The Challenges of an Integrated Telehealth Care Delivery System

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Alaska Native Tribal Health Consortium

- Project
- Program
- Telehealth System
- Integrated Care Delivery System
The Doctors are NOT where the Patients ARE

- 49% of all physicians in Alaska are primary care physicians (2002 data).
  - The U.S. average is 28%
- 59% of the state’s residents are in medically underserved areas.
- Alaska is 48th in “doctors to residents” ratio
  - 65% are located in Anchorage
  - Shortages in many specialties
  - 579 Community Health Aides in 200 villages provide nearly ½ million encounters each year.

Medical Care Service Levels

- Alaska Native Medical Center tertiary care
  - Referrals to private medical providers and other states for complex care
- 6 regional hospitals
- 4 multi-physician health centers
- 25 subregional mid-level care centers
- 180 small community primary care centers
Village-Based Medical Services

- 180 Small Village Health Centers
  - ~550 Community Health Aides/Practitioners
  - ~125 Behavioral Health Aides
  - ~20 Dental Health Aides/12 Therapists
  - ~100 Home health/personal care attendants

- Average Alaska village: 350 residents

Where we came from ...

Alaska’s Experience

Barrow - early 80’s

NSHC - CHAIN (Community Health Aide Information Network)

Public Health Nursing

Barrow - (AuroraNet Distance Delivery Health Care Project) - Installed in 6 village clinics, 1 regional hospital.


AFHCAN - Begin installation 9/2000. 248 sites, 43 organizations. Funded by the Veterans Administration, Indian Health Service, DHHS, Department of Defense.
Alaska Telemedicine Testbed Project (ATTP)

- Funded by NLM (National Library of Medicine) Contract #N01-LM-6-3540
  - University of Alaska Anchorage (UAA)
    - Fred Pearce, Ph.D. Principal Investigator
- 4 Regional Health Corporations
  - 26 Village clinics
- Evaluate the impact of low-bandwidth telemedicine systems on costs, professional isolation and provider/patient satisfaction
- >3,000 cases >9,000 images in 2 years

The Value Proposition

- It’s NOT about the technology – it’s about the value proposition.

- The value proposition is often obvious to the more experienced providers.
  - Older health aides saw the value – e.g. it let them convince the new doc that they really were seeing an infected ear.
More Lessons ...

- Non-clinical factors will often drive usage and usage patterns ... perhaps more than clinical factors.
  - Needs assessments have limited predictability value.

- A note about evaluation – be careful!
  - Hawthorn effect ... or top ten ways to kill telehealth usage.

Systemic Adoption

- Partial participation will result in less that partial results.
- We’re either all in or it’s not worth doing.
  - Full participation and organization support is an important step to gain desired utilization.
- Pilots may not tell you about larger systemic issues and may not be predictors of usage.

Alaska Federal Health Care Partnership

- Veterans Affairs
- DoD (Army & Air Force)
- DoT - (USCG)
- Indian Health Service (IHS):
  - Alaska Native Tribal Healthcare Consortium (ANTHC)
AFHCAN MISSION

To improve access to health care for federal beneficiaries in Alaska through sustainable telehealth systems

Alaska
Federal
Health
Care
Access
Network

What are your key organizational goals for telehealth applications?

Please rank in order of importance to your organization:

- Access to care
- Patient Satisfaction
- Quality of Care
- Information Transfer
- Costs/Economics
- Continuity of Care
- Other

What are your key organizational goals for telehealth applications?
The Alaska Telehealth Advisory Council (ATAC) was established in 1999 to provide a forum that enhances collaboration and communication between organizations involved in telehealth initiatives.

