Building a Community Health System at Scale

Regional Triple Aim Initiative

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Overview

1. Triple Aim framework and rationale
2. Learning system for Triple Aim execution
3. Triple Aim Initiative Examples
4. Contra Costa Regional Triple Aim Asthma Initiative
   - Comprehensive community health model encompassing community context
5. Sustainable funding – pay for success financial mechanisms
System designs that simultaneously improve three dimensions:

– Improving the health of the population

– Improving the patient experience of care (including quality and satisfaction)

– Reducing the per capita cost of health care

Determinants of Health and Their Contribution to Premature Death

Adapted from: McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. Health Aff (Millwood) 2002;21(2):78-93.
How Population Health Happens

• Health happens:
  – one person at a time
  – one day at a time
  – one decision at a time

• Within the context of where and how people live:
  – where they work, learn, play, shop
  – influenced by their level of education, income, employment
  – determined by their access to healthy food, safe environments, available transportation, healthcare services

• Health does not happen primarily within healthcare sector:
  – it happens within the context of each person’s life –
    – their cultural, social, and economic frameworks modified by their values and priorities

• Individuals aggregate to populations

Defining Populations

Determined by defining boundaries of individuals:

– Racial, ethnic, disease specific, life-stage, level of poverty
– Health system’s population of patients
– Health insurer’s population of patients across health systems
– Clinician’s entire practice of patients
– Segment of a clinician’s practice
  • Patients with depression or adolescents or elderly….
– Geographic region - county, city, neighborhood or block
– Healthcare resource utilization
  • high utilizers
Design of a Triple Aim Enterprise

Triple Aim History 2006 - Present

- **Phase I – II**: Started using Triple Aim concepts with small population segment – disease focused within a clinical practice

- **Phase III**: Larger subpopulations – multiple practice sites

- **Phase IV – VI**: Expanded to community and geographic focus

- **Present**: Sunset of Triple Aim prototyping initiative; Launch of Triple Aim Improvement Community – collaborative approach with change packages
NR2  Add TA Improvement Community
Nixon Richartz, 2012-07-02
The Triple Aim Improvement Community
Launched 2012

- 12-Month Collaborative gathering 32 sites from US, Canada, UK, Sweden, and Denmark

- Focus on Building Infrastructure, managing populations, testing and feedback loops

- Work streams include:
  - High Cost/High Risk Populations
  - Care for Frail Older Adults
  - Employed Populations (Commercially insured, ages 18-65)
  - Community Activation

Triple Aim Approach

1. A clear purpose, including what the team, coalition, or region/community is trying to accomplish and why

2. A cogent set of high level measures that operationally define what a participating team or coalition means by health of a population, experience of care, and per capita cost

3. An established portfolio of projects and investments to support the pursuit of the Triple Aim

4. A means of governing and integrating the initiatives and investments
# Components of a Learning System for the Triple Aim

1. System level measures
2. Explicit theory or rationale for system changes
3. Segmentation of the population
4. Learn by testing changes sequentially
5. Use informative cases: “Act for the individual - learn for the population”
6. Learn during scale-up and spread with a production plan to go to scale
7. Ongoing periodic review
8. People to manage and oversee the learning system

*From Tom Nolan PhD, IHI*

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## Potential Triple Aim Population Outcome Measures

(6/2011)

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Measure</th>
</tr>
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</table>
| **Population Health** | 1. Health Outcomes:  
  - Mortality: Years of potential life lost; Life expectancy; Standardized mortality rates  
  - Health/Functional Status: single question (e.g. from CDC HRQOL-4) or multi-domain (e.g. SF-12)  
  - Healthy Life Expectancy (HLE): combines life expectancy and health status into a single measure, reflecting remaining years of life in good health |
|                     | 2. Disease Burden: Incidence (yearly rate of onset, avg. age of onset) and/or prevalence of major chronic conditions |
|                     | 3. Risk Status: composite health risk appraisal (HRA) score |
| **Experience of Care** | 1. Standard questions from patient surveys, for example:  
  - Global questions from US CAHPS or How’s Your Health surveys  
  - Experience questions from NHS World Class Commissioning or Care Quality Commission  
  - Likelihood to recommend |
|                     | 2. Set of measures based on key dimensions (e.g., US IOM Quality Chasm aims: Safe, Effective, Timely, Efficient, Equitable and Patient-centered) |
| **Per Capita Cost**  | 1. Total cost per member per month of the population |
|                     | 2. Hospital and ED utilization rate |
Global Triple Aim Participants

