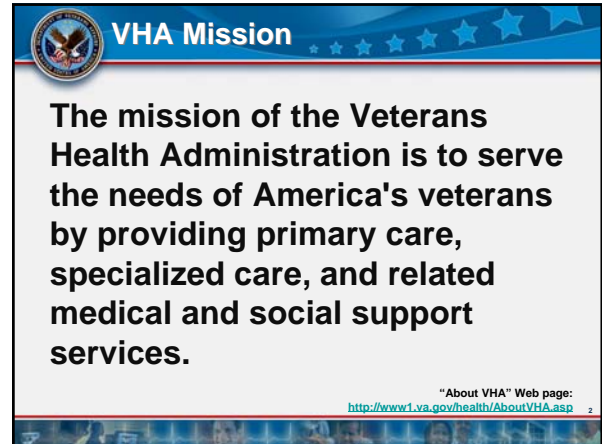


When Does a Bridge Become a Barrier?

Patty Greim, MS RN-BC
Diane Bedecarre', MS RN-BC
Donna DuLong, BSN

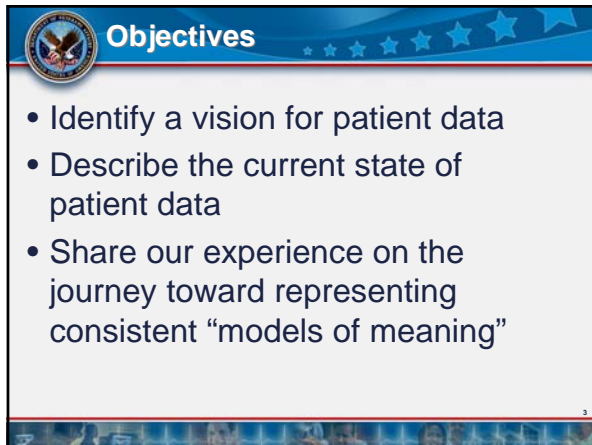
Summer Institute of
Nursing Informatics
(SINI) 2009 Baltimore, MD

VHA Mission

The mission of the Veterans Health Administration is to serve the needs of America's veterans by providing primary care, specialized care, and related medical and social support services.

"About VHA" Web page:
<http://www1.va.gov/health/AboutVHA.asp>

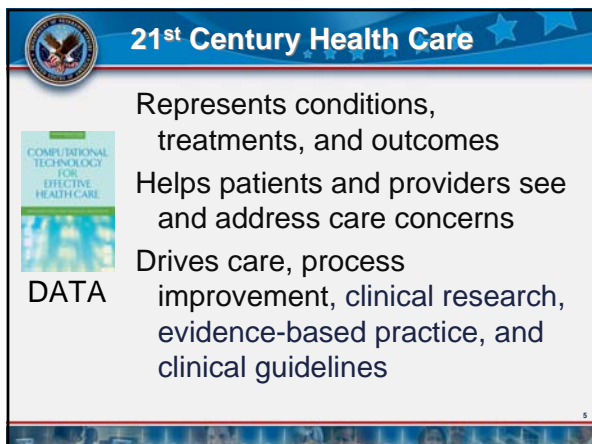


Objectives


- Identify a vision for patient data
- Describe the current state of patient data
- Share our experience on the journey toward representing consistent "models of meaning"



Vision

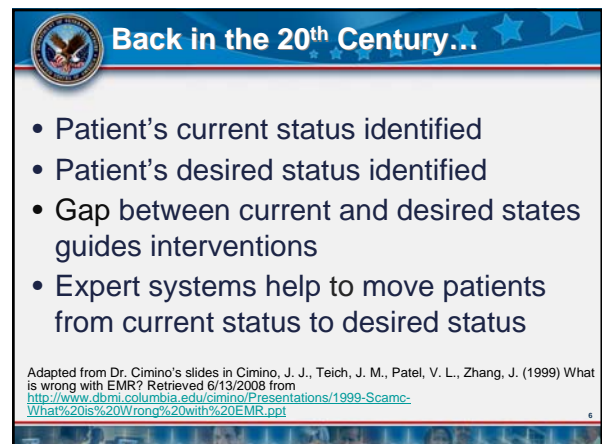
21st Century Health Care



Represents conditions, treatments, and outcomes

Helps patients and providers see and address care concerns

DATA Drives care, process improvement, clinical research, evidence-based practice, and clinical guidelines



Back in the 20th Century...

