

Telebehavioral Health:

Past, Present, and Future



Past

First Telehealth Encounters

- ▶ 500 BCE: friends and relatives of sick patients could visit the temples of Asclepius the God of Healing if the sick individual was unable to travel
- ▶ Telegraph used during the Civil War for the care and treatment of wounded soldiers

Bashshur, R. L. B. & Shannon, G. W. 2009. *History of Telemedicine: Evolution, Context, and Transformation*. Rochelle, New York: Mary Ann Libert, Inc.

Considered the first

- ▶ Alexander Graham Bell's first telephone conversation was to summon assistant because he accidentally poured acid on himself
- ▶ 1879 paper reported that a physician used telephone for distance diagnosis
 - “Lift the child to the telephone and let me here it cough” – reassured mother not croup

Bashshur, R. L. B. & Shannon, G. W. 2009. *History of Telemedicine: Evolution, Context, and Transformation*. Rochelle, New York: Mary Ann Libert, Inc.

First two-way television link

- ▶ 1968 onsite nurse clinician presented swollen knee with the off-site physician
- ▶ Link between Logan International Airport Medical Station and Massachusetts General Hospital

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Diphtheria Serum Run of 1925



<http://aramink.files.wordpress.com/2007/08/seppala5.jpg>

Alaska First Project: ATS-1

- ▶ 1968 only 39 communities in AK had long distance phone, used radiotelephone or telegraph, or relayed messages village by village
- ▶ 1966 – NASA launched the Applications Technology Satellite with support by the Lister Hill Center for Biomedical Communications/National Library of Medicine
- ▶ 1971 – ground stations built for 12 villages using 2 way radios linked to ground stations to contact regional hub physicians

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- ▶ Promoted daily voice communication between health aides and physicians. Health aides used two-way radios linked to the Satellite ground station.
- ▶ Communication increased 5 fold compared to control group
- ▶ Identification of episodes of new illness increased 47.1 to 184.6, while the control group decreased
- ▶ Saved 7 lives

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- ▶ As a result the state of AK provided \$5 million to purchase satellite earth stations for 200 villages
 - Video provided an edge over audio in 5–10% of cases

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ATS-6 Satellite

- ▶ More technologically sophisticated NASA satellite for voice, data, and video communications
- ▶ Sep 1974 – May 1975
- ▶ Sponsored by NASA, Indian Health Service, National Library of Medicine
- ▶ 318 two way video encounters, 12 minutes per encounter – various medical problems
- ▶ Found audio best for routine care, video for “subjective exams” needing a second opinion or consult with a specialist

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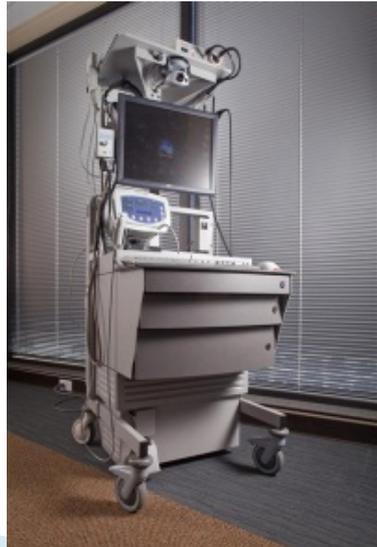
- ▶ Video critical in 5% of cases
- ▶ Found that the most prevalent health problems were alcoholism and mental health
- ▶ Providers felt video gave only a slight advantage over audio

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Alaska Telemedicine Testbed Project

- ▶ 1996 National Library of Medicine funded
- ▶ University and Alaska Native Health Board narrow band telehealth systems in 26 villages for otolaryngology
- ▶ Positive results – Proposal by Alaska Federal Health Care Partnership (DOD, HIS, VA) to provide access to quality healthcare to federal beneficiaries

- ▶ The partnership's effort became Alaska Federal Health Care Access Network (AFHCAN)
 - Teleradiology began in 1997 DOD funding
- ▶ Turnaround times 24 hours as compared to 9 to 21 days



Other efforts

- ▶ 1992 – Dr. Winn attended the COMDEX show in Las Vegas
 - Borrowed 2 VideoPhones 2500 (AT&T)
- ▶ Returned to Gateway Center for Human Services – Ketchikan.
- ▶ 1993 Able to link from Gateway Center – Ketchikan to main office in Anchorage to consult for an EAP case.
- ▶ After demonstration and proof of project videophones returned.

