

Jan 26, 2005



Vista Imaging for Indian Health Care

NEEDS

- Integrated display capability for diverse images
 - Local facility and clinic
- Growing capability for telehealth – and resultant need for integrated solutions across regions/systems ■

DIRECTIONS

- Enterprise Architecture solution for images and telehealth
 - Incorporating images into EHR
 - Facilitating regional solutions to service delivery needs ■

How can images be integrated into the EHR?

IHS-EHR (DEMO)

User Patient Help

Patient Chart Communication

	Smith, Anthony William 37796 08-Jul-1959 (44)	M/S A232-1 12-Nov-2002 14:18 MARTIN, DOUG	Dictation	Postings A
--	---	---	-----------	---------------

(Indian Health Service • Electronic Health Record)

You are about to view information that is protected by the Federal Privacy Act of 1974 and the Health Insurance Portability and Accountability Act of 1996. Unauthorized use or disclosure of this information is a violation of federal law. Violators will be prosecuted.

Chart Notifications Cover Sheet Prob/POV Services Orders Notes Labs Medications Hlth Maint D/C Summ Reports

MARTIN, DOUG	DEMO.CIAINFORMATICS.COM	CROW HOSPITAL	02-Oct-2003 14:33
--------------	-------------------------	---------------	-------------------

Vista Imaging

The screenshot displays the VISTA Imaging System interface with several windows open:

- VISTA Imaging System (Main Window):** Includes a menu bar (File, Options, View, Reports, Help), a toolbar, and a patient information field showing "Patient: Demo.Patient". Below this is a grid of "Examples of Many Types of Images" with 12 thumbnails and their corresponding labels: 1 Back of Patient with DERM 95-12/12, 2 Back Closer, Neurof, 3 Gastrointestinal Pol GI 95-05/01, 4 Giards LAB-94-02/04, 5 Anatomical Drawing MAS 94-02/01, 6 Chest Xray RAD 94-01/01, 7 MUGA Nuc Med Heart S, 8 Surgery SUR 93-04/02, 9 Corneal Transplant OPH 93-02/01, 10 Dental Intraoral Pro, 11 Pathology Mitoses 10, 12 Psoriasis (Rpt) DERM 92-11/02.
- Abstracts - Demo.Patient:** A sub-window with a "Save Image" checkbox and a grid of image thumbnails.
- ECG Window:** Displays an ECG trace with leads III, V1, II, and V6. Technical specifications at the bottom: 25m/s, 10mm/mV, 100Hz, 004A, 12SL78.
- Full Resolution View -- Demo.Patient:** A window for detailed image viewing with "Brightness" and "Contrast" sliders. It shows a histology image of cells stained with H&E. The title is "HEM 90 - 12/15 Hematology (Rpt)".
- Demographic Window:** Shows "Demo.Patient RAD 91 - 06/05 MRI" and a menu bar (File, Monitor, Grayscale, CT Presets, MainWindow, Help). It includes a "Window: 202" field and a "Level: 149" field. A control panel on the right has buttons for "Mouse Pan", "Mouse Magnify", "ROI Win/Lev", "Reverse", "Rotate", "Measure", "Copy", "Rad Report", and "Reset".
- MRI Image Window:** Displays a sagittal MRI scan of a brain.
- Statistics Window:** A text box containing the following data:
 - ORTHOCHROMATIC NORMOBLASTS: 9
 - POLYCHROMATIC NORMOBLASTS: 10
 - BASOPHILIC NORMOBLASTS: 10
 - PRONORMOBLASTS: 16
 - LYMPHOBLASTS: 0
 - PLASMA CELLS: 2
 - MONOCYTES: 0
- Footer:** "EID:116 ED T: 12:20 06-OC T:1994 ORDER:"

Integrated Display of Text and Images in VHA

VISTA Imaging Display : MADTL,F F (isw-imgdemo1) in use by :FRA...

File Options View Reports System Manager Help



Patient: MADTL,F F 9 Images

00/00/24 500-50-5000 NON-VETERAN (OTHER)

Click the 'EKG' button to list patient EKG's

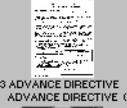
9 of 9 Abstracts : MADTL...



1 110193-38 UNLISTED RA XRAY 11/01/1933



2 COLON 7/28/37 COL 07/28/1937



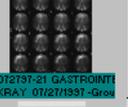
3 ADVANCE DIRECTIVE ADVANCE DIRECTIVE (



4 X-RAY CHEST SINGLE GEN. MED. 07/28/1937



5 072797-22 ANGIO VISC XRAY 07/27/1937-Group



6 072797-21 GASTROPOINT XRAY 07/27/1937-Group



7 SIGMOID COLON DIVER COL 12/24/1932-Group



8 BLEEDING SCAN FOR P GEN. MED. 12/24/1932



9 PHOTO ID Nov 01, 1932 PHOTO ID 11/01/1932

Vista CPRS in use by: Frank,Stuart (isw-imgdemo1)

File Edit View Tools Help

MADTL,F F Visit Not Selected Primary Care Team Unassigned Remote Data Postings AD

500-50-5000 ,1924 (77) Provider: FRANK,STUART

Active Problems	Allergies / Adverse Reactions	Postings
Diverticulosis, Colonic Hemorrhage of Gastrointestinal Tract	Penicillin	Allergies Advance Directive Jul 28,97

