

2010 Military Health System Conference

Using Virtual Health to Reduce Visits

Sharing Knowledge: Achieving Breakthrough Performance

LTC Hon S Pak, AMEDD CMIO

26 January 2010



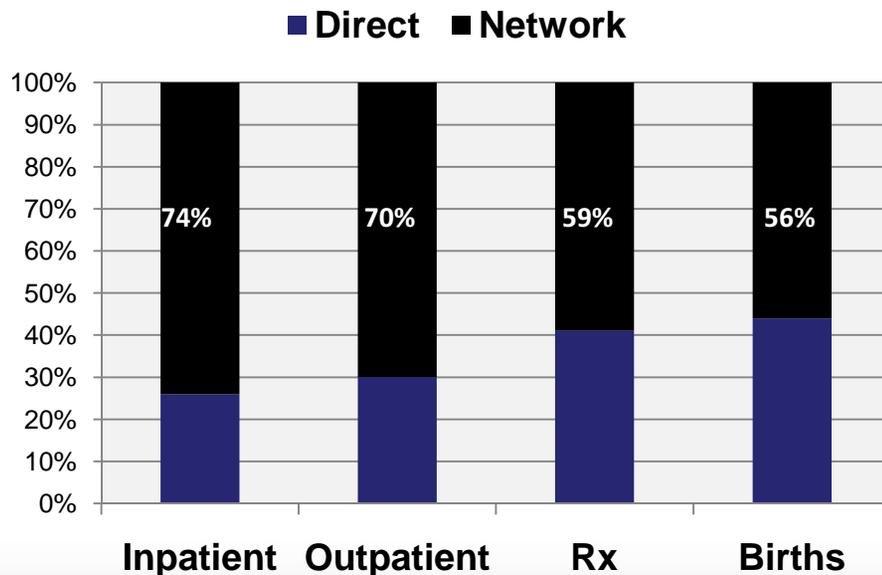
Army Medical Department



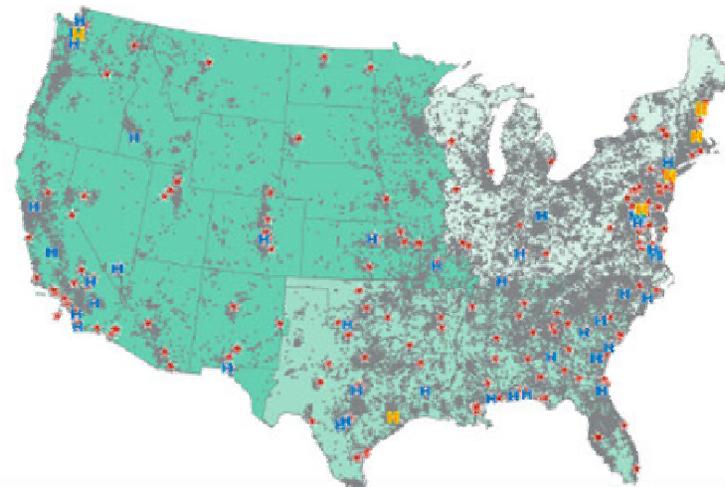
Military Health System (MHS)

Military Beneficiaries: 9.4 million			
Military Bases in US: 202			
Military hospitals	63	Medical/Dental Clinics	826
Encounters/month	9 million	Average outpatient visits/year/patient	4

1:4 military families move in a given year
<50% of network consults make it back to the PCM



MHS Beneficiary Distribution



(Source: TATRC/MRMC, Steffensen, 2009)

MHS Measures for Focused Improvement

– Our Tactical Imperatives



#1 – Casualty Care and Humanitarian Assistance

Reduced Combat Losses

- Case Fatality Ratio (OIF/OEF Combat Casualty Statistics)
- Observed vs. Expected Survival Rates (Battle Wounds)
- Mortality Rate Following Massive Transfusions
- Battle-Injured Medical Complications Rate
- Age of Blood in Theater

Effective Medical Transition

- MEBs Completed Within 30 Days
- DES Cases Returned to MTF
- MEB/PEB Experience Satisfaction Rate
- VA Transition Process

Improved Rehabilitation & Reintegration to Force

- Amputee Functional Re-Integration Rate
- Psychological Distress Screening, Referral and Engagement
- PTSD Screening, Referral and Engagement
- PTSD Intensity of Care
- TBI Screening and Referral
- Potential Alcohol Problems and Referral

#2 – Fit, Healthy and Protected Force

Reduced Medical Non-Combat Loss

- Force Immunization Rate
- Orthopedic Injuries Rate in Theater
- Orthopedic Injuries Rate in Garrison (Non-Deployed)
- Influenza-Like Illness Rate in Theater
- Influenza-Like Illness Rate in Garrison (Non-Deployed)
- Psychological Health: In-Theater Evacuations/Encounters

Improved Mission Readiness

- Deployment Limiting Medical Conditions
- Undetermined Medical Readiness Status

Increased Resilience & Optimized Human Performance

- In Development

#3 – Healthy & Resilient Individuals, Families & Communities

Healthy Communities/Healthy Behaviors

- MHS Tobacco Use Rate
- Active Duty Lost Work Days Rate
- MHS Body Mass Index Rate
- Alcohol Screening/Assessment Rate
- FAP Substantiated Child/Spouse Abuse Rate
- Influenza Immunization Rate
- Mental Health Demand Family of Service Members
- Active Duty Suicide Rate (Probable/Confirmed)

Health Care Quality

- Enrollee Preventive Health Quality Index (HEDIS)
- Overall Hospital Quality Index (ORYX)
- CONUS Ventilator Associated Pneumonia Rate
- Health Care Personnel Flu Vaccination Rate
- Hospitalization 30-Day Disease Mortality Rate

Access to Care

- No Problem Getting Needed Care Rate
- Percent of Time MTF Enrollees See Their PCM When PCM in Clinic
- Booking Success Rates for Primary Care Appointing
- Primary Care Third Available Routine Appointment

Beneficiary Satisfaction

- Satisfaction with Provider Communication
- Satisfaction with Health Care
- Satisfaction with Health Plan

#4 – Education, Research and Performance Improvement

Capable MHS Work Force and Medical Force

- Uniform Provider Fill Rates - Mental Health Specialties
- Competitive & Direct Hire Activity – Medical Professionals

Contribution to the Advancement of Medical Science

- Peer-Reviewed Journal Article Publication Rate

Performance-Based Management and Efficient Operations

- Annual Cost Per Equivalent Life (PMPM)
- Enrollee Utilization of Emergency Services
- Provider Productivity
- Bed Day Utilization (Prime Enrollees)

