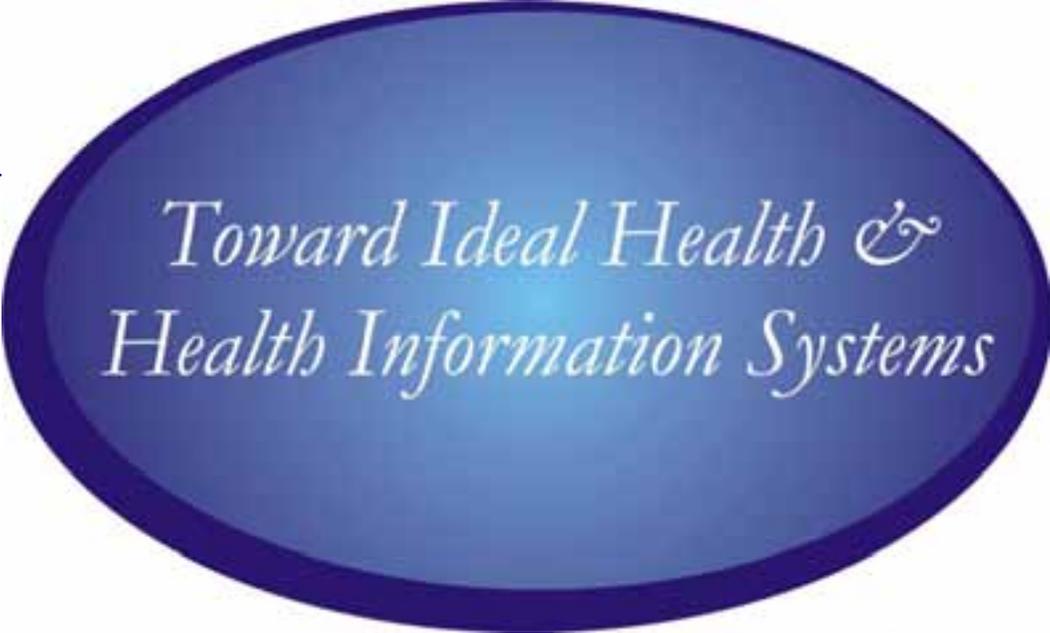December 19, 2003

Toward Ideal Health &
Health Information Systems

Presentation to NHII Workgroup

Gary A. Christopherson
Senior Advisor to the Under Secretary
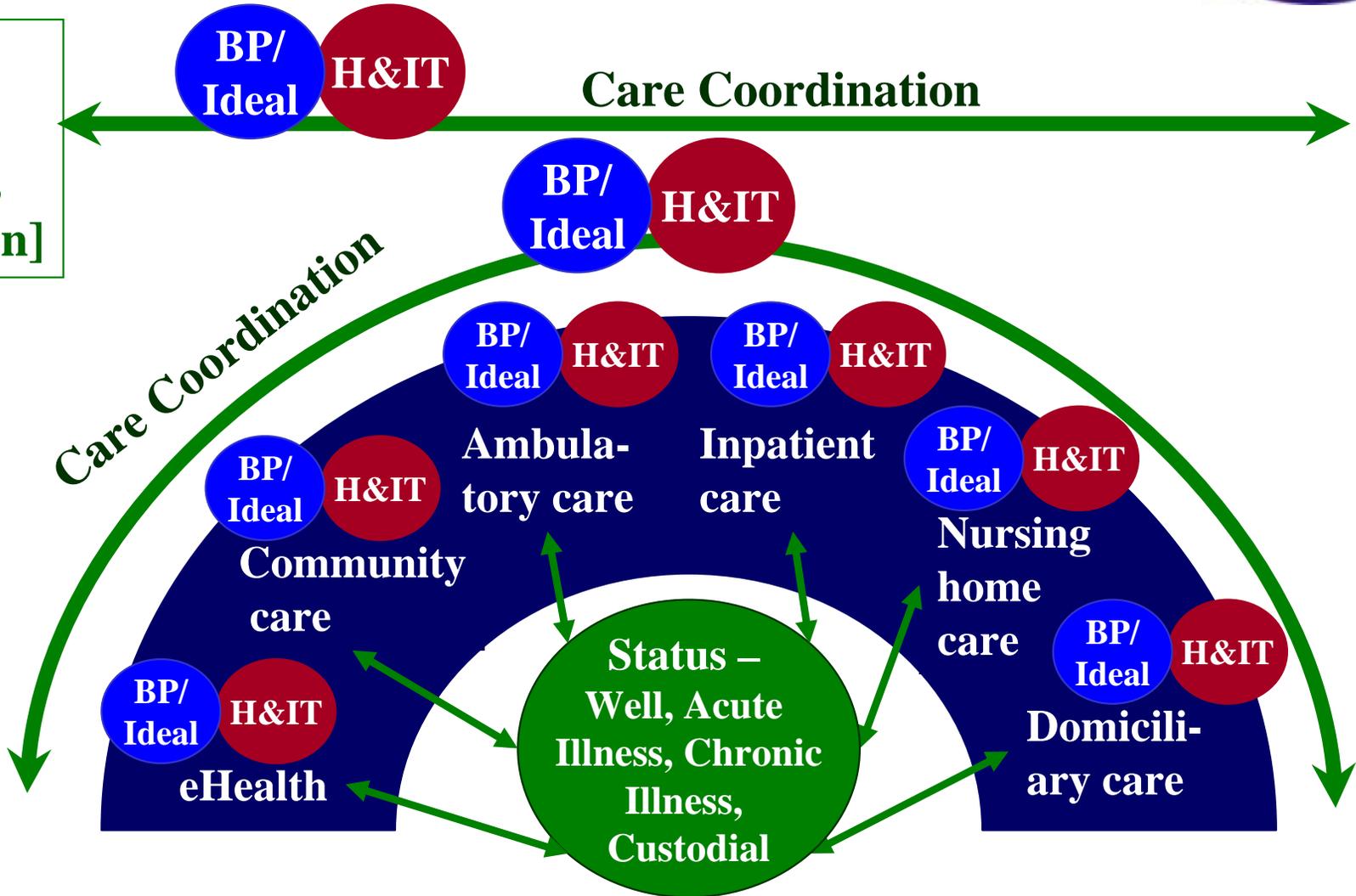Veterans Health Administration, Department of Veterans Affairs
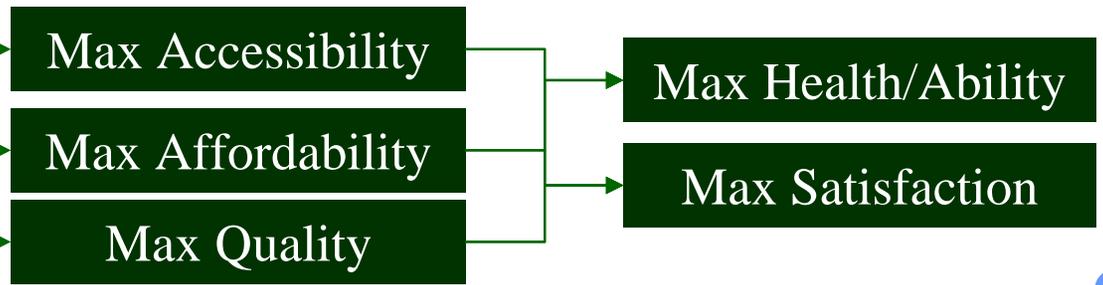
Maximize Health/Ability & Satisfaction

HealthePeople

Population Based [community, region, nation]

Person Based

Episode Based

Care Coordination

Care Coordination

BP/Ideal   H&IT

BP/Ideal   H&IT

BP/Ideal   H&IT   Ambulatory care

BP/Ideal   H&IT   Inpatient care

BP/Ideal   H&IT   Community care

BP/Ideal   H&IT   Nursing home care

BP/Ideal   H&IT   eHealth

BP/Ideal   H&IT   Domiciliary care

Status – Well, Acute Illness, Chronic Illness, Custodial

Health Systems – Best Practices & Ideal

Max Accessibility

Max Affordability

Max Quality

Max Health/Ability

Max Satisfaction

"VHA's integrated health information system, including its framework for using performance measures to improve quality, is considered one of the best in the nation."