Alaska Department of Corrections

- ◆ 1997 – Department of Corrections began using POTS and videophone for tele-psychiatric assessment and treatment for inmates, including medication consults, emergency assessments and Title 47 assessments, as well as clinical supervision for providers. Discontinued 2004 – staff turnover.

Alaska Telehealth Advisory Committee Funded 2 projects

▶ First Project:

- 2000, Eastern Aleutian Tribes Inc, began a low-bandwidth project for telepsychiatry services, but it was unsuccessful due to poor connectivity. Eventually EAT obtained a T1 circuit and established a WAN.

Gateway Mental Health Center in Ketchikan

- ◆ Second Project Funded
 - ◆ 2000 Executive Director Ron Adler began a grant-funded high bandwidth telepsychiatry pilot, focused on child and adolescent populations in Ketchikan, and later Metlakatla, observing playgroups.
 - ◆ First demonstration nationally evaluating children and youth via live VTC
 - ◆ Universal Service fund subsidized connectivity
 - ◆ Findings:
 - ◆ Benefit of access to care
 - ◆ Overall positive perception of quality of care
 - ◆ Anonymity a benefit

Initial API Telebehavioral Health Project

- ▶ Start-up 2003
- ▶ Funding: Alaska Telehealth Advisory Committee and the Alaska Mental Health Board. Board certified psychiatrist funded.
- ▶ Communication carriers offered T-1 connectivity to demonstrate high bandwidth connectivity.
- ▶ Served four rural and remote rural (not connected to road system) Alaska sites.

Lessons Learned

- ▶ Start-up slow
- ▶ End users reluctant to use technology
- ▶ Ongoing practice needed for dial-up
- ▶ Supported usefulness of VTC for behavioral health

The Office of Advanced Telehealth Grant to API 9/1/05 – 8/31/07

- ▶ (OAT within DHSS/Health Resources and Services Administration)
- ▶ Congressionally mandated project
- ▶ Formative Evaluation
- ▶ Goal: To provide greater access to behavioral health services through technology in rural and frontier Alaska

Findings and Lessons Learned

- ▶ Readiness assessment instead of a needs assessment
 - Some sites not prepared for the high administrative, clinical, and information technology demands in TBH
- ▶ Information Technology
 - Infrastructure evolved over course of grant
 - Outages up to 2 months
 - Firewalls problematic
 - Bandwidth too limited, bandwidth shared with other applications creating long lapses in service
 - Severe freeze framing and pixilation

▶ Administrative

- Sites with proactive leadership “champions” to oversee implementation more successful
- Staff stability, high turnover rates negatively impacted TBH
- Importance of the rural health aides or behavioral health aides as part of treatment team

▶ Clinical

- Served chronically mental ill adults, emotionally disturbed children not being adequately served
- Itinerants no continuous contact with patients, unable to monitor drug reactions, patient follow-up with TBH more frequent
- Client Satisfaction rated services as good as or better than “in-person”
- “Live discharge planning” helpful in returning API patients to their home communities
- Successful consumer run psycho-educational group

Second Office of Advanced Telehealth Grant to API 9/1/08–8/31/10

- ▶ Congressionally mandated project
- ▶ Provide psychiatric evaluation and treatment to adults, youth, and children for TBH partners
- ▶ Psychiatric consultation and liaison with hospitals med/surge patients
- ▶ Grand Rounds
- ▶ Impact

Findings and Lessons Learned

- ▶ 150 encounters quarterly and increased
 - Successfully served depressed and suicidal clients
 - Ongoing care mitigates suicide risk
 - Performed Handful of API diversions many suicidal
 - Able to successfully treat in home community
 - Importance of live discharge planning demonstrated
 - Recipients functioning improved
- ▶ A few med/surge consultations for acute psychiatric patients for a rural hospital
 - Handful of hospital diversions
 - Service highly valued
 - Network problems

