNTUTAUNA
- IROUITUCUN
- UTUCHIN VERDE SAMIRIKURUK LUMA RASURA CACHAMUN
- CHAY UNKUY SHINCHINA TIGRASHAGA JAHUADA TUKICHIN

¿MATA BANANNA SHUK UNKUSHA PUMAHUA?  
SHUK RUNA ALGODON PUMA NISHKA UNKUYA CHARIK TUNU  
RIKURINKA, PROMOTOR DE SALUD PAKMA O SUBCENTRO SALUDMA  
RUNA USHAN MANASHKA EXAMENKUNATA RURANKAPAK.



UNION

International  
Union  
Against TB



# Preventive Medicine and Integrating Community Health Workers/ Promotores de Salud















# San Cristóbal, Galápagos

1350 Km.



**UTE**



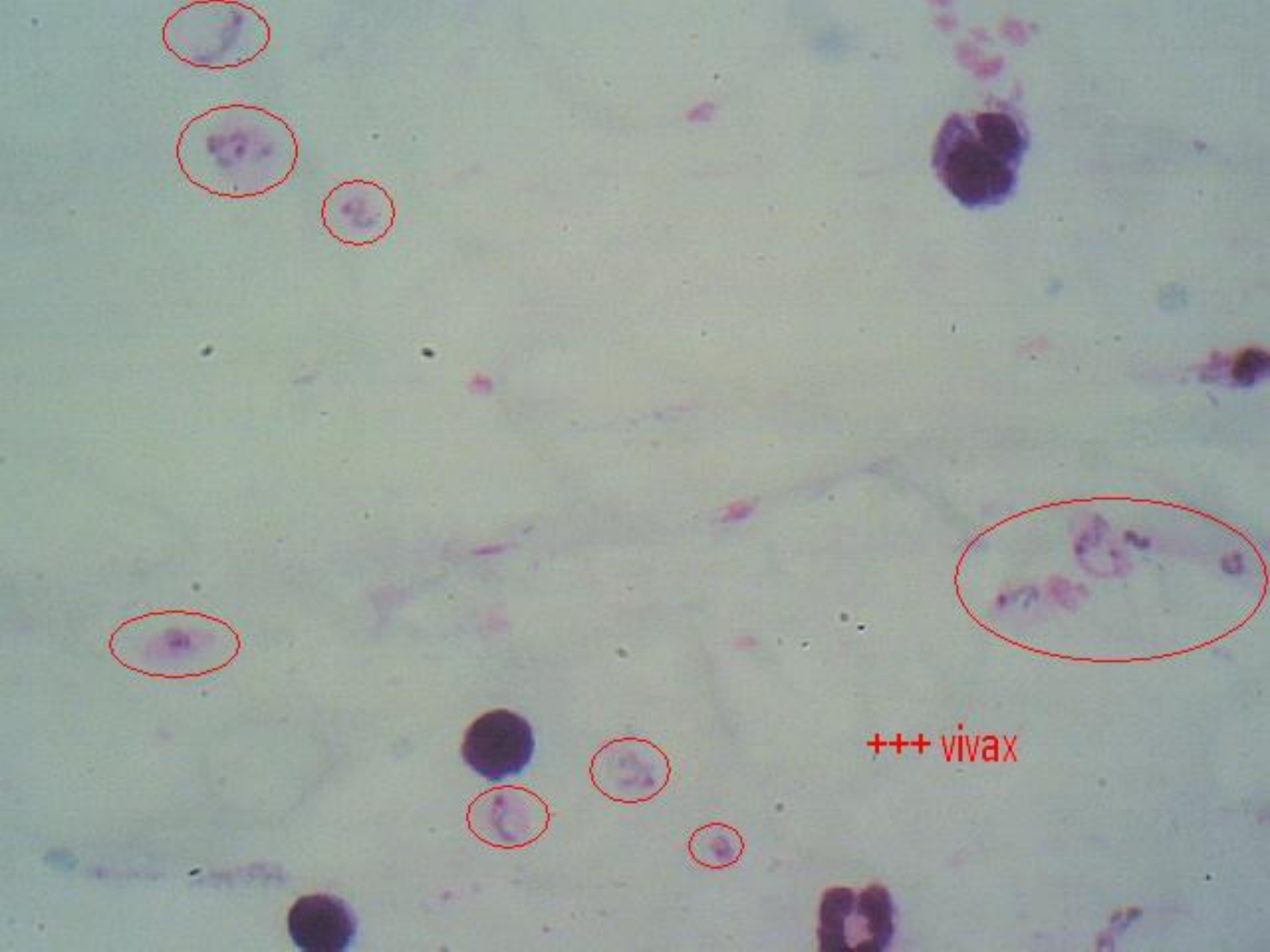
# NUEVO ROCAFUERTE

850 Km.









+++ vivax





**Exchange of Students and Faculty**







# NEPAL



























# Nepal's network





# Putting a Grid Antenna



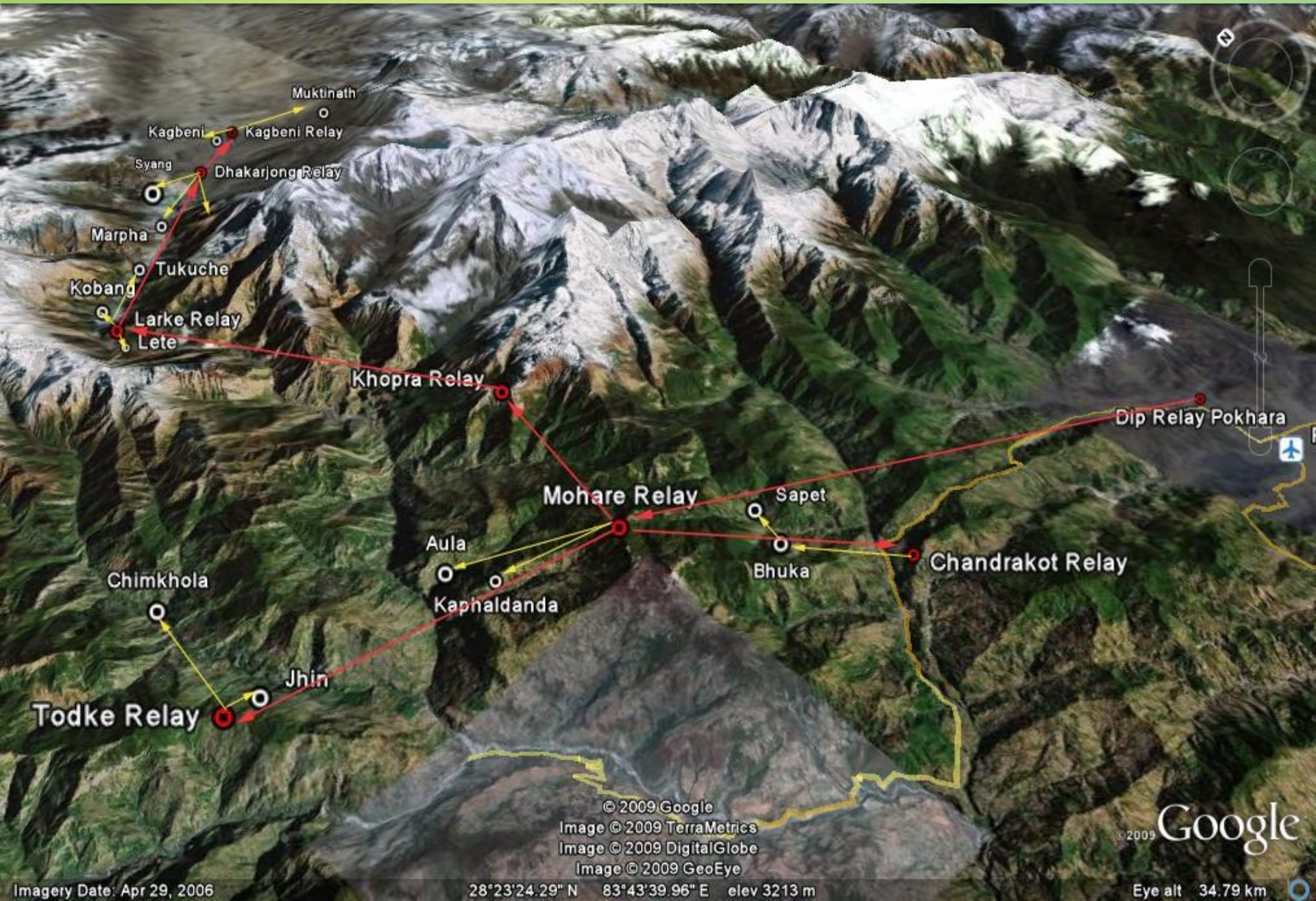


# Chhukung Relay at 5,100 m





# Mustang Network





# IRAN





بیمارستان الکترونیکی، بیمارستان آینده

# سمپوزيوم بين المالى بیمارستان الکترونیکی و تله مدیسین و جشنواره برترین بیمارستان الکترونیکی



طایفه امتیاز برآوردی



دانشکده پزشکی دانشگاه تهران  
۱۹ و ۲۰ مهر ماه ۸۹



Dr. Karen Rheuban: رئیس بخش تله پزشکی و تله رادیولوژی  
Alice Wattland: مدیر بخش تله پزشکی  
Dr. Guntram Ickenstein: مدیر بخش تله پزشکی و تله رادیولوژی  
Jonathan D.Links: مدیر بخش تله پزشکی  
Dana Puskin: مدیر بخش تله پزشکی و تله رادیولوژی  
Dr. Nina Antonietti: مدیر بخش تله پزشکی و تله رادیولوژی  
Dr. Dale Ahernson: مدیر بخش تله پزشکی و تله رادیولوژی