Deliver Information to People so They Can Make Better Decisions

- AHLTA Reliability
- AHLTA Speed
- DMHRSI/EAS-IV Transmissions by Service

MHS Voting Results for Tactical Imperatives



Mission Outcome	Measure	Votes
Health Care Quality	Enrollee Preventive Health Quality Index (HEDIS)	14
Access to Care	No Problem Getting Needed Care	13
Access To Care	Percent of Time MTF Enrollees See their PCM When PCM in Clinic	11
Effective Medical Transition	MEB/PEB Experience Satisfaction Rate	10
Beneficiary Satisfaction	Satisfaction with Healthcare	10
Performance- Based Management and Efficient Operations	Annual Cost per Equivalent Life (PMPM)	10
Improved Mission Readiness	Deployment Limiting Medical Conditions	7
Effective Medical Transition	MEB's Completed within 30 Days	7
Health Care Quality	Overall Hospital Quality Index (ORYX)	6
Performance-Based Management and Efficient Operations	Enrollee Utilization of Emergency Services	6

Note: Voting based on members present at meeting

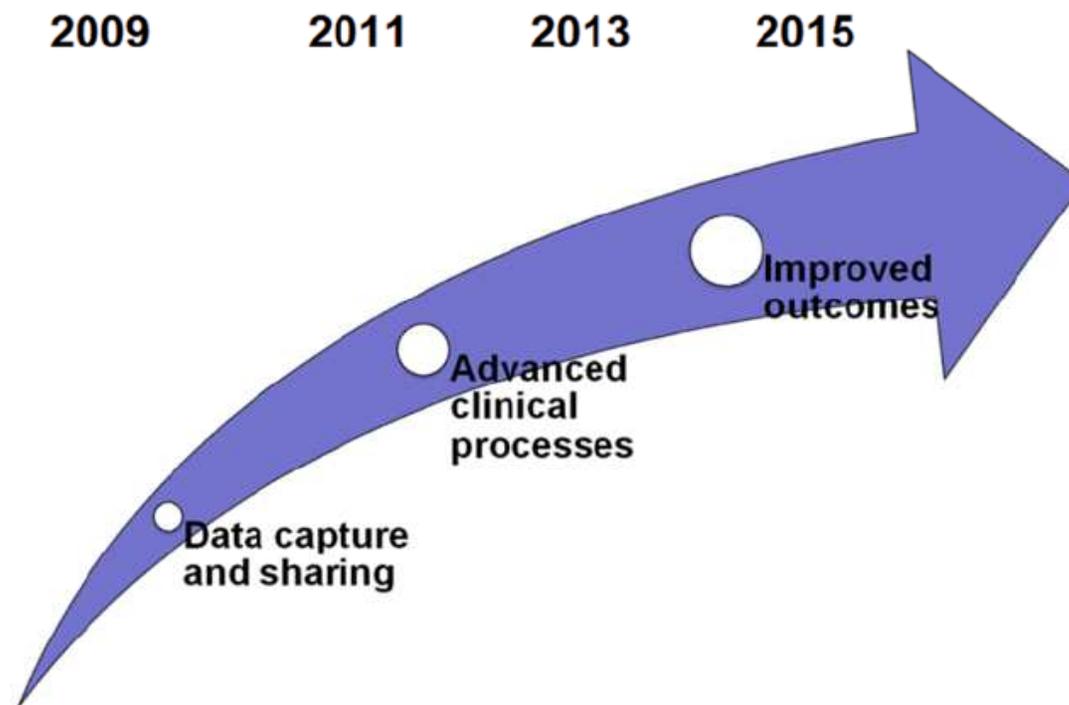
National Quality Forum



- NQF in 2008 set National Priorities and Goals to fundamentally change the ways in which we deliver care while providing access to healthcare that is safe, effective and affordable
 - Engage patients and families in managing their health and making decisions about their care
 - Improve the health of the population
 - Improve the safety and reliability of America Healthcare System
 - Ensure patients receive well-coordinated care within and across all healthcare organizations, settings, and levels of care.
 - Guarantee appropriate and compassionate care for patients with life-limiting illnesses
 - Eliminate overuse while ensuring the delivery of appropriate care



Meaningful Use of HIT is Quintessential to Health Care Reform





Proposed Definition of Meaningful Use: Care Goals

- Improve quality, safety, efficiency, and reduce health disparities
- Provide patients and families with timely access to data, knowledge and tools to make informed decisions and to manage their health
- Improve care coordination
- Communicate with public health agencies
- Ensure adequate privacy and security protection for personal health information



Implications to IM/IT

- Align investments to priorities and goals of quality, safety, outcomes and readiness using NQF's goals and challenges as a framework
 - Focus on personalized medicine and enabling technologies that empower patients (MEDICAL HOME, Patient Portal with Secure Messaging)
 - Focus on Business Intelligence infrastructure and tools to help manage explosion of data (population health to genomics) to shift our organization from a data generator to a knowledge driven system. This includes delivery of timely accurate and actionable information at point of care.
 - Focus on framework for clinical best practice and tools that reduce variation of care. (Clinical Knowledge Management Framework)
 - Focus on design, implementation, training and support for clinical system focused on patient safety and quality outcomes (MAPS, EHR Way Ahead, Informatics workforce)
 - Focus on tools that reduce and eliminate gaps in coordination of care (NH IN)

Most Patients Now Go to the Net



- Why?
 - Shopping, Travel, Finance, Social Communications, Buying and financing a house, College education
 - There is a drop in Primary Care Physicians and in time per patient when you do see one
 - If you're sick or frightened of getting sick you have a lot of time to worry about it –Your doctors don't
 - Older people actually have more time on their hands

Background on Provider-Patient Electronic Communications



- Growing Trend
 - 1/3 of physicians communicate with their patients online
 - 90% of U.S. Consumers prefer online communications with their providers

- Types of online communications
 - Secure online patient portals
 - Traditional email (provider networks or commercial services; i.e. gmail, Yahoo, AOL)
 - Other services: American Well

Patient access to an electronic health record with secure messaging: impact on primary care utilization.



Am J Manag Care. 2007 Jul;13(7):418-24. [Zhou YY](#), [Garrido T](#), [Chin HL](#), [Wiesenthal AM](#), [Liang LL](#).