- ▶ **Grand Rounds**
 - Over 10 trainings
 - Well attended, up to 12 Alaskan sites joined with primary care and behavioral health providers
 - Must have CME's and CEU's offered for attendance
- ▶ **Impact – Evidenced Based Depression Care**
 - Anchorage Neighborhood Health Center
 - Successful, achieved similar results in treating depression to those achieved in more controlled settings
 - Program continues
 - VTC cost prohibitive, so in-person
 - Rural site, not as successful

Transformation Transfer Initiative National Association of State Mental Health Programs grant 12/1/09 – 9/15/10

- ▶ Same day access to psychiatric and behavioral health assessment and treatment to rural and remote-rural Alaskans. Emphasis on primary care providers.
 - Performed 494 encounters within same day for partner sites
- ▶ One page fee-for-service agreement
 - For non-partner sites
 - Performed a small number, towards completion of the grant referrals increased

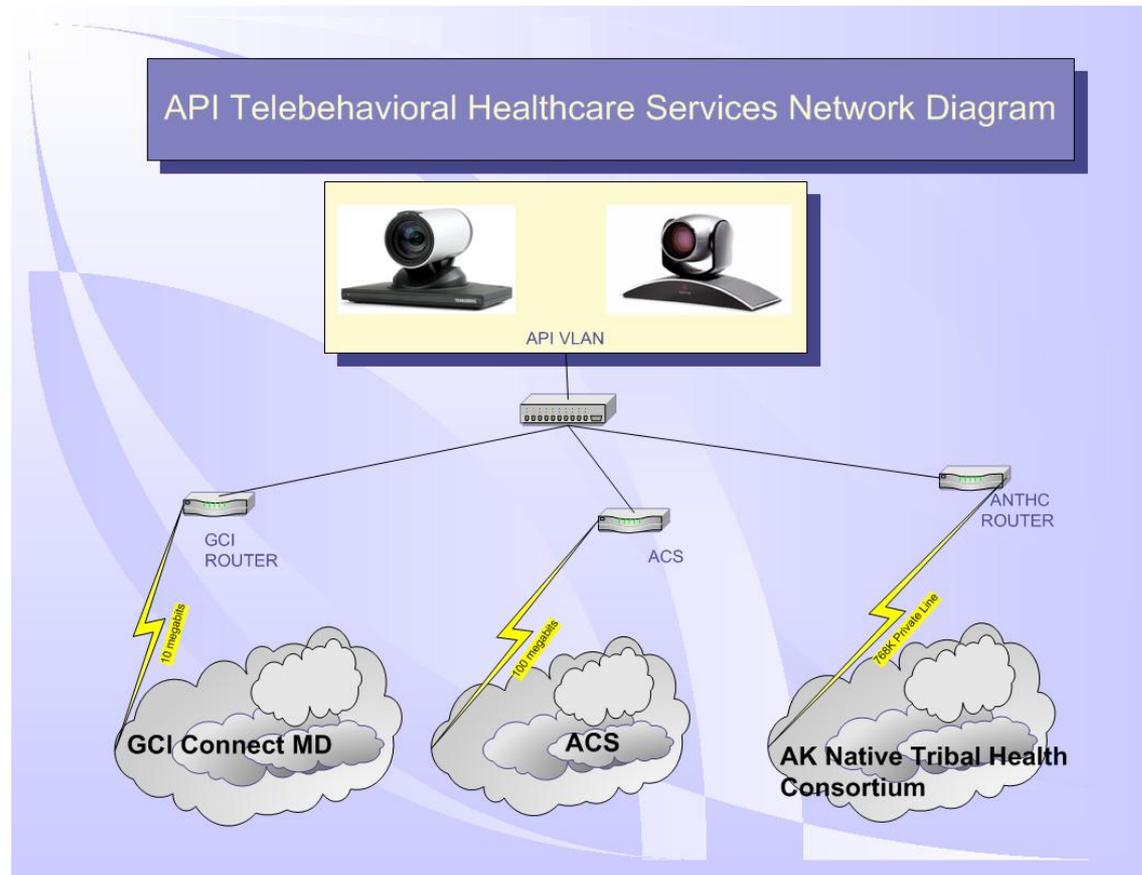
- ▶ Rural and remote rural Alaska more crisis oriented so a great match for same day access
- ▶ Non-partner sites wanted to become partner sites
- ▶ A few referrals by primary care providers, followed up by behavioral health
- ▶ Some varying levels of IT support, connectivity problems sometimes days to fix
- ▶ High turnover, primary care staff rotate
- ▶ Flexibility of providers paramount
 - Connectivity problems, late appointments, variable quality paperwork

