

Arizona Health Care Cost Containment Health System Medicaid Transformation Grant Program

AHCCCS/ASU Clinical Data Project

March 17th, 2009



Presentation Overview

- Project Mission
- Project Value Proposition and Goals
- Key Strategic Challenges
- Business Model
- Proposed System Architecture
- > ASU/CHIR Link
- Business Components and Services
- Use Cases Supported
- Next Steps



Project Mission

The mission of this project is to create and implement the requisite organizational and healthcare partnership elements, as well as the technological components, needed to facilitate an integration of healthcare information in a state-wide clinical data repository.



Project Value Proposition

- Foundational work for integrating a broad clinical repository as part of a state-wide integrated health information architecture
- Extend and Expand the community of collaborators and contributors (time, effort, data, \$) to advance the implementation of HIT in Arizona
- Create value at a social level and at an individual provider level to produce benefit to the entire health industry



Project Goals

- Short Term: Implement value proposition based functional components of HIT-HIE and integrate other potential and on-going state efforts such as ePrescribing, eLabs, AMIE, etc
- ➤ Mid Term: Create and maintain repositories of clinical Information
- Long Term: Incrementally add services that enhance value proposition to/for participants, and sustainability of the overall infrastructure



Key Strategic Challenges

- Business model
- Breadth of data and resource participation
- Integration with other on-going efforts (e.g. AMIE, EHR, etc)
- Availability in electronic format
- Build or buy
- Protecting privacy
- Trust relationships & contracts
- Governance, accountability & data custodianship
- Controlling access
- Managing & applying consent directives

- Timeliness
- Harmonization
- Data structures (format)
- Vocabularies (encoding, normalization)
- Semantics
- Heterogeneous technology environments
- Number of organizations, connection points & systems
- Controlling feeds and queries to the data



Business Model

Partner Network

- · HIT Vendors to develop their took to be interoperable with standards data distribution service.
- AHCCCS enabler and champion.
- AMIE
- · Laboratories/PBMs/hospitals /providers to provide data
- Various technology partners.

- EMPI Capabilities
- · Model and Terminology

Core Capabilities

- Routing
- Standardized quality reporting capabilities.
- · Extensive knowledge of HIT standards and implementation efforts
- HIE needs and value, costs and benefits
- Data Repositories
- Persistent data management
- Data Management including consent, auditing, security, authentication, confidentiality, etc.
- Analytics and Decision Support

Value Configuration

- Data Provider On-boarding and relationship management
- Infrastructure Maintenance and support
- Vendor relationship management
- Populating and on-going update of patient information

Value Proposition

- · Higher quality, lower costs, improved worldlows of analytics
- Research/Analytic data repository services such as: receive requests for data from subscribers' analytic applications, distribute scheduled standardized care quality reports for subscribers in a noncompetitive environment.
- · Single push point of data
- · Push and 'forget'
- Secure routing
- Reduced costs of information
- · Automated standardization (i.e. terminology services}
- Configurable subscription based service to distribute clinical information to data consumers.

Customer Relationship

- Establish and add participants through promotion of value proposition
- Encourage use of service through market leaders
- Involve customers in further development and value propositions
- · Forums, CRM managers, wikis, etc.

Distribution Channel

- Deliver services through standards based interfaces
- Reporting based services
- API interfaces linked in through routing service.
- Connectivity imposed/encouraged by market leaders such as health plans and other data recipients
- Standards organizations support
- Payor requirement

Target Customer

- AHCCCS Initiatives (ePrescribing, AMIE, EHR Adoption, Analytics and Decision Support)
- Health Plans
- Hospitals
- Health-e Connection
- HIOs
- PBM
- Research Organizations
- · Quality and Oversight organizations
- Government and Professional Organizations

Cost Structure

- Human capital cost to support business activities.
- Cost to acquire data (where required)
- Acquisition of member/patient information
- Databases Infrastructure and matching processes
- Hardware/Software/Licensing Costs
- Other Infrastructure Costs.

