Telemedicine@Shriners

Jana Lindsey, RN
Shriners Hospitals for Children, Honolulu
Shriners Hospitals For Children

Locations of Shriners Hospitals
Conditions Treated

- Orthopaedic Disorders
  - Clubfoot
  - Scoliosis
  - Limb Length Discrepancies
  - Rickets
  - Hip, Hand, & Back problems
  - Burn Rehab Care

- Ortho Problems Assoc. w/ Spina Bifida
  - Polio
  - Cerebral Palsy
  - Juvenile Rheumatoid Arthritis
Outreach

- Neighboring Hawaiian Islands
- Micronesia and Polynesia
- Isolated
- Limited Resource
- Shortage of Trained Healthcare Professionals
## Cost/Time Savings

<table>
<thead>
<tr>
<th>Location</th>
<th>Location</th>
<th>Flights</th>
<th>Cost</th>
<th>Distance</th>
<th>Time Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hawaii</td>
<td>California</td>
<td>Daily</td>
<td>$350 - $550</td>
<td>2,550</td>
<td>2 to 3</td>
</tr>
<tr>
<td>Hawaii</td>
<td>American Samoa</td>
<td>2/week</td>
<td>$580 - $930</td>
<td>2,550</td>
<td>1</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Guam</td>
<td>Daily</td>
<td>$940+</td>
<td>3,801</td>
<td>4 Plus a day</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Yap/Palau via Guam</td>
<td>2/week</td>
<td>$1,300</td>
<td>4,400</td>
<td>5 Plus a day</td>
</tr>
<tr>
<td>Hawaii</td>
<td>Circle Micronesia</td>
<td>2/week</td>
<td>$940+</td>
<td>3,801</td>
<td>1-4 Plus a day</td>
</tr>
</tbody>
</table>
Telemedicine

“The use of medical information exchanged from one site to another via electronic communications for the health and education of the patient or health care provider and for the purpose of improving patient care, treatment, and services.”

-American Telemedicine Association
Moving Data versus People
Clinical Benefits

- Enhanced Access
- Timely & Cost Effective
- Triage & Preventative Care
- Communication & Interdisciplinary Coordination
- Collegial Support
- Pt/Family Understanding & Support
Educational Benefits

- Access/Opportunities
- Dynamic Learning
- Efficient Staff Utilization
- Cost Efficiency
Administrative Benefits

- Cost Efficiency
- Efficient Staff Utilization
- Recruitment & Retention
- Public Relations & Visibility
- Community Services
Our Beginnings....

- 1998 Harry and Jeanette Weinberg Foundation
Video Teleconferencing Systems
Document Camera

- Meetings
  - Overheads
  - Handouts
- Consultations
  - X-rays
General Handheld Exam Camera

- Aux Camera
- Mobile or mounted
- Wide or Telefocal
- Polarized
- Still Snap shots
- X-rays/Gait Panning
Electronic Scopes

- Otoscope
- Dermoscope
- Ophthalmoscope
- Stethoscope
Digital Camera/Camcorder

- Store & Forward
  - Stills
  - Videos
- Aux Camera
Real Time vs Store & Forward
Modes of Transmission

- Cable
- Satellite
- Microwave
- Internet
STAN
State Telehealth Access Network

[Map of Hawaii showing connections between islands]
PEACESAT
Pan-Pacific Education & Communication Experiments by Satellite
OAHU
• Leahi Hospital
• Maluhia

KAUAI
• Kauai Veterans Memorial Hospital
• Samuel Mahelona Memorial Hospital

BIG ISLAND
• Hilo Medical Center
• Hale Ho’ola Hamakua
• Kau Hospital
• Kohala Hospital
• Kona Community Hospital

LANAI
• Lanai Community Hospital

MAUI
• Maui Memorial Medical Center
• Kula Hospital

http://www.hhsc.org/
**OAHU**
- Kalanimoku Bldg.
- Capitol Center Bldg.
- Kapolei State Office Bldg.
- Kapuaiwa Bldg. (coming soon)

**KAUAI**
- Lihue State Office Bldg.

**MAUI**
- Wailuku State Judiciary Bldg.

**BIG ISLAND**
- Hilo State Office Bldg.

http://olepe.icsd.hawaii.gov/_
Hawaii Pacific Health

Sites:
- Kapiolani Medical Center for Women & Children
- Pali Momi
- Straub Hospital & Clinic
- Wilcox General Hospital