Institute of Medicine (IOM) Report, Leadership by Example: Coordinating Government Roles in Improving Health Care Quality (2002)

Success in supporting health delivery for millions of veterans

- **VistA/CPRS was & is a success**
  - Built by "fire" of VHA collaboration
  - Publicly owned by VA; could be for future as well
  - Strong interest by public/private in using VistA
- **Largest integrated health info system for nation's largest integrated health system**
- **Helps serve 4.1 million American veterans annually**
- **Supports:**
  - $23+ billion nationwide health system
  - 1,300 care sites, incl. 163 hospitals & 800+ community & facility based clinics
  - 180,000 health care staff; 85,000 trainees
- **Considered best overall health information system**

VistA CPRS in use by: Clerk,Pharm (LOCALHOST)

File Edit View Tools Help

MADTL,F F   Visit Not Selected   Primary Care Team Unassigned   CIRN   Postings
500-50-5000   ,1924 (74)   Provider: CLERK,PHARM   Data   A

Lab Results

Most Recent
Cumulative
All Tests by Date
Selected Tests by Da
Worksheet
Graph
Microbiology
Anatomic Pathology
Blood Bank

Laboratory Results - Worksheet - All Results

Table Format
◉ Horizontal   ○ Vertical

Other Formats
○ Comments   ◉ Graph

☐ Abnormal Results Only   ☐ 3D   ☐ Values

Date/Time	Specimen	HCT	HGB	MCV	PLT	WBC
06/18/98 00:00	Blood	35.3 L	11.4 L		276	7.1
01/21/98 00:00	Blood	34.6 L	11.6 L	90.4	276	8.1
01/21/98 00:00	Blood	34.6 L	11.6 L	90.4	282	8.1
08/17/97 00:00	Blood	34.1 L	11.3 L	90	549 H	13.7 H
08/16/97 00:00	Blood	33.9 L	11.4 L	89.2	605 H*	15.2 H
08/15/97 00:00	Blood	30.8 L	10.4 L	89	559 H	14.5 H
08/14/97 00:00	Blood	30.7 L	10.2 L	90.7	544 H	18 H
08/13/97 20:36	Blood	30.7 L	10.3 L	89.1	538 H	21.5 H
08/13/97 04:06	Blood	25.7 L*	8.4 L	90	559 H	20.1 H
08/12/97 04:44	Blood	29.4 L	10 L	88.7	596 H	21.6 H
00/11/07 04:07	Blood	20.7 L	10 L	00.4	559 H	17.0 H

Other Tests

Date Range

Today
One Week
Two Weeks
One Month
Six Months
One Year
Two Years
All Results

Hct (Blood)
Hgb (hb) (Blood)
Mcv (Blood)
Plt (Blood)
Wbc (Blood)

◆ Hct (Blood) — Ref Low 41 — Ref High 51

7/12/92 1/10/93 7/11/93 1/9/94 7/10/94 1/8/95 7/9/95 1/7/96 7/7/96 1/5/97 7/6/97 1/4/98 7/5/98
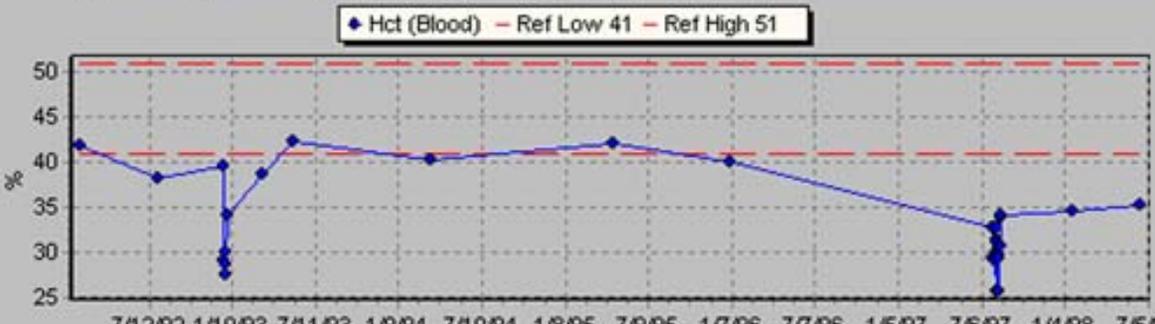
KEY: "L" = Abnormal Low, "H" = Abnormal High, "*" = Critical Value, "'*'" = Comments on Specimen