ثبت نام پیامکی: لطفاً نام و محل خدمت خود را به شماره ۱۰۰۰۲۹۷۲۳۹۸۱۰ پیامک (SMS) کنید  
تلفن دبیرخانه: ۸۸۸۳۲۷۷۷ - ۰۹۳۵۹۷۰۰۳۶۱ ثبت نام اینترنتی: [www.ehconf.ir](http://www.ehconf.ir)

design: f.davoudi



✓ krheuban

+ Add people

here for your friends to

Personalize ▾

Conversation Topics

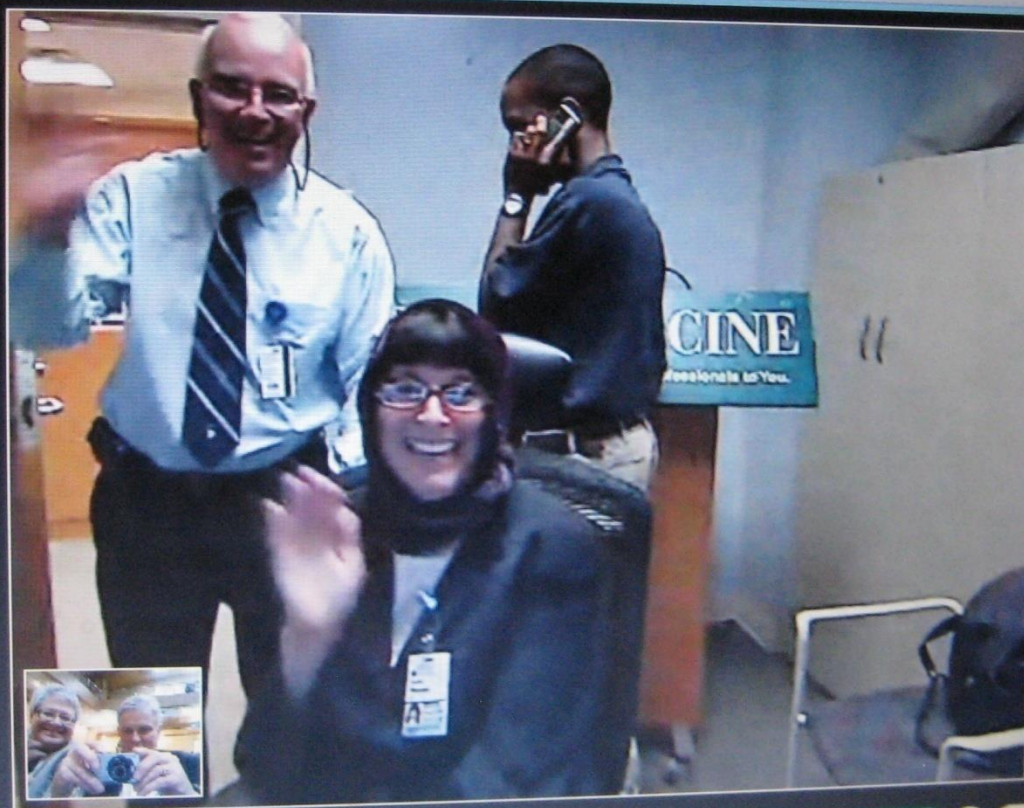
6 new

07:34

y Desarrollo - Instituto Z.

6 new

om \$2.99 a month.  
e from. Get a



End call

07:34

Mute

Turn off video

Check settings

Dale C. Alverson

Can u hear us?

1:55 AM

Be quiet for now and don't use thumbs up (not good in Iran)

1:57 AM

krheuban

I could tell it was nina even before you moved the camera

2:59 AM

Send message

Share Extras

Type a message to krheuban here

6:00 AM



# INDIA













# Traditional Medicine



# Next Steps

- Develop Concrete Programs where Telehealth adds value and mutual benefit
- Utilize emerging new information communication technologies that can provide systems for global connected health and cultural exchange.



# Conclusions

Together we have opportunities to integrate Telehealth in a manner that can provide platforms for greater continuity in collaborative efforts within and between countries:

- Clinical service and consultation
- Public Health
- Education and training
- Research















# Questions?



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