Active Medications	Clinical Reminders	Due Date
Clonidine 0.2mg Tab	Hepatitis C Risk Assessment	DUE NOW
Methylodopa 500 Hctz 30mg Tab	Influenza Vaccine	DUE NOW
Dexamethasone 4mg S.T.	Flexisigmoidoscopy	DUE NOW
Clonidine 0.1mg Tabs	Tobacco Cessation Education	DUE NOW
Allopurinol 100mg Tab		
Methylodopa 500 Hctz 30mg Tab		

Recent Lab Results	Vitals	Appointments/Visits/Admissions
No orders found.	T 98 F Oct 26,98 17:03	No data found
	P 86 Oct 26,98 17:03	
	R 18 Oct 26,98 17:03	
	BP 120/75 Apr 28,99 10:08	
	HT 58 in Oct 26,98 17:03	
	WT 140 lb Oct 26,98 17:03	

Cover Sheet Problems Meds Orders Notes Consults D/C Summ Labs Reports

Vista Imaging in the IHS

- Integrated functionality for different types of patient information
 - Consults, images, scanned documents, signature documents etc.
- Requires:
 - MPI or unique patient identifier
 - For functionality at a regional level
 - “Bench test” of VHA MPI in IHS planned
 - Redundancy and reliability
 - For hardware and networks
 - Customization for use in I/T/U environment
 - Training and technical support

Timeline

- Clearance for IHS to use Vista Imaging as a national VI “distributor”
 - Hopefully – by Feb 28, 2005
- Area-level planning with VI Implementation Managers
 - IHS to establish internal “implementation manager” capacity
- First facility deployments
 - Warm Springs, Crow and Wind River, Cherokee, Ft. Defiance, others
- Planning re: roll-out to all interested EHR sites

TELEHEALTH CARE



Major Directions

- Telehealth Directory
- ViRtual Centers of Clinical Excellence for Indian Health Care
- On-line Telehealth University/Training Capacity
- System level planning and evaluation
 - Business modeling and planning

Telehealth Directory

- First version to be released Feb 1, 2005
- Will undergo continued review/update