\Cover Sheet \Problems \Meds \Orders \Notes \Consults \D/C Summ \Labs \Reports /
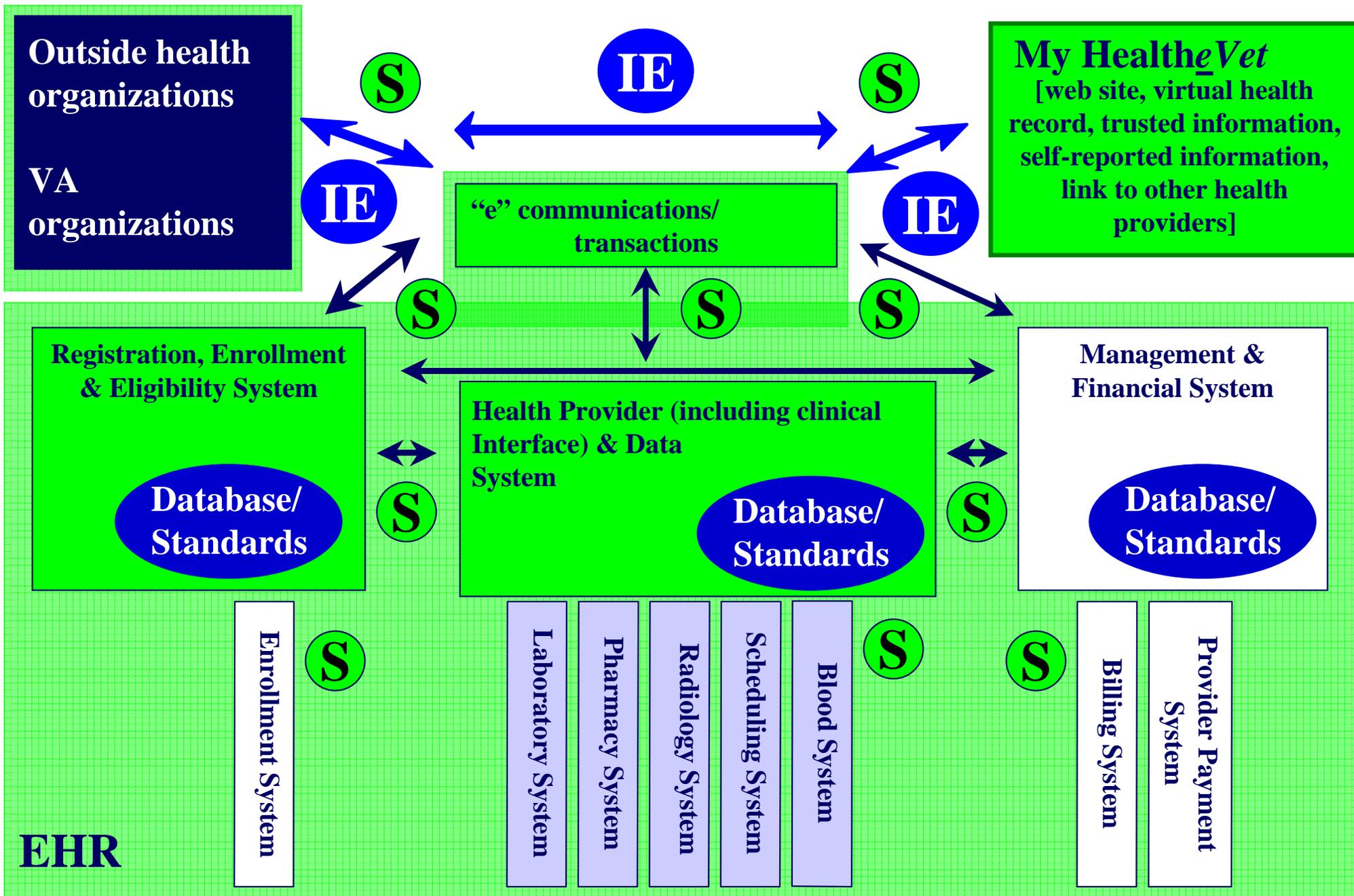
VistA - Why change?

