Building a Regional Clinical Data Repository: Lessons Learned

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CA Health Care IT Context

- Organized model of care
- Large medical groups/IPAs
  - Leadership
  - Infrastructure
  - Pay for Performance rewards at group level
- Many groups have registries for some conditions, few can aggregate data across databases
- Growing demand for EMRs
- Early DOQ-IT state
Medical Group Motivations

- Better Care ~ manage populations
  - improved quality
  - P4P rewards
  - Demonstrate clinical integration
  - Support their physicians in patient care
- Better Business ~ lower costs, efficient operations
  - Benchmark utilization
  - Uncover hidden cost trends, care of marginal value
  - Tool to feed back utilization info to physicians
- Better Competitive Position ~ vs. Kaiser and PPO’s
Non-profit trade association of medical groups

Provides collective strategic direction, support services, advocacy

150 member groups caring for over 9 million lives
The Big Clinical IT Vision

- **Clinical Data Repository**
  - Data from existing electronic sources
  - Refreshed at regular intervals
  - Comparisons mainly at the macro level

- **Health Information Exchange**
  - Data from additional sources like EMRs
  - Real-time
  - Supports physicians in all care either by feeding their EMR or by showing the data over a portal
Clinical Data Repository

Start here because:

- Greater current demand by medical groups
- Population views and benchmarking can quickly effect big changes
- Technology more available; standards less challenging
- Logical precursor to EMRs
Why a common CDR?

- Better ~ access to technology and tools
  - Software for risk-adjustment, registries, etc.
  - Web-based platform
  - Comparison benchmarking
- Richer ~ simplifies data collection
- Faster ~ shorter build time than separate efforts
- Cheaper ~ economies of scale
  - Technology and development far more expensive for medical groups to build/buy individually
What is the Clinical Data Repository?

Single, shared database to support quality and business improvements

- Data aggregation - acquire, clean, and match
- Regularly scheduled reports
  - Clinical quality, Resource utilization
- Ad hoc web-based reporting and viewing tool
  - Remotely run analyses on subsets of own data
  - Physicians and patients can access their own data
- MD level feedback
  - Patient intervention opportunities
  - Support for point of care reminders
- Personal Health Record for the consumer/patient
Data Into the CDR
Clinical Data Repository Inputs

Medical group
Physician claims/encounter data

Hospital
Claims data

Laboratory
Claims and results data

Health Plan
Eligibility and paid claims data
(facility, POS, mental health and vision claims)

CAPG
Clinical Data Repository

Health plan/PBM
Pharmacy data
Products out of the CDR
Clinical Data Repository Outputs

- Personal Health Records
- Patient action lists
- Web based ad hoc reports
- Disease registries
- Benchmark reports
- Data extracts

CAPG Clinical Data Repository

California Association of Physician Groups
<table>
<thead>
<tr>
<th>Chronic Conditions</th>
<th>Patients Med</th>
<th>Net Pay Med</th>
<th>Per Patient Med</th>
<th>Per 1000 Acute</th>
<th>LOS Admit Acute</th>
<th>TOT 1000 Office Med</th>
<th>Per 1000 ER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>2,048</td>
<td>$577,945</td>
<td>$282.20</td>
<td>.63</td>
<td>3.61</td>
<td>50.38</td>
<td>2.94</td>
</tr>
<tr>
<td>Chronic Obstruct Pulm Dis(COPD)</td>
<td>632</td>
<td>$500,204</td>
<td>$791.60</td>
<td>.60</td>
<td>7.10</td>
<td>14.16</td>
<td>.20</td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td>1,763</td>
<td>$6,016,310</td>
<td>$3,412.54</td>
<td>3.35</td>
<td>4.79</td>
<td>47.44</td>
<td>.70</td>
</tr>
<tr>
<td>Diabetes</td>
<td>2,551</td>
<td>$1,241,760</td>
<td>$486.77</td>
<td>.98</td>
<td>7.33</td>
<td>95.69</td>
<td>1.18</td>
</tr>
<tr>
<td>HIV Infection</td>
<td>70</td>
<td>$196,783</td>
<td>$2,811.19</td>
<td>.07</td>
<td>12.20</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td>Hypertension, Essential</td>
<td>6,192</td>
<td>$1,048,083</td>
<td>$169.26</td>
<td>.31</td>
<td>3.32</td>
<td>159.92</td>
<td>.76</td>
</tr>
<tr>
<td>Mental Hlth - Anxiety Disorder</td>
<td>863</td>
<td>$236,342</td>
<td>$273.86</td>
<td>.03</td>
<td>2.50</td>
<td>40.68</td>
<td>.43</td>
</tr>
<tr>
<td>Mental Hlth - Bipolar Disorder</td>
<td>316</td>
<td>$438,865</td>
<td>$1,388.21</td>
<td>.56</td>
<td>6.90</td>
<td>27.36</td>
<td>.01</td>
</tr>
<tr>
<td>Mental Hlth - Depression</td>
<td>2,856</td>
<td>$2,007,080</td>
<td>$700.21</td>
<td>1.40</td>
<td>6.97</td>
<td>254.13</td>
<td>.37</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>2,135</td>
<td>$2,032,455</td>
<td>$951.97</td>
<td>1.21</td>
<td>4.86</td>
<td>59.59</td>
<td>.21</td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>283</td>
<td>$212,287</td>
<td>$750.13</td>
<td>.06</td>
<td>4.25</td>
<td>13.06</td>
<td>.03</td>
</tr>
</tbody>
</table>