- Patient's current status identified
- Patient's desired status identified
- Gap between current and desired states guides interventions
- Expert systems help to move patients from current status to desired status

Adapted from Dr. Cimino's slides in Cimino, J. J., Teich, J. M., Patel, V. L., Zhang, J. (1999) What is wrong with EMR? Retrieved 6/13/2008 from <http://www.ctbmi.columbia.edu/cimino/Presentations/1999-Scamc-What%20is%20Wrong%20with%20EMR.ppt>



Business Problem

- **VA application development**
 - Patient Assessment Template
 - Clinical Flow Sheet (CLIO)
- **Commercial Off the Shelf Applications (COTS)**
 - Clinical Information Systems (CIS)
 - Anesthesia Record Keeper (ARK)

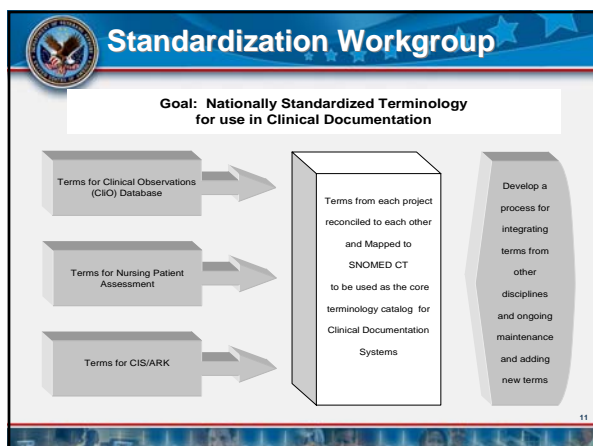
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The Goal

If we store data using consistent representations, regardless of the source of the data, we can efficiently and effectively retrieve and reuse information.

Huff, S. M., Rocha, R. A., Coyle, J. F., Narus, S. P. (2004). Integrating detailed clinical models into application development tools. Medinfo 2004, IMIA. Retrieved 7/23/2008 from <http://cmbi.bjmu.edu.cn/news/report/2004/medinfo2004/pdffiles/papers/5574Huff.pdf>

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Informatics Project Goals

Develop a repeatable process to representation of clinical data

- Identify common observations of interest
- Represent observations with reference terminologies
- Describe the knowledge about the observations using mind maps
- Represent knowledge as comparable, implementable models

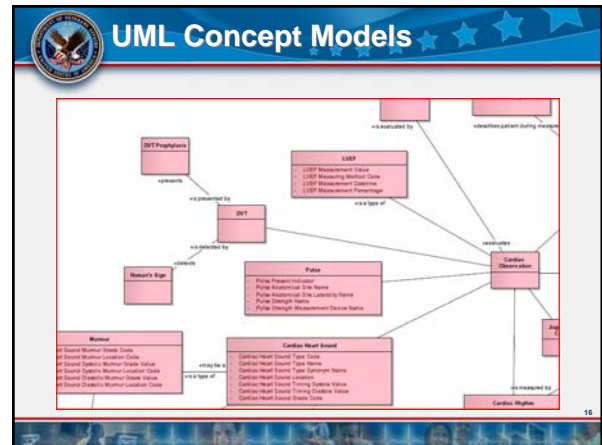
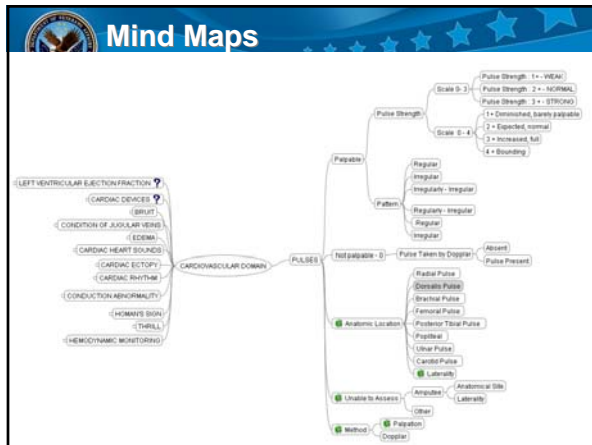
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Terminology Spreadsheets

