Santa Barbara County Care Data Exchange

A Regional Health Information Organization (RHIO)

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Outline

1. The Vision
2. Organizing Principles & Framework
3. Technology Approach
4. Business Case
5. Lessons Learned

The Santa Barbara Vision

- A simple and secure way to electronically access patient data, across organizations
- A public utility available to all physicians, caregivers and consumers
- An experiment to determine whether a community would share the cost of a regional IT infrastructure

Santa Barbara County Profile

Santa Barbara County
Population: 408,135
Per Capita Income: $28,698

Major Cities

- Santa Barbara
- Santa Maria
- Lompoc

5 major hospitals
1,011 physicians

Total Health Care Spending:
Approximately $1.1 Billion

Santa Maria
Population: 72,900

184 physicians
1 major hospital

CDE Participants: Midcoast IPA,Unilab, Marian Medical Center

Initial CDE Participation

Hospitals	5 of 5
Physicians	~400 of 1,011
Payors	1 of 8

Lompoc
Population: 43,300

75 physicians
1 major hospital

CDE Participants: Lompoc Valley Community Health Organization, Lompoc Hospital

Santa Barbara
Population: 92,800

693 physicians
3 major hospitals

CDE Participants: Santa Barbara Regional Health Authority, Sansum-Santa Barbara Medical Foundation Clinic, Santa Barbara Public Health Department

Key Participating Organizations

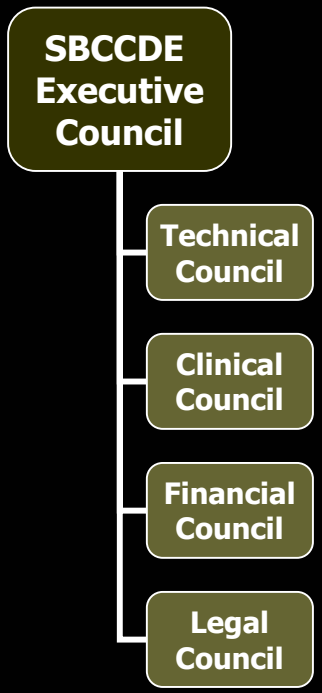
- Santa Barbara Regional Health Authority
- Santa Barbara Public Health Department
- Santa Barbara Medical Foundation Clinic
- Cottage Health System
- Marion Medical Center (CHW)
- MidCoast IPA
- Lompoc Valley Community HCO
- Santa Barbara Medical Society
- Unilab/Quest Diagnostics
- University of California at Santa Barbara

Organizing Principles

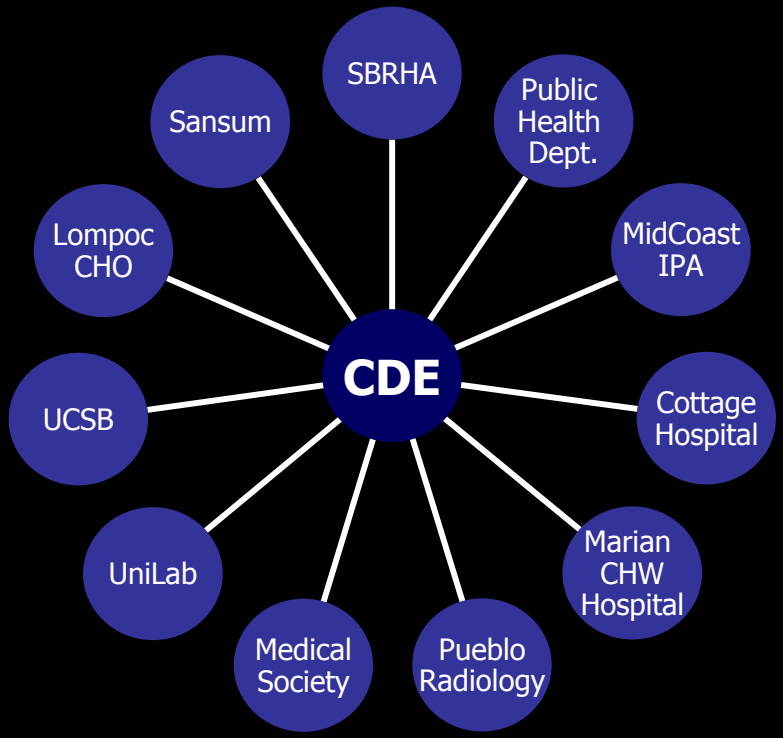
1. Oversight and governance without regard to size or financial leverage of any organization
2. Collaboration in care delivery with explicit aim of improving health status of all residents
3. Available to all caregivers and consumers
4. Compliance with current State and Federal patient privacy regulations
5. Share operating cost and promote health information technology standards

