The Maryland Healthcare Commission
Health Information Organization Research
Colorado - CORhio
February , 2009

Section	Requirement	Definitions	Colorado - CORhio
Vision	**Vision**	Clear description of how to respond the unique needs an opportunities of HIE in state	The Governor held an HIT summit and defined the CORhio as the entity to drive implementation in the state. Requires that all HIO's join CORhio
	Mission		
	Principles from Appendix B		
	Interoperability		This is a key concept at CORhio, efficiency's in the information and the need for an electronic post office (clinical messaging)
	Quality of care		65% of preventable deaths are caused by handoff's from provider to provider and this can't be solved by an electronic health record but by clinical messaging
Strategy and Planning			
	Financial Model and Sustainability	Economic Analysis of cost and benefit for each phase of implementation	Self sustainability needs to happen in four years
	Financially sustainable		
	Transaction fees		
	Subscription fees		Plan to have a subscription model - i.e. large hospitals would pay $250,000 to join
	Membership fees		
	Hospital funding		
	State Funding		
	Federal Funding		5 year funding from AHRQ, $5M

	Health Plan funding	
	Physician funding	
	Philanthropic funding	Short term they are funded by a local foundation
	Budget	
	capital	
	operating costs	
	Salaries	
	Benefits	
	Office expense	
	Rent	
	Utilities	
	Software purchase and maintenance	
	Hardware purchase and maintenance	
	Taxes	
	Cyber Liability Insurance	The data partners required that CORhio buy cyber liability insurance at a cost of $80k a year
	cash flow	
	break even analysis	
	Community Benefit	CORhio recommends that the market forces are research and understood - what are the patterns of case, who to connect with and the political pressure points
Benefit Realization		
	ROI - financial measurement	
	ROI - quality measurement	
	ROI - System use measurement	
	how many users	
	what do they access	

		A multi-stakeholder approach that represents the needs of the community and all stakeholders	
	Governance Framework		
	Plan for engaging stakeholders		
	Ownership model: Public-Private Partnership		
	Profit Status: Not-for-profit		
	Articles of Governance		
	Role of Local HIEs:		No local HIO representation
	May include but not require creation of independent governance entities to oversee regional or local HIE. All HIEs would conform with statewide policies, standards and rules.		
	RHIO participation will be required (required as regional governance entities)		
	Local HIEs must be inclusive and non-discriminatory		
	Technical Operations		
	Separate governing structure from technical operations (potential for combination in latter stages)		
	Governance and technical operations in single entity		
	Accountability Mechanisms		
	Direct oversight through contracts with incentives for adherence and penalties for non-adherence		
	Direct oversight via legislation		

	Board of Director Composition		23 member BOD including the local QIO and a malpractice attorney
	Governor's Office		
	State Medicaid Agencies		
	State Department of Health		
	State Healthcare and Hospital Association		
	State Medical Association		
	Other non-profits who are involved in the medical community		
	Government Agencies who may be a stakeholder		
	Consumers		
	Employers		
	Insurers		
	Health Care Providers		
	Pharmacy		
	Clinical Laboratories		
	Higher Education		
	Quality Organizations		
	Operational / Management Positions and Responsibilities		
	Positions		
	Executive Director		
	Staff		
	2 program staff, controller, 2 adm assistants		
	Privacy and Security Officer		
	Responsibilities		
	Execute strategic, business and technical plans		
	Coordinate day-to-day tasks and deliverables		

	Establish contracts and other relationships with local/sectoral initiatives		
	Provide industry knowledge		
	Advise the Board		
	Board Committees and Responsibilities		
	Governance Board		
	Maintain vision, strategy, and outcome metrics		
	Build trust, buy-in and participation of major stakeholders statewide		
	Assure equitable and ethical approaches		
	Develop high-level business and technical plans		
	Approve statewide policies, standards, agreements		
	Balance interests and resolve disputes		
	Raise, receive, manage and distribute state, federal, private funds		
	Prioritize and foster interoperability for statewide and sub-state initiatives		
	Implement statewide projects and facilitate local/sector projects		
	Identify and overcome obstacles		

	Financial and legal accountability, compliance, risk management		
	Educate and market		
	Facilitate consumer input (Others in MCHIE document worth reviewing and making sure tie back to above)		
	Determining compensation for staff		
	Board Committees		
	Broadens stakeholder representation in governance body		
	Provides content expertise in very specific areas		
	Represents clinicians, consumers, employers and payers		
	Suggested Committees:		
	Steering Committee		
	Privacy and Security (legal, S & P officers)		
	Clinical		
	Technical		
	Standards		
	Outreach and Education		
	Privacy and Security		CORhio has participated in all phases of HISPC, currently working on the consumer education collaborative.
	Registration		
	Registration authority		
	Trusted relationship (i.e. hospital)		

