The End of Telehealth

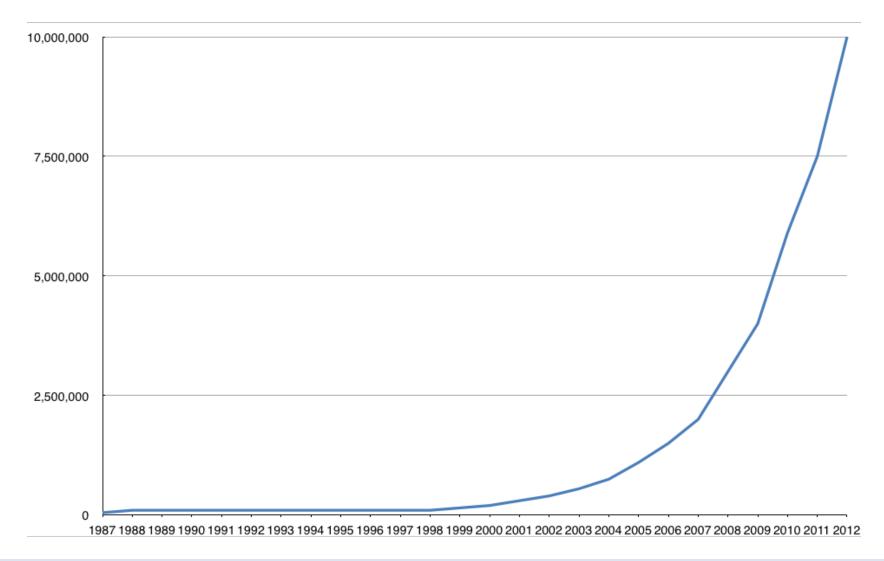
... as we know it



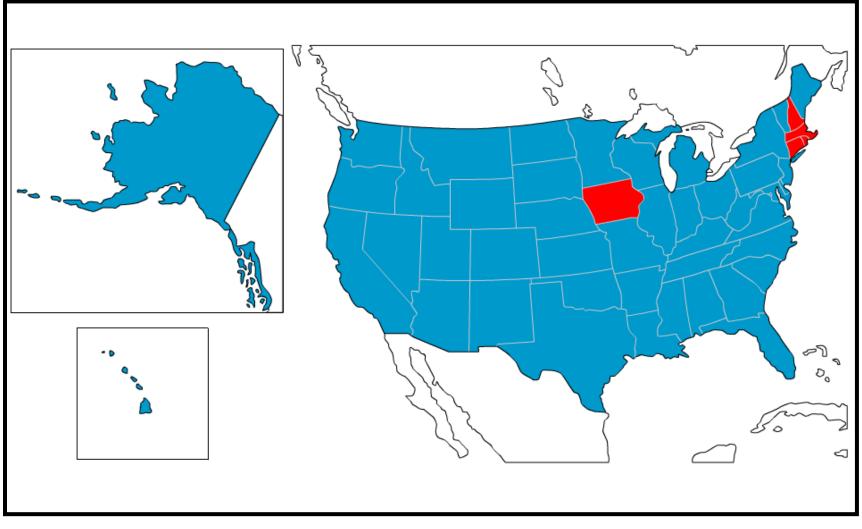


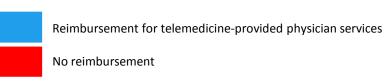
Stewart Ferguson, PhD
Chief Information Officer (CIO)
Alaska Native Tribal Health Consortium

Patients Served by Telemedicine in North America



Medicaid - State Telemedicine Reimbursement for Physician Services (2014)







AFHCAN - by the numbers ...

Since 2001

2014 (Proj)