- **OBJECTIVE:** To determine whether patient access to secure patient-physician messaging affects annual adult primary care office visit and documented telephone contact rates.
- **STUDY DESIGN:** Retrospective cohort and matched-control studies with pre-post analysis.
- **METHODS:** The cohort study sample included 4686 adult members of Kaiser Permanente Northwest (KPNW) who had been registered KP HealthConnect Online users longer than 13 months and had used at least 1 feature. The matched-control study sample included 3201 randomly selected controls matched by age/sex, selected chronic conditions, and primary care physician to 3201 registered users. We calculated the difference in primary care office visit and documented telephone contact rates in the pre- and post-periods (defined, respectively, as 3-14 months before and 2-13 months after registration for KP HealthConnect Online). Paired t tests were used to assess significance.
- **RESULTS:** Annual office visit rates decreased by 0.23 (-9.7%) visits per member in the cohort study. Annual office visit rates for users in the matched-control study decreased by 0.25 (-10.3%); the corresponding decrease for the controls was 0.08 (-3.7%). This 0.17 (-6.7%) reduction was significant ($P < .003$). Annual documented telephone contact rates for users in the matched-control design increased by 0.32 (16.2%) contacts per member; the corresponding rate for the control group was 0.52 (29.9%). This 0.20 (13.7%) difference was significant ($P < .01$).
- **CONCLUSION:** Patient access to the secure messaging feature of KP HealthConnect Online was associated with decreased rates of primary care office visits and telephone contacts.

PMID: 17620037 [PubMed - indexed for MEDLINE]

The Kaiser Permanente Electronic Health Record: transforming and streamlining modalities of care



Health Aff (Millwood). 2009 Mar-Apr;28(2):323-33. [Chen C](#), [Garrido T](#), [Chock D](#), [Okawa G](#), [Liang L](#).

- We examined the impact of implementing a comprehensive electronic health record (EHR) system on ambulatory care use in an integrated health care delivery system with more than 225,000 members.
- Between 2004 and 2007, the annual age/sex-adjusted total office visit rate decreased 26.2 percent, the adjusted primary care office visit rate decreased 25.3 percent, and the adjusted specialty care office visit rate decreased 21.5 percent. Scheduled telephone visits increased more than eightfold, and secure e-mail messaging, which began in late 2005, increased nearly sixfold by 2007. Introducing an EHR creates operational efficiencies by offering nontraditional, patient-centered ways of providing care.

PMID: 19275987 [PubMed - in process]

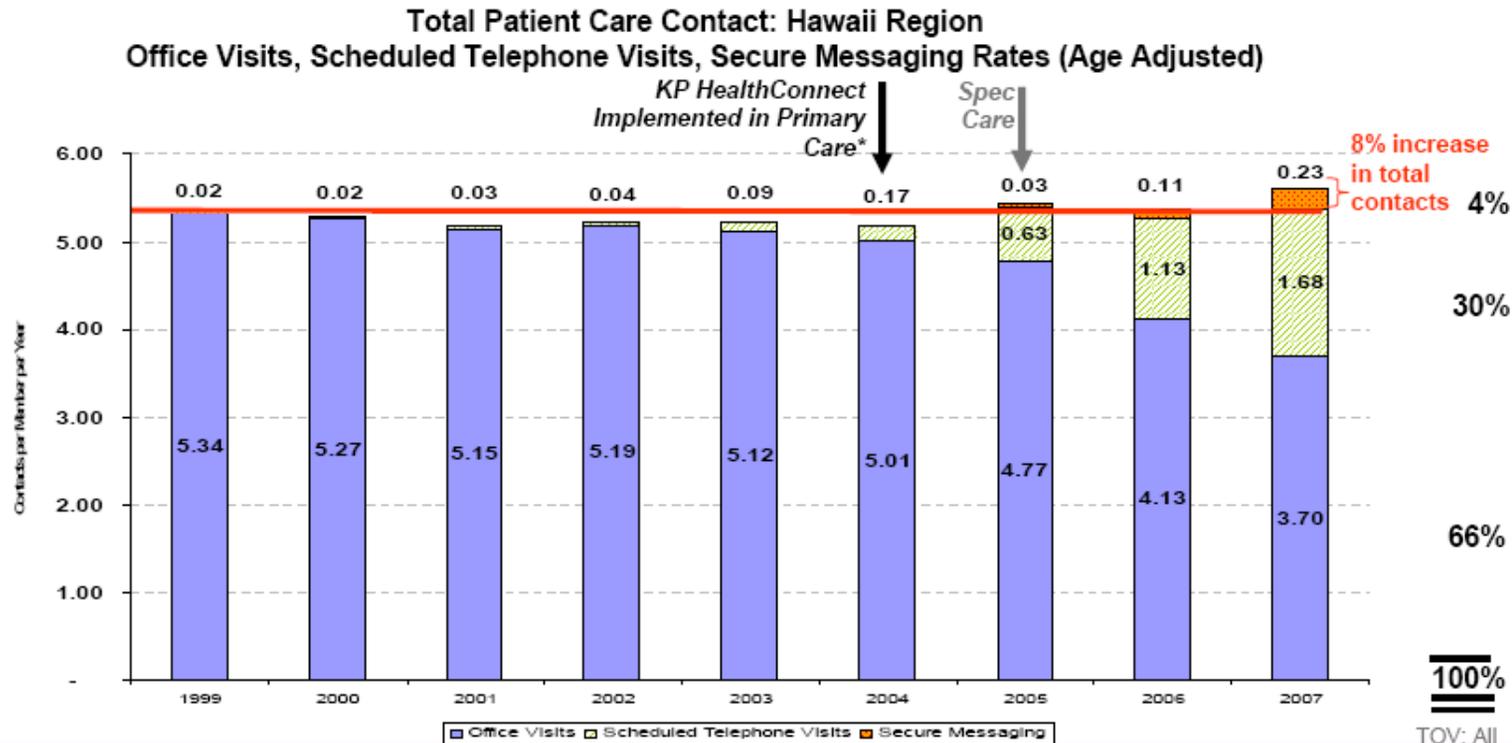
Kaiser Permanente's Findings



Transformation: Hawaii study

In an article that we published in Health Affairs Mar 09, we have found a common pattern of impacts in Hawaii,