- ▶ Discovered untreated medical conditions
- ▶ 10 potential API hospitalizations diverted, 50% treated in home community
- ▶ Clinical screening measures introduced
- ▶ Attentive to Metabolic Problems
- ▶ Patient and provider comments only positive, examples: “This is by far away the very best service that we have been able to provide for our clients.” “The quick time frame to connect with you guys is wonderful.”

Present

- ▶ Continue to provide psychiatric evaluations and treatment to partner and non-partner sites who have no local psychiatry, same or next day
- ▶ Impact continuing with another rural site
- ▶ APAL line with Seattle Children's Hospital

Three networks provide connectivity to almost every Alaska Native village, small hospital, and state and federal beneficiaries



AFCHAN Network Part 1



AFCHAN Network Part 2

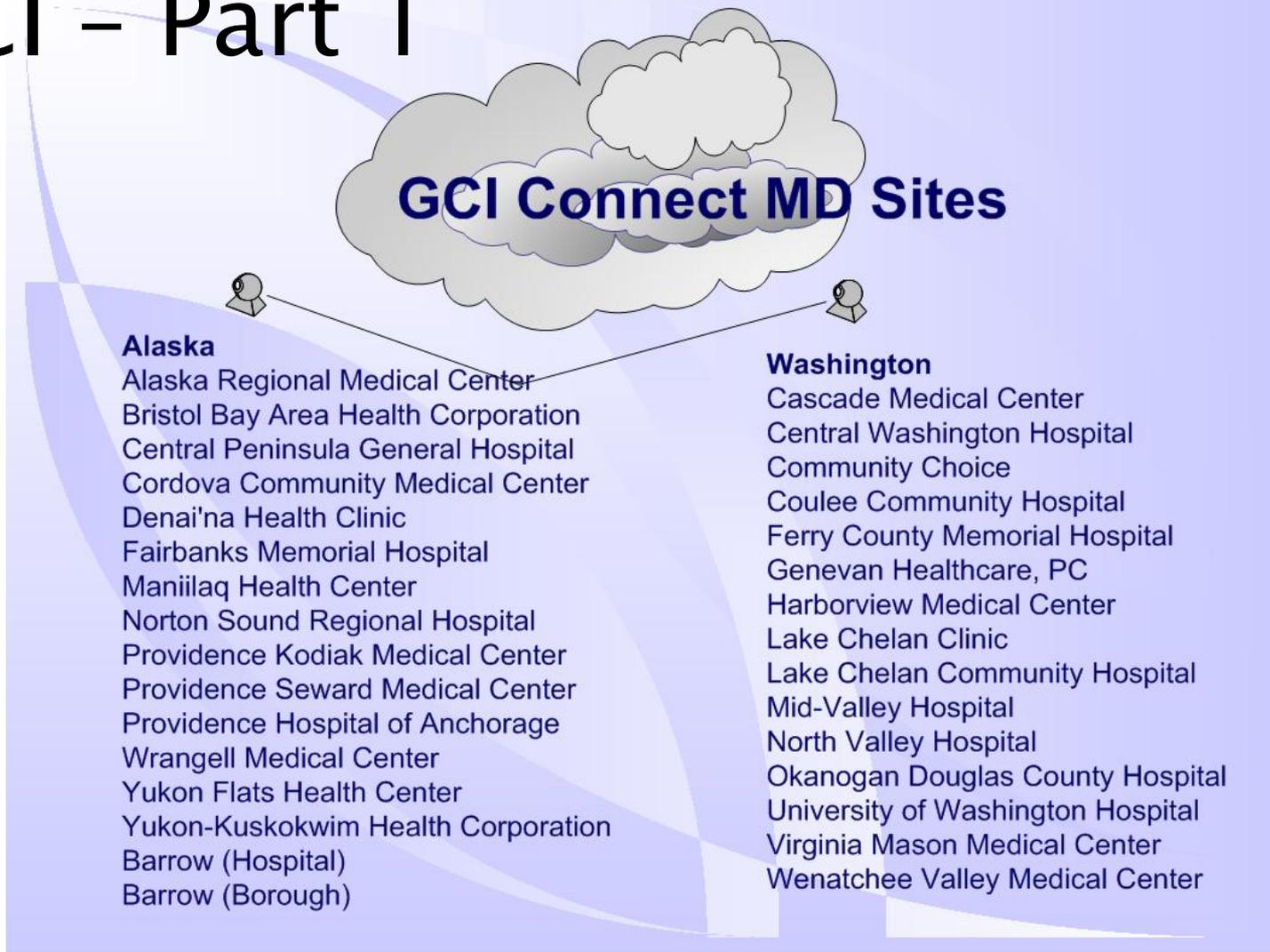
ANTHC AFCHAN (Continued)