ATAC members provide direction, leadership and coordination of telehealth efforts throughout Alaska.

http://www.hss.state.ak.us/dph/Healthplanning/telehealth/atac/default.htm

Designing A Primary Care Tool

- Ear Disease
  - Audiometer, Tympanometer, Video Otoscope
- Heart Disease
  - ECG & Vital Signs Monitor
- Respiratory Illness
  - Spirometer & Vital Signs Monitor
- Trauma, Skin & Wound
  - Digital Camera
- Dental Problems
  - Dental Camera
- General
  - Scanner & Forms

A User Interface Designed by Users

$10,000 USD/month
THE ROLE OF TELEMEDICINE

AFHCAN Telehealth Program

- Managed by ANTHC
- Federally funded
- 28 Staff
- 12 year Operational History
  - 33,000 cases/year
  - 140,000 Cases (ATHS)

Installed Customer base includes:
- Alaska: 248 sites, 44 organizations
  - 59 operational systems in 2011
  - 1,425 providers in 2012
  - 20,719 patients in 2012 (15% of AN pop)
- Other states and countries

When Do You Need A Telemedicine Consultation?

- Uncertain about the diagnosis.
- Uncertain about the treatment.
- Uncertain about the outcome; complications

Specialist participation earlier rather than later: “Expert Level Triage”

Role of Telemedicine

- S&F
  - 3% of encounters
  - Primary Care (75%)
  - Specialty Care (25%)
  - Triage / Planning
  - Discharge Planning
  - Esoteric: Abuse ...
  - Teleradiology
  - Telepharmacy
- VtC
  - Cardiology
  - Liver/Hepatitis
  - Pediatrics
  - Breast Cancer Screening
  - Mental Health / API
- RPM
IMPACT OF TELEMEDICINE

Improving Access
Greater Efficiency of Existing Resources

Telehealth Impact on Extended Waiting Times (> 4 months)

Access

Data courtesy of Phil Hofstetter
**Why do you do Telemedicine?**

- Best for patient care
- Helps me communicate with a doctor
- Saves my organization money
- Most convenient to the patient
- Improves patient satisfaction
- Makes me more efficient
- Gives me confidence in doing the right thing for the patient
- Increase access to care

**Providing Care in the Patient’s Community**

**Extending Care to the Village**

<table>
<thead>
<tr>
<th>Traveling Audiologist Program</th>
<th>1,987 visits</th>
<th>($175,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Travel Prevented</td>
<td>1,726</td>
<td>$697,090</td>
</tr>
<tr>
<td>Note: 1,153 less than 18 yrs old</td>
<td></td>
<td></td>
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**Net Savings in Travel Costs Realized by Program**

$522,090
(300% ROI)

**Outcomes**

- 26% of patients seen needed something done (meds, surgery, ongoing monitoring)
- 26% needed to be screened out.

About 72% of the patients seen needed something done (meds, surgery, ongoing monitoring) and 26% needed to be screened out.
Joslin Vision Network (JVN)
Portable JVN Pilot
Deployment of the IHS-JVN in Alaska using a portable platform reversed a seven year decline in rates for the state

Reducing Costs

Medicaid Study: 2003-2009

Decreased Travel = Cost Savings

<table>
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<tr>
<th>Quantity</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Claims Paid by Medicaid</td>
<td>4,482 ($269,894)</td>
</tr>
<tr>
<td>Telemedicine Prevented Travel</td>
<td>3,662 $3,116,034</td>
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Net Savings Realized by Medicaid $2,846,140

Note: For every $1 spent by Medicaid on reimbursement, $10.54 is saved on travel costs. Outreach clinics saved another $3.4m in travel costs

Annual Travel Savings (by Case Role)

Primary Care
Specialty Care

FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09 FY10 FY11 FY12

$0 $1,000,000 $2,000,000 $3,000,000 $4,000,000 $5,000,000 $6,000,000

Notes:
- Travel is saved for 75% of all patients.
- Assume all patients under 18 need an escort
- Travel costs based on 1 week advance fares

Outreach clinics saved another $3.4m in travel costs
Hiring Providers

- Alaska rural facilities spent $12,000,000 in 2004 to recruit for 13 provider types.

- The average cost to hire a provider is $38,000.
  - Tribal health organizations that include hospitals in their system expended $66,000 per new hire.
  - Rural health facilities average $42,575 to recruit each registered nurse.

- Alaska’s rural hospitals spent approximately four times the national average to hire providers.
  - Clinics spent approximately seven times the national average.