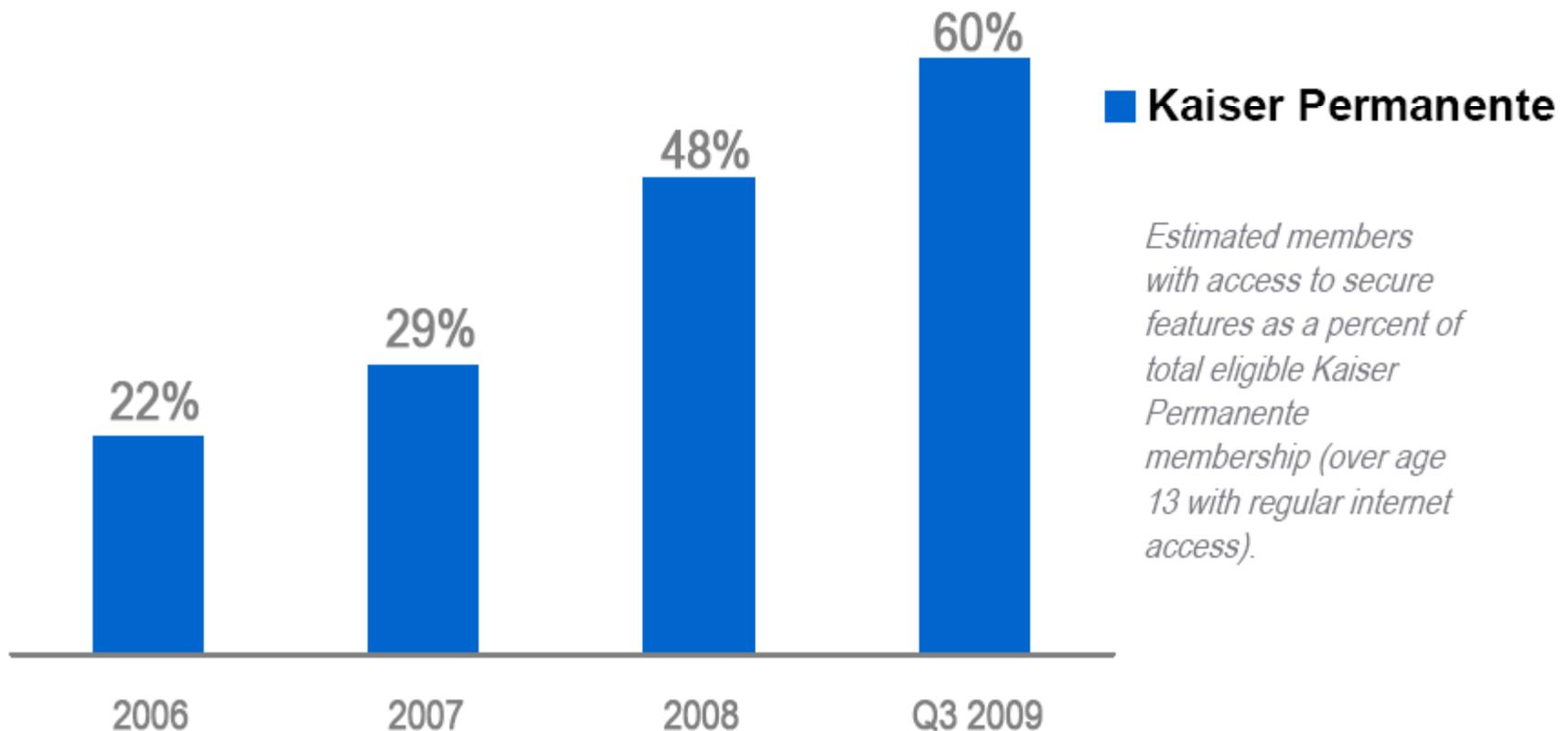
- A 25-26% decrease in primary care age-adjusted office visits
- A 8 fold increase in phone encounters
- Secure messaging increasing from 0 to 4% of all encounters
- Overall patient contacts have increased 8%



Adoption Rates by Patients



Kp.org adoption rates



Increasing patient empowerment



- With secure e-mail messaging, patients can:
 - communicate with their doctors
 - view their record
 - manage their care at any time, anywhere

- Patients who use secure e-mail:
 - Are 7% to 10% less likely to schedule routine office visit*
 - Make about 14% fewer phone contacts

- Those who book appointments online are up to 50% more likely to keep them

*Based on a published article in AJMC July 2007

How does it change care delivery?



- Increases member satisfaction with provider interactions—14 and 9.5 point increases in “% Delighted” for primary care / specialty care
- Increases patient’s confidence in ability to follow treatment plan—93% vs. 76%
- *Source: Kaiser Permanente HealthConnect and kp.org SmartBook for Value Realization and Optimization ; Studies performed in Northwest (2006), Southern California (2007), and Colorado (2006) Regions*



Evolution In Online Healthcare

Uses of Search Engines

- Most basic activity
- Diagnostic: What's wrong with me?
- Information: What is this disease?
- Double Checking: Is this medicine OK for me?
- Prognosis: What might happen to me?
- Is there a cure?



Limitations of Search

- Not personal
- Often not relevant to you and your issues
- Can be too clinical or too basic
- Can unnecessarily scare the patient
- Angers your physician who is paid by the minute
- Time consuming
- Too much content –How do I keep up?

Evolution In Online Healthcare

Talk to others like you

- People move online to talk with others like me
- Their attempt to address two outages.
- Get personalized advice in terms they understand
- Allay their worry/fear from others like them
- So-called Health 2.0 is largely about this

