Vista Community Leadership Meeting
"Public-Private Collaboration"

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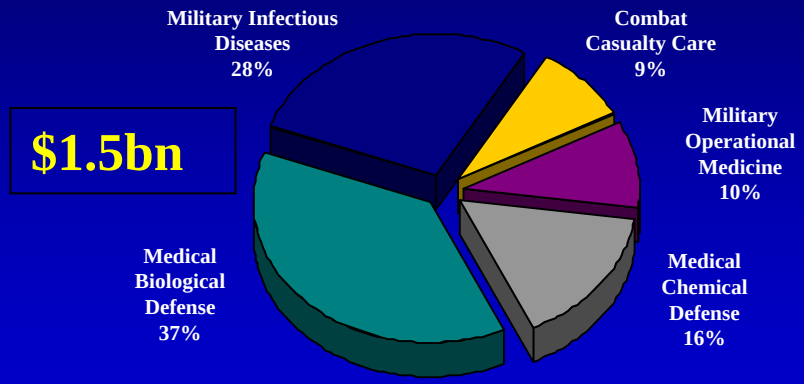
VA-DoD Pacific Telehealth & Technology Hui - TATRC Organization

- Medical Research & Materiel Command – Fort Detrick, MD

U.S. Army Medical Research and Materiel Command Core Medical S&T Program Areas

Military Infectious Diseases

- Medical readiness
- Vaccines
- Biotechnology
- Prophylaxis/treatment drugs
- Diagnostics/prognostics
- Vector control



Combat Casualty Care

- Lightweight medical equipment
- Medical C4ISR
- Trauma care
- Health monitoring and diagnostic technology

Medical Biological Defense

- Vaccines/therapies
- Field-portable diagnostic systems
- Medical readiness
- Biotechnology

Military Operational Medicine

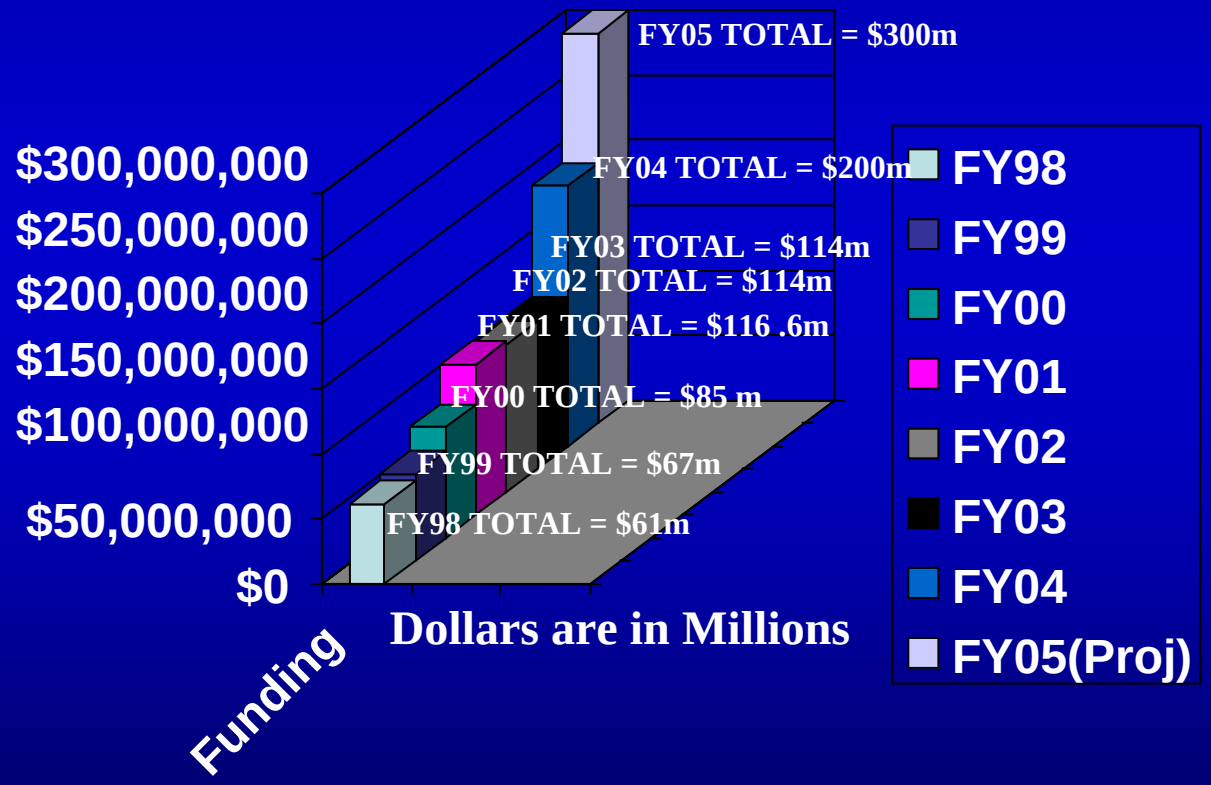
- Soldier selection and sustainment
- Soldier performance
- Warrior system modeling
- Health hazards protection
- Diagnostics/prognostics
- Health monitoring

Medical Chemical Defense

- Medical management of chemical warfare casualties
- Medical readiness
- Drug prophylaxes/ pretreatments
- Diagnostics/therapeutics

Total Funding

Projected FY05 TOTAL = $300m

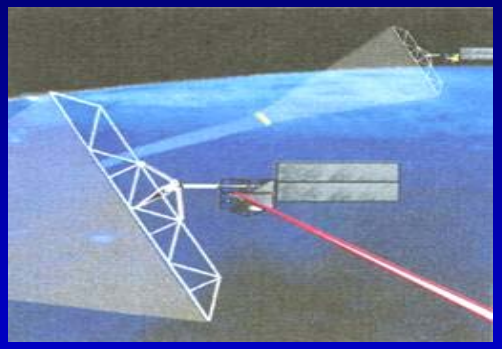


TATRC Triple Helix R&D Strategies

New Ideas, Knowledge

Academia

High Risk, High Payoff



DARPA

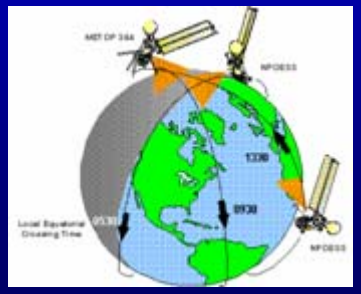
Link to the Warfighter

Stryker Brigade – Deployed Forces

Academia + Government + Industry
(Maximum Bang for Buck)

Expanded Resource Base

Service Labs



Interagency Partners

International Coalitions

Innovation, Transition

Industry

Hui Vision

- Vision
  - *Create partnerships*
    - for developing and providing telehealth research, services, education and training
  - *Use innovative technologies*
    - in all aspects of its endeavors

"Become a leader for developing healthcare partnerships to develop and facilitate telehealth and technology research and services, education and training, while emphasizing the use of innovative technologies in all aspects of its endeavors."