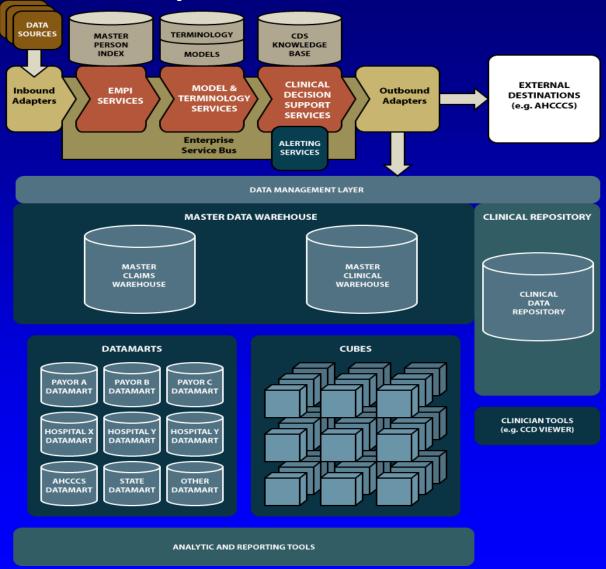
Revenue Wodel

- Consulting service fees
- Publishing/Subscription fees from data distribution service
- Subscription fees from research/clinical repository reporting and analytics services
- Transfer cost to Model and Terminology services component

Clinical Data Project

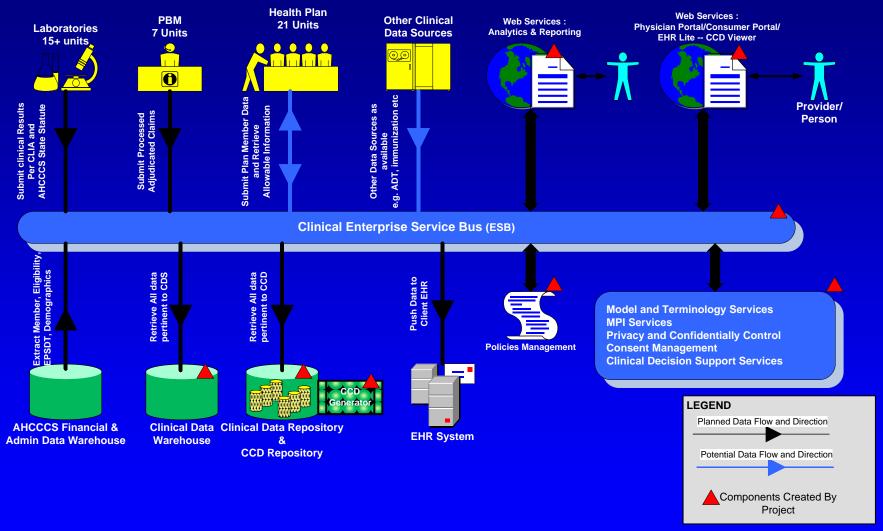


Conceptual Architecture





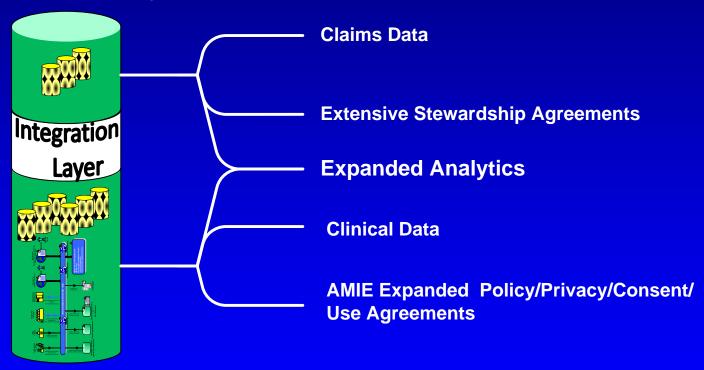
Conceptual Connectivity Architecture





ASU Connection

CHIR Repository



CDW & CDS Repositories
System



Business Components and Services

- Clinical Repository and Data Warehouse
 - Report Generation and Delivery Service (Joint Commission, CDC, other quality reports)
 - CCD Generation and Delivery Service Quality
 - Client Risk Analysis
 - > EHR Connectivity (push of client data)
 - Chronic Care Evaluation
- Health Information Exchange Infrastructure
 - EMPI Statewide Master Patient Index
 - > Terminology and Modeling Service
 - Routing Service
 - Consent Management Service
 - Data De-identification Service
 - Decision Support Alert Delivery Service
- Consulting Services
 - > Interface implementations
 - Definition of reporting requirements
 - Healthcare business process improvement



Business Use Cases Supported

- Unsolicited distribution of standardized clinical information to data consumer applications (PHRs, EHRs, etc).
- Unsolicited distribution of standardized clinical information to data repository integrated with on-demand analytic and reporting tools.
- Unsolicited distribution of scheduled standardized performance and quality reports for subscribers in a noncompetitive environment.
- Generation and delivery of continuity of care documents to subscribers' systems for display.
- Delivery of decision support alerts to provider subscribers

