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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

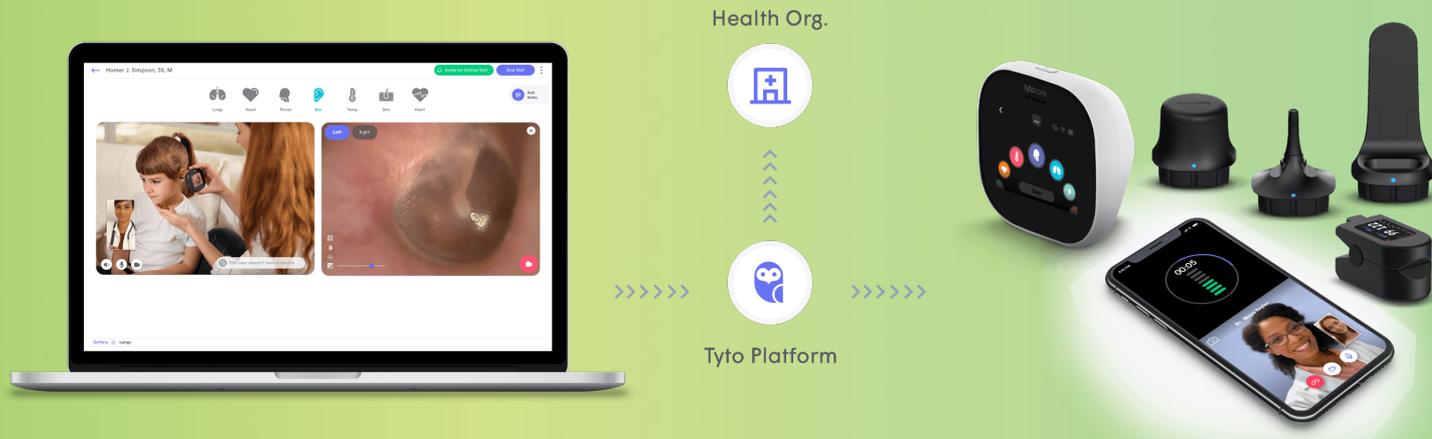


# Direct to the Patient Telemedicine at Home

- 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

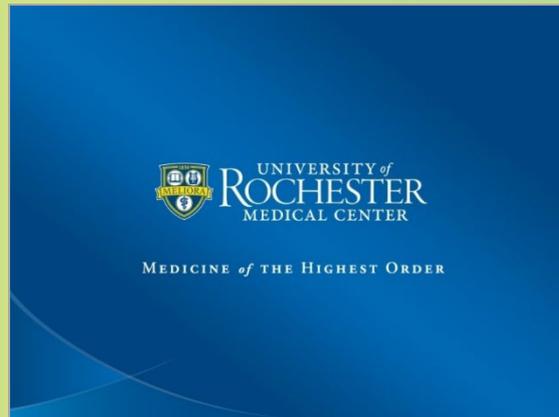


# *Video Family Visitation*



# 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***

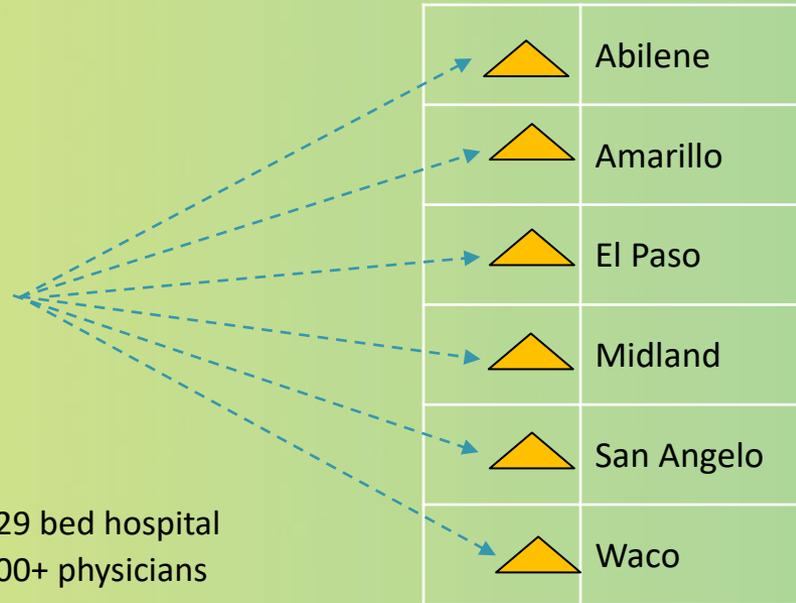


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# Cook Children's: Tele-Genetics



