# 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 1st 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 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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