- **Not lose functionality we have**
- **Strengthen VistA**
  - Move to person & data focus
  - Move to standardized, fully sharable health data
  - Modernize & replace older systems
  - Ensure documentation on application programs
  - Move to modern technologies
  - Increase flexibility to respond to future health needs
  - Lower cost of maintenance
- **Support our future health system**

Health*e*Vet – strategy overview

- **Moves from facility-centric to person/data-centric**
  - Uses national, person-focused health data repository for production & management/analysis/research
- **Builds on, enhances & utilizes VistA**
  - Moves from legacy VistA to Health*e*Vet-Vista
- **Uses best, appropriate modern technology**
  - Programming, software, hardware, networking
- **Moves "core" applications to run "enterprise-wide"**
- **Standardizes core data & communications**
- **Enhances the five major systems**
  - Regis./eligibility/enrollment, health data, provider, management/ financial, "e" commun./transactions
- **Enhances cross-cutting**
  - Security/privacy, architecture, data quality/standards, infrastructure, enterprise system/resources management

NextGeneration Health*e*Vet-VistA - High Performance Info System Components/Links/Standards

Health*e*Vet

Outside health organizations

VA organizations

S **IE** **S**

IE **IE**

"e" communications/ transactions

S **S** **S**

My Health*e*Vet
[web site, virtual health record, trusted information, self-reported information, link to other health providers]

Registration, Enrollment & Eligibility System

Database/ Standards

Health Provider (including clinical Interface) & Data System

Database/ Standards

Management & Financial System

Database/ Standards

S

S

S

S

S

Enrollment System

Laboratory System

Pharmacy System

Radiology System

Scheduling System

Blood System

Billing System

Provider Payment System

EHR

What is Care Management? (Clinician Dashboard)

VistA to Health*e*Vet (incl. Health*e*Vet –VistA)

VistA Legacy (Maintenance/Enhancement until "Retirement") [Current – 2005]

... 2000 2001 2002 2003 2004 2005 2006 2007
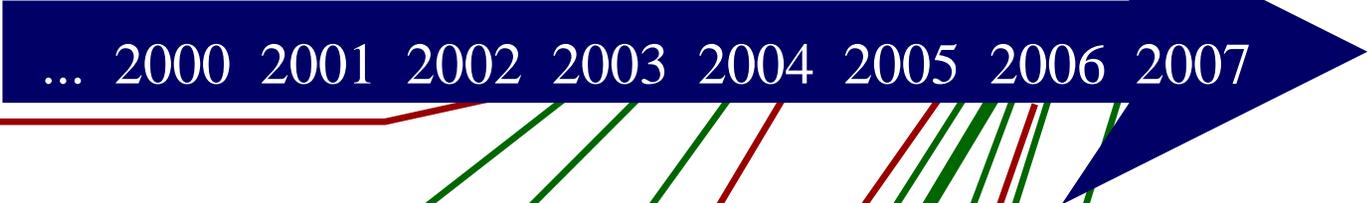
Enterprise Architecture Strong Project Management