State of AK Dept. of Health and
Social Services: Public Health:

Bethel, Fairbanks, Juneau, Kenai,
Wasilla, Anchorage, Kotzebue,
Nome, Craig, Dillingham,
Ft. Yukon, Homer, Petersburg,
Seward, Sitka, TOK, Valdez,
Wrangell

US Coast Guard: Kodiak, Juneau,
Ketchikan, Sitka,
US Army: Ft. Wainwright
US Air Force: Eielson AFB,
Elmendorf AFB

GCI - Part 1



GCI Connect MD Sites

Alaska

Alaska Regional Medical Center
Bristol Bay Area Health Corporation
Central Peninsula General Hospital
Cordova Community Medical Center
Denai'na Health Clinic
Fairbanks Memorial Hospital
Maniilaq Health Center
Norton Sound Regional Hospital
Providence Kodiak Medical Center
Providence Seward Medical Center
Providence Hospital of Anchorage
Wrangell Medical Center
Yukon Flats Health Center
Yukon-Kuskokwim Health Corporation
Barrow (Hospital)
Barrow (Borough)

Washington

Cascade Medical Center
Central Washington Hospital
Community Choice
Coulee Community Hospital
Ferry County Memorial Hospital
Genevan Healthcare, PC
Harborview Medical Center
Lake Chelan Clinic
Lake Chelan Community Hospital
Mid-Valley Hospital
North Valley Hospital
Okanogan Douglas County Hospital
University of Washington Hospital
Virginia Mason Medical Center
Wenatchee Valley Medical Center