Overview of Organization

- **1994 AKAMAI, PACMEDNET, PRPO, Pe-IC**
  - **Vision and Support of Senator Inouye**
- **December 1999**
  - **Pacific Telehealth Hui was established**
    - **Signing witnessed by Senator Inouye**
- **July 2001 renamed**
  - **DoD/VA Pacific Telehealth & Technology Hui (Partnership)**
    - **Jointly governed, Health Care Research and Development Organization**
- **October 2005 Re-aligned with MRMC/TATRC**

- **Support Diverse Portfolio through partnerships ($25-30M annually)**
  - **Biotechnology**
    - Dengue, West Nile Vaccine
    - Medical Surveillance, HIV
    - Cancer Detection with infrared spectroscopy
    - Genomics, premature heart disease
    - Brain computer interfaces
    - Tissue regeneration and transplantation
    - Extracorporeal Membrane Oxygenation (ECMO)
    - Triple Helix Initiative
  - **Simulation and Biosensors**
    - Manikin and Virtual Environment Simulation
    - Raman Laser Spectroscopy
    - Physiologic monitoring
  - **Telemedicine**
    - Chronic disease management
    - Rehabilitation
    - eICU
    - Mass Medication (Bioterrorism) Clinic
  - **Clinical Informatics**
    - Automated clinical practice guidelines, Henry Ford Health System, DoD-AHLTA
    - **VistA - Open Vista Related Projects**

Hui Mission Statement Excerpts

- The Hui supports **research, prototype development, demonstration**, **testing, evaluation, validation,** then dissemination and institutionalization of applications and **technologies for innovative health care**.
- The Hui supports and enables **health education**, continuing medical education, and postgraduate medical education
- The Hui supports the **improvement of access**, coordination, continuity, and quality of health outcomes while controlling costs
- The Hui promotes the **transfer of technology** between US Government and other public and private sector agencies by building alliances to facilitate the sharing of resources and knowledge
- The Hui supports enhancement of **patient and population health**.

Hui Mission: Hui OpenVistA Projects

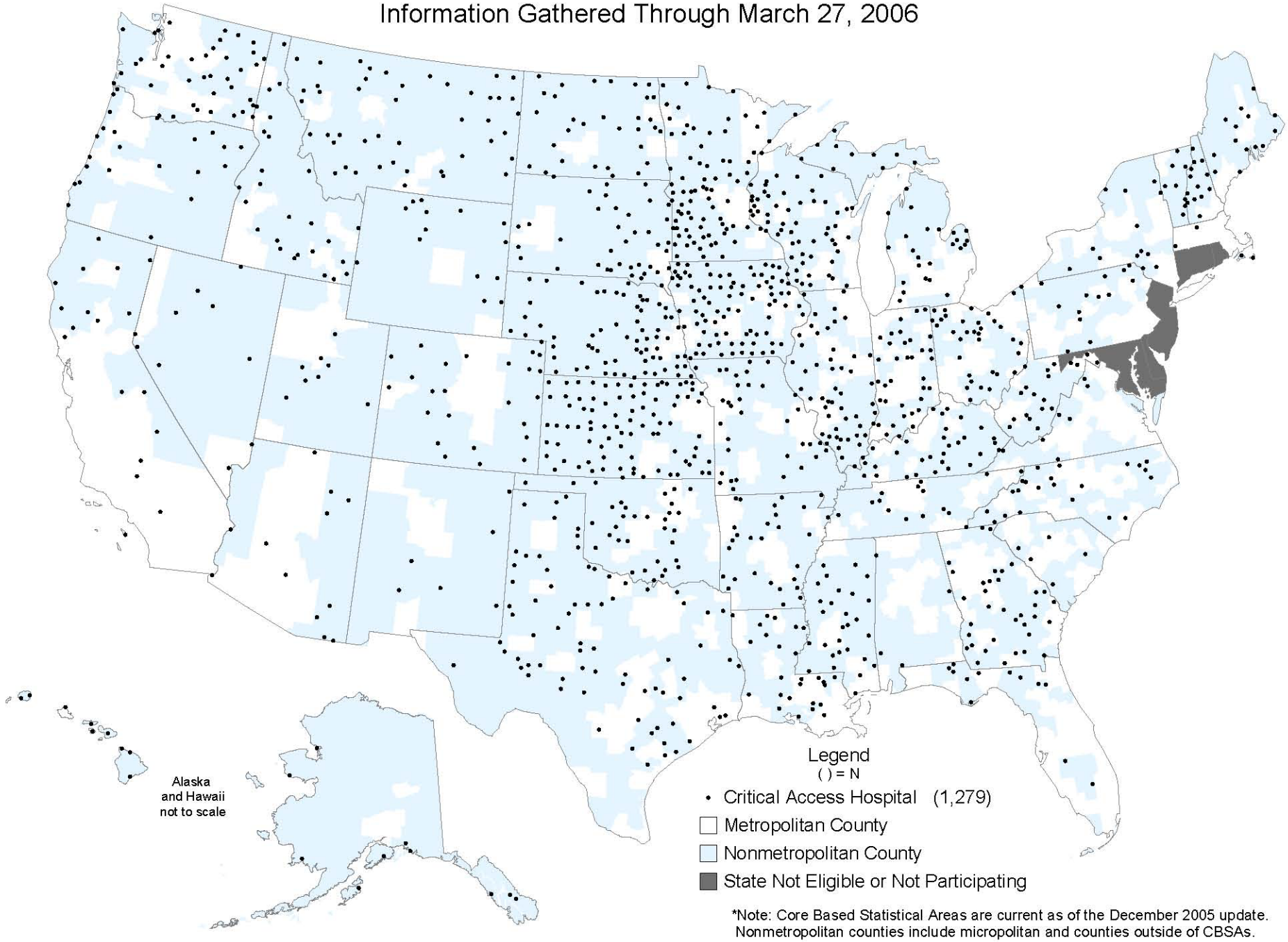
- **Enabling technology - improve health care**:
  - Improve communication
    - Reduce error, Integrate ancillary data, lab, pharmacy, billing, imaging
  - Improve patient satisfaction
    - Timeliness, completeness, reduced waiting times, paperwork reduction, information and communication
- **Health education**
  - Vista University, Medical-Nursing Informatics
  - Patient Education enabled at point of care, over distance and through data warehouse capability
- **Access to care**
  - Care coordination, continuity, recall, chronic disease management
  - Enables Telemedicine
- **Population health**
  - Data warehouse enables chronic disease management, prevention and empowers public health initiatives
- **Create Partnerships**
  - Multiple partnerships formed and encouraged through CRADA with Non-profit: HCMH

