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 Quovadax)—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 \(\rightarrow\) risky move that created financial distress
  - **Over-promised** when services would be ready
  - **Over-sold progress** in public meetings \(\rightarrow\) 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 1st and not have much of a value proposition—later services might

■ Private and social (social: includes benefits that private investors cannot fully reap—e.g., 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 1st 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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