- This is only magnified when considering the higher turnover rate.
Post-Operative Followup

- Post-surgical follow-up is difficult for patients from remote settings.
- Telehealth provides ability to monitor and followup.
  - Validated model
  - "Reverse Consult" empowers CHA/Ps and midlevels to respond to requests from specialists.

“Many simple problems, such as tympanostomy tube follow-up can be done with telemedicine without asking the patient to leave their village.”

ENT Specialist

Overall Image Rating

<table>
<thead>
<tr>
<th>Study #1</th>
<th>Study #2</th>
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</thead>
<tbody>
<tr>
<td>Very Poor</td>
<td>5%</td>
</tr>
<tr>
<td>Poor</td>
<td>10%</td>
</tr>
<tr>
<td>Adequate</td>
<td>25%</td>
</tr>
<tr>
<td>Good</td>
<td>30%</td>
</tr>
<tr>
<td>Excellent</td>
<td>25%</td>
</tr>
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Discharge Notes

Nationally, hospital discharge summary is rarely available (12-34%) to the physician at the first post-discharge visit and remains poor at 4 weeks (51%-77%).


AFHCAN was used to generate 20,000 discharge summaries in FY12, and is now being fully automated.
Comparison of surgical time (actual surgical time – estimated surgical time) for telehealth and non-telehealth cases. Values in the right half of the plot represent cases which took longer than planned (42% of telehealth cases and 47% of non-telehealth cases); values in the left half represent cases that took less time than planned (58% of telehealth cases and 53% of non-telehealth cases).

The average difference was not statistically different between the two groups: 32 minutes for the telemedicine evaluation group and 35 minutes for the in-person evaluation group.

How important is the speed of reply? (% “Extremely Important”)
When using AFHCAN for patient care – how important is the speed of reply of the consulting doctor?

- Speed of response is clearly more important to Initiators compared to Consultant
- High User Initiators - 43% rated this 5 out of 5 (“Extremely Important”)

The Challenges of an Integrated Telehealth Care Delivery System

- Many telehealth systems have demonstrated efficacy
- The challenge is obtaining a consistent application of procedures that are known to produce results … and responding to the business in a timely manner … at volume.

The Challenge of Scale
• Telehealth is more cost effective at higher volumes
• Highly sensitive to:
  — How often telehealth eliminates the need for subsequent in-person encounter
  — Originating telehealth from patient’s location

Costing Model

System Variables include:
- Patient location
- Patient age
- Provider location
- Reimbursement rates
- Denial rates
- Predicted coding levels
- Payor mix
- Facility fee
- Telehealth originating fee
- Encounter type
- Travel costs
- Lodging costs
- Per diem costs
- No Show rate
- Patient bed work time
- Provider lost work time
- Length of encounter
- Support staff cost
- Clinic space costs
- Clinic equipment costs
- Hardware costs
- Software costs
- Support costs
- Connectivity costs
- Provider salary
- Training costs

Estimating the COST PER ENCOUNTER for delivering specialty care... by traditional versus telehealth model

Challenge - Systemic Adoption

Champion
- Can
  — See potential
  — Create
  — Innovate
  — Nurture
- Can’t
  — Sustain
  — Grow to large scale
  — Leave something behind

Service Model
- Guarantee of performance
- Agreed upon expectations
- Sustainable and scalable
- Accountable
- Independent of individuals
- Requires support structure

Service Model

- Remains even when the individuals change
- Supports non-linear growth
- Requires support structure
  — Training & Knowledge Management
  — Technical
  — Monitoring
  — Data collection
  — Customer service

TRAINING
Training is no longer seen as an instance in time event

Workshops created to help regional trainers learn more about using the hardware and software, structuring their own training programs

Curriculum developed by trainers, for trainers

Distance delivery and self-paced learning via videoconferencing, Webinars, and computer-based training

Online Certification Courses

- Course I: Understanding Telehealth & the Role of the Telehealth Coordinator
  - Topics include telehealth applications, specialty uses, rural impact, case management, business aspects, etc.

