

# The Santa Barbara County Care Data Exchange: What Happened?

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## As others have said, the SBCCDE was

- Once one of the most ambitious and publicized health information exchange (HIE) efforts in U.S.
  - Considered model for emerging regional health info organizations (RHIOs)
- In fact, many thought Santa Barbara Exchange was successful
- “What happened” surprised many
  - only limited data had been exchanged
  - for only a few months
  - then the Santa Barbara Exchange shut down, after 8 years of effort

# Methods

- We had the advantage of starting this research well before we knew fate of Santa Barbara Exchange
- Between March 06 and Feb 07, conducted 40 semi-structured interviews with current/former managers in key organizations
  - Santa Barbara County health care organizations
  - CareScience (now part of Quovadx)--vendor
  - California HealthCare Foundation (CHCF)—funding agency
  - AND: Two functioning RHIOs in central Indiana and Spokane areas—to provide perspective
- Analyzed transcriptions and documents
- Reconstructed the history, identified some lessons learned
- NOTE that we provided initial draft to interviewees to get their corrections of fact, comments on interpretation

# Market setting

- **Santa Barbara City: 80 miles N of LA on coast**
- **County: 400,000 people in three geographically self-contained areas**
  - Santa Barbara, Santa Maria, Lompoc
  - Patients get most care in market in which they lived
- **Uncomplicated market**
  - One hospital dominates in each city
  - One lab, one Medicaid health plan dominate in county

## Several distinct periods in the history

- Early evolution (late 1998 through mid 1999)
- Organizing and planning (mid 1999 to end 2000)
- Technical concept development & prototyping (end 2000 to mid 2003)
- Technical revamping (fall 2003 to Sept 2005)
- Community organization decision-making (before/after Sept 2005)

## Early evolution of Santa Barbara effort took place from late 1998 to mid 1999

- By late 1998....the key players had connected
- Santa Barbara organizations looking for grant money
- David Brailer—CEO of CareScience--looking for funding to test out HIE ideas
- CHCF looking to fund interesting HIE efforts
  - Focusing on that area
- CHCF asked CareScience to conduct feasibility study of a HIE demonstration project, which found:
  - Sufficient interest and cooperation within Santa Barbara
  - Sufficient existing software: Enough off-the-shelf software to integrate existing information systems with new peer-to-peer networking technology
  - Barriers were surmountable: product, culture, workflow, financial

## Organizing & planning phase followed, from mid-1999 to end 2000

- **Crucial: CHCF's \$10 million grant in 1999**
  - **Important: >50% to community organizations**, for interfaces to the Exchange AND upgrades for IT—those organizations benefited, no matter what happened to the Exchange
  - **Rest to CareScience**
- **CareScience, as program management office, did a lot**
  - Dispersed funds
  - Organized participants
  - Set up/staffed governance structures
  - Certified vendors/contracted with them
- **Clear: CHCF and CareScience drove project**
  - Not the community participants

# Technology development was main constraint on progress: End 2000-Sept 2005

- CareScience thought it assemble HIE software components—vendors would adapt existing off-the-shelf software. *Components included:*
  - Master patient index—to identify the patient
  - Information locator service—identify patient data
  - Authentication services—identify legitimate users
  - Audit services—identify illegitimate users
  - Graphical user interface
- Then realized it could not use “off-the-shelf” software, SO (in a big shift):
- CareScience undertook major software development effort to create HIE components
  - CareScience became software vendor as well as Program Management Office

# Biggest technology barrier: interfaces...

- ...needed to:
  - obtain data from older legacy information systems
  - make data available to the Exchange

## Developing interfaces: 3 iterations (end 2000-fall 05)

- First 2 years: CS created direct interfaces between Exchange & legacy info systems
  - Didn't work
  - The older systems were **designed to be used for transactions within** organizations
  - NOT to share data with other organizations, or even with other information systems in the same organization

## Biggest technology obstacle: interfaces (2)

- In the next two years: CS created clinical data repositories (CDRs): uniform databases that sit in-between Exchange & legacy systems (02-04)
  - CDRs regularly extract & reformat data from old systems
  - Put data into modern databases that Exchange could use
  - Right approach, but needed work
- In the final year, CS revamped CDRs—to improve performance (2004-2005)

**After 5 long years, once technical issues finally resolved...  
Community decision-making became constraint  
(after Sept 2005)**

**Liability became key constraint**

- Issue: assigning legal liability in case of lawsuits over data errors, such as exchanging confidential patient information
- At shutdown, only Quovadx + 4 Santa Barbara organizations had signed agreements
- **Funding became a key constraint after grants ended**
  - Exchange needed \$500k/year to keep going, w/o new services
  - While CHCF willing to pay some, Santa Barbara organizations not willing to pay enough of rest
- **Exchange Board voted shutdown in Dec 2006**

## State of the data at shutdown

- Only two organizations supplied patient data for use at point of care
  - Cottage Health System supplied hospital data
  - Medicaid HMO (SBHRA) supplied HMO data
- Two organizations had signed agreements but still needed software “filters” for confidential patient data
  - Largest medical group in Santa Barbara
  - Lompoc District Hospital
- Four other organizations had had their data tested but had not signed agreements, including dominant lab, Qwest
- Many other organizations had tested data nor signed agreements

# Why did the Santa Barbara Exchange fail?

## ■ Foundation grant money

- Foundation became a social venture capitalist because many Exchange rewards would not be captured by those investing—e.g., other communities might benefit by implementing RHIOs sooner, wouldn't help private investors
- Problem: demonstration project grants distort incentives
  - So community organization interest dropped when grant \$ dropped
- Interviewee: “CHCF grant money polluted the process”