Hui Mission: Hui OpenVistA Projects

- **Transfer of technology**
  - Dual use and transfer of technology between US Government and other public and private sector agencies enhances value, CRADA with Hawaii Consortium for Medicine and Health (HCMH)
- **Rural Health Care Disparities**
  - OpenVista attractive in rural environments, current Hui Study,
  - ASP Model or stand alone installations provide lower cost alternative for rural clinics, offices, Critical Access Hospitals, Long Term Care facilities

Location of Critical Access Hospitals

Information Gathered Through March 27, 2006

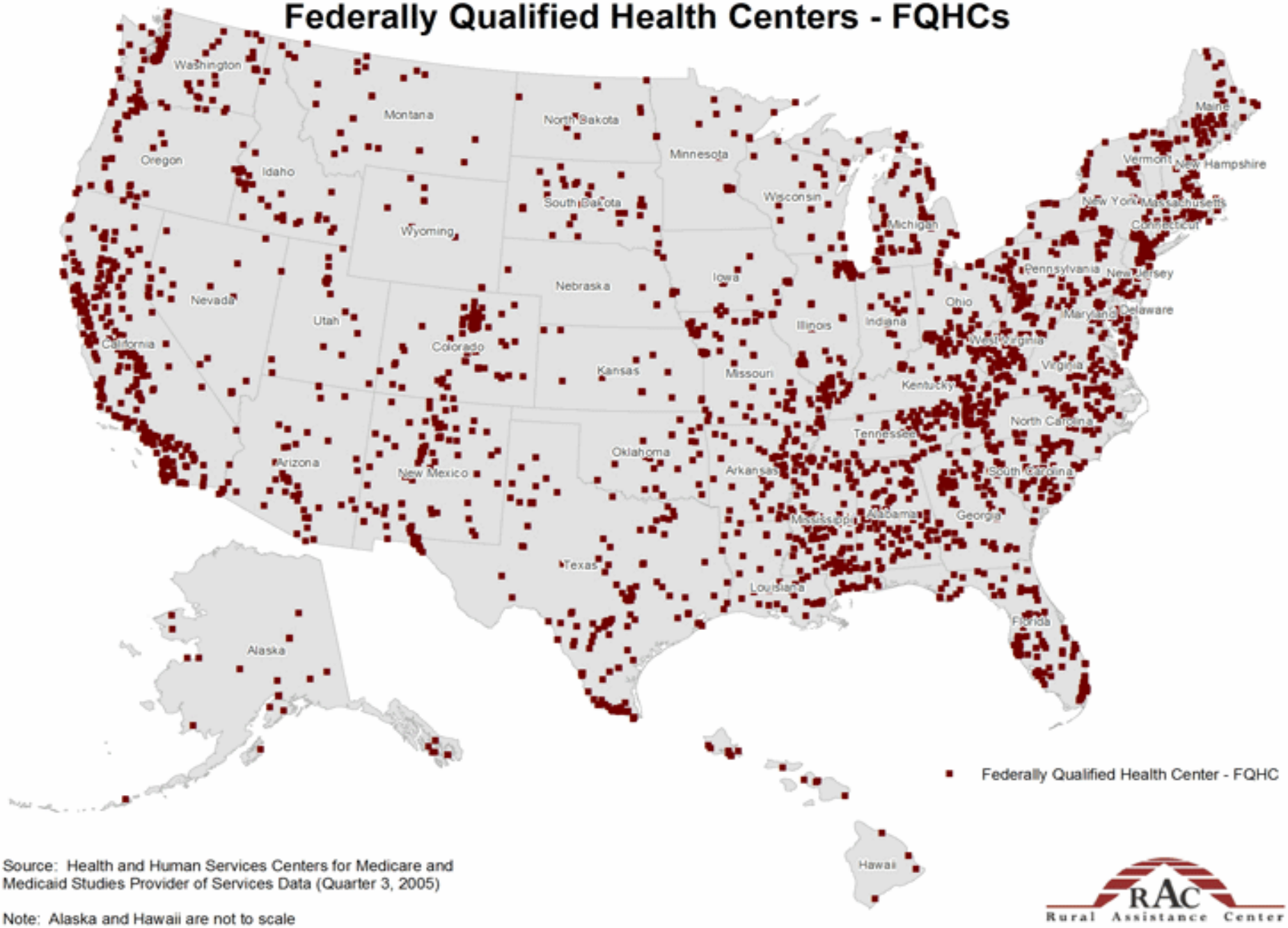


*Note: Core Based Statistical Areas are current as of the December 2005 update.
Nonmetropolitan counties include micropolitan and counties outside of CBSAs.

ources: US Census Bureau, 2005; CMS Regional Office,

Produced By: North Carolina Rural Health Research and Policy Analysis Center, Cecil G