	Authentication –		Using NOVO for authentication
	providers		
	consumers		
	public health		
	other institutions (educational)		
	non licensed providers (if any exist in state)		
	data authentication (in and out of HIO)		
	system authentication (system accessing HIO)		
	Identification -		
	Use of a master person index to provide provider and consumer information		CORhio uses a Master Patient Index . Providers are identified by the data partners via an excel spreadsheet that is uploaded at CORhio
	public health		
	other institutions (educational)		
	non licensed providers (if any exist in state)		
	data identification		
	system identification		
	Credentialing of health care providers		
	Audit – providers, consumers, data		
	what is audited		
	who audits		
	how often		
	external audit requirements		
	rules of enforcement		
	Authorization – providers, consumers, data		NOVO is used for authorization

	providers authorized to see what data		
	consumers authorized		
	public health		
	other institutions (educational)		
	non licensed providers (if any exist in state)		
	data authorization		
	system authorization		
	Access – role based using HL7 standards		
	Who can access what data		
	Who can change, update data		
	Sensitive specially protected health information - substance abuse, HIV/AIDS, genetic etc.		This type of data is blocked at the data partner
	Consent Framework		
	Opt In	*if patient opts out does the data still go to the HIO without allowing it to be viewed, changed etc.	
	Opt Out	Recommend reviewing California consent models - very detailed based on use cases	Opt Out model is used although they always ask if a person is wanting to be part of the system. Only 50 people opted out.
	Notice only to consumer that their information in accessible via HIO		
	Use of de-identified data		
	Legal Agreements:		CORhio used the DURSA and IOA HISPC information to develop their agreement and it took about a year

	master participation agreement		CORhio has a master data sharing agreement that includes this
	use agreement		CORhio has a master data sharing agreement that includes this
	business associate agreements		CORhio has a master data sharing agreement that includes this
	Policy and Procedures	Develop sound policy to manage authorization and access to electronic patient information in a consumer centric approach to health information exchange (Privacy and Security Policies)	
	authentication		
	audit		
	authorization		
	access		
	consent		
	enforcement - statewide that all must adhere to and may require legislation or ownership by AG office		
	Break the glass		
	Form relevant policy to enable improved community health status		
	HRB		
	Support for Policies Governing Patient Authorization for Data Sharing		
	Legal Issues		There are no state legal issues
	HIPAA considerations		Taken into account
	MDCMRA as may be required		

		Ensure Transparency, convene all stakeholders, educate	
	Stakeholder Outreach and Education		
	Part of statewide governing body		
	Documented process to educate:		
	Consumers		They have a consumer fact sheet on the web site in six languages http://www.corhio.org/Services/PointOfCare.htm
	Under-served		
	Providers		
	Public Health		
	Government Agencies		
	Non-profits		
	Understanding of market forces - patterns of care , who to connect with and political environment		
Detail Design	Care Delivery	Implementation Sequencing – Who has access first and Implementation Phasing - What information is available first	
	Phase 1:		
	Data Partners		
	Hospitals		4 Hospitals; 1 children's hospital
	Laboratories		
	Clinics		
	Pharmacies		
	Individual Physician Practice		
	Nursing Homes		
	State Health Agencies		
	Quality Organization		
	Medicare		

	Medicaid	
	Insurers	Kaiser
	Data Exchange Requirements	
	Use case analysis to determine actors, information they need, how to provide:	
	Clinical Decision Support Tools	
	Medication history and reconciliation	CORhio can exchange this data
	outpatient prescriptions	CORhio can exchange this data
	pharmacy prescriptions	CORhio can exchange this data
	e-prescribing and prescription histories	
	Allergy and drug-drug interaction alerts	
	Access to drug formularies for Medicaid and MD's two top private insurers	
	Lab results	CORhio can exchange this data
	outpatient lab results	CORhio can exchange this data
	Outpatient episodes	
	Radiology Results	CORhio can exchange this data
	Radiology images	CORhio can exchange this data
	Inpatient episodes	
	Dictation / transcription	
	Claims	
	Pathology	
	enrollment / eligibility	
	Cardiology	
	GI	
	Pulmonary	
	Hospital discharge summary	

	Emergency room reports		They have a Point of Care Inquiry System that allows 500 emergency department clinicians to use the RLS
	Patient Reported Data		
	Ambulatory electronic health record		
	Disease Management Tools		
	Wellness and prevention support based on national proactive guidelines - disease management		
	Medical Alerts		
	Demographics		
Application Functionality			
	Evaluate the following applications based on use case analysis:		
	clinical messaging		This is being planned right now - currently can add a PDF of medical information to CORhio by a provider
	Continuity of care records (CCD)		
	Longitudinal health records		
	Elements of Shared Health Record		
	Insurance Eligibility		
	Functionality to Support Access to Data for Research		
	Support for External Information Requests		
	Master person index		Master Patient Index - NOVO
	Record Locator Service		Yes
	Health Record Banking		
	Auditing		

	Security Applications		
System Architecture			
	Plan for interfaces of data from data providers		
	Push / Pull		This is the model
	Central Repository vs. Federated Model		
	Record Locator - Edge Servers		CORhio is using a record locator service
	Hybrid Model		
	MPI		
	HRB with opt-in		
	Web-based application (portal)		
Reporting			
Standards			
	Standards for Message and Document Formats (HL7)		
	Standards for Clinical Terminology		
	Provide and implement CCHIT certified EMRs for selected physicians as determined by XXXXX with options including: EMR license with physician storing in office; license with storage at hospital or health bank; license with storage at vendor; ASP model		
	HITSP-endorsed IHE approach appropriate for supporting distributed data or HRB		
	ASTM Standards		
	NIST e-authentication		
	IHE		

Implementation	Project Management		
	Team Selection		
	Detail Schedule		
	Task development		
	Hardware infrastructure		
	Software Solution Deployment		
	Interface analysis		
	Interface Development		
	Agreement negotiation		
	Solution Testing		
Maintenance	Operations processes		
	Staffing		
	Support Services		