208,276

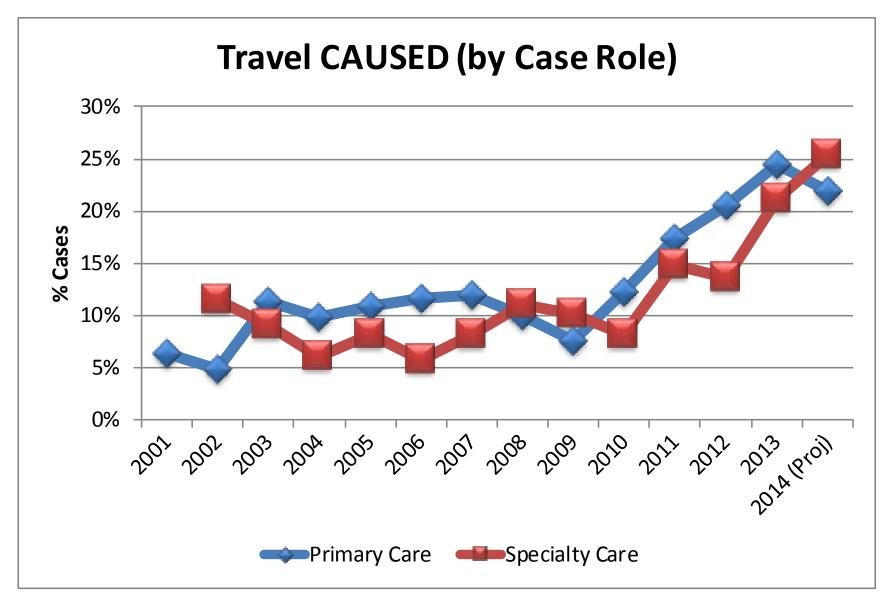
Cases created 45,526

83,548 Patients served **30,079**

3,968 Providers involved 1,700

2,278 Providers creating 900

\$57.8m Travel Savings \$8.7m



ATHS (Alaska Tribal Health System) (1/1/2000 to 6/30/2014)

Telehealth Impact on Extended Waiting Times (> 4 months)

ORIGINAL RESEARCH

The Impact of Telehealth on Wait Time for ENT Specialty Care

Philip J. Hofstetter, Au.D., John Kokesh, M.D., 2 A. Stewart Ferguson, Ph.D.³ and Linda J. Hood, Ph.D.⁴

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Consortium, Anchorage, Alaska.

⁴Department of Hearing and Speech Sciences, Vanderbilt University, Nashville, Tennessee.

Audiology in rural Alaska has changed dramatically in the past 6 years by integrating store and forward telemedicine into routine practice. The Audiology Department at the Norton Sound Health Corporation in rural Nome Alaska has used store-and-forward telemedicine since 2002. Between 2002 and 2007, over 3,000 direct audiology consultations with the Ear, Nose, and Throat (ENT) Department at the Alaska Native Medical Center in Anchorage were completed. This study is a 16-year retrospective analysis of ENT specialty clinic wait times on all new patient referrals made by the Norton Sound Health Corporation providers before (1992-2001) and after the initiation of telemedicine (2002-2007). Prior to use of elemedicine by audiology and ENT, 47% of new patient referrals would wait 5 months or longer to obtain an in-person ENT appointment; this dropped to 8% of all patients in the first 3 years with telemedicine and then less than 3% of all patients in next 3 years using telemedicine. The average wait time during the first 3 years using telemedicine was 2.9 months, a 31% drop compared with the average wait time of 4.2 months for the preceding years without telemedicine. The wait time then dropped to an average of 2.1 months during the next 3 years of telemedicine, a further drop of 28% compared with the first 3 years of telemedicine usage.

DOE 10.1089/tmj.2009.0142

Key words: telehealth, telemedicine, teleaudiology, audiology, ENT, otoscopy, extreme environments

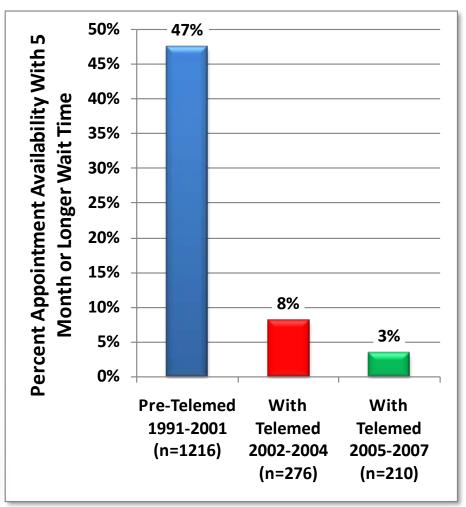
elehealth is fast becoming recognized as a method to improve healthcare in developing nations, regions of low population density, and areas with limited access to both primary care providers and specialists.¹⁻⁴ The lack of providers or access to specialists in rural regions is well documented.56 The World Health Organization (2008) reports that there are currently 26 physicians per 10,000 Americans in general, with a drop to less than 10 physicians per 10,000 Americans specifically in rural Alaska.

