Telemedicine Toolbox

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Disclosure

• Speakers: Terri Imus, RN; Loretta Williams, RN

• We have anything to disclose

• Thank you Julie Hall-Barrow for developing this presentation.
Telemedicine Today and Tomorrow
Definitions

**Telemedicine:**
the use of medical information exchanged from one site to another via electronic communications to improve patients’ health status.

**Telehealth:**
encompasses a broader definition of remote healthcare and includes everything not directly related to patient care – like tele-education, disaster and terrorism response, regional health information sharing, research, and administration.
The Four Basic Ways to Use Telemedicine

Tele-education

Tele-consultation

Tele-practice

Tele-research
Tele-education
Tele-education
How Does it Help My Patients and Me?

Adult Learning

Smith CE, et al., *Pediatric Annals, October* 2009
Gonzalez-Espada WJ, et al., *Pediatrics* 2009
Types of Continuing Medical Education

Archived  Live Streaming  Interactive

Smith CE, et. al. Pediatric Annals, October 2009
## Tele-Education

### Tools Needed

<table>
<thead>
<tr>
<th>Archived</th>
<th>Streaming</th>
<th>Interactive</th>
</tr>
</thead>
</table>
| • Computer with speakers  
• Internet Connection ($35-$55/month)  
• [Example of archived lecture](#) | • Computer with speakers  
• Internet Connection ($55-$75/month)  
• High Speed Broadband (minimum bandwidth 768k down) | • Web Cam with microphone ($60)  
• Computer with speakers  
• Internet Connection - High Speed Broadband (minimum bandwidth 768k down, 384k up) ($35-$75/month)  
• Allows for face to face real time communication |
Tele-Education
Tools Needed

Video Conference Unit

- Internet Connection – High Speed Broadband (minimum bandwidth 1meg download and 384k upload) ($75 - $100/month)
- H.323 Video Conference Unit with 24 inch display (varies from $1,000 to $20,000)
- Allows for face to face real time communication
Tele-Education

Tools Needed

Training and Support

• Recommend that you have a reliable contact information with a local Internet Service Provider and your equipment provider.
• On-line (synchronous or asynchronous)
• Training Center
Tele-Consultation
Tele-Consultation
How does it Help My Patients and Me?

Quicker clarification of diagnostic confusion

Tele-Consultation
How does it Help My Patients and Me?

Therapy more appropriate

Tele-Consultation
How does it Help My Patients and Me?

Therapy begun quicker

Tele-Consultation
How does it Help My Patients and Me?

Patient convenience

Enhancing the Medical Home
Tele-Consultation
How does it Help My Patients and Me?

Patient remains with the local provider.

Tele-Consultation

How does it Help My Patients and Me?

Patient less burdened by travel, cost, and time.
Tele-Consultation

How does it Help My Patients and Me?

Patient less burdened by travel, cost, and time.
Tele-Consultation
How does it Help My Patients and Me?

Prestige for the local provider.

Tele-Consultation

How does it Help My Patients and Me?

Prestige for the local provider.
Tele-Consultation

How does it Help My Patients and Me?

Reduced duplication of care.
Tele-Consultation
How does it Help My Patients and Me?

Increased Continuity of Care.
Tele-Consultation

How does it Help My Patients and Me?

Practice enhancement in the eyes of your patients.
Tele-Consultation

How does it Help My Patients and Me?

Practice enhancement in the eyes of your patients.
Tele-Consultation
How does it Help My Patients and Me?

Virtual curbside consults.
Tele-Consultation

How does it Help My Patients and Me?

Indirect and almost unintentional physician education.
How do I get telemedicine services?
Patient Assessment

Physical exam NOT required

• Secure Web Cam Connection with microphone ($60)
• Computer with speakers
• Internet Connection - High-Speed Broadband (minimum bandwidth 768k down, 384k up) ($35-$55/month)
• Encrypted software service ($150 - $250)
# Tele-Consultation

## Tools Needed

<table>
<thead>
<tr>
<th>Patient Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical exam required</td>
</tr>
</tbody>
</table>

- Video Conference Unit
- Internet Connection – High Speed Broadband (minimum bandwidth 1meg download and 384k upload) ($75 - $100/month)
- H.323 Video Conference Unit with mounted display ($20,000 - $30,000)
  - Medical Grade
  - Scopes – ENT, Stethoscope, General Exam, Derm, etc..

[Play Video](#)
Tele-practice
Tele-practice
How does it Help My Patients and Me?

Herendeen NE, Schaefer GB. Practical Applications of Telemedicine for Pediatricians. October 2009

Tele-practice

How does it Help My Patients and Me?
Tele-practice
How does it Help My Patients and Me?

Allows connection with your patients from your office or hospital.

Tele-practice
How does it Help My Patients and Me?

No wasted time traveling to remote clinics.
Tele-practice

How does it Help My Patients and Me?

Decreased no-show rate.
Decreased waiting time for appointments.

Alexander A, Farst K. *Pediatric Annals*, October 2009,
Tele-practice

How does it Help My Patients and Me?

You can bill for your care just like you do in the office.
Tele-practice

How does it Help My Patients and Me?

Allows quicker, more accurate assessment of your patients.

Dharmar M, Marcin JP., Pediatric Critical Care Medicine 2009
Tele-practice
How does it Help My Patients and Me?

Allows you to institute more specific care, more quickly, than with a telephone call.

Tele-practice

How does it Help My Patients and Me?

Even prevents unnecessary and costly transfers to your hospital.

Hall-Barrow J et al., *Pediatric Annals*, October 2009
Tele-practice

How does it Help My Patients and Me?

Allows back-transport more quickly, with follow-up distant care

Hall-Barrow J et al., Pediatric Annals, October 2009
Tele-practice

How does it Help My Patients and Me?

Allows out-patient post hospital care
Telemedicine for My Community
Tele-practice

Tools Needed

• Interactive Equipment for Consulting Sites

**Web Cam with microphone**
- $60
- Computer with speakers
- Internet Connection - High Speed Broadband (minimum bandwidth 768k down, 384k up) ($35-$55/month)
- Encrypted software service ($150 - $250)

**Video Conference Unit**
- Internet Connection – High Speed Broadband (minimum bandwidth 1meg download and 384k upload) ($75 - $100/month)
- H.323 Video Conference Unit with 24 inch display (varies from $1,000 to $20,000)
- Allows for face to face real time communication
Tools Needed

- Interactive Equipment for Receiving Sites

**Video Conference Unit**

- Internet Connection – High Speed Broadband (minimum bandwidth 1meg download and 384k upload) *(75 - $100/month)*
- H.323 Video Conference Unit with mounted display ($20,000 - $30,000)
  - Medical Grade
  - Scopes – ENT, Stethoscope, General Exam, Derm, etc..
Access for your Patients

Access to Clinical Trials

Gonzalez-Espada WJ et al., Pediatrics 2009
Access for your Patients

Increase catchment for clinical trials
Access for your Patients

Translational Research
Access for your Patients

New frontiers for telemedicine research
Patient Assessment
Physical exam NOT required

- Secure Web Cam Connection with microphone ($60)
- Computer with speakers
- Internet Connection - High Speed Broadband (minimum bandwidth 768k down, 384k up) ($35-$55/month)
- Encrypted software service ($150 - $250)
Tele-research
Tools Needed

Patient Assessment
Physical exam required

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Tele-research Tools Needed

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Telemedicine and Telehealth Summary

• An amazing new tool that benefits everyone.
• Limited chiefly by our imaginations.
• Will become commonplace.
• You should become involved!
• Pick one project and do it well.
• Expand as your patient’s needs, and your own, demand.
Thank You