On-Line Training Resource



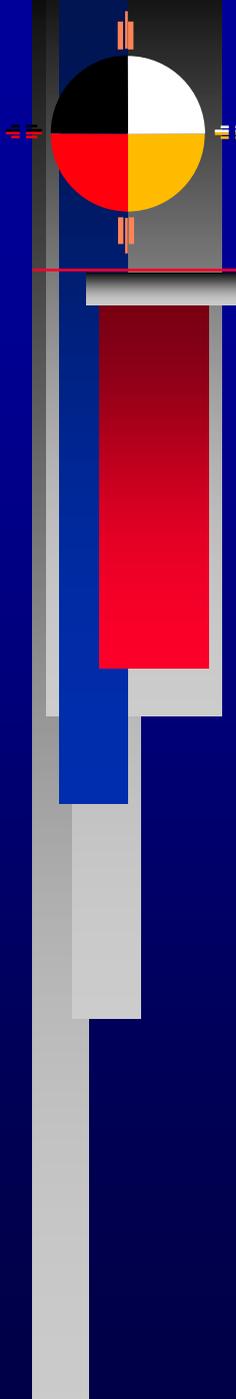
NAME
ID
AGE
SEX

08/12/04
17:05:33



Vision-Sciences, Inc.
DVC-2010 Digital Camera System

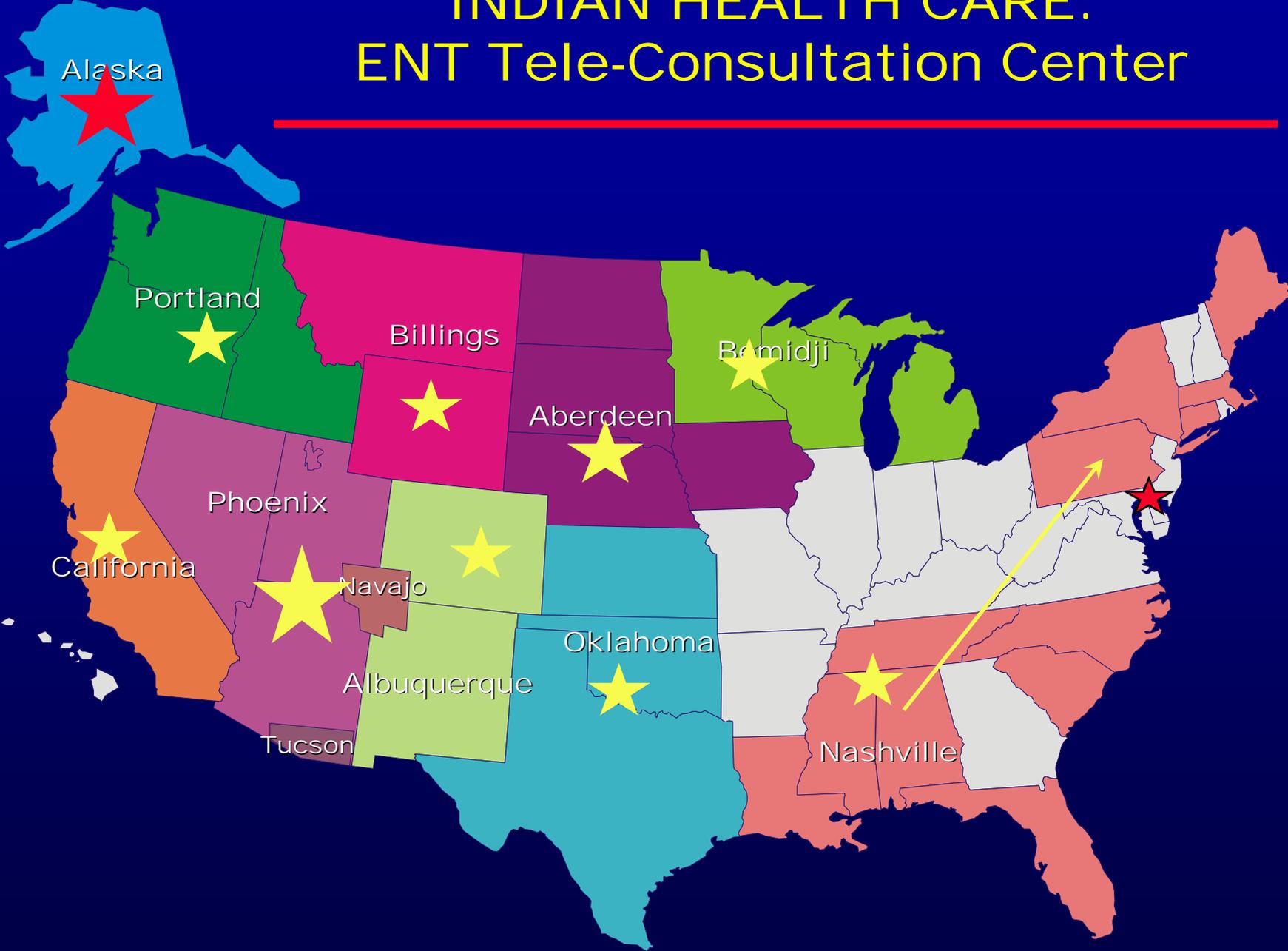
ViRtual Centers of Excellence

- 
- ENT Care
 - Dermatology
 - Digital mammography
 - Radiology
 - Cardiology
 - Stroke Management
 - eICU
 - eED

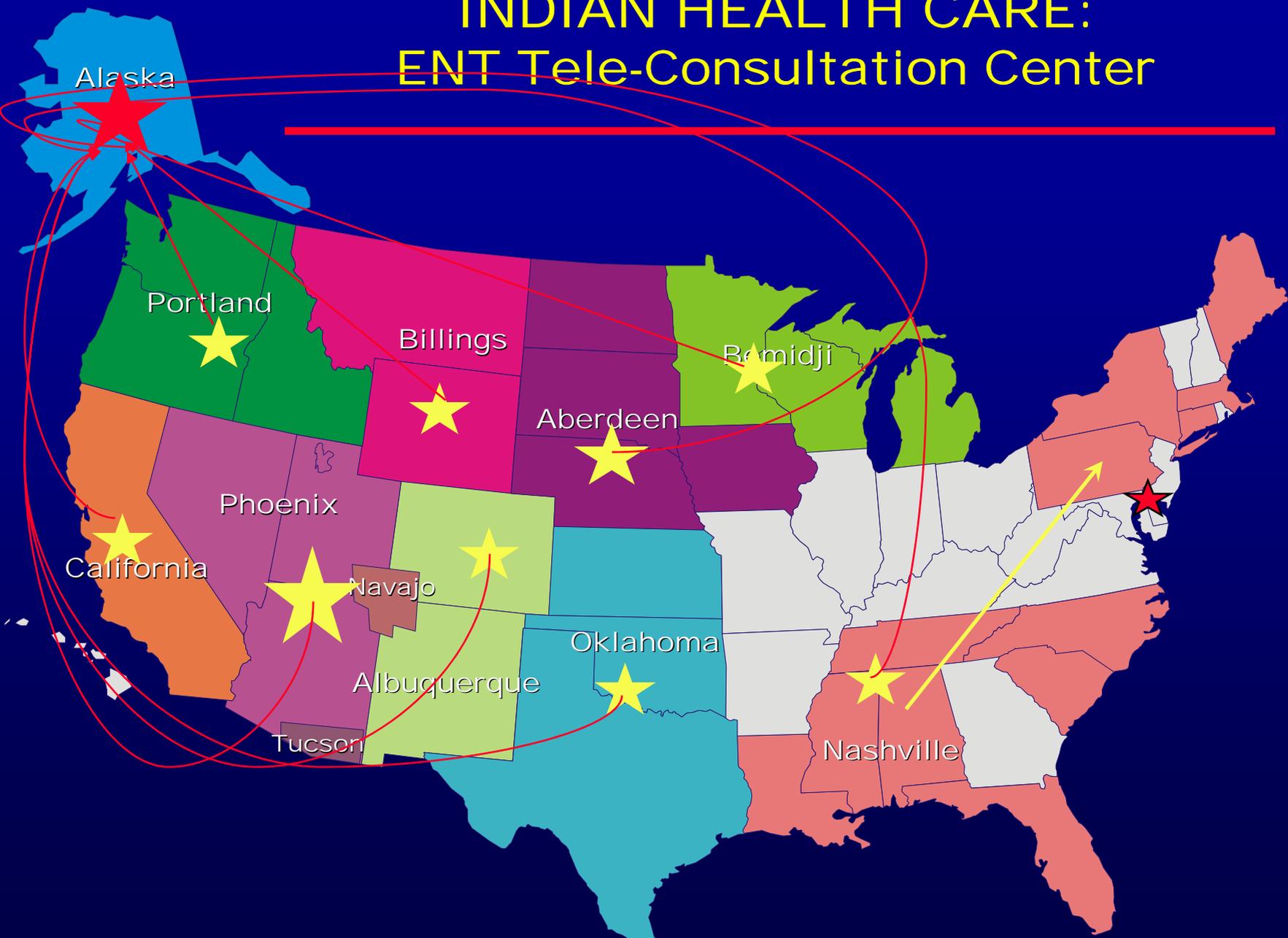
Why ViRtual Centers?