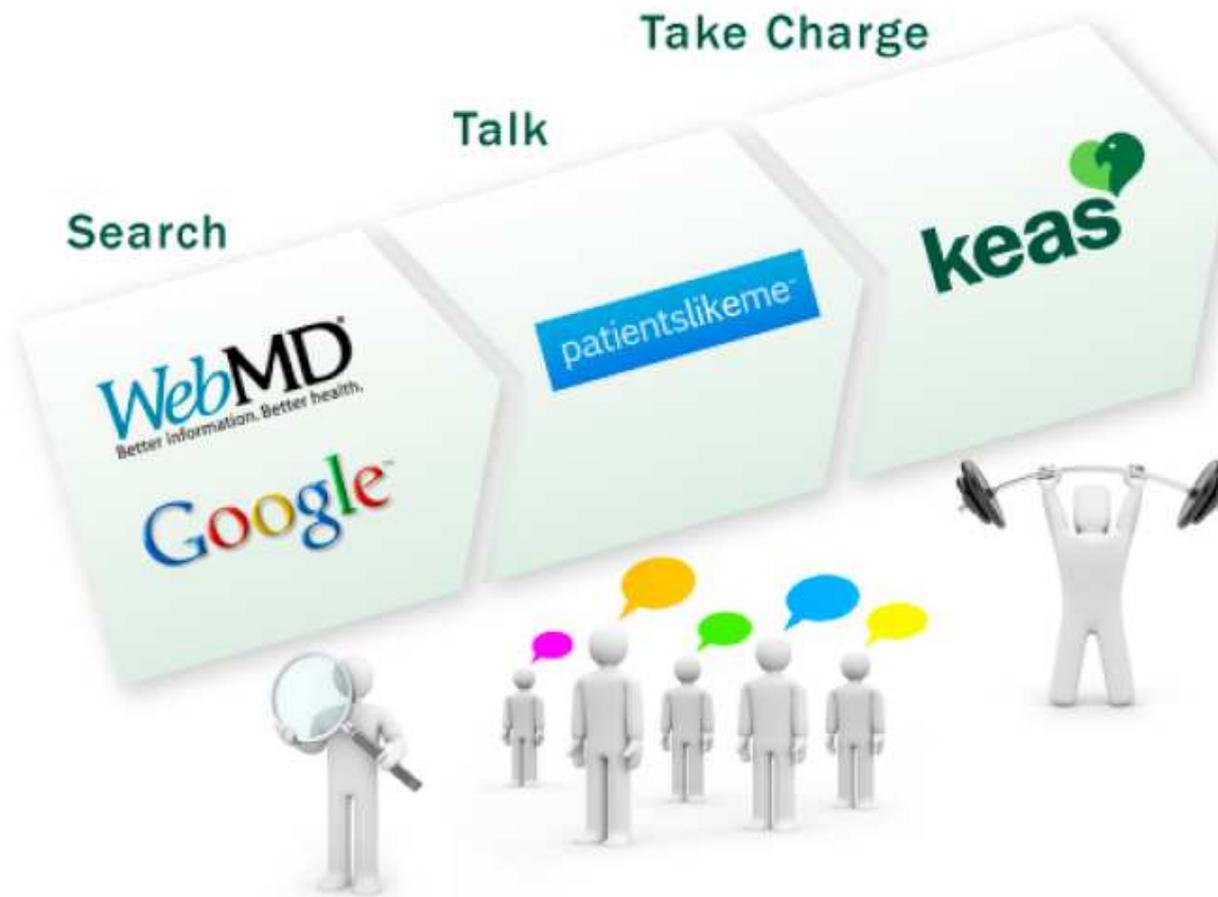


Limitations of Talk

- Misinformation can flow
- Usually fixed by the community
- No health expertise in discussion
- Can obsess about the wrong things
- Doesn't have health expertise injected into it
- Requires lots of time/judgment

Evolution In Online Healthcare

Take Charge



- Actionable information personalized to patient

- “The goal is not just health care information, but knowledge about what that means and what action to take,” said Dr. John D. Halamka,

- Healthwise, a nonprofit supplier of online health information, has created 15 care plans for Keas so far, including ones on [high blood pressure](#), [cholesterol](#), diabetes, [weight management](#) and [stress management](#).

Evolution in Patient Empowerment



Care Plans, owned by Health experts, authored and published without IT.



Personalized consumer graphs and information: *understand your health data.*



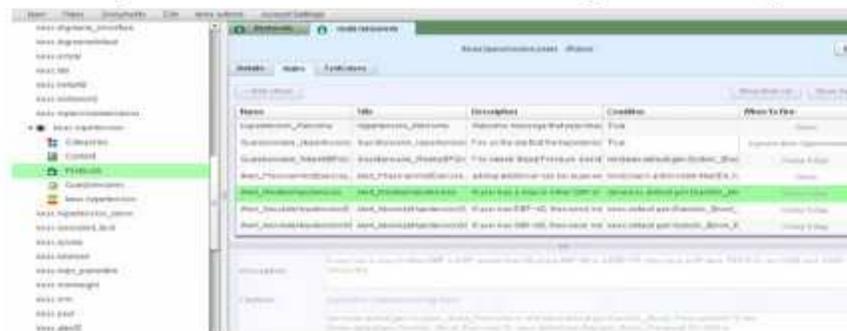
Key color-coded indicators for each Care Plan, are you *in the green?*



Community, learning and motivated by *people like you*, with similar goals



Online platform for Care Plan authoring and testing



Evolution in online healthcare



American Well

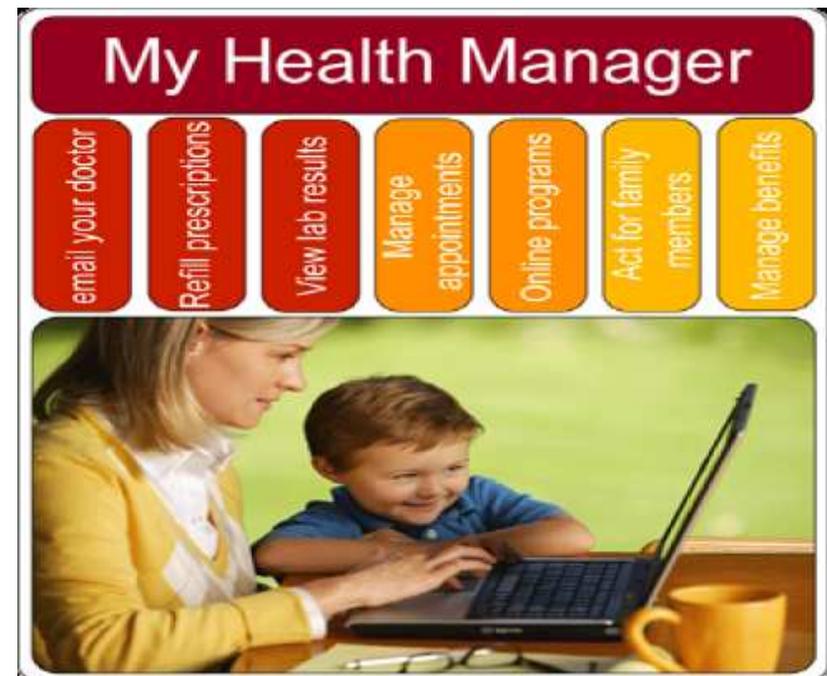


- **Online Care Personal Edition** is a software platform for bringing healthcare services online. With Online Care, doctors can make themselves available for online and phone consultations at any time, from any location, and for as long as they choose.
- Online Care pools available doctors by specialty, ensuring that the supply of doctors is adequate to meet consumer demand. Consumers seeking guidance can find and immediately connect with the provider who is right for them.
- By brokering interaction with available providers, Online Care allows consumers to have immediate, live conversations with doctors and specialists - giving them convenient access to care when they need it most. Consumers can get care on their own terms, from home, the office or even their mobile phone. That's why some have described Online Care as a 21st-century house call.

My Health Manager on kp.org



- More than 3 million members actively using My Health Manager on kp.org
- Universal adoption by providers
- More than 650,000 e-mails sent to providers from members each month
- More than 16 million test results viewed online in 2008 alone
- **Kaiser Permanente YouTube Channel**
<http://www.youtube.com/kaiserpermanenteorg> 'Empowering People'



KP- My Health Manager



- My medical record
 - View my lab test results, immunizations, allergies, past office visits, health care reminders
 - E-mail my doctor
 - E-mail my doctor's office, pharmacists

- Clinical transactions
 - Refill prescriptions, manage appointments
 - Supporting health improvement

- Deep and trusted health information, over 11 tailored healthy lifestyle programs

- Act for a family member: other adults, children

What is DOD doing ?