This ratio becomes worse for specialty providers. For example, there are less than five audiologists or otolaryngologists per 10,000 people in Alaska. Rural regions traditionally have poor providerpatient ratios that add to the already difficult access to healthcare for persons in these areas. Retention of providers, regardless of rural or nonrural location, has been shown to break down when provider networks and specialty referral processes are lacking.⁶ Studies have long linked socioeconomic status with poor and dissatisfying healthcare.9-11

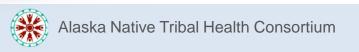
Impovershed rural patients and patients of Alaska Native American Indian ethnicity are reported as the least satisfied with their healthcare. 10 Increased demand for healthcare and low providerpatient ratios, particularly in the rural regions with low socioeconomic status, have led to long wait times for care, Limited access to healthcare and lack of availability of appointments distress patients, ¹² Providers are overwhelmed with demands for clinic appointments, which may need to be booked weeks, or sometimes months, in advance. Although open access models have helped to improve wait times in some healthcare organizations, access and wait

time problems continue to be prevalent. Delivering quality healthcare in Alaska, with a population of 636,932 (U.S. Census, 2000)¹³ in 586,412 miles, is challenging. The population is very dispersed with a density of 1.1 persons per square

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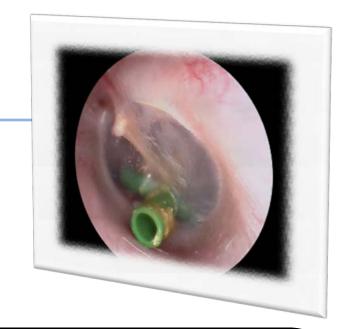
Data courtesy of Phil Hofstetter





Post-Operative Followup

 Post-surgical follow-up is difficult for patients from remote settings.



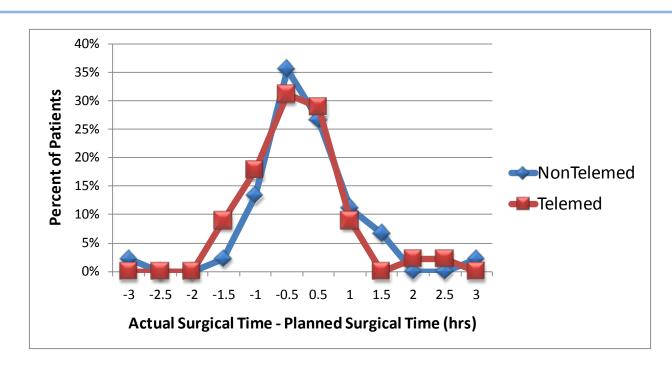
- Telehealth provides ability to monitor and followup.
 - Validated model
 - "Reverse Consult"
 empowers CHA/Ps and
 midlevels to respond to
 requests from specialists.

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

ENT Specialist

Pre-Operative Planning for Ear Surgery Using Store-and-Forward Telemedicine

John Kokesh M.D., A. Stewart Ferguson Ph.D., Chris Patricoski M.D.



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

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)

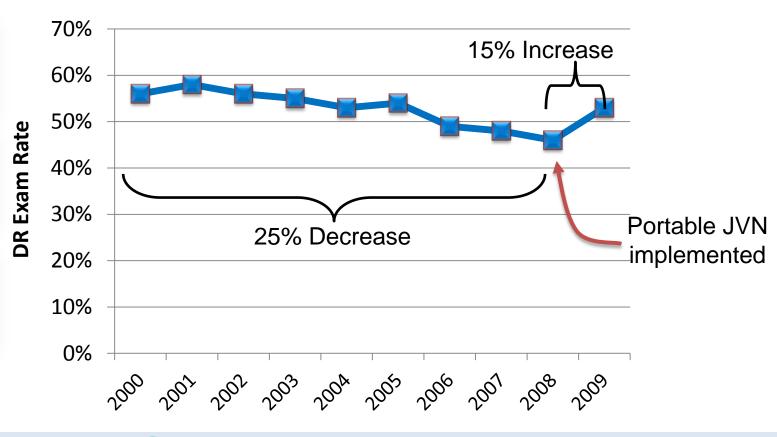
Joslin Vision Network (JVN) Portable JVN Pilot

Deployment of the IHS-JVN in Alaska using a portable platform reversed a seven year decline in rates for the state









How much "Telehealth" can be done?