- Economies of scale
- Licensure/credentialing advantages
- Business care/efficiencies
 -
- Tele-ENT, as an example:
 - Already working in Alaska
 - ?Extend capacity to sites in lower 48

INDIAN HEALTH CARE: ENT Tele-Consultation Center



INDIAN HEALTH CARE: ENT Tele-Consultation Center



A ViRtual ED?

- 24, 7 real-time support for ED clinicians
 - Many EDs without Board certified ED physicians
- How would this service affect clinical outcomes and inter-facility transport decision/costs?
- Eg. "MedAire"



National Radiology Reading Center

- Based at PIMC
- Service for all Areas
- Phased project:
 - 2005 – Phoenix Area
 - 2006 – Expansion to other Areas



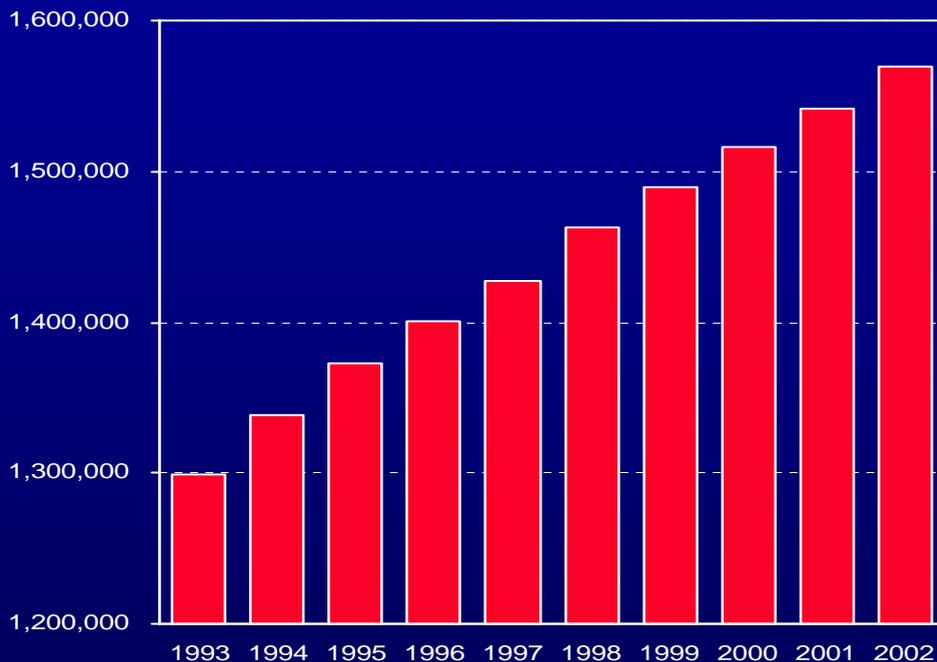
WHAT HAS TELEHEALTH CARE DONE?



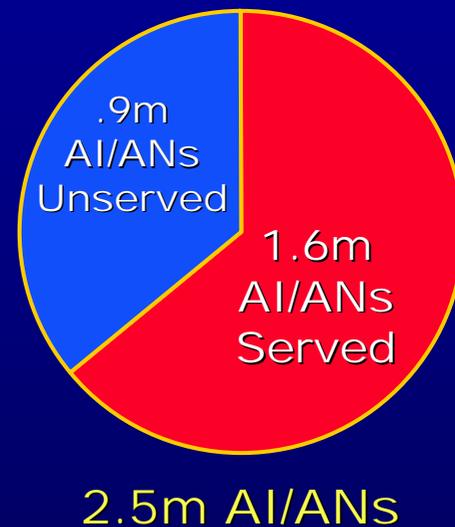
WHAT SHOULD TELEHEALTH CARE DO?