Cardiovascular Observations

NURSING ASSESSMENT	CIO	Proposed ENTERPRISE TERM	LOINC	SNOMED CT PREFERRED TERM	SNOMED CT SYNONYMS	SNOMED CT CODE	SNOMED CT HIERARCHY
	Pulses - Peripheral:	Pulses - Peripheral:	8885-8 Arterial pulse intensity; Type: Pt, XXX, Nom, Palpation	Peripheral pulse	Peripheral pulse, function	54718008	observable entity
		Peripheral Pulse Present		Peripheral pulse present		301151001	clinical finding
	Pulses - Peripheral: RADIAL - RIGHT	Radial Pulse Present	8911-0 Arterial pulse intensity; Force: Pt, Radial artery right; Obs: Palpation	Radial pulse		301150005	clinical finding
	Pulses - Peripheral: RADIAL - LEFT	Radial Pulse Present - Duplicate from above	8910-2 Arterial pulse intensity; Force: Pt, Radial artery left; Obs: Palpation				
	Pulses - Peripheral: DORSALIS PEDIS PULSE - RIGHT	Dorsalis Pulse Present	8927-9 Arterial pulse intensity; Force: Pt, Dorsal pedal artery; Obs: Palpation	Right Dorsalis pulse	1 Dorsalis pedis pulse present	24028007	qualifier value clinical finding
	Pulses - Peripheral: DORSALIS PEDIS PULSE - LEFT	Dorsalis Pulse Present - Duplicate from above	8928-9 Arterial pulse intensity; Force: Pt, Dorsal pedal artery left; Obs: Palpation	Left Dorsalis pulse	1 Dorsalis pedis pulse present	77718001	qualifier value clinical finding
	Pulses - Peripheral: POSTERIOR TIBIAL PULSE - RIGHT	Posterior Tibial Pulse Present	8908-6 Arterial pulse intensity; Force: Pt, Posterior tibial artery right; Obs: Palpation	Posterior tibial pulse present		301150004	clinical finding
		Brachial Pulse Present	8909-9 Arterial pulse intensity; Force: Pt, Brachial artery right; Obs: Palpation	Left Brachial pulse present		301154003	clinical finding
		Brachial Pulse Absent	8907-7 Arterial pulse intensity; Force: Pt, Brachial artery right; Obs: Palpation	Right Brachial Pulse Absent		301194000	clinical finding
		Femoral Pulse Present	8904-5 Arterial pulse intensity; Force: Pt, Femoral artery left; Obs: Palpation	Left Femoral pulse present		301157002	clinical finding

- ## Methods
- Literature review
 - Engaging with clinical experts
 - Developing and comparing “models of meaning”
 - Engaging with partners: Standards Development Organizations



The Journey to date

Process Steps	Phase 1	Phase 2	Phase 3	Phase 4
Terms collected and harmonized from two applications (Standardization effort)	initial set of terms identified and harmonized		Adding terms from CIS/ARK	
Standardized Terms mapped to reference terminologies (SNOMED CT, Clinical LOINC)		Terminology matched to Initial set	Validating terminology matches	Adding terminology matches to CIS/ARK
Concept representation and modeling with clinicians (detailed clinical models)			Developing Mind Maps	Validating Mind Maps
Exploring ways to formalize model representations				Developing UML diagrams

- ## Collaborative Partners at VA
- Office of Nursing Services**
 - Patient Care Services**
 - Clinical Information Systems & Anesthesia Recovery Knowledge (CIS/ARK) Projects
 - Office of Health Information**
 - Chief Health Informatics Office
 - Standards and Interoperability: Terminology Standards
 - Office of Information & Technology**
 - Standards and Terminology Services (STS)
 - VHA Health Information Model (VHIM) Team
 - Project Teams (Clinical Observations, etc.)

Slide 18

v5

Is the VHIM team part of OI&T?

vhacocodurc, 7/20/2009



End Game

The right data at the right time for the right decisions to promote the health, dignity and well-being of Veterans and their families

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Bonny Collins
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Holly Miller
Luigi Sison
John Carter
Tim Cromwell
Linda Fischetti



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Computable, Interoperable, Reusable



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Questions?



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