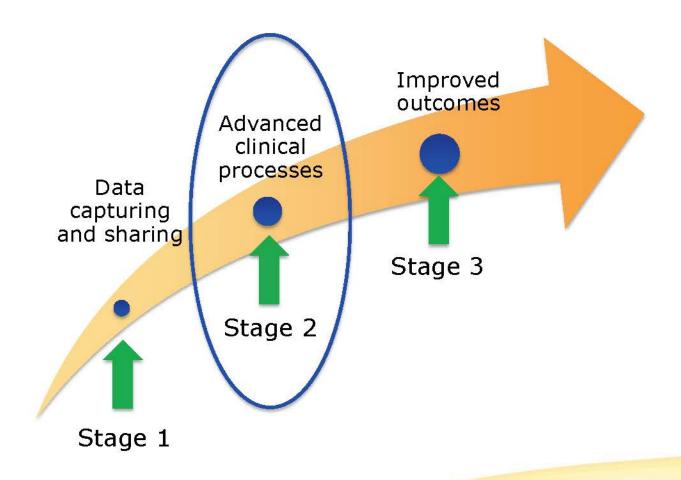
Consisten	Population to Require One FTE (6)	Total FTEs Required for IHS Population	% Workload that can be handled through Telemedicine			FTE Required for Telehealth Needs	
Specialty			via S&F only	via VtC (and S&F)	Confidence in Estimates	via S&F only	via VtC (and S&F)
Cardiology	32,000	47	10%	25%	Medium	4.7	11.75
Dermatology	47,000	32	30%	50%	High	9.6	16
Infectious Disease	132,000	11	20%	25%	Medium	2.2	2.75
Ophthalmology	25,000	60	25%	30%	Medium	15	18
Diabetic Retinopathy	25,000	60	90%	90%	High	54	54
Otolaryngology/ENT	39,000	38	10%	15%	High	3.8	5.7
Total		248				89.3	108.2

Notes

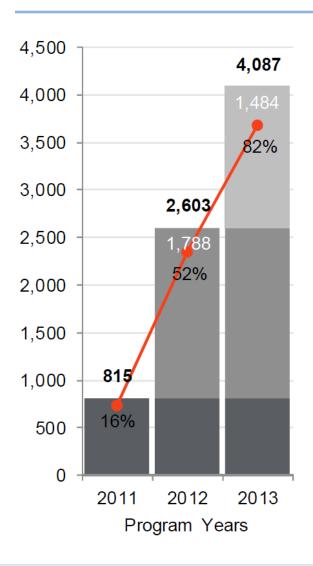
- (1) User Pop for IHS assumed to be 1,500,044
- (2) Family Medicine is used to support primary care given by non physician providers. Not included here as numbers unknown for population served by non physician providers.
- (3) ENT telehealth utilization will double with good audiology support.
- (6) Approximation for staffing needs based on average from multiple sources (Information compiled by Medicus Partners from GMENAC, Health Manpower Report, Medical Economics, Inforum, Current National Ratio, AMA, Mulhausen Staff Model HMO, Journal of American Medical Association, Hicks & Glenn.)



Stages of Meaningful Use



Meaningful Use Technology







Patient Portals

Two Problems. Two Solutions.

What do we communicate?

- Purpose designed templates?
- Required information?
- Optional information?
- Human readable?
- Structured?
- Digestable?







How do we communicate

- Secure disclosure?
- Correct destination
- Who can access msg?
- Who sent it?
- Unchanged?
- Chain of trust?

C-CDA IG Purpose: Single Source for CDA Templates



HL7 Implementation Guide for CDA R2: IHE Health Story Consolidation, DSTU Release 1.1 (US Realm) July 2012

Document Templates: 9

- Continuity of Care Document (CCD)
- Consultation Note
- Diagnostic Imaging Report (DIR)
- Discharge Summary
- History and Physical (H&P)
- Operative Note
- Procedure Note
- Progress Note
- Unstructured Document