THE INDIAN POPULATION WE SERVE

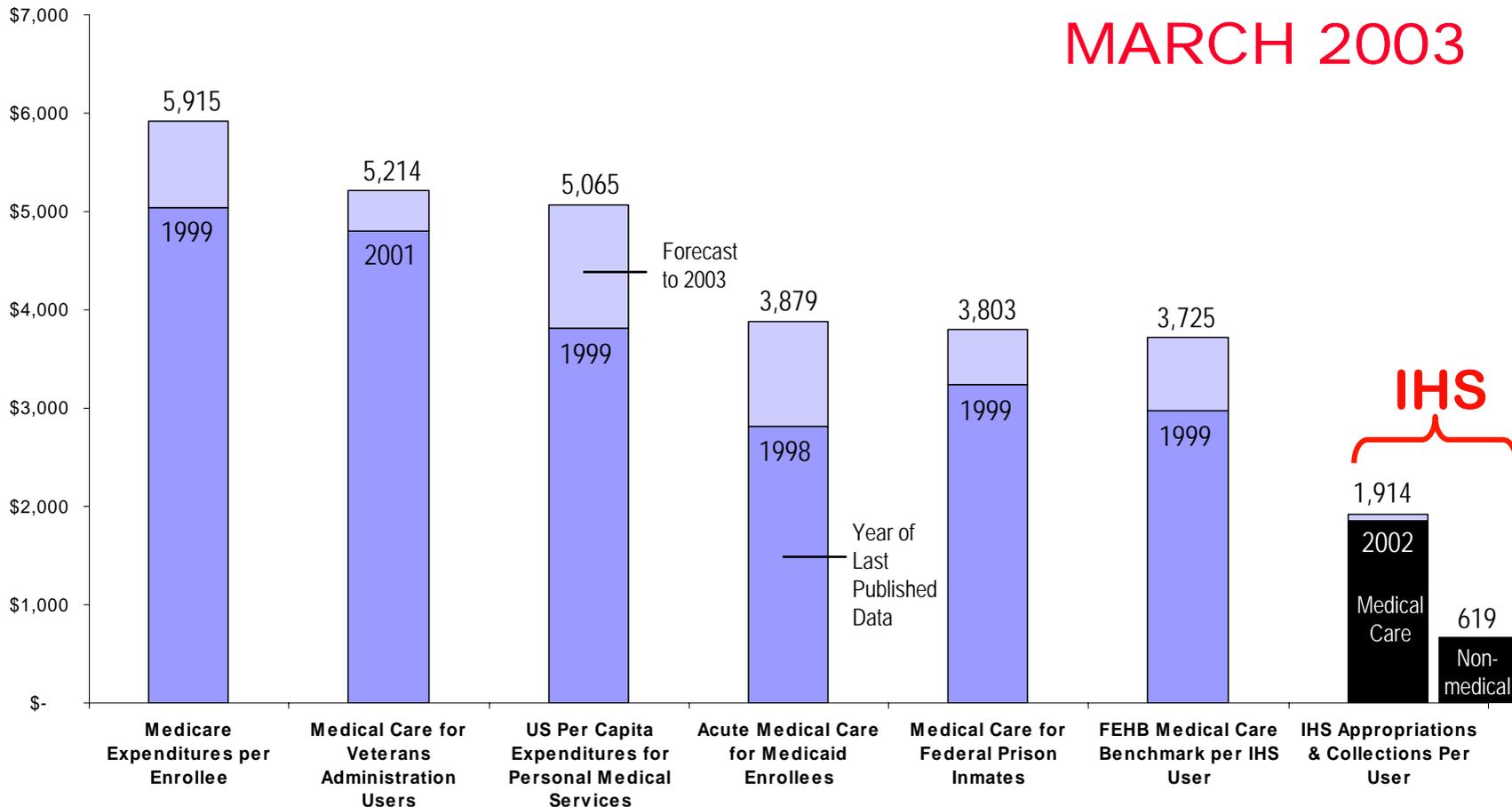


IHS Service Population Growth



- Population growth rate of 1.7% per year
- 63% high school graduates (77% U.S.) & 9.4% college graduates (20.3% U.S.)
- 32% of AI/ANs fall below poverty standard
- Unemployment is 2.5 times the US rate