- Course II: Becoming a Certified Telehealth Coordinator
  - Provides attendees the tools & skills needed to support the use of telehealth

- Course III: Becoming a Certified Telehealth Program Manager
  - Provides attendees the tools & skills needed to manage telehealth programs

Training → Program Development

- Evolved from a training focus to a bigger picture view that incorporates program development and education
  - Using education as a driver for systemic change
  - Assisting organizations with clinical workflow design, program evaluation & adoption
  - Fostering relationships between referring healthcare providers and consultants
It’s all about relationships ...

Almost 250 more patients are being seen per year, a savings in 80 man-years of waiting time.

Program Development

- Clinicians and nurses have their hands full treating patients
- One of AFHCAN’s key roles is to:
  - Observe what clinicians are doing and help them integrate telehealth in ways that can make them more efficient
  - Get care to patients that need it, and faster
  - Save “someone” time & $$
- We provide this service because we have the experience and it is what we do

Four Star Status

- Receive electronic request for consultation for the majority of patient cases
- Specialty Clinics provide consultation, documenting in tConsult and sending the case back to the referral site
- Have a defined process for billing for telehealth including patient registration and collaboration with coding dept.
- Have a defined Clinical Admin. User (staff member whose role is to manage staff user accounts and customized clinic form in tConsult)

SUPPORT
Customer Support

- How we have changed
  - Proactive
  - Focus on customer and product being more self-reliant and knowledgeable
  - Provide online resources
  - Directly tied to quality and product development initiatives → FDA medical device.
  - Survey customers regarding our product and services

Customer Support (more)

- What has changed
  - Partnering to offer VTC training to shared customers
  - Server support for various initiatives and programs
  - Consulting to organizations considering integrating telehealth with the EHR (data and visually)
  - Technology assessment beyond AFHCAN centric equipment

The questions have changed ...

- 10 Years Ago
  - “Should we do telemedicine”
  - “Will patients be satisfied”
  - “How do we do telemedicine”

- Now
  - “How do we integrate telehealth with the care environment”
  - “How can we support and expand telehealth capability”
Corporate Policy

- would be considered in a "telemedicine" priority situation …

"Symptoms" of an Integrated Telehealth Care Delivery System

- Fully reimbursed
- Integrated with EHR
- Embedded within Strategic Health Plan
  - Regular communication with payers, providers, leadership
- Supported by Corporate Policy
- Challenged by scale

The Clinician's Perspective … the New Limiting Step

Don’t let

Computers
Email
Networks
VTC
Testing
IV
SMS
Facetime
Cellphones
ERHS
AND ALL THE OTHER STUFF

Prevent you from meeting, talking, arguing, understanding, sharing
Global Telehealth Conference 2012

• 400 Scientific Presentations
• 200,000 Square Feet of Exhibits
• > 5,000 Attendees

ATA 2013 - 18th Annual International Meeting & Trade Show
May 5-7, 2013 in Austin, TX

www.ATA2013.org

Some ATA Strategies for FY13
• Work with strategic stakeholders to expand involvement and support for the public policy changes.
• Develop and distribute an evidence base and case studies for telehealth resulting in a compendium of validated scientific research on cost, quality and access.
• Drive the adoption of “best practices” in telehealth.
• Develop a comprehensive educational program that consolidates webinars, video casts, online courses and other activities of ATA and member groups with regularly scheduled events.
• Drive consumer awareness of telehealth

Practice Guidelines

COMPLETED
✓ Teledermatology Quick Guides for Live- Interactive and Store and Forward
✓ Telepresenting
✓ Diagnosis of Diabetic Retinopathy
✓ Telerehabilitation
✓ Telemental Health – Video- based Evidence-based Telemental Health
✓ Core Standards for Telemedicine Networks
✓ Teledermatology
✓ Home Telehealth
✓ Telepathology

IN PROGRESS
• Remote Prescribing
  – Jim Greene, Peter Yellowlees
• Desktop & Internet Telemental Health
  – Carolyn Turvey
• Remote Health Monitoring Data Management
  – Nina Antoniotti
• TeleUrgent/Primary Care
  – Frances Gough
• TeleICU
• Telepathology
  – Liron Pantanowitz
• Telestroke
• Teleradiology
  – Elizabeth Krupinski

ATA TeleICU Guidelines Working Group Members

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Thank You

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