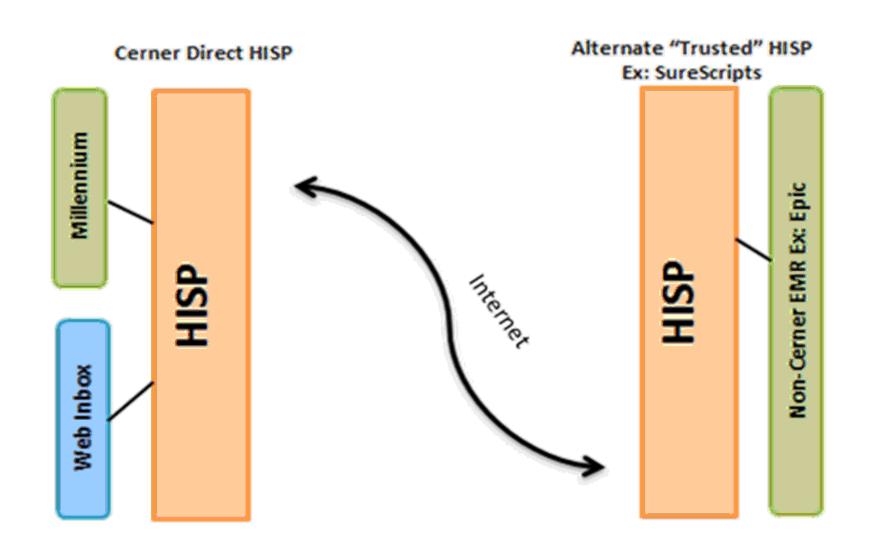
Section Templates: 60

Entry Templates: 82

Document Template	Section Template(s)					
Continuity Of Care Document (CCD)	Allergies Medications Problem List Procedures Results Advance Directives Encounters	Family History Functional Status Immunizations Medical Equipment Payers Plan of Care	Section templates in GREEN demonstrate CDA's interoperability and reusability.			
History & Physical (H&P)	Allergies Medications Problem List Procedures Results Family History Immunizations Assessments	Assessment and Plan Plan of Care Social History Vital Signs History of Present Illness History of Present Illness	Chief Complaint Reason for Visit Review of Systems Physical Exam General Status			

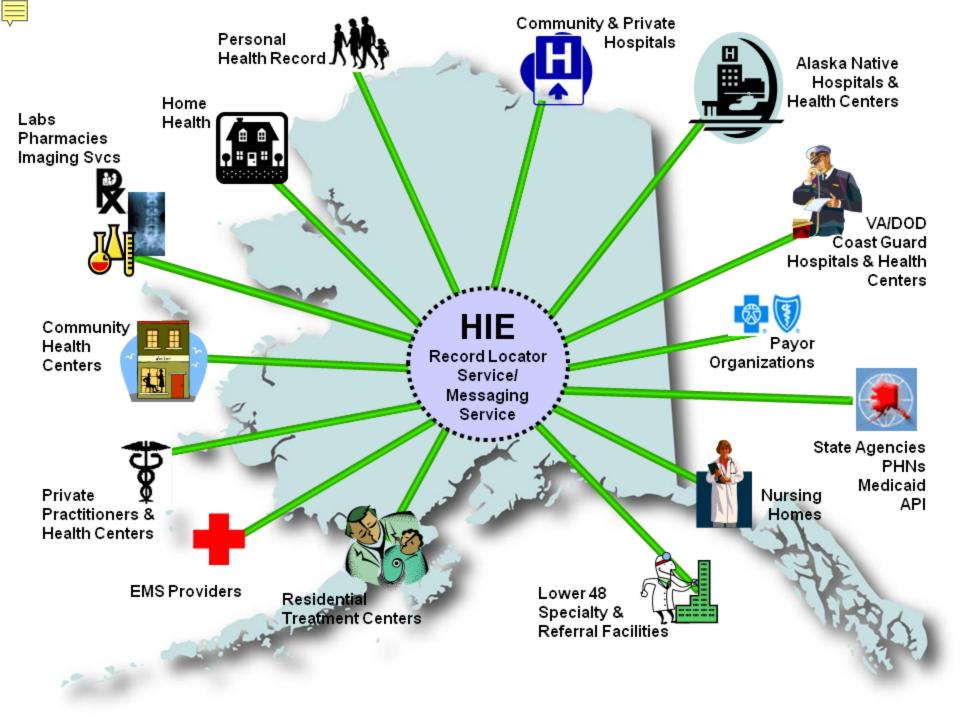
HISP to HISP Communication

Accredited HISPs: http://www.ehnac.org/status



Alaska now has the largest Direct Secure Message network of any state, with 4800 secure mailboxes for Alaska providers.

Over 290,000 messages have been sent, about 5,000 per day.



HIE-based S&F Telehealth

- Access to health summaries, notes
- Offers an MPI to match patients and MRNs
- A single place for shared solutions
 - E.g. Case Management
- Future Capabilities
 - E.g. eVisits (specific to Epic and Siemens portals)

The Challenges

 Need to develop standards (e.g. CCDA), processes, service agreements, testing methodologies, etc. to connect our EHRs.

 Need shared solutions to shared problems: multimedia components, scheduling, marketing/broker service, eVisits.

Where do we have these discussions?

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