**Summary**

- Net Pay Med
- Admits Per 1000 Acute
- Days LOS Admit Acute
- Visits Per 1000 Office Med
- Visits Per 1000 ER
### Member Information

- **Member ID:** 9082346678-01
- **Member Name:** Richard Montgomery
- **Current Plan:** Health Plus
- **Primary Physician:** Alice Trice
- **Months Enrolled:** 33

### Dependents

- **Cherie Jones-Montgomery**
- **Elena Montgomery**

### Preventive Care

- **Prostate Specific Antigen Test** 3/2/04
- **Office Visit Established Patient** 3/2/04
- **Dental Visit** 1/15/03

### Clinical Conditions

- **Coronary Artery Disease**
- **Asthma**
- **COPD**

### Drug Summary

<table>
<thead>
<tr>
<th>Drug</th>
<th>Purpose</th>
<th>Ordering Physician</th>
<th>Dose</th>
<th>Scripts</th>
<th>Last Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lipitor</td>
<td>Cholesterol Lowering</td>
<td>Dr. Alice Trice</td>
<td>10 mg</td>
<td>18</td>
<td>6/12/04</td>
</tr>
<tr>
<td>Prilosec</td>
<td>Stomach Acid Red.</td>
<td>Dr. Alice Trice</td>
<td>20 mg</td>
<td>34</td>
<td>6/12/04</td>
</tr>
<tr>
<td>Vanceril</td>
<td>Treats Asthma</td>
<td>Dr. Alice Trice</td>
<td>.042 mg</td>
<td>9</td>
<td>6/12/04</td>
</tr>
<tr>
<td>Cardizem CD</td>
<td>High Blood Pressure</td>
<td>Dr. Susan Giltrist</td>
<td>180 mg</td>
<td>6</td>
<td>9/15/03</td>
</tr>
</tbody>
</table>
### My Medstat Personal Health Record

**Member ID:** 9082346678-01  
**Member Name:** Richard Montgomery  
**Gender:** Male  
**Age:** 51 Years of Age

#### Primary Preventive Services: Staying Well

<table>
<thead>
<tr>
<th>Service</th>
<th>Frequency</th>
<th>Last Service</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prostate Specific Antigen Test</td>
<td>Once per year</td>
<td>3/2/04</td>
<td>Up-to-date</td>
</tr>
<tr>
<td>Cholesterol Screening</td>
<td>Once per year</td>
<td>~</td>
<td>Missing</td>
</tr>
<tr>
<td>Colon Cancer Screening</td>
<td>Once per year</td>
<td>~</td>
<td>Missing</td>
</tr>
<tr>
<td>Primary Care Visit</td>
<td>Once per year</td>
<td>3/2/04</td>
<td>Up-to-date</td>
</tr>
<tr>
<td>Dental Visit</td>
<td>Once per year</td>
<td>1/15/03</td>
<td>Overdue</td>
</tr>
</tbody>
</table>

#### Managing Your Disease

<table>
<thead>
<tr>
<th>Condition</th>
<th>Service</th>
<th>Frequency</th>
<th>Last Service</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asthma</td>
<td>Rx-Inhaled Steroid</td>
<td>Ongoing</td>
<td>6/12/04</td>
<td>Up-to-date</td>
</tr>
<tr>
<td>Asthma</td>
<td>Spirometry</td>
<td>Every 1 – 2 yrs</td>
<td>~</td>
<td>Missing</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>Lipid Test</td>
<td>Once per year</td>
<td>4/9/03</td>
<td>Overdue</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>Rx-Beta Blocker</td>
<td>Ongoing</td>
<td>6/12/04</td>
<td>Up-to-date</td>
</tr>
</tbody>
</table>
Early Participants

- 10 Initial Medical Groups caring for over 1.5 million Californians
- Financial and sweat equity
- Gain insights into data integrity, design the benchmark reports
- Early access to results
- Desire to shape health care IT
Potential Partners

- Health Plans
  - Mixed response
- Commercial Labs
- Purchasers
  - PBGH highly supportive
- Foundations
  - Interested but not funding development
- Government
  - CMS
  - ONCHIT
What is the financial model?

- **Development funding**
  - Pays to build the foundation – technology, data use agreements, data integrity, etc.
  - Completed in two years, CDR partially operational
  - Mix of health plans, corporate partners, grants

- **User fees**
  - Fully funds operations
  - Health plans and medical group users
  - Begins in year 2
Keys to Success

- Participation – critical mass of groups, plans, labs
- Funding - $4-5M for development phase
- Credible, confidential and secure data
- Demonstrate that data contributes to better care and management decisions
- Remain connected to, and consistent with, other statewide and national initiatives
- Rapid start-up – time window for collaborative data model will close
Symmetrical Data Use/Sharing

- Medical Groups see:
  - all data on own patients, sortable by health plan
  - relevant comparators—e.g. vs other IPAs
  - aggregated results, by health plan

- Health Plans see:
  - all data on own members, sortable by medical group
  - relevant comparators
  - aggregated results, by medical group
Key Lessons

- Design the system based on what the clinicians and medical groups want/need
- Align with all the other initiatives—ONCHIT, state
- Invite feedback on how to make it better
- It takes a lot more time and effort to get going than you can imagine
- The biggest barriers are financial and political