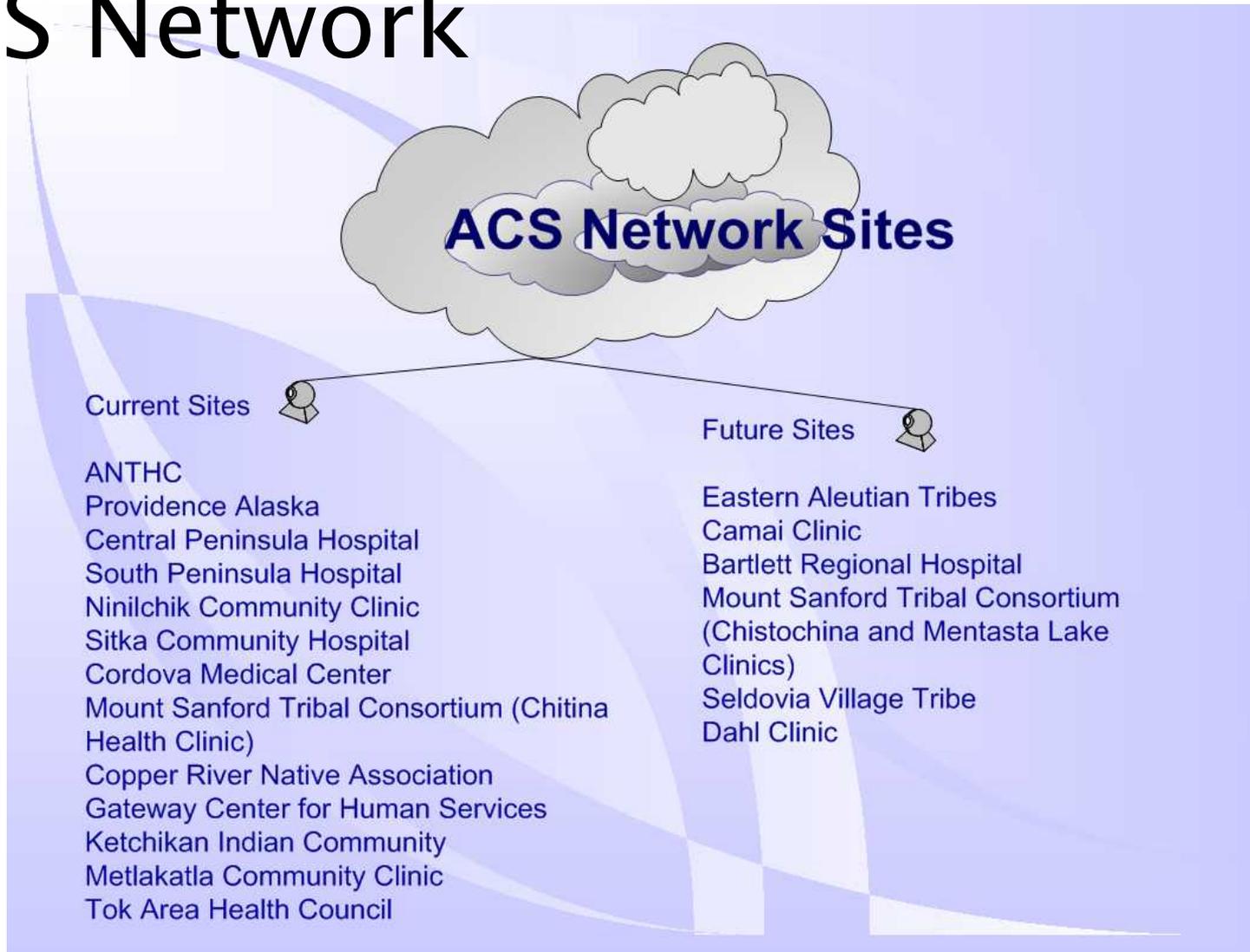
GCI Part 2



GCI Connect MD Sites

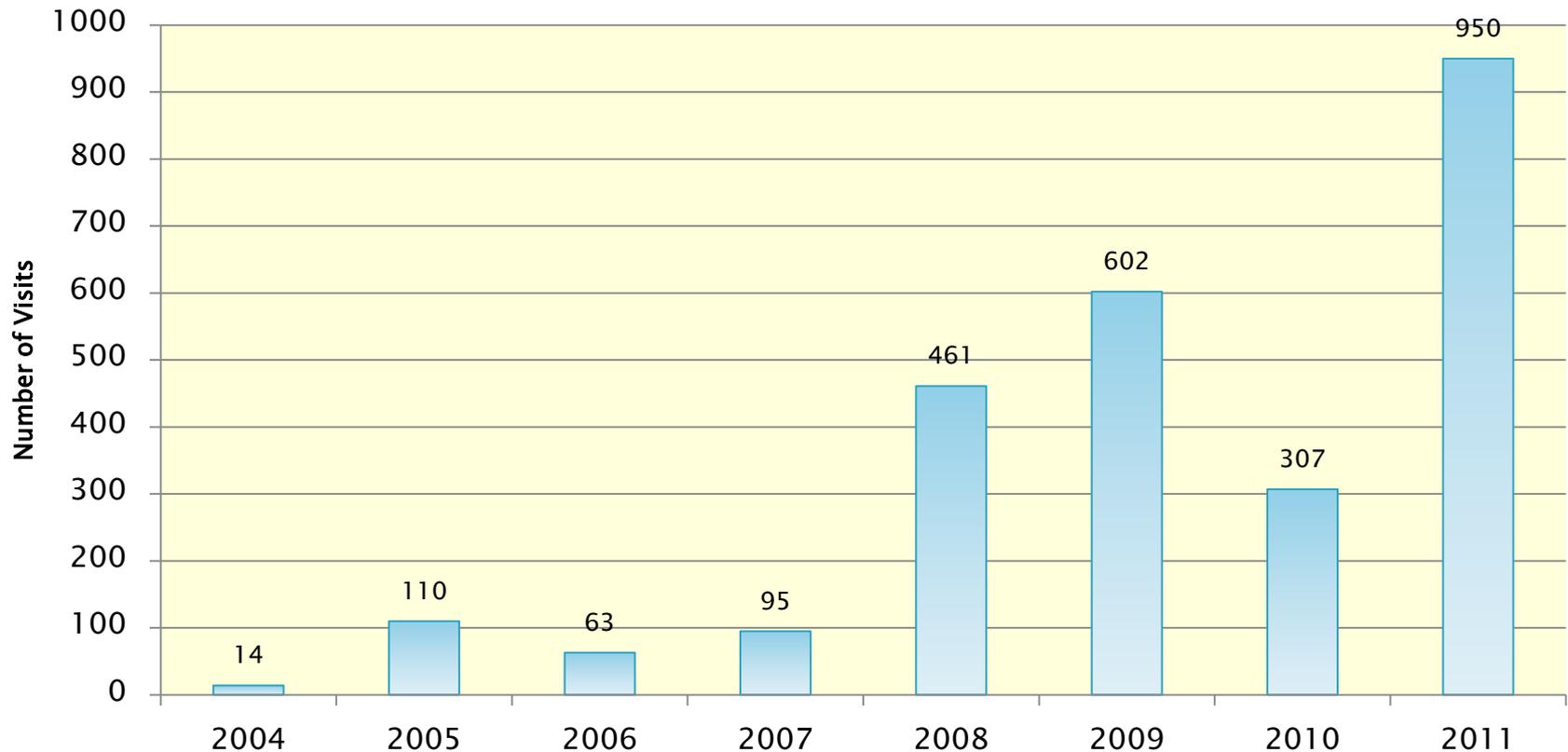
Various State of Alaska Administrative Sites
and
DJJ Fairbanks Youth Facility
DJJ McLaughlin Youth Facility
DJJ Nome Youth Facility
DJJ Bethel Youth Facility
DJJ Johnson Youth Facility
DJJ Peninsula Youth Facility

ACS Network



API Telebehavioral Health Encounters to Date

Total TBH Visits by Year (n=2602)



Future

Proposed API's ePsych Program

- ▶ Development assisted by WICHE
- ▶ The ePsych Program will provide an alternative way to deliver high-quality stabilizing critical care for med/surge patients when specialist behavioral health resources are limited.



Rationale for API ePsych Center

- ▶ API psychiatrists, psychiatric nurses, and other behavioral health specialists monitor acute patients 24/7.
- ▶ To assist bedside teams watch over community hospital psychiatric patients and to prioritize and guide interventions.
- ▶ The goal is to enable and support rapid assessment, diagnosis, and intervention to divert civil commitments, reduce wait for care, mitigate complications, and reduce the length of patient stays.

Future Opportunities: Evolving Technology

- ▶ Referral and document exchange through the AFHCAN telemedicine cart “tConsult”
- ▶ “Smart” tablets and “Smart” phones live video
- ▶ Superior software for webcam communications
- ▶ Home-based Services Increasing

- ▶ This fall, the FDA approved diagnostic image viewing on “smart” phones and “smart” tablets
- ▶ Secure software for live video–teleconferencing



Nation's First Virtual Care Center

- ▶ Chesterfield, Mo.
- ▶ The \$90 million center open in 2 ½ years.
- ▶ Staffed by hundreds of doctors and nurses linked electronically to Mercy hospitals, clinics and even patient homes via telemedicine technology.
- ▶ Mercy serves more than 3 million patients a year through its 30 hospitals and more than 200 outpatient facilities in Arkansas, Kansas, Missouri and Oklahoma.

Store Based Kiosk's

- ▶ This fall Rite Aid implemented an in-store virtual doctor
 - 10 minute visits for \$45 (video chat room – social media sites)
 - Kiosk based psychiatry???

The End

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