Federally Qualified Health Centers - FQHCs

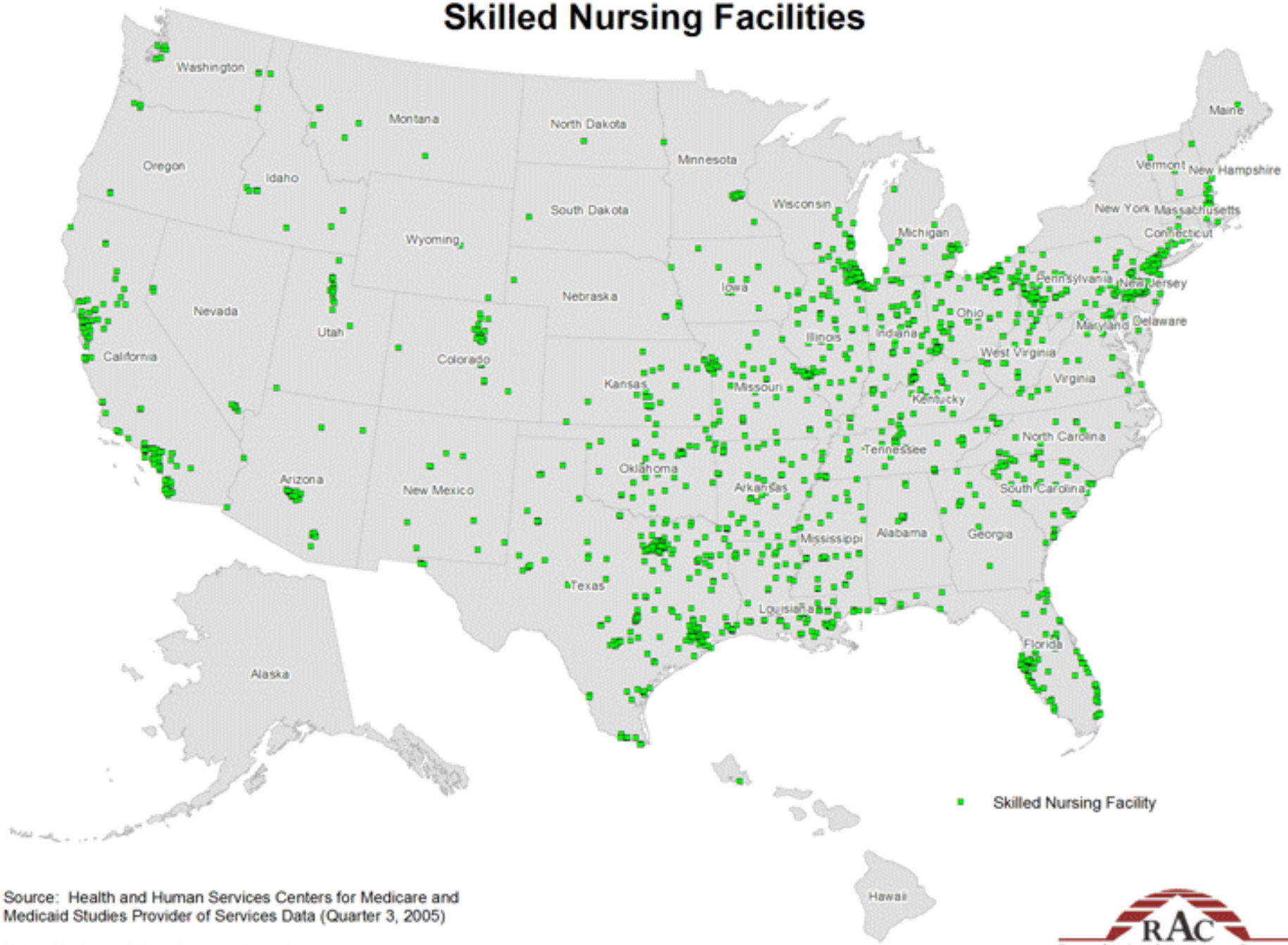


Source: Health and Human Services Centers for Medicare and Medicaid Studies Provider of Services Data (Quarter 3, 2005)

Note: Alaska and Hawaii are not to scale

RAC
Rural Assistance Center

Skilled Nursing Facilities



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RAC
Rural Assistance Center

Hui VistA Activities

Hui Initiatives have ALL been possible ONLY through collaboration in our “Vista Community”

Facilitate Technology Transfer by Strengthening Areas of weakness

- **Develop enhancements** beyond VistA to improve user acceptance
  - Prescription Auto Finishing
  - Hui Vista Imaging
  - Dot Macro
  - Control/F
  - Data Warehousing - INSIGHT (DM, HTN, Coag)
  - Billing Interface
  - OB and Peds modules

- **Demonstrate Open Vista utility/practicability** with pilot installations
  - LBJ Tropical Medical Center (In-patient and Out-patient)
  - Clint Spencer Clinic (HIV Specialty Clinic)
  - University of Hawaii (Geriatrics Specialty Clinic)
  - Physician Center of Mililani – VOE Beta Test Site (Physicians Practice)

Hui VistA Activities

Facilitate Technology Transfer - Strengthening Areas of weakness

- **Develop documentation and instructional curricula**
  - Installation aids, documentation and customization guides
  - Vista Institute Curricula
  - Vista Institute e-Curricula
  - Clinical Application Coordinator and Systems Administrator

- **Develop work force capabilities**
  - Develop hands on training opportunities
  - Construct certification curricula and testing
  - Facilitate partnering to leverage capabilities, CRADA HCMH, VSA

- **Support efforts to maintain Vista Code reliability**
  - Code repository, maintain updated code
  - Support efforts to meet Vista CCHIT requirements

Hui VistA Timeline

- Began in 1999 with LBJ Tropical Medical Center in American Samoa
  - First installation of FOIA VistA in a non-VA hospital in the Pacific region
  - 160-bed hospital/out-patient clinic/dialysis center
  - LBJ credits system with return to profitability

Commercialization of VistA

The Veterans Information Systems & Technology Architecture

Pacific Telehealth & Technology Hui
A DoD/VA JOINT VENTURE
TATRC ORGANIZATION

2001
FOIA VistA

Commercialized and installed at LBJ Tropical Medical Center

- Registration
- Scheduling
- Pharmacy
- Radiology
- Laboratory
- Computerized Patient Record System (CPRS)