Triple Aim Examples

- Bolton Primary Care Trust - UK
- HealthPartners – Minnesota, USA
- Care Oregon – Oregon, USA
- Contra Costa County – California, USA
Bolton Primary Care Trust

• Population 261,037 –
  – residents have 2 year shorter life expectancy than the national average
  – 15 year disparity within the Borough
    • 82 years affluent versus 67 years deprived

• Biggest contributors to death
  – Heart disease
  – Stroke
  – Cancer

Bolton Primary Care Trust Triple Aim Initiative

• Aim:
  – Reduce health inequalities for Cardio-Vascular Disease and improve life expectancy for all residents in Bolton aged 45+

• Strategy:
  – Work in partnership between public health, local authority and primary care to improve health experience and wellbeing

• Project Portfolio:
  – Risk assess 100% of all residents aged 45+ for Cardiovascular disease within specific timeframe
  – Amplify Smoking cessation activity
  – For patients with risk rating of >20% -- primary care prevention strategies applied
Bolton Primary Care Trust

After Primary Prevention Intervention

Primary Prevention Scheme 2006 - 2009

Percent Assessed

YEAR

Bolton Primary Care Trust

Outcomes – MI Admissions

diagnosis of Acute Myocardial Infarction

Number of admissions

BBHC commences
Outcomes

Bolton Primary Care Trust

Improved Life Expectancy

Within the Borough - disparity outcomes improved

- In 2004: 15 year gap
- In 2009: 11.9 year gap
HealthPartners Clinics

TRIPLE AIM --- Health-Experience-Affordability

% patients with Optimal Diabetes Control:
- Diabetic blood sugar per ICSI guideline: A1C changed from < 7 to < 8 in 1st quarter 2009
- AND blood pressure
- AND cholesterol
- AND daily aspirin use
- AND non-tobacco user

% patients “Would Recommend” HealthPartners Clinics

Total Cost Index (compared to statewide average)
- < 1 is better than network average

HealthPartners

Saving 364 Hearts, 68 Legs & 625 Pairs of Eyes Each Year
(Diabetic Population)
**Care Oregon Triple Aim**

**DRIVERS**

1) Improved Primary Care Processes
2) Expanded Social and Clinical Care Models
3) Optimal Transitional Care
4) Accountable Payment Systems
5) Community-based Palliative Care

**PROJECTS**

- Empanelment
- Advanced access
- Continuity
- ED outreach
- Primary and specialty care embedded "engagement specialists" for high utilizing patients (aka ‘hot spot’)
- Health plan transitional care RNs embedded in the hospital
- Health plan transitional care team
- New primary and specialty care payment methods
- New hospital contracting arrangements
- New partnerships with community-based palliative care programs
- Revised health plan palliative care benefit structure

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**Data Modeling**

Population prevalence of 7 different factors associated with HIGH RISK of repeat Hospitalization and/or ED visits

\[ \approx 50,700 \text{ members currently enrolled as of Mar01, 2011} \]
Data Modeling

Adult Medicaid Average Cost for One Year by Risk Factor

Care Oregon Triple Aim – Rebecca Ramsay
Contra Costa Regional Triple Aim Initiative

- Comprehensive System-Wide Community Model
  - multi-sector utilization of evidence-based interventions to leverage the unique resources, reach, expertise, and influence of each sector in a coordinated, integrated, aligned fashion to build an accountable learning community to improve health