Organizational Framework

Governance Model
Public/Private Collaboration



Organizational Model
Hub and Spoke



Clinician Requirements

Available where and when needed

- Access regardless of location
- Real time data at the point of care

Single, secure access point

- One log-in to CDE and hospital portals

Easy to use and well-supported

- Simple access screens and patient lists
- Adequate training, support and maintenance

Technology Approach

Technology Approach

Managed Peer-to-Peer Model

- Distributed clinical data repositories
- No clinical records centrally stored
- Mitigates data ownership issues
- Lowers operating costs

Technology Approach

Access & Security Management

- Authenticates user
- Enables access only to allowed data
- Monitors and records access requests

Identity Correlation System

- Centralized Master Patient Index (MPI)
- Intelligently matches similar records

Information Locator Service

- Links to patient records in participants' systems
- Demographic data of all patients in system

Care Data Exchange Network Components

Web Portals

Physician Portal

- Clinical records access
- Browser-based
- Retrieve records from anywhere in system
- Manage consent process

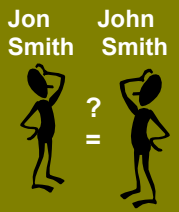
Consumer Portal

- Personal information
- Browser-based
- Clinical information access
  reports
- Medications

CDE Infrastructure

Access & Security Management

- Controls login
- Enables access only to allowed data
- Monitors and records access requests



Identity Correlation

- Correlates patient identities from different sources
- Intelligently matches similar records

Information Location Service

- Links to patient clinical records in participants' systems
- No clinical records stored at CDE central site
- Demographic data of all patients in system

Data Interfaces

Hospitals


Patient Demographics


Pharmacy Records


Radiology Studies


Lab Records

Payors


Policyholder Demographics

Eligibility and Authorization

Diagnostic Services


Patient Demographics


Radiology Studies


Lab Records

Business Case

Questions we set out to answer

- What are the quantifiable economics for community clinical data exchange?
- How do these economics impact the success of the project?

Methodology used

- Interviewed health care system constituents
- Reviewed academic literature
- Estimated costs and benefits
- Built financial model to value data exchange

Value Based on Tangible Costs/Benefits

Costs

Implementation
Initial startup costs (year 1) for defined community

Cost Drivers
- Hardware
- Software
- Development
- Installation
- Training

Support
Annualized costs for maintenance of CDE from years 2-5 (assumes a 5-year CDE life cycle)

- Maintenance contracts for hardware/software
- Application support
- Ongoing help desk/systems administrator

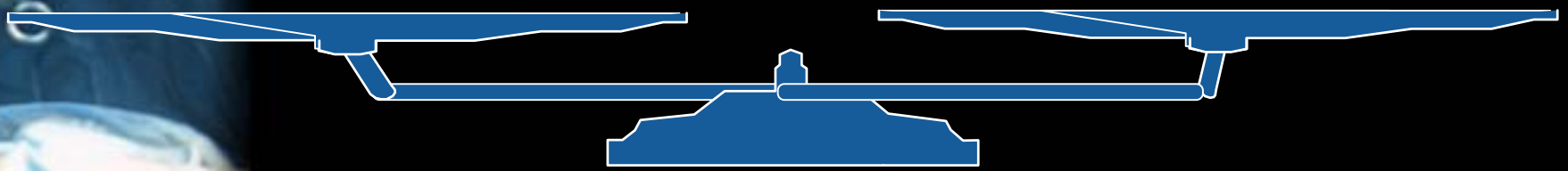
Benefits

Web Enablement
Benefits to individual constituent of bringing own information online