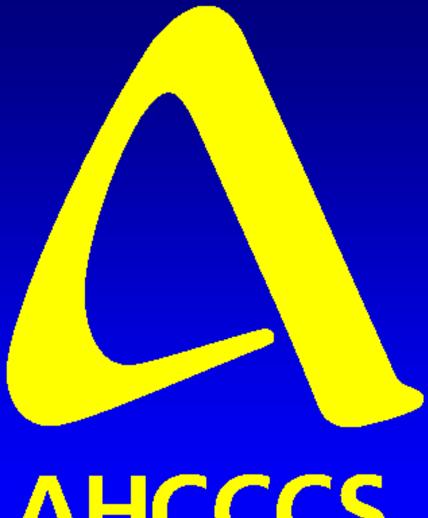


Next Steps

- > Define and Detail Data and Services of "Value"
- Sign Up Data Providers
- Detail Data, Consent and Sharing Agreements
- Design Architecture Extension and Add Ons
- > Implement Architecture
- Test Reporting and Analytics



Our first care is your healthcare

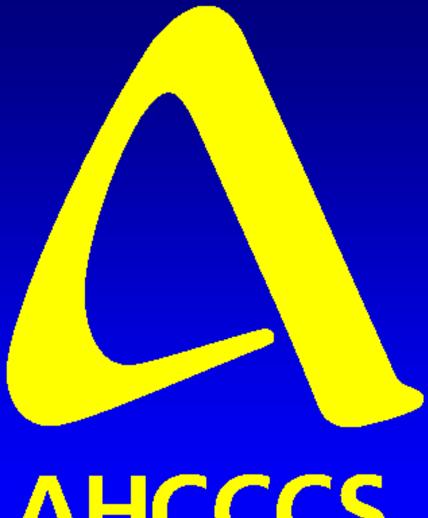


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Overall System Requirements

- > Description of system level requirements that apply to all components and services
- > Extensive adherence to comprehensive range of standards:
 - Security and Auditing
 - Privacy and Confidentiality
 - Open Source
 - HIT Policies, Procedures and Standards
- > Integration of consent
- > Transactional support





Enterprise Service Bus (ESB)

- > Partner and access management
- > Implementation of consent functionality
- > Audit at transaction level
- Message management
- Routing algorithm/logic/restraint
- > System capacity, scalability and performance
- System health monitoring



Master Person Index (MPI) Services

- > Matching algorithm standards
- > De-Identification of Patient data
- Security of privacy e.g. patient staff provider
- Centralization and distribution of updates
- Comprehensiveness of information



Model and Terminology Services (MTS)



- ➤ Nomenclature translation
- Conformance to HL7 standards
- Mapping across systems





Clinical Data Warehouse {OLAP}

- Architecture and structure of information/data
- Broad range of clinical data types
- Multi-year longitudinality
- Multiple aggregation schemas e.g. patient, payor, service type, institutional, etc
- Reporting functionality & analytical support
- > De-identified and identified data
- Multi-level security of use of data





Clinical Data Repository (CDR) {OLTP}

- Architecture and structure of information/data
- Patient oriented focus
- > Longitudinal depth of information
- Demographic comprehensiveness
- Querying capability
- Access monitoring and control
- Indexing and information retrieval schemes
- Security of information access

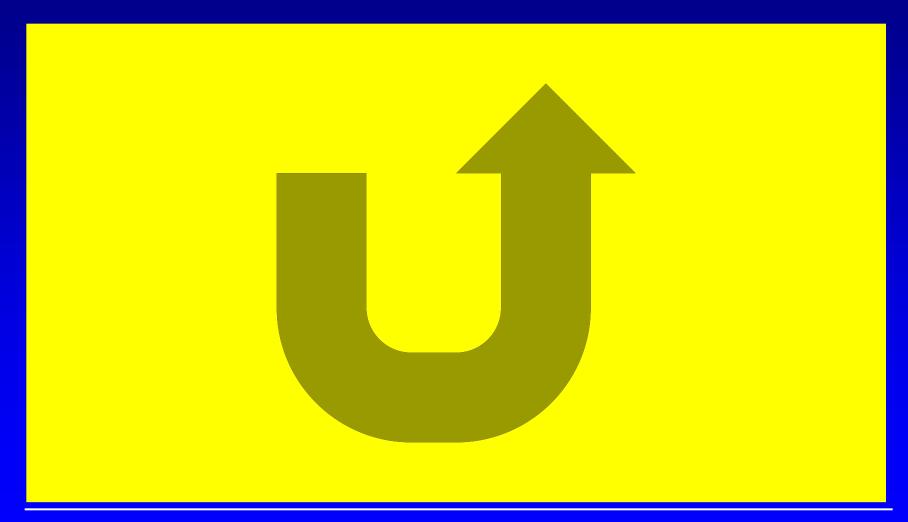


"Physician Portal (including CCD viewer)