VistA Imaging

Fee

Billing

High Performance Network/Infrastructure

Secure systems/infrastructure
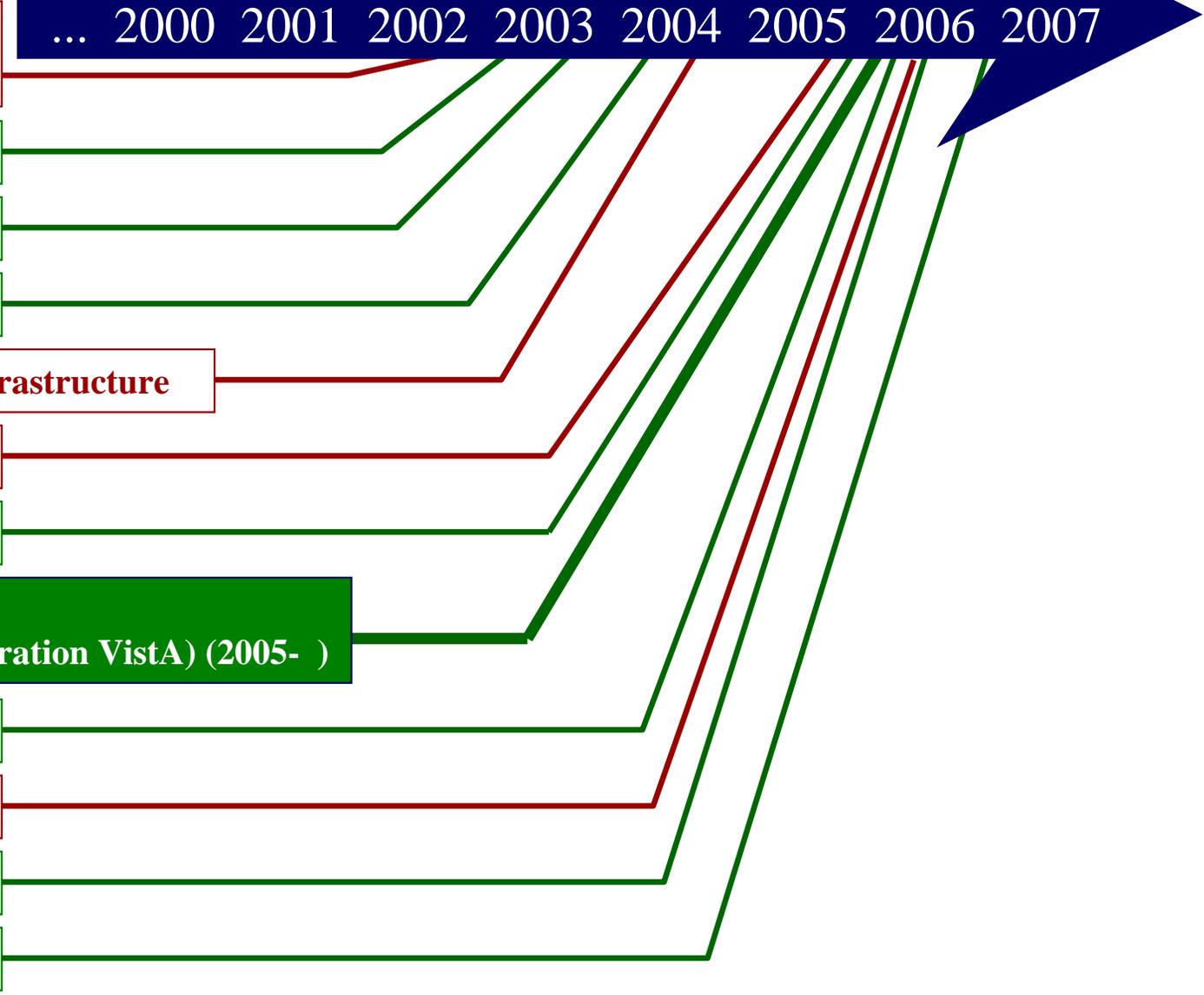
Health Data Repository

Health*e*Vet-VistA (Person/Data-Centric Next Generation VistA) (2005-)

Scheduling

High Performance Workforce

Pharmacy

Laboratory

Toward NHII and a "Virtual Health System"

- **EHRs** –
  - Provide financial incentives
  - Strongly encourage private sector vendors to make available affordable, high quality, standards-based EHRs
  - Strongly encourage provider-based efforts like AAFP
  - Continue to improve Health*e*People-VistA & make available
- **PHRs** –
  - Strongly encourage public/private sector to work together to develop & make available PHRs for persons
- **EHR/PHR Info Exchange (IE)** –
  - Strongly encourage public & private sector to work together to develop & make available national "exchange" solution
- **Standards** –
  - Consolidated Health Informatics as federal leadership
  - Strongly encourage public/private development/adoption of national standards

- **VHA push EHRs, PHRs, EHR/PHR Info Exchange & Standards in Federal and nationwide**
- **VHA support of NHII**
- **EHRs – VHA**
  - Current -- VistA electronic health record system
  - Next generation -- Health*e*Vet-VistA
  - Public version -- Health*e*People-VistA
- **PHRs – VHA**
  - My Health*e*Vet
- **EHR/PHR Info Exchange (IE) – VHA**
  - Federal Health Information Exchange with DoD
  - EHR Interoperability (Health*e*People (Federal) with DoD & IHS
- **Standards – VHA**
  - Adoption of VHA-wide standards
  - Adoption of standards between VA and DoD and VA and IHS
  - Consolidated Health Informatics