Bridge Certified with the CDC

http://www.hawaiipacifichealth.org/home.html
Hawaii Primary Care Association

- **Sites**
  - Bay Clinic
  - Community Clinic of Maui
  - Hamakua Health Center
  - Ho’ola Lahui Hawaii
  - Kalihi-Palama Health Center
  - Kokua Kalihi Valley
  - Waianae Coast Comprehensive
  - Waikiki Health Center
  - Waimanalo Health Center

http://www.hawaiipca.net/
Connecting the Dots
Honolulu’s Network

- Area Health Education Center
- Castle Medical Center
- Department of Education (Pacific)
- Department of Health (Pacific Basin)
- Guam National Guard
- Hawaii Health Systems Corporation
- Hawaii Pacific Health
- Hawaii Primary Care Association
- Hawaii State Rural Health Assoc.
- Hilo Medical Center
- Kamehameha Schools
- Kapiolani Medical Center
- Kaiser Permanente
- Kauai Veteran’s Memorial Hosp.
- LBJ Tropical Medical Center
- Molokai General Hospital
- National Guard Bureau
- Office of the Regional Health Administrator
- Pacific Islanders In Communication
- Pacific Islands Health Officers Assoc.
- Pacific Resources in Education and Learning
- Pacific Telehealth & Technology Hui
- Pan-Pacific Distance Learning Association
- PEACESAT/STAN/Tip-G
- Queen’s Medical Center
- Sprint Hawaii
- Straub Hospital and Clinic
- St. Francis Medical Center/HMC
- Tandberg
- Tripler Army Medical Center
- University of Guam
- University of Hawaii JABSOM
- World Health Organization
Tele-Applications

Clinical

Educational

Administrative (meetings)
Hawaii Telehealth Activities

- Radiology
- Fetal Ultrasound
- Dermatology
- Mental Health
- Neuro-Trauma
- Orthopaedic
- Rheumatology
- Genetics
- Nutrition

- Grand Rounds
- Continuing Education
- Simulation
SHC Clinical Consultations

- State of Hawaii
- Continental US
  - Shriners Northern California
- American Samoa
- FSM (Chuuk, Yap, Pohnpei, Kosrae)
- Guam
- Republic of the Marshall Islands
- Saipan
Coordination
Administrative Issues

- HIPAA
- Licensure
- JCAHO
- Privileging & Credentialing
- Corporate Contract/Agreements
- Malpractice Issues
- Funding & Reimbursement
Coordinating Challenges

- Time Zone Differences
- Clinicians’ Availability/Timing
- Coordination of Dual Sites
- Patient Notification
- Cultural/Language Barriers
- Set-up/Implementation
- Documentation
  - EMR integration
Telemedicine Puzzle
Equation

\[ \text{Equipment}^2 + \text{Site}^2 + \text{Network}^2 + \text{Clinician}^2 + \text{Pt} \]
Technical Difficulties
Consulting Challenges

- Facilitated by far-side provider, interpreter
  - Quality dependent upon the far-side provider
  - “Observational” Physical Examination
- Age specific limitations
- Reading body language
- Human interaction factors
- Patient Privacy Issues
- Cultural Barriers
Trends

http://go.to/funpic
Advances in Technology
Expansion of Environment

Telemedicine
Eliminates the physical barriers
Expansion of Treatment

Telemedicine can be used to supplement and enhance the delivery of care
Expansion of Focus

- Disease
- Individual
- Family and Support Systems
- Community
- Behavioral & Lifestyles Changes
Expansion of Responsibility

- Healthcare Provider
- Inclusive of the Patient/Family
- Community
- Government
Global Expansion
“Today, the majority of the world’s population is suffering from poverty and is denied adequate, safe and reliable access to the solutions that health technologies can offer.”

~~~WHO
Telemedicine

- Public
- Licensure
- Standards/Guidelines
- Education
- HIPAA
- Institution Acceptance
- Research
- Affiliate Agreements
- Clinician Acceptance
- Professional Associations
- Reimbursement
- JCAHO
- Policy Makers
- 3rd Party Payers
- Funding
- Technology
- CMS
- Competencies
- Nurses
- Licensing Boards
Key Aspects to Success

- Justifiable Need
- Common Vision with Goals
- Executive Champion
- Interdisciplinary Teamwork
- Commitment/Dedication
- Administrative Support
- Sensitivity & Compassion
Mahalo
Discussion