- Data presentation standards (structured and unstructured)
- > Drill down and drill in functions
- Continuity of Care Document (CCD) support
- Proactive patient alerts
- > Extended Functionalities



Return To Main Presentation



Clinical Data Project



Alternate Project Mission

Facilitate quality and performance reporting processes for healthcare organizations, such as hospitals, health plans, labs, while delivering clinical data electronically to health information systems in order to improve patient care and safety and reduce costs across various care settings by making key healthcare information available.



CDR Stakeholder Conceptual Benefits

Audience/Stakeholder	Benefits					
AHCCCS/MCOs	 ✓ Reduction of lab costs due to duplicate laboratory tests ✓ Reduction in Hospital, laboratory, and pharmacy claims ✓ Reduction of drug costs due to duplicate scripts ✓ Reduction in claim processing time due to availability of claim attachments ✓ Reduction in Adverse Drug Reactions in ED rooms and Hospitals. ✓ Reduction of administrative costs for generating and delivering reports ✓ Increased quality of care 					
Payers	 ✓ Reduction of lab costs due to duplicate laboratory tests ✓ Reduction in Hospital, laboratory, and pharmacy claims ✓ Reduction of drug costs due to duplicate scripts ✓ Reduction in claim processing time due to availability of claim attachments ✓ Reduction in Adverse Drug Reactions in ED rooms and Hospitals. ✓ Reduction of administrative costs for generating and delivering reports ✓ Increased quality of care 					
Laboratories	 ✓ Reduced costs for paper distribution for lab results ✓ Reduced administrative costs due to lab results request. ✓ Reduction of administrative costs for generating and delivering reports ✓ Increased quality of care 					
Provider Organizations	 ✓ Near real-time data access to complete patient history across providers and payers ✓ Reduced administrative costs due to clinical document requests. ✓ Reduction of administrative costs for generating and delivering reports ✓ Increased quality of care 					



Stakeholder Financial Benefits

						Maximum			
						Potential	Adoption	n Estimated	
Stake holder	Savings	Units	Base Units	Unit Cost	% Savings			t Benefits	Total Benefits
AHCCCS/MCO	s								
	Reduction in Duplicate								
		Laboratory Claims	5,580,000	\$27.18	4.00%	6,066,576	15%	\$909,986	
	Reduction in Claims								
	Processed	Laboratory Claims	5,580,000	\$4.29	4.00%	957,528	15%	\$143,629	
	Electronic Documents with	Claims Requiring Lab							
		Documentation	148,196	\$11.39	50.00%	843,976	6 15%	\$126,596	5
	Reduction in Adverse Drug								
		ED Visits	656,378	\$338.00	2.00%	4,437,115	5 15%	\$665,567	
	Reduction in Adverse Drug Reactions	Hospital Admissions	226,934	\$5,283.00	2.00%	6 23,977,846	6 15%	6 \$3,596,677	
	Reduced Drug Costs for Duplicate Scripts	Duplicate Prescriptions	\$4,443,000	\$1.00	100.00%	4,443,000	15%	6 \$666,450	
		Hospital Claims	\$4,443,000 883,312						
	Reduced Hospital Claims	Hospital Claims	000,512	ψ4.25	2.00 /0	75,760	1370	ψ11,500	
	Reduced Pharmacy Claims	Duplicate Pharmacy Claims	56,500	\$4.29	100.00%	242,385	5 15%	\$36,358	3
Total AHCCCS/MCO									\$6,156,632
Laboratories									
	Reduced Paper Distribution	Lab Orders	5,580,000	\$10.00	75.00%	41,850,000	15%	\$20,925,000	
	Reduced Requests for								
	Results	Chart Requests	1,116,000	\$14.00	75.00%	11,718,000	15%	\$5,859,000	
Total Laborato	ories								\$26,784,000
Providers									
	Reduced Requests for								
		Chart Requests	1,116,000	\$10.00	75.00%	8,370,000	15%	\$4,185,000	
Total Practitio									\$4,185,000
Industry Benef	rits	Clinical	ata P	rojec	<u>+</u>				\$37,125,632