Benefit Drivers
- Lab savings
- Radiology savings
- Staff savings
- Fewer readmissions

Network Benefits
Benefits to individual constituent of different health care constituents joining the network

- Fewer medical errors
- Enhanced lab revenue from proper coding
- Test duplication avoidance
- Staff savings



Three Hypothetical Communities Were Modeled

	Constituent type	Total number in community	Penetration	
			Low*	High**
Large	Major hospital	10	3	7
	Diagnostic imaging center	5	2	4
	Independent laboratory	3	1	2
	PBMs	5	1	3
	Major physician groups	5	1	3
	Physicians	5,000	750	1,750
Medium	Major hospital	6	2	4
	Diagnostic imaging center	2	1	2
	Independent laboratory	1	1	1
	PBMs	5	1	3
	Major physician groups	2	1	2
	Physicians	1,000	150	350
Small* **	Major hospital	1	1	1
	Diagnostic imaging center	1	1	1
	Independent laboratory	1	0	1
	PBMs	5	0	3
	Major physician groups	0	1	0
	Physicians	200	30	70

* Low penetration is ~33% institution participation and 15% physician usage adoption

** High penetration is ~66% institution participation and 35% physician usage adoption

*** Given low numbers in community, penetration percentages for institution participation not applicable

Value Increased w/Community Size & Penetration

$U.S. annual

Penetration

Value

Community size

	Low	High
Large	Costs* $1,000,000 Benefits $1,300,000 Net $300,000	Costs* $2,200,000 Benefits $7,900,000 Net $5,700,000
Medium	Costs* $800,000 Benefits $900,000 Net $100,000	Costs* $1,400,000 Benefits $2,600,000 Net $1,200,000
Small	Costs* $490,000 Benefits $180,000 Net ($310,000)	Costs* $780,000 Benefits $600,000 Net ($180,000)

* Includes annual support costs and amortized implementation costs over 5 years

Modest Value For Each Constituent; First Mover Disadvantage Existed For All Constituents

$U.S. annual

LARGE COMMUNITY, HIGH PENETRATION

Most likely organizers	Costs [1,2]	Per constituent: Intrinsic benefits of providing data	Per constituent: Network benefits	Per constituent: Total individual benefits	Total for all constituents: Number of constituents	Total for all constituents: Total costs	Total for all constituents: Total benefits
Hospital	$120,000	$180,000	$110,000	$290,000	7	$840,000	$2,000,000
Imaging center	$110,000	$44,000	$(15,000)	$29,000	4	$440,000	$120,000
Laboratory	$110,000	$70,000	$170,000	$240,000	2	$220,000	$480,000
Physician group	$120,000	$90,000	$280,000	$370,000	3	$360,000	$1,100,000
MD free riders							
Other physicians	$40	$0	$2400	$2400	1,750	$70,000	$3,500,000
PBM	$110,000	$0	$0	$0	3	$330,000	$0
						~$2,200,000	~$7,300,000

First-mover disadvantage

Benefits fragmented

[1] Costs are determined by individual site costs plus central costs distributed among participating constituents

[2] Central costs are $280,000 for 1st year and $150,000 annual support costs. For 1 constituent alone on the network, annual costs would run $290,000, which includes all central costs amortized over 5 years and costs for individual site

Business Case Findings

1. Quantifiable economic value; meaningful when sizable network in place
2. Substantial first-mover disadvantage
3. Hospitals most likely organizers of care data exchange
4. Quantifiable quality and service benefits could substantially increase value

Current Status

- User Acceptance Testing and independent security audit near completion
- Broad physician recruitment and training to begin in January 2005
- Quality and service assessment commissioned

Lessons Learned

- Community buy-in is earned; not achieved through theoretical construct
- Big Bang vs radical incrementalism
- Technology is complex

Santa Barbara County
CARE DATA EXCHANGE™