2003
GT.M / Linux

Ported FOIA VistA to GT.M / Linux

2004
OpenVistA

OpenVista

Modify GT.M / Linux to ASP

2005
OpenVistA

OpenVista

Field-test ASP

- Clint Spencer Clinic
- University of Hawaii Geriatric Medicine

Add-On Modules

- Billing
- OB/GYN
- Pediatrics

VistA Institute

- Systems Administration
- Clinical Applications

2006

CMS VOE Beta Test Site

- Mililani Physician Center

HHSC Kauai ASP Network

- Kauai Veterans Memorial Hospital
- Sam Mahelona Hospital
- Waimea Clinic
- Kalaheo Clinic
- Eleele Clinic

Interface to Third Party Applications

- Practice Management Systems
- Laboratory System
- Prescription System

Open Source Release (from www.pacifichui.org)

- Hui OpenVista 4.0 Upgrade
- VistA Institute Program Curricula

VistA Institute II

- e-learning program

VistA Institute

University of Hawaii – Pacific Telehealth & Technology Hui

VistA Training & Certification Program Curricula

Clinical Application Coordinators

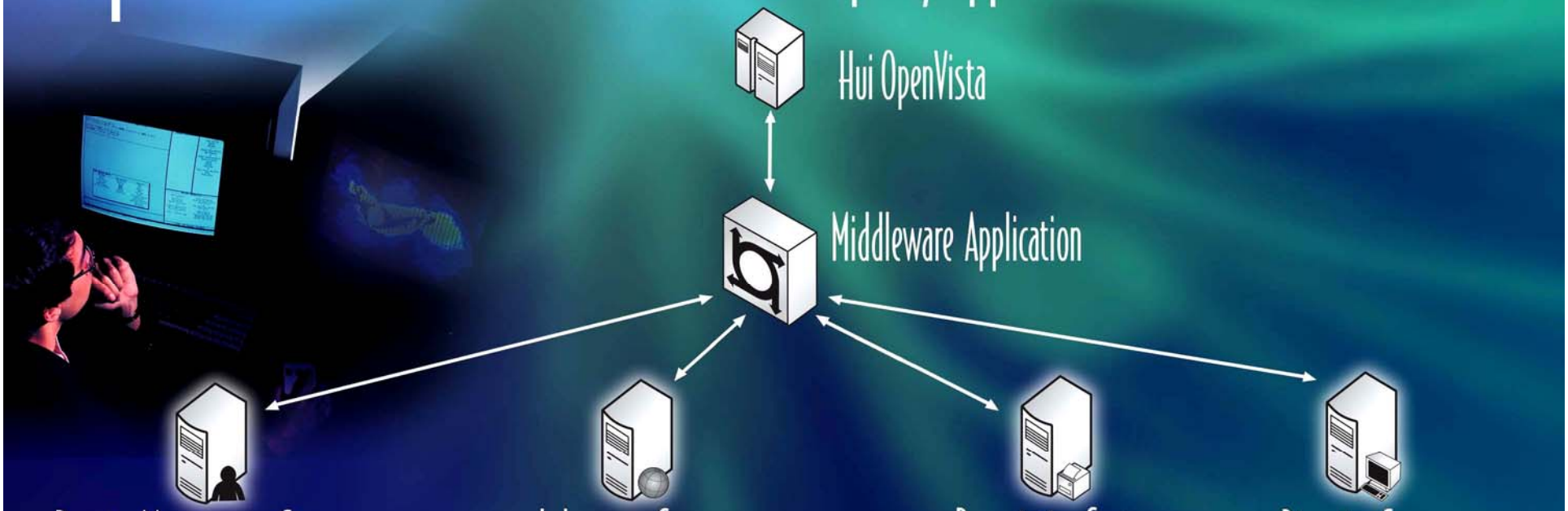
- CAC Roles & Responsibilities
- VistA Orientation
- CPRS (Tabs) – End User Training11
- User Setup
- Notifications
- CPRS – Adverse Reaction Tracking
- Admissions Discharge Transfer/ PIMS/Scheduling
- CPRS - Text Integration Unit (TIU)/ CPRS – Authorization Subscription Utility (ASU)
- CPRS – Problem List
- Patient Care Encounter
- CPRS – Orders
- Laboratory

System Administrators

- VistA Overview
- M (MUMPS)
- FileMan
- TaskMan
- Device Management
- Spool Management
- Operations Management (1 of 2)
- Operations Management (2 of 2)
- Security
- Menu Management
- User Management
- MailMan
- Error Processing
- HL-7
- KIDS

OpenVista Interfaces to third party applications

Pacific Telehealth & Technology Hui
A DoD/VA JOINT VENTURE
TATRC ORGANIZATION



Practice Management System

Sample PMS Providers include:

- AdvancedMD by AdvancedMD
- Lytec Medical 2006 by Lytec
- AltaPoint Medical by AltaPoint
- MediSoft by MediSoft
- Medical Manager by WebMD
- Office Hours Pro by MediSoft
- PRAXIS® PractiSoft by MediSoft
- PractiSoft by MediSoft

Laboratory System

Compatible Lab Systems include:

- Bio-Reference Lab by Bio-Reference
- CliniScan for Sunrise Labs
- CliniScan for Enzo Labs
- LCM Network by LabCorp of America
- E-MAXX Network by MedPlus
- QuestLab Network by Quest Laboratories
- Smith-Kline
- Clinician by WebMD/Healtheon

Prescription System

Prescription Systems:

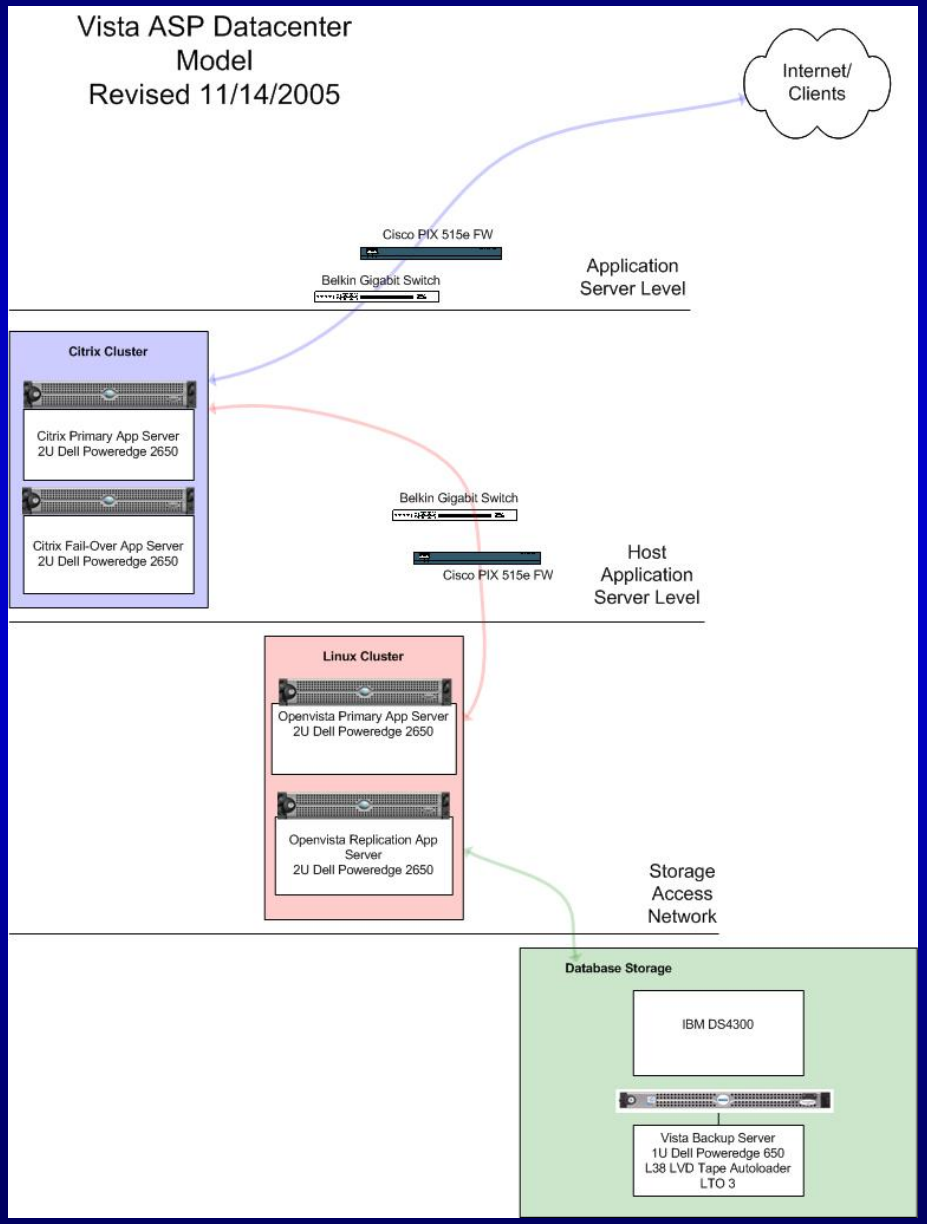
- PPARIS
- TouchScripts

Dictation System

Dictation/Voice Recognition Systems:

- Dragon Naturally Speaking
- Sony Digital Voice Recorder

Application Service Provider (ASP) Prototype



Collaboration

"Vista Community"

- Non Profit
- Industry
- Academic
- Government

Public-Private Collaboration

- Hui is turning to the Hawaii Consortium for Medicine and Health to serve as a Neutral Non-profit to support our technology transfer program through CRADA to:
  - Develop, test and disseminate modifications, enhancements and new developments to promote useful, efficient and sustainable EHRs
  - Provide access and use to the Hui's ASP data center and other resources to support research, development and testing of new developments
  - Define new research and development projects to support program goals including facilitating interoperability among health information providers
  - Foster partnerships with institutions and organizations to jointly research and develop new applications and programs

Hawaii Consortium for Medicine and Health

- CRADA with HCMH enables:
  - Promote Collaborations to:
    - Collaborate with Universities to develop and disseminate Open Vista curricula, (West Virginia, Georgia and Hawaii)
    - Collaborate with IT companies to transfer data center models, technology an d documentation (West Virginia, New Mexico, Louisiana, Hawaii)
    - Support OpenVista Institute Governance Council code standardization and maintenance efforts.
      - Add-on modules
      - Rx Auto Finishing
      - Hui OpenVista Imaging
      - Dot Macro
      - Control/F

OpenVista™ Hawaii Collaboration

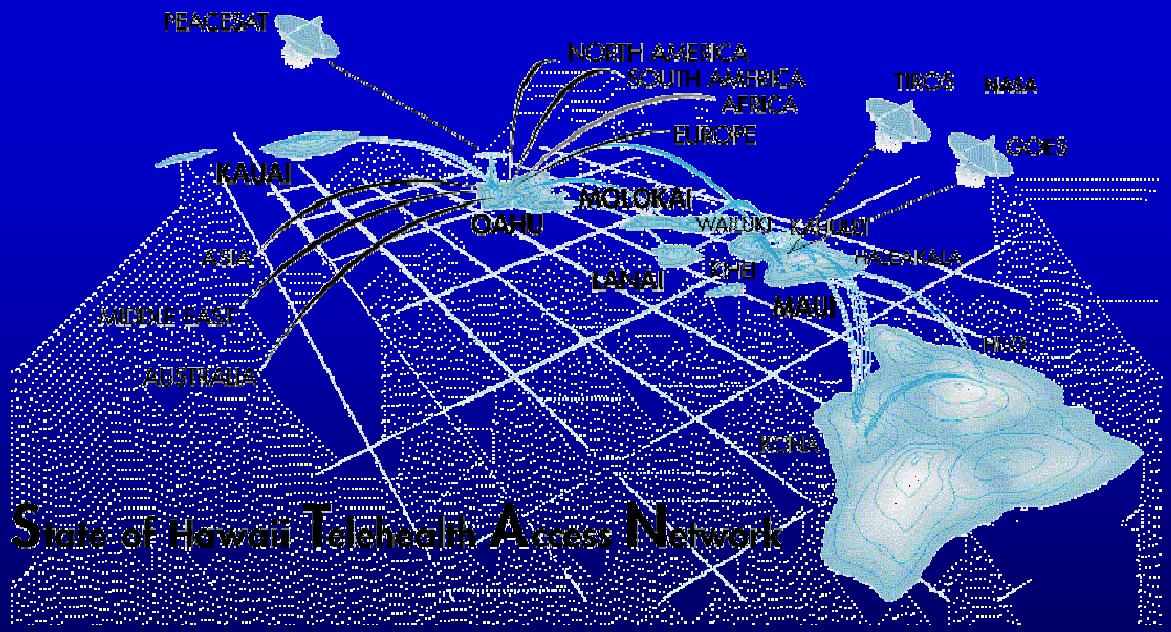
- **Collaboration – Government, Academia, Industry,**
  - **Partners: Research Project: Open Source Electronic Health Records in a Rural Environment**
    - Hawaii Health Systems Corporation (HHSC)- fourth largest public hospital system in the U.S. with 3,400 employees staffing 1,260 beds on five islands
    - Private IT Companies
    - University of Hawaii (Telecommunications & Information Policy Group)
    - Pacific Health Research Institute
  - **Clinicians**
  - West Kauai Medical Center (Hospital)
    - Sam Mahelona Hospital
    - Waimea Clinic
    - Kalaheo Clinic
    - Elelele Clinic