IHS APPROPRIATIONS PER CAPITA COMPARED TO OTHER FEDERAL HEALTH EXPENDITURE BENCHMARKS

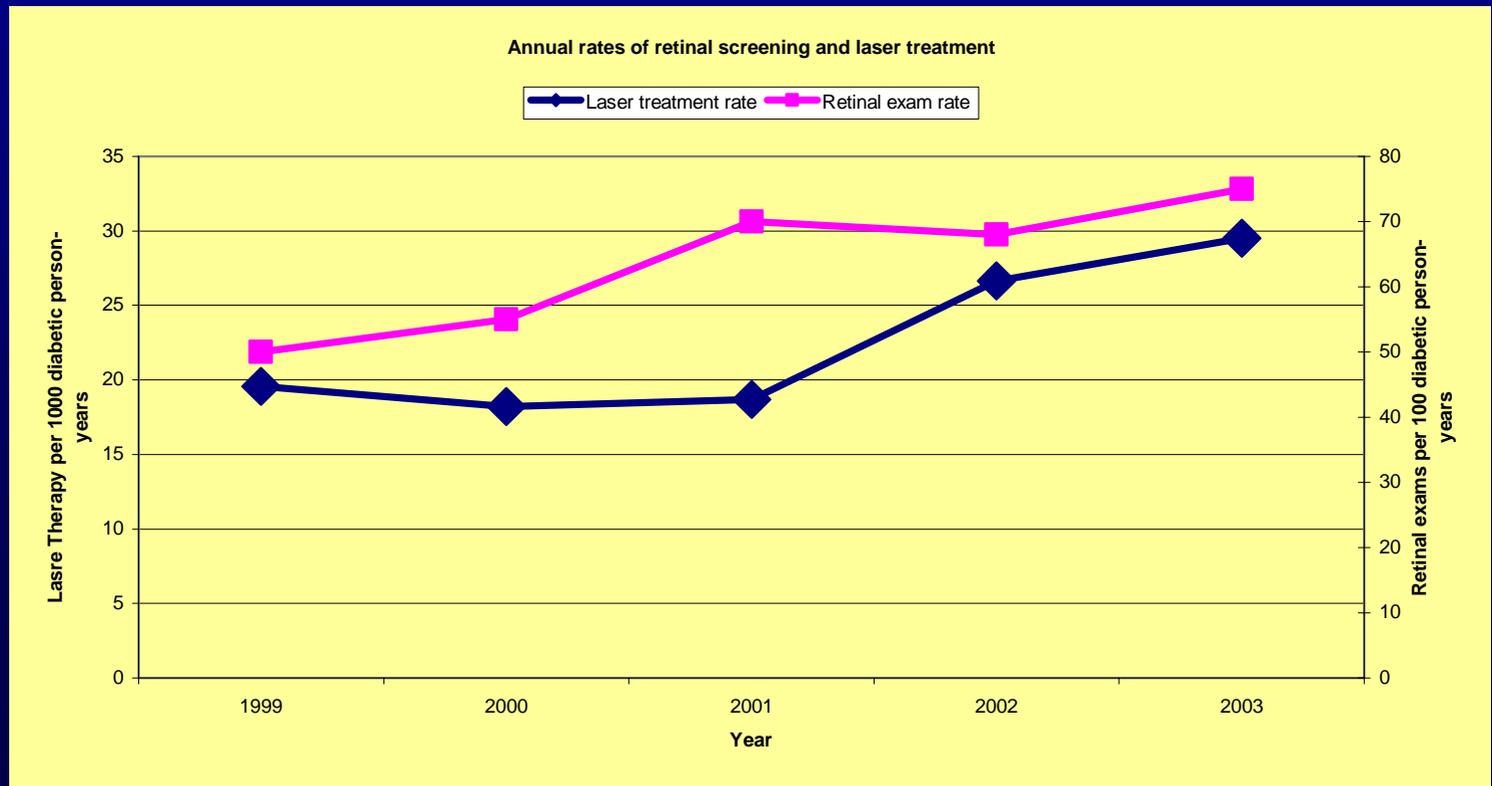


A FOCUS ON QUALITY

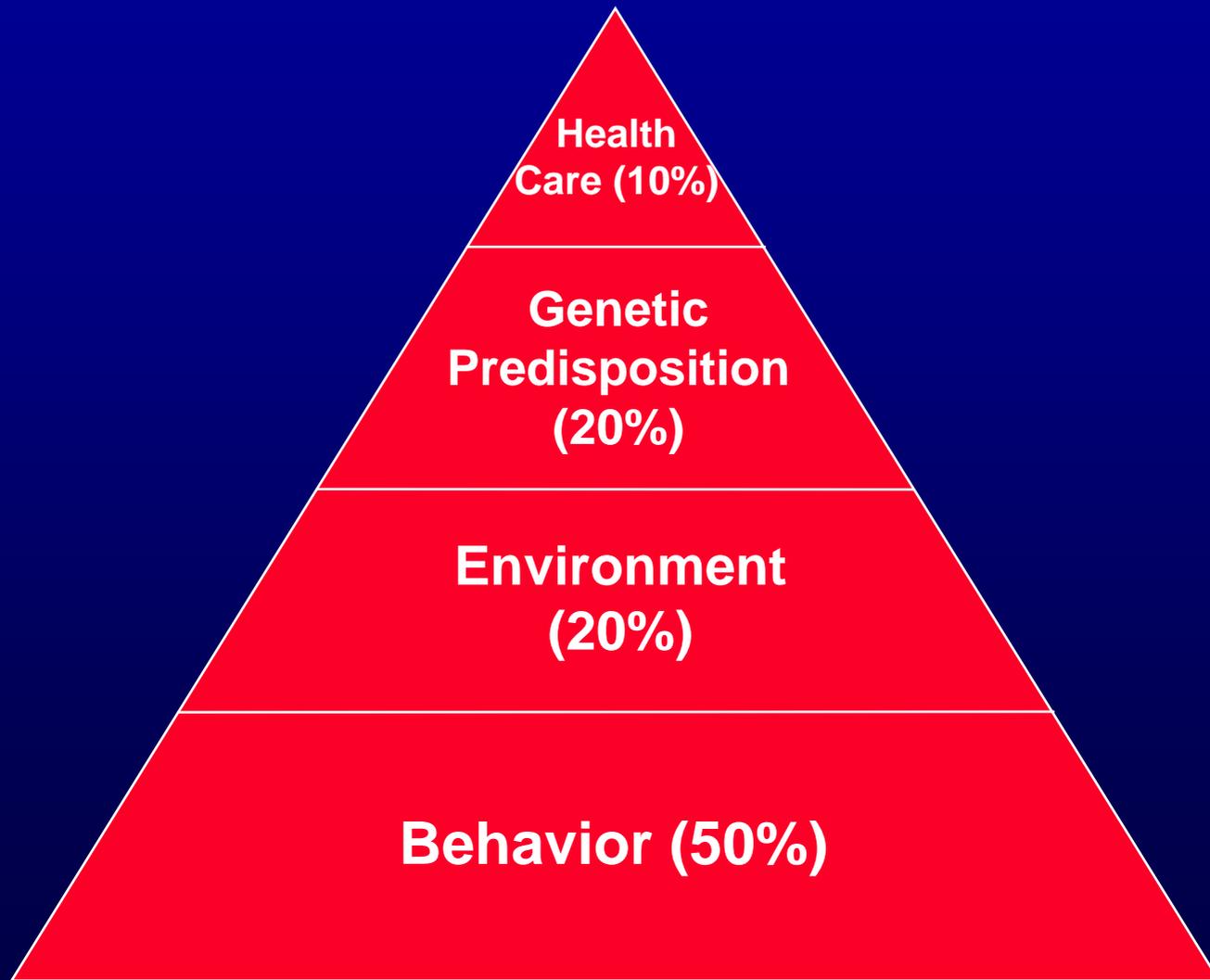
- TELEHEALTH CARE AS A QUALITY INITIATIVE:
Identify opportunities to support/assist with improvements of:
 - GPRA Indicators
 - Healthy People 2010 Indicators
 - Regional measures of Health Status
 - Disparities in Health Care