Toward NHII and a "Virtual Health System" – Veterans Health Administration Activities

HealthePeople

- VA/DoD Electronic Health Record (EHR) System
- Health Informatics Standards, Federal Health IT Architecture, & related Federal eGov Initiatives
- State Veterans Homes & VistA/CPRS
- Indian Health IT Sharing
- AAMC & Affiliated Medical Schools & VistA
- Federal/State/Local) Health Info & VistA Sharing
- EHR/PHR Info Exchange (IE)
- Personal Health Records & Home Tele-Health Care
- Public Health Info Systems/Databases & VistA Data
- Private Sector/Non-Government activities
- International Healthcare Community & VistA

Computerized Health Records (FY 2005+)

HealthePeople

DoD CHCS II Software	HealthePeople (Federal) Joint, Shared Software	VA HealtheVet-VistA Software

DoD CHCS II Clinical Data Repository

HealthePeople (Fed.) Data Standards (standardized across MHS/VHA)

VA/DoD Exchange

VA HealtheVet-VistA Health Data Repository

HealthePeople (Fed.) Data Standards (standardized across VHA/MHS)

Federal Data, Communications, Security Standards

Standards – Jointly use data, communications, architecture, security, technical, software standards; federal standards& potential national standards across public/private sector
Software – VA/DoD/Joint high performance software
Databases – Separate; enterprise-wide w/i each agency
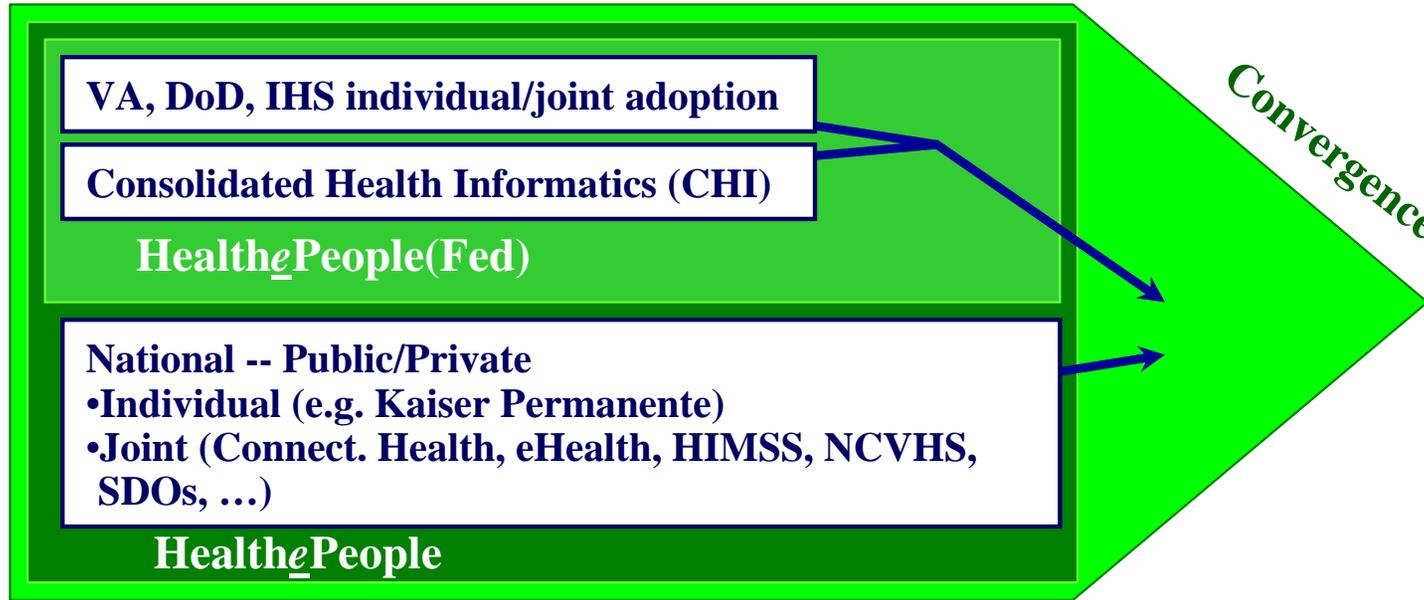**Hardware** – Separate; mix of enterprise & local w/i each agency
Exchange – Two-way VA/DoD
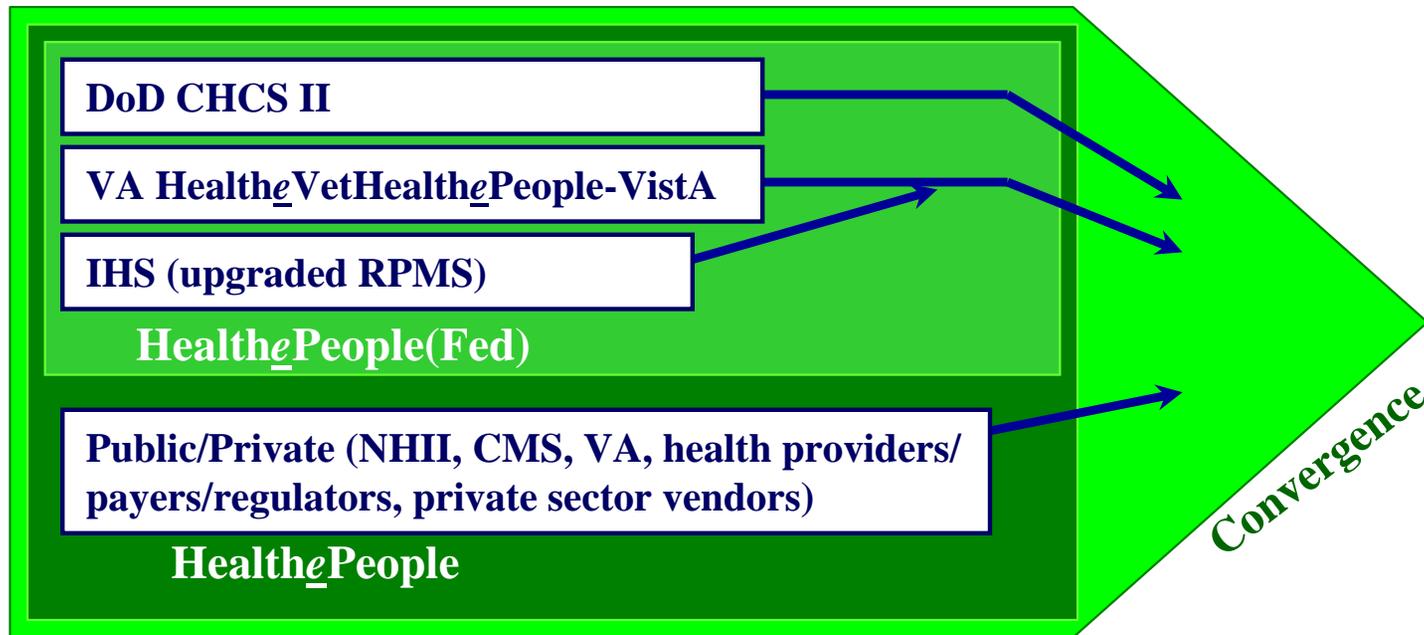
Toward NHII and a "Virtual Health System"

HealthePeople

Health Information

Standards

VA, DoD, IHS individual/joint adoption

Consolidated Health Informatics (CHI)

HealthePeople(Fed)

National -- Public/Private
- **Individual (e.g. Kaiser Permanente)**
- **Joint (Connect. Health, eHealth, HIMSS, NCVHS, SDOs, …)**

HealthePeople

Convergence

Systems

DoD CHCS II

VA HealtheVetHealthePeople-VistA

IHS (upgraded RPMS)

HealthePeople(Fed)

Public/Private (NHII, CMS, VA, health providers/ payers/regulators, private sector vendors)

HealthePeople

Convergence

National Health Information Standards

Info Exchange / Sharing

High Performance Health Info Systems

Personal Health Record Systems

2001

2010

"Electrifying"
1/7th of US Economy