MELE Health Information Systems

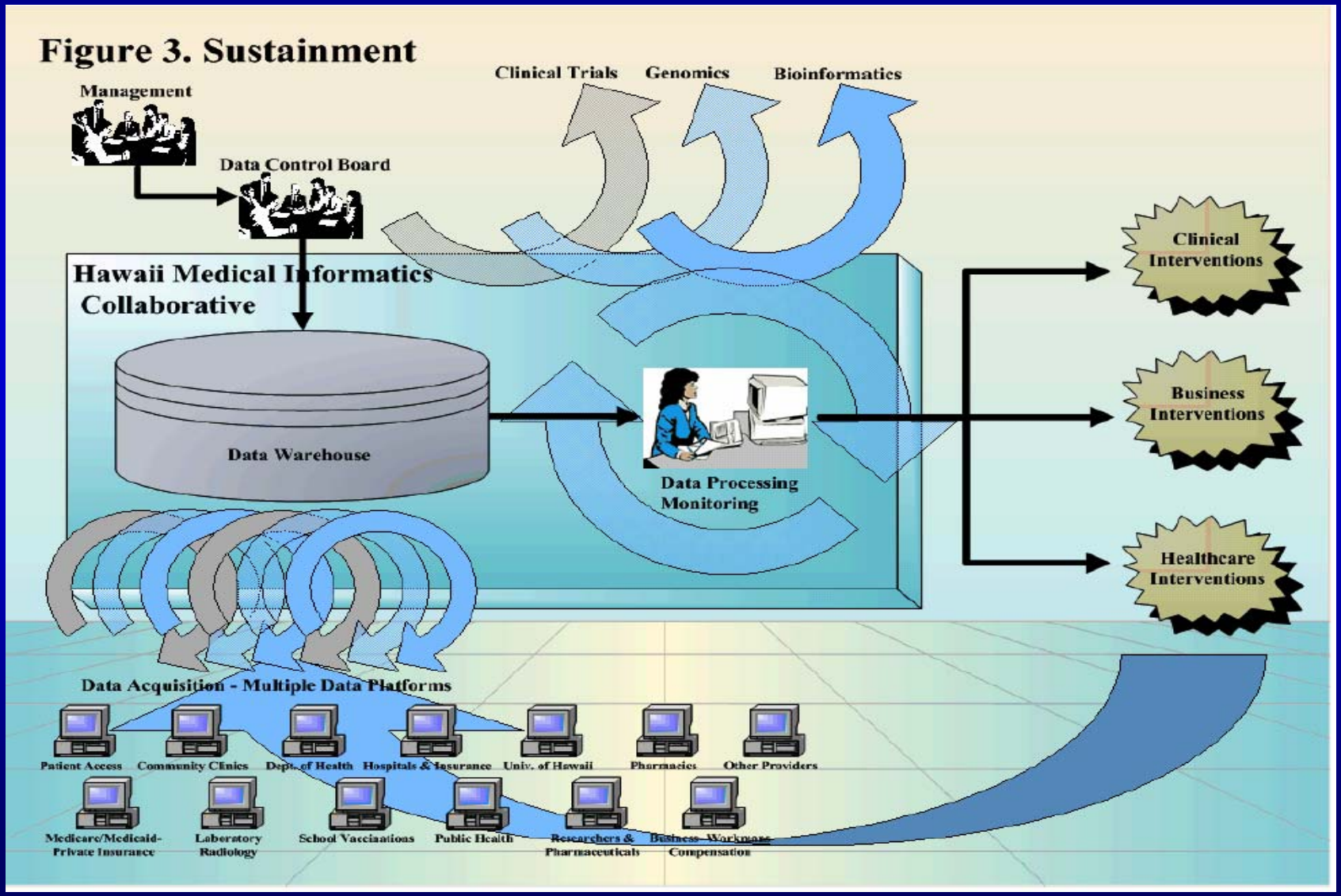
Public-Private Collaboration

State of Hawaii Telehealth Access Network (STAN)

- **Collaborative effort with State, Federal and Private organizations**
  - **16 private hospitals, 7 clinics**
  - **22 Pacific Island jurisdictions**
  - **Department of Public Health**
  - **UH School of Medicine**



Hawaii Medical Informatics Collaborative (HIMedIC)