- Secure Messaging
 - Relay Health (NNMC)
 - Medfusion (Eisenhower)

- PHR Pilot
 - Madigan

- TOL Enhancements

Madigan PHR Pilot



- Leverage Commercial PHR to test adoption
 - Microsoft HealthVault
 - Google Health

- Leverage BHIE and existing connectors (re-use NDAA skills at exchanging information)

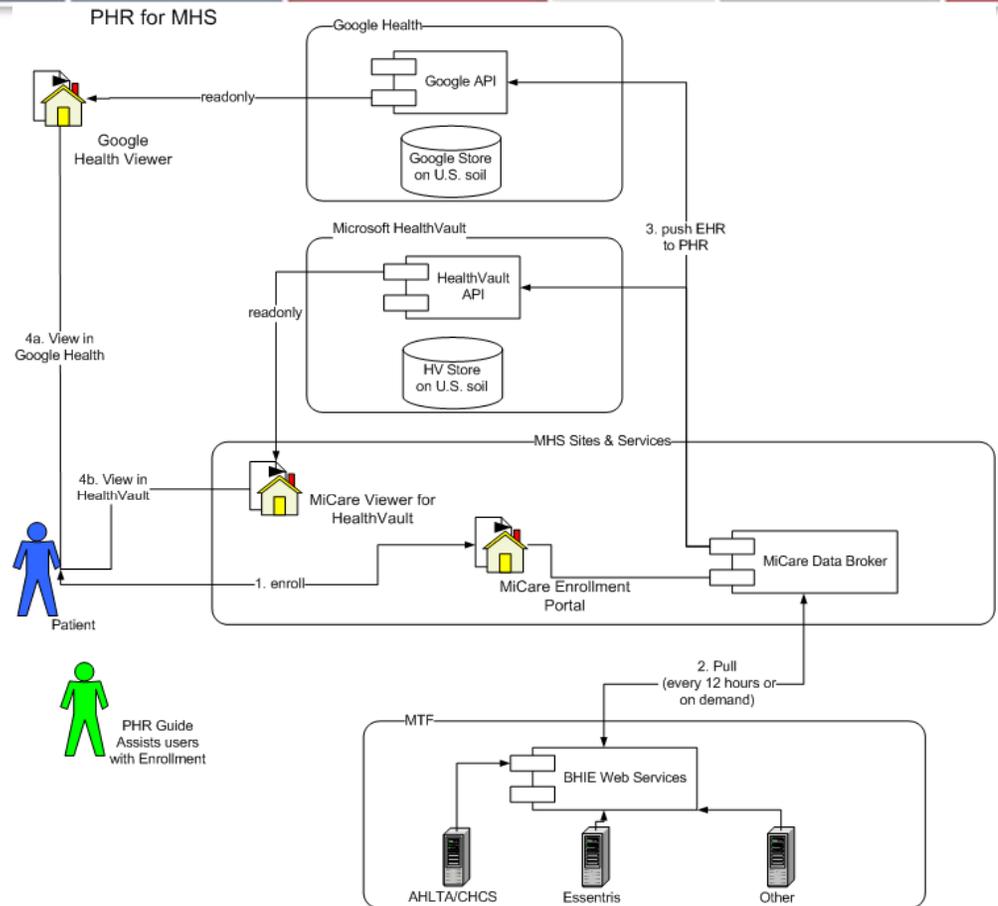
- Aligned with MHS Patient centered movement and efforts in Medical Home
 - Empowering patient to manage their information from not only MHS but also from civilian network



PHR pilot Leveraging BHIE

- **Data being exchanged**

- Allergies
- Active Medications
- Lab Results
- Inpatient/Outpatient Records
- Appointments
- Personally added documentation/Other sources
- Immunizations



Patient decides:
1. What data to transmit
2. Where to send data
3. How to view data 

TOL Overview



- Capability is in the portfolio of Deputy Director, TMA
- TOL Components
 - Portal
 - Only MHS patient-focused portal, providing single point-of-entry access to a suite of applications and features supporting patient participation in their health and healthcare experience
 - Role-Based access is in accordance with DoD Privacy and Security standards
 - Existing infrastructure has significant capacity and scalability
 - Applications such as online appointing and refill request
 - FY08-09 RDT&E is for development of TOL Booking Appointments for Minors
 - Convenient links to Internet sites and features

Current Applications

Online Appointing



Note: No-Show rate is calculated (appts via other means) in the TOC report has changed since Jun 09, resulting in a higher percentage.

- Allows patients to book Primary Care and select self-referral specialty appointments
 - Patient convenience
 - Available 24/7
 - Select appointment that meets personal schedule
 - Avoids telephone appointing wait times and busy signals
 - Reduced no-show rates: ~2% for TOL verse 6-9% for other appointing methods
 - Comparison of Primary Care appointment types

Current Applications

Personal Health Data



- Provides patients with read-only access to basic Personal Health Information from their Electronic Health Record (EHR)
 - Allergies, Medication Profile, Demographic Information

Current Applications

Rx Refill



- Provides a link to TRICARE Mail Order Pharmacy
- Provides central web access to Rx refill features provided by AudioCARE
 - Offers convenience by providing centralized option to refill prescriptions
 - Only electronic way for AF beneficiaries to refill their prescriptions
 - Army and Navy link to AudioCARE from their MTF homepages

NEW: Patient Portal Initiative



- Utilizes established TOL portal infrastructure as foundation of MHS Patient Portal
- Consolidate all MHS patient portal activities to expedite achieving common goals
- *Note:* Patient Portal Initiative approved by Clinical Proponency Steering Committee on 5 Aug 2009

FY 10 Planned Portal Actions



- Redesign TOL portal “look and feel” so more user friendly
- Realign and maintain PHR frame work (Madigan developed) utilizing commercial backend PHRs (MS and Google) to TOL
 - Supports current enrollees (500); expandable up to 15K enrollees (NNMC Medical Home)
 - Intent is to prove enterprise scalability for all beneficiaries
- Support Secure Messaging component for NNMC Medical Home
- Pilot Anakam Project (Simplified Log-on)