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



# 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

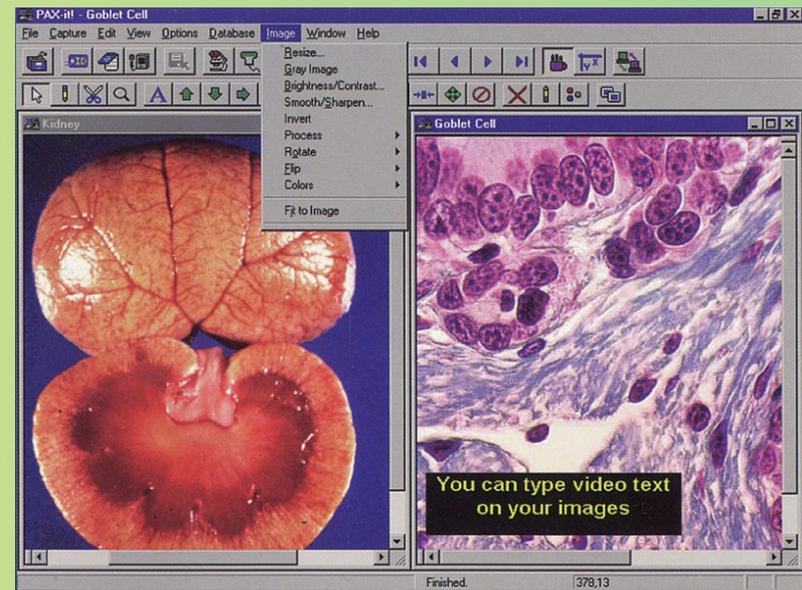


# “Store and Forward”

- 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**



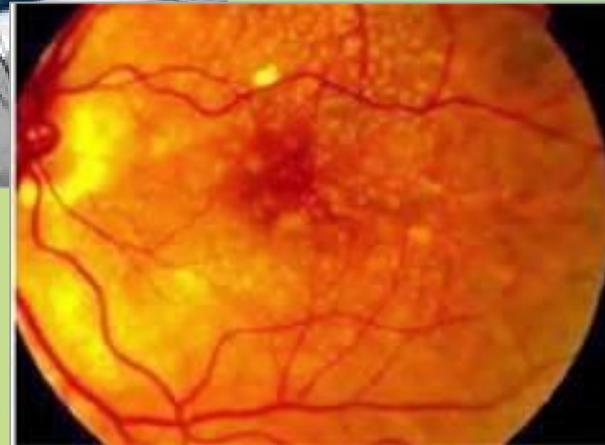
**Web-Based Portals**



# 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)

[\(https://www.msf.org\)](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 \(southwesttrc.org\)](http://southwesttrc.org)



# Next Steps

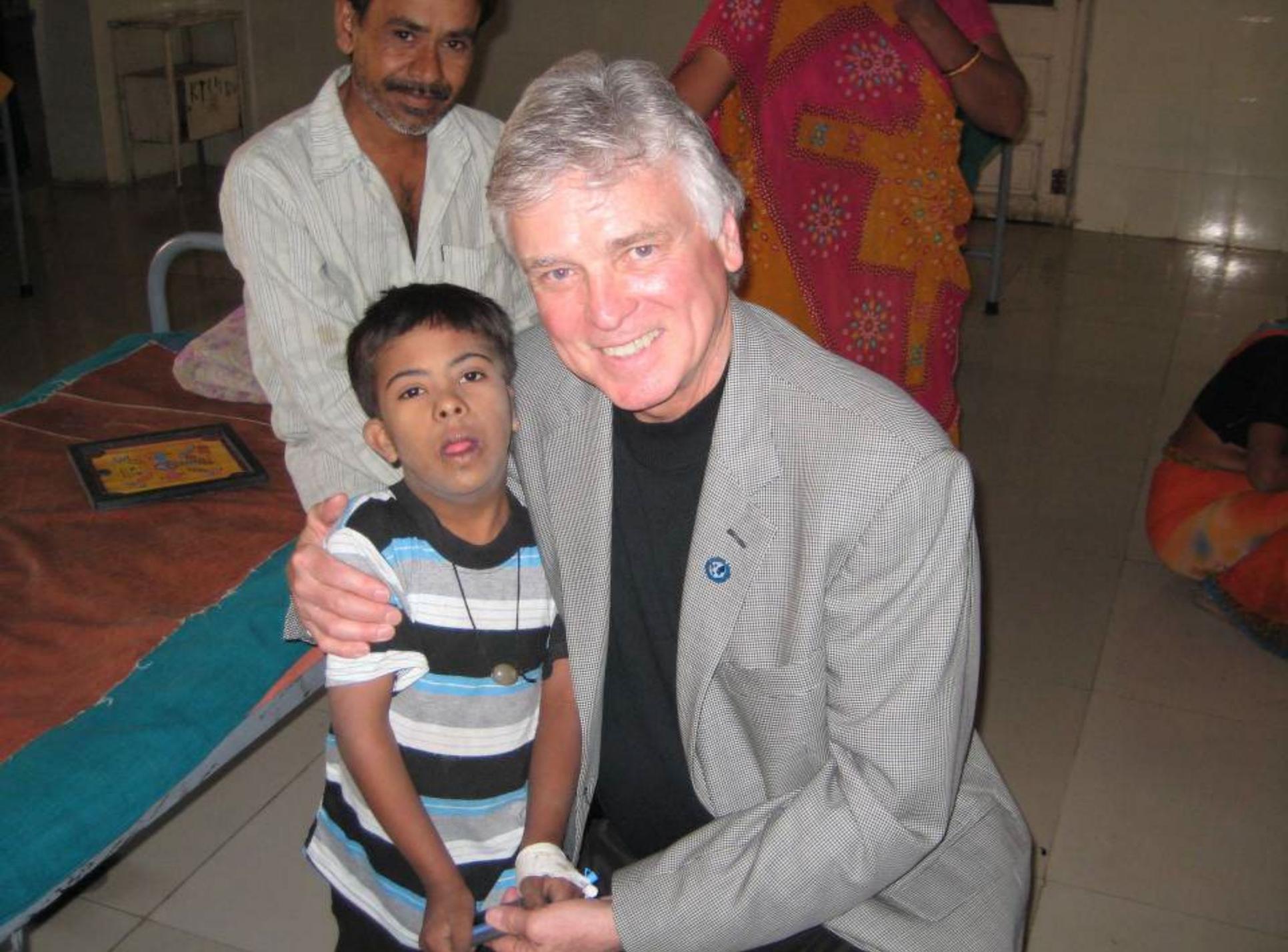
- Develop Concrete Programs where Telehealth adds value and mutual benefit
- Utilize emerging new information communication technologies that can provide systems for global connected health and cultural exchange.

# 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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