- Sustainable financing mechanism
  - social impact investing/pay for success model

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Contra Costa Regional Triple Aim Initiative

UNFOCUSED EFFORTS

- Random activity
- Blinded to related efforts
- Competitive
- Redundant
- In-Parallel
- Multiple unaligned incentives

TARGETED, ALIGNED ACTIVITY

- Clear, focused aim and outcomes with targets
- Explicit, deliberate aligned action
- Utilize unique levers of each sector
- Track results over time – adapt interventions to achieve targeted outcomes
- Accountability and aligned incentives
- Become a learning community
- Spread model to other activities
<table>
<thead>
<tr>
<th>California Asthma Impact</th>
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<tbody>
<tr>
<td>• Most common health condition among young children especially African Americans</td>
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<tr>
<td>• Significant cause of absenteeism from work and #1 from school</td>
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<tr>
<td>• Asthma prevalence increasing</td>
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<tr>
<td>– 2001 - one in eight (12%)</td>
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<tr>
<td>– 2010 - one in six (15%)</td>
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<tr>
<td>• 22% of children diagnosed with asthma have an asthma-related ER visit each year</td>
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<tr>
<td>• High cost problem</td>
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<tr>
<td>– $763 Million total asthma-related charges (2005)</td>
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<tr>
<td>– $23,953 average hospitalization cost (2005)</td>
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<table>
<thead>
<tr>
<th>Contra Costa Asthma Impact</th>
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<tbody>
<tr>
<td>• Contra Costa has a higher prevalence of asthma than almost all counties in the state and 30% higher rate of ER visits and hospitalizations</td>
</tr>
<tr>
<td>• West Contra Costa County</td>
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<tr>
<td>– two times prevalence of asthma hospitalizations than other regions of Contra Costa County</td>
</tr>
<tr>
<td>– Large African-American population with highest rate</td>
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Contra Costa Regional Triple Aim Initiative

AIM:

To prevent asthma onset and improve the outcomes of individuals with asthma in West Contra Costa County through system-wide, integrated, and aligned action

Measures

- Decrease asthma-related ER visits by 20% (cost)
- Decrease asthma-related hospitalizations by 20% (cost)
- Improve school attendance of children and adolescents with chronic uncontrolled asthma by 20% (health)
- Improve work attendance of adults with chronic uncontrolled asthma by 20% (health)
- Improve self-reported health status of individuals with chronic uncontrolled-asthma (experience)
Start in the Person’s Home

Use proven standardized in-home assessment tools to identify asthma triggers including family circumstances to be conducted by –

- Public health nurses
- Promotoras and African American Health Conductors
- Community Health Workers - key workforce development
- Geospatial Information Systems (GIS) mapping to target hot spots

In Home Remediation

Targeted in-home remediation and family-based interventions –

- Remove mold, mildew and pet dander
- Reduce dust by removing carpets and/or thorough cleaning of living area with non-toxic products
- Pillow and mattress covers
- Hepa-filter vacuums for aerosolized triggers
- Address in-home smoking risk
- Weatherize windows to prevent drafts
- Education and support for Asthma Action Plan
Go to Where People Spend Their Time –
At Work and School

School-based education and clinical support services for students, teachers, and families and on-site clinical services for students to manage asthma in schools --

- Outreach to students missing school due to asthma-related episodes – intensive case management connected to a health home
- Utilize mobile apps and other social networking strategies
- Primary care management services at the school site to keep children in school with an Asthma Action Plan based on regular assessment and symptoms
- Educational, environmental and individual support for Asthma Action Plan for each student
- Health Academy at schools with some focused educational activities related to asthma prevention and management

Pre-School Interventions

Pre-School education, remediation of triggers and management (Head Start and other daycare programs) –

- Education of parents and staff about recognition of asthma triggers (exercise, environmental, upper respiratory infections and allergy), medication management and Asthma Action Plans for each affected child

- Trigger remediation at sites
Business Sites