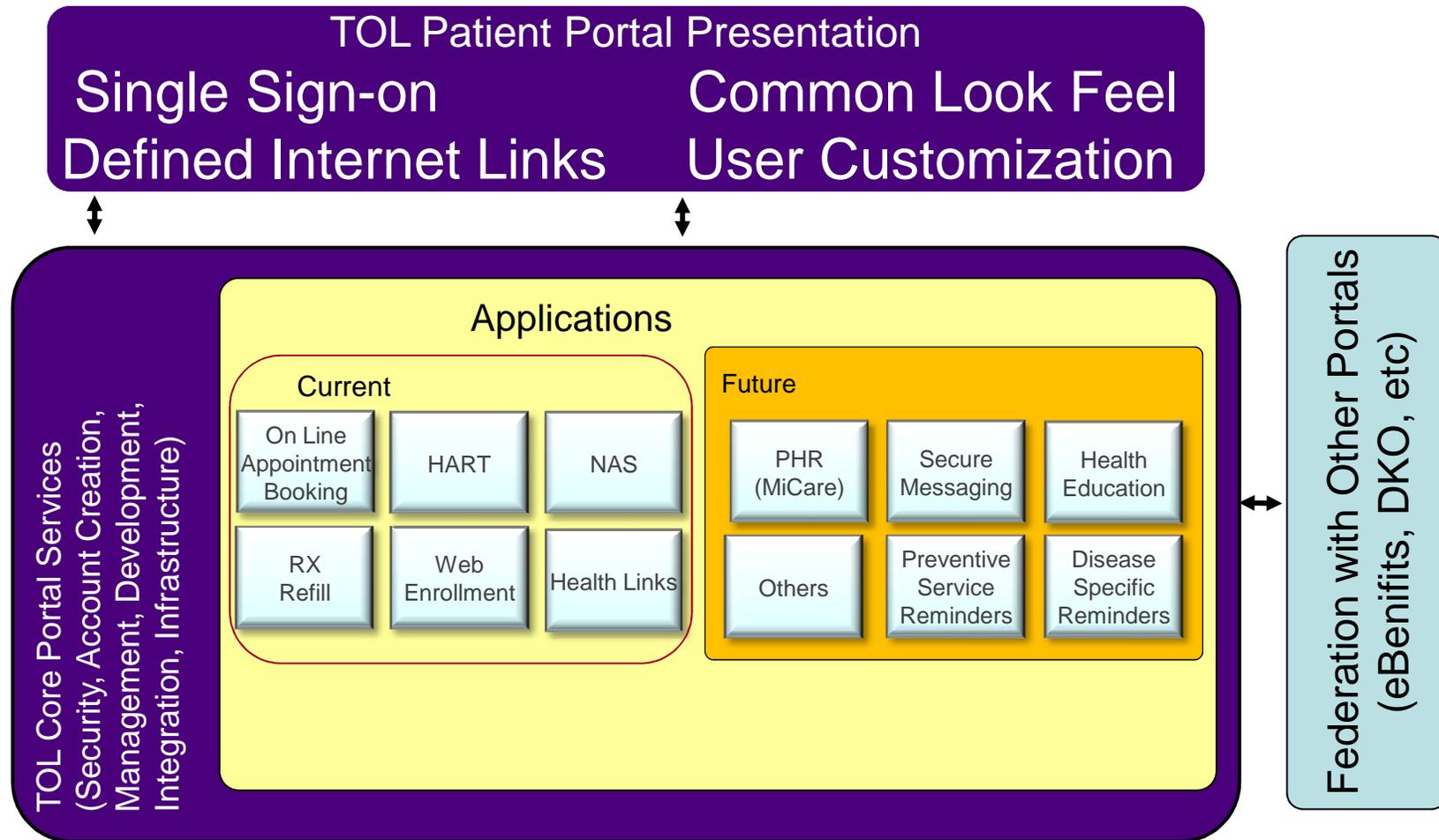


Patient Portal Initiative

- TRICARE Online
 - Portal infrastructure and services
 - Applications and features as briefed
- eBenefits Portal (VA-DoD Joint Project)
 - Comprehensive Benefits Portal
 - Requirement for Pharmacy Refill and PHR via TOL
 - Requirement for health educational content via MHS Learn
- Madigan developed Micare PHR
 - MHS/VA data via BHIE interface to commercial PHRs
- Air Force Family Health Initiative
 - Emphasis on TOL Online Appointing
 - Pilot for simplified Logon to TOL
- National Naval Medical Center, Bethesda Medical Home (and others)
 - Secure Messaging (Relay Health) pilot
 - Leveraging TOL Online Appointing
- Possibly Others...

TOL: Portal View

As MHS's only patient-focused portal, TOL provides the infrastructure and services to securely access multiple MHS, DoD, and VA applications and features which may be both COTS and GOTS. Allows apparently seamless end-user access to multiple portals, applications, and internet sites.