CLINICAL OUTCOMES: An example of Telehealth Quality

- Improved care for diabetic patients from IHS Joslin Vision Network Program



BUT- The Bigger Picture: FACTORS THAT AFFECT HEALTH STATUS

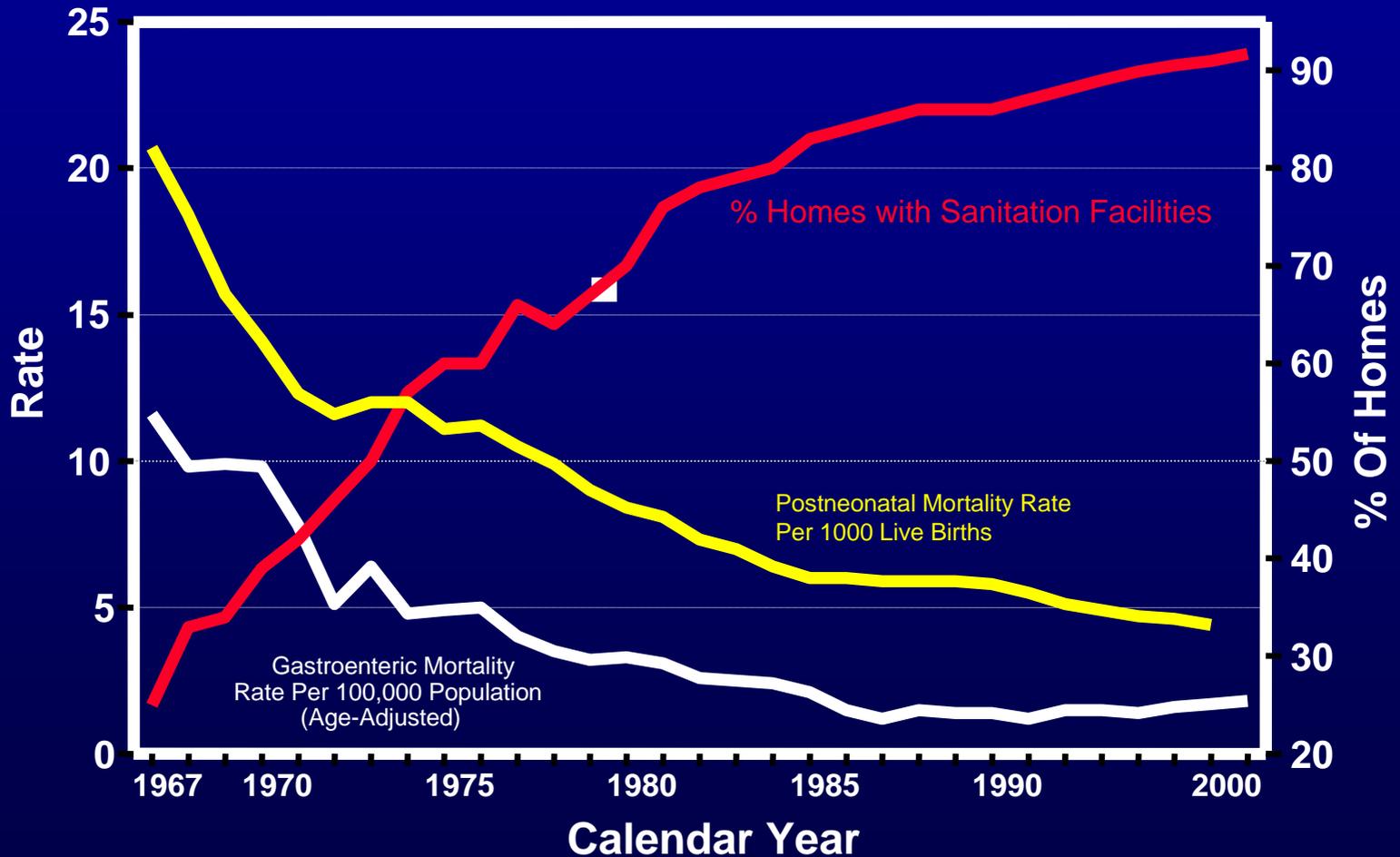


Telehealth Care: A Public Health Framework?