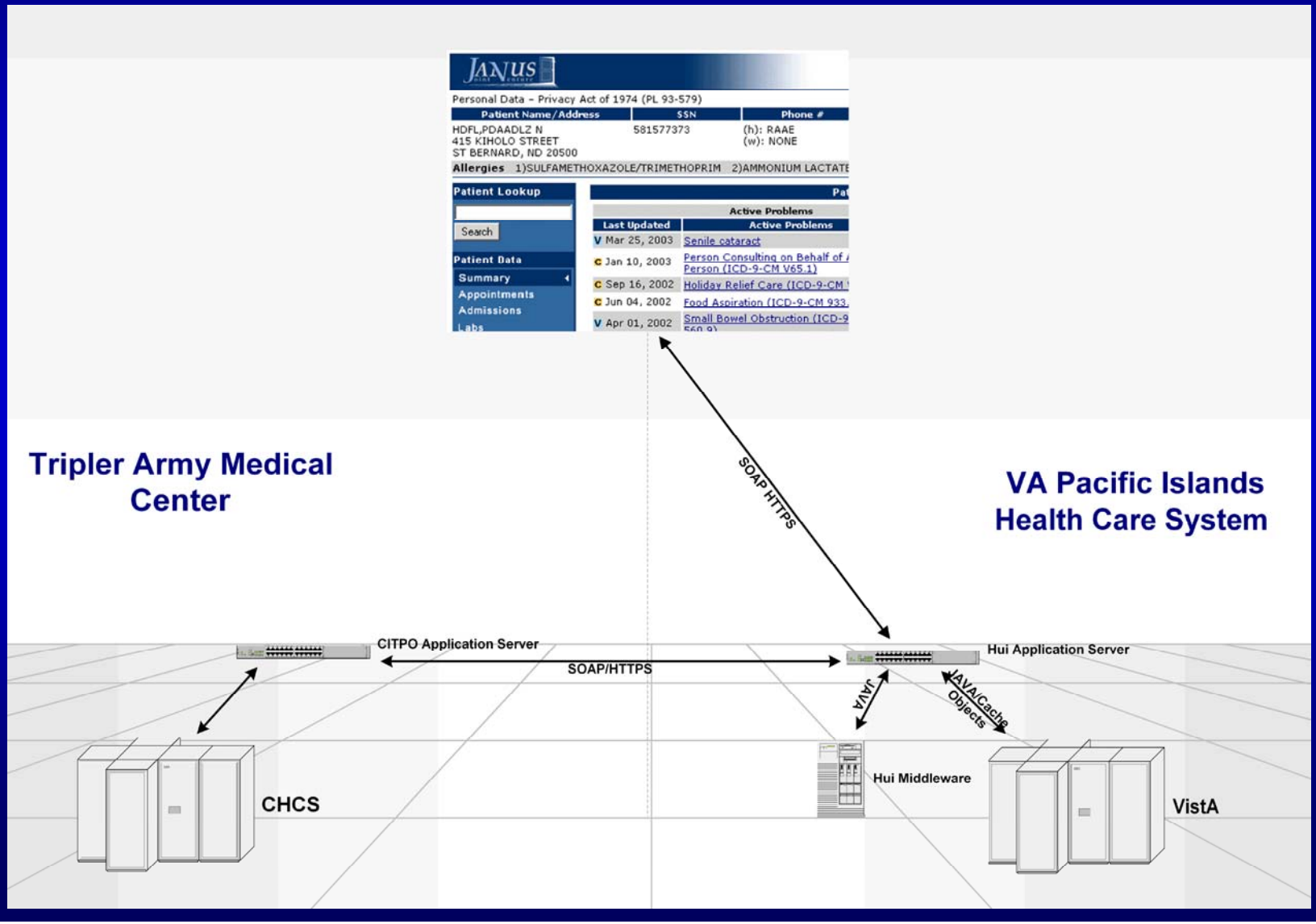


VA/DoD Interoperability Joint Venture

Janus Project

- **Collaboration with CITPO**
- **Developed in multiple phases**
  - Built Architecture using Cache Objects and J2EE
  - Developed Hui Clinical Interface
  - VA Janus
    - Built Hui VistA Web Services Interface
  - DoD Janus
    - Integrated Hui Middleware from Bi-Directional Pharmacy
    - Interfaced with CITPO CHCS interface

VA/DoD Interoperability Joint Venture



VA Bi-Directional Pharmacy

- CITPO/Hui Collaboration to develop standardized pharmacy interface to DoD's Clinical Bi-Directional Interface System (CBIS)
  - (2004) One way CBIS interface enabled exchange of data between Hui middleware and Tripler CHCS
    - VA prescription data electronically transmitted to Tripler
  - (2005) Bi-directional interface implemented to enable exchange of data between both VA and DoD institution's disparate systems

HIMedIC Health Integrated Data System

- Collaborative effort with State of Hawaii Department of Health (DOH)
  - Automate Health Integrated Data System – used to perform queries on State's vital statistics data
    - Queries processed manually
    - Aggregate data made available to the public
  - Migrate stand-alone DOS-based system to a secured web-based application
    - Enable access to public data
    - Reduce staff work load

HIMedIC Immunization Reporting System

- School Immunization Assessment Online Application System
  - Collaborative effort with Hawaii DOH and Department of Education
    - Used at 800+ schools statewide to service approximately 181,897 students
  - Online reporting system for tracking immunizations of Hawaii school children
  - Enables authenticated, authorized DOH users to:
    - Input immunization data on school's student population
    - Compile data electronically
    - Generate reports on immunization status of Hawaii's children

Vista Community
Major Challenges

Address critical needs to maintain FOIA VistA / VOE / Hui OpenVista in EHR mainstream

1. Need for skilled technical and clinical VistA work force
2. Need for systems interface tools
3. Need to maintain source code current with FOIA patch releases
4. Need to ensure compliance with current and future certification programs, e.g., CCHIT
5. Need to establish a successful record of installations in the outpatient and inpatient communities, e.g., more success stories
6. Need for VistA/Hui OpenVista/VOE certification and training program

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Need for skilled technical and clinical VistA work force

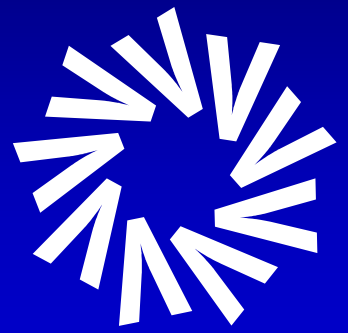
- Clinical Applications Coordinators
  - Power Users
- Systems Administrators
  - System Implementers/Installers

Need for systems interface tools

- Hui OpenVista Middleware to X-Link

Need to maintain source code current with FOIA patch releases

- Governance Council – partnership of organizations from the VistA Community
  - oversees the development of standards and policies needed to sustain a “Golden Master” standard, freely shared source code of the open source Vista.



Need to ensure compliance with CCHIT

Need More Success Stories

- Need to establish a successful record of installations in the outpatient and inpatient communities
  - HHSC effort

Need Certification and Training Program