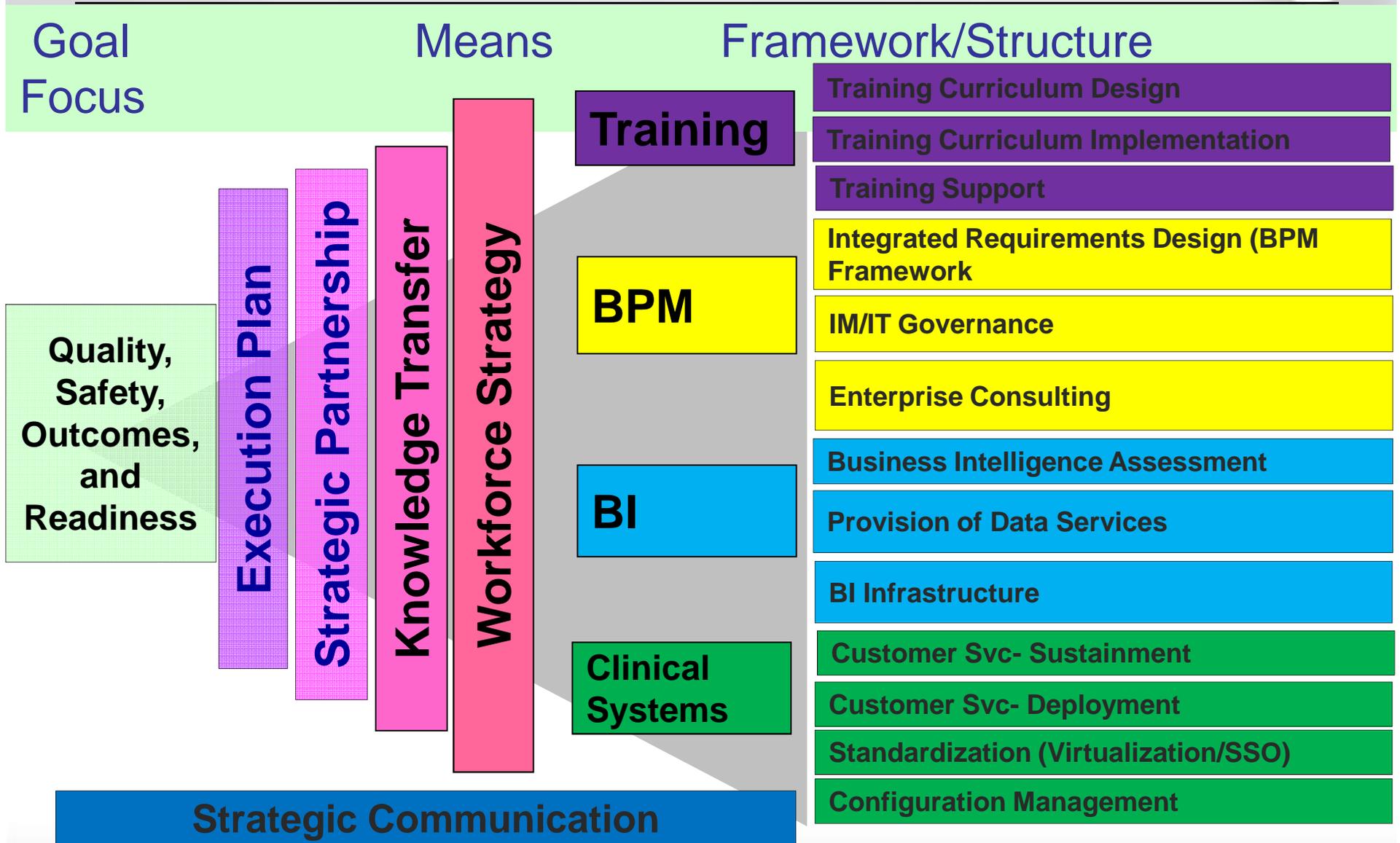


Summary



- *Connecting for Better Health*
- Need to put patients on the health care team
- Personalizing health care is key to engaging patients in healthcare transformation
- Integrated PHR/EHR currently provides the most value
- Convenient for patients
- Efficient for physicians
- Essential for a patient's health home

AMEDD Informatatics Framework



Operational Framework of Transferring Clinical Best Practice



Clinical Business Process Mgmt

- Assessment of variation and root cause analysis
- Design of best practice workflow
- Determine Requirements

Clinical Business Intelligence

- Enterprise Data Warehouse / Common Analytic Platform
- Metric Development
- Dashboard

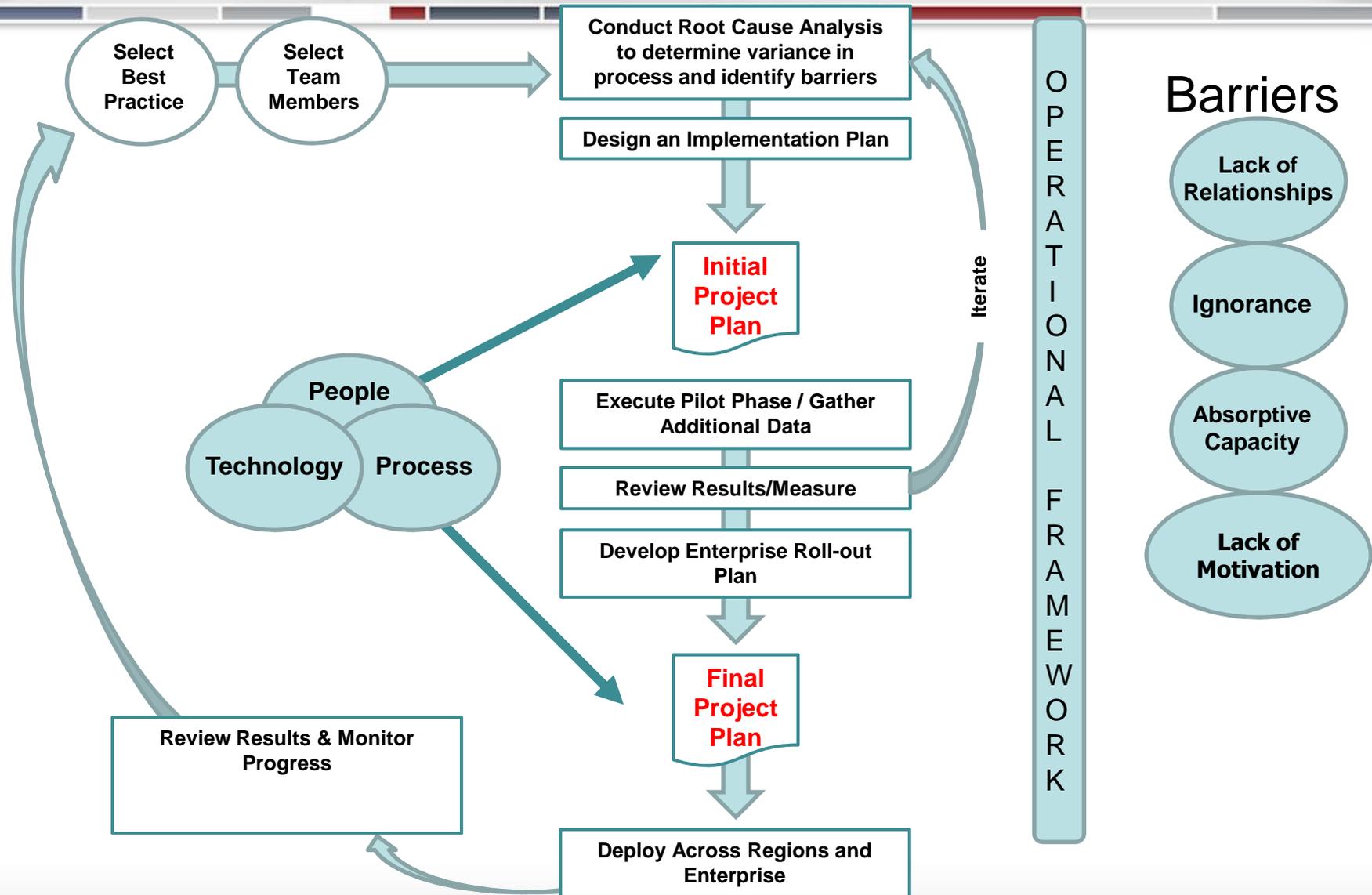
Clinical System Integration

- Hard coding workflow
- Modifications to capture necessary data

System Training

- Clinical System Training
- System workflow Training

Proposed Process for Propagating Best Practice



2010 OCMIO STRATCOM

CMIO will transform AMEDD into a **knowledge-driven, systems-based organization** leveraging health information technology to enhance patient focused care.



Strategic Focus Through IM/IT

- ◆ Access to Care
- ◆ Personalized Health
- ◆ Quality and Safety
- ◆ Readiness

Data



Evidence



Clinical Best Practice



Focused Clinical Outcomes

**Business Process
Management**

**Clinical Business
Intelligence**

**System and
Workflow Training**

**Clinical System
Design and
Implementation**

Values: Patient Centered, Humility, Service, Transparency

Culture: Continuous Measurement and Learning; Competence; Customer Focus

Tools: TOL, AHLTA, PoP Health Portal, Essentris, CDM, etc

Questions



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