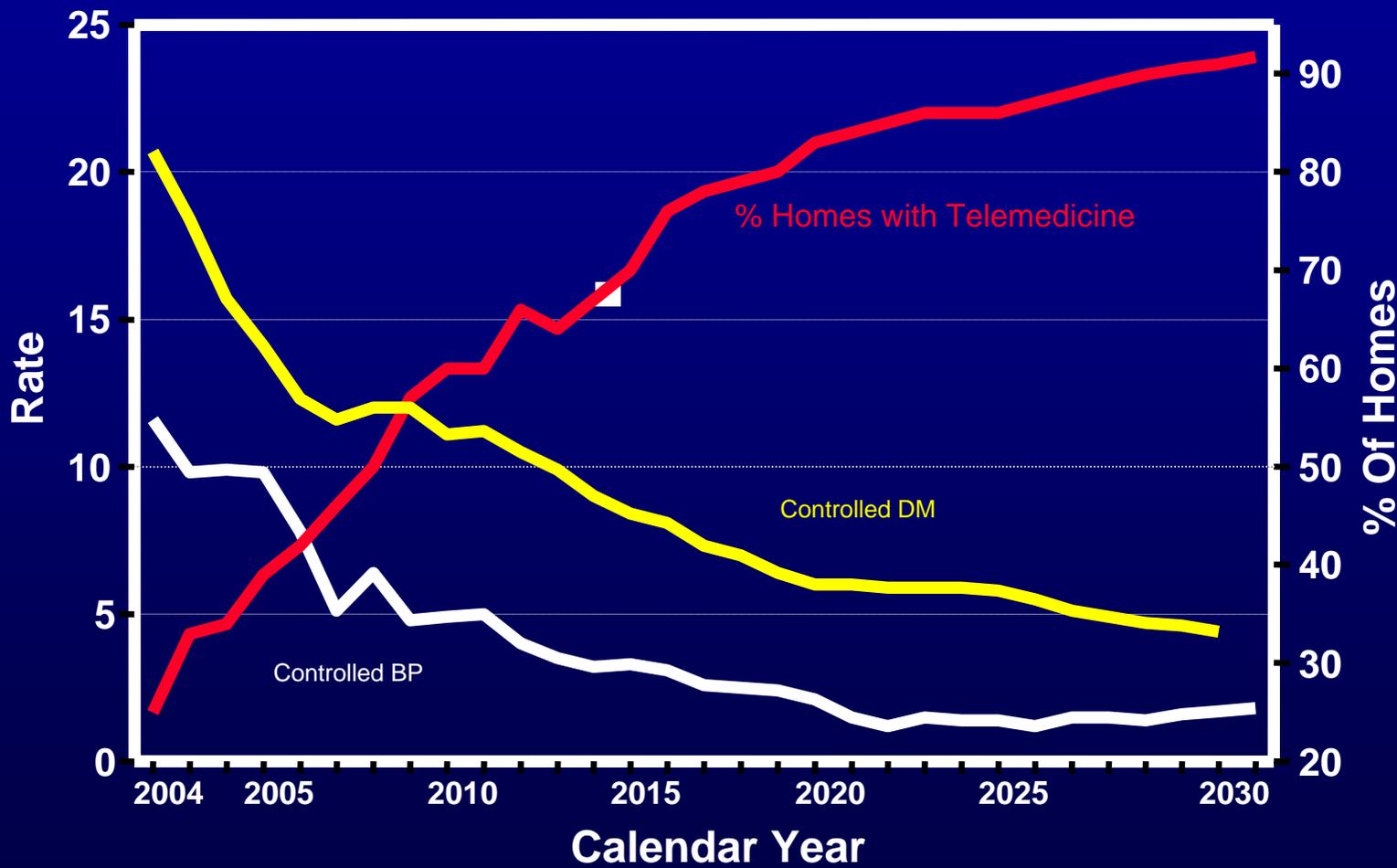
- Health Care – 10%
 - Specialty Referrals/tele-consultation
 - Special Projects, such as eRad Ctr
- Genetic Predisposition – 20%
 - Counseling tele-consultation
 - Early diagnosis/treatment
- Environment – 20%
 - Planning tele-consultation
 - Distance learning
- Behavior – 50%
 - Telehome health
 - E.G. CDMP
 - Sacred Breath Project

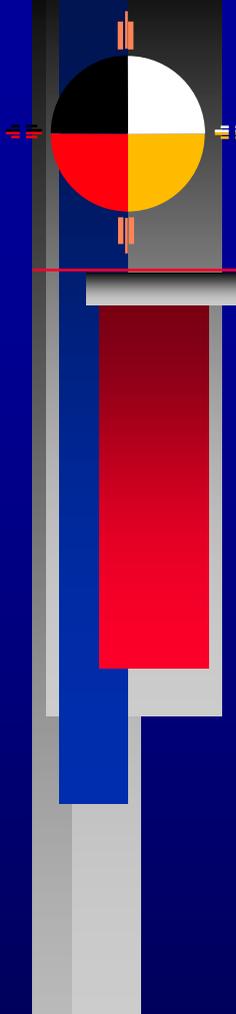


GASTROENTERIC & POSTNEONATAL MORTALITY RATES COMPARED WITH % OF HOMES WITH SANITATION FACILITIES FOR AI/ANS



?TELEHOME HEALTH





ENTERPRISE ARCHITECTURE: Integrating VI and Telehealth

- Critical for local care delivery
 - Seamless interface with EHR
- Critical for systems of care improvements
 - Taking advantage of new functionality from telehealth tools

Thanks

Mark Carroll MD
(928) 214-3920
mark.carroll@ihs.gov