## Why did the Santa Barbara Exchange fail? (2)

### ■ Lack of community leadership

- Outside CHCF largesse & vendor technical expertise fostered passivity
- There was no pre-existing HIE leadership— i.e., that had emerged from prior “organic” community development of HIE structures, expertise, business cases

# Why did the Santa Barbara effort fail? (3)

## ■ Vendor limitations

- Wrong about being able to use adapted “off-the-shelf” software
- Took on large software development project on **fixed budget** in area with many unknowns → risky move that created financial distress
- **Over-promised** when services would be ready
- **Over-sold progress** in public meetings → added to disillusionment

## ■ Lack of momentum—demoralizing

- No tangible services that could hint at better services and benefits to come

## Why did the Santa Barbara effort fail?

### KEY: Lack of compelling value proposition

- Technology delays tended to obscure this
- Santa Barbara had an uncomplicated market: made it attractive as demonstration site but created unfavorable value propositions
  - Since one hospital dominates each city, one lab dominates county SO:
- Provider-users already obtained much data from a few web portals...
  - Although only data they generated
- ...and got little new data from the Exchange
  - No Qwest lab (including from other physicians on their patients), pharmacy, Medicare, commercial plan data

## Lack of compelling value proposition (2)

SO: Not surprising that there were few Exchange users; meanwhile...

- Data providing organizations already had reaped some gains from less paper by providing data through their own portals

Finally, some stakeholders benefiting were not paying into investment pot

- E.g., small practices, health plans, and patients
  - Put financial burden on those considering paying
- SO: There were **NO** favorable short-term value propositions for viewing Exchange data at point of care

## So liability, funding became difficult issues

- Organizations unwilling to take even small risks unless payoff is high enough
  - i.e., there's a favorable value proposition
- If “No risk, no reward” is true, then...
- “No reward, no risk” also is true
  - Participants need adequate expected reward to be responsible for even small amounts of risk (of lawsuits) or small amounts of funding

## Some positive outcomes from the Santa Barbara effort

It did **NOT** become lab for on-going RHIO innovation, **BUT** it:

- Piqued interest in health information exchange
  - In many communities and among policy-makers around U.S.
- Some software architecture elements were copied by others
- Some business agreements can be models for other communities
- CHCF-owned software might be further developed by open source software developers

# Perspective: Central Indiana and Spokane-area RHIOs

- Few functioning RHIOs
  - CHCF report in early 2006 identified only a handful
- Northwest RHIO—200 mile radius of Spokane
- Central Indiana efforts were most interesting
  - 2 key related entities: Indiana Network for Patient Care (INPC) and Indiana Health Information Exchange (IHIE)
- INPC (Regeinstrief Inst) develops services using grant funds, passes profitable ones to IHIE
- IHIE sells services for which stakeholders willing to pay marginal cost
  - E.g., clinical messaging
- Many data contributors
  - Hospitals, local county health department, State Dept of Health, Medicare, Medicaid, commercial health plans, RxHub

# Central Indiana: moving beyond basic services

- ...Such as

- Patient data summaries
- Clinical messaging

- ...To other services

- Bio-surveillance, outbreak detection services

- ...And they're developing new health information services

- Reminders for chronic/preventive care visits
- Lists of patients needing services
- P4P measurement services/performance reporting

# Compared to other RHIOs Santa Barbara Exchange had...

- Fewer data providers and less data
- Only basic services
  - Data viewing at the point of care
- Too little community leadership
  - Not enough “skin-in-the-game”
  - Focused too much on short-term private value propositions...
  - And too little on longer-term private/social value propositions for more services
- Too simple a market
  - Market characteristics matter

# Lessons learned from RHIO efforts (1)

- **Pace of RHIO development will be slow**
  - Yes, others will have fewer technology delays BUT...
  - Building interfaces will always be slow & tedious
  - Business agreements, building trust takes time, never ends
- **Many HIE services possible**
  - Once have infrastructure + critical mass of data providers
  - Also possible: personal health records, which require HIE to be truly useful

## Lessons from the RHIO efforts (2)

- **To speed investment, important to better understand the many value propositions**
  - Short, medium and longer-term—some services will be produced 1<sup>st</sup> and not have much of a value proposition—later services might
  - Private and social (social: includes benefits that private investors cannot fully reap—eg, improved patient health)
  - Different for each stakeholder
  - Different for each community—e.g., # large systems and large medical groups, managed care market penetration and so on
  - Depend on stage of RHIO development (building infrastructure v operating infrastructure) and network size: number of data providers and users
  - Different for electronic health record (EHR) v non EHR users

## More lessons from the RHIO efforts (3)

- **Grant money important for RHIO R&D**
  - Despite the Santa Barbara experience
  - Paid for much Indiana infrastructure, service development
  - Spokane: slower development of services due to fewer grants
- **Leadership vision critical**
  - ...to see what's possible
  - And stick with the effort

# Implications for funding

- Grant funding needed for R&D in more communities...
  - R&D for services, agreements, technology
  - ...AND grant funding needed for determining value propositions
    - Which will vary by community
- Beyond R&D, amount of grant funding needed is unclear
  - Must 1<sup>st</sup> understand possible services, their value propositions, in more communities
  - Funding reality: Easier for stakeholders to pay for marginal cost than fixed costs
  - Clear: Grants/subsidies needed for services with favorable social & unfavorable private value propositions

## More implications for funding

- Some funding sources may become **MUCH** more important...from:
  - Health care payers
  - Pharmaceutical firms may pay for research data
  - Web advertising—big wild card, as is the role for google-type firms
- Finally, in some communities, mandates may be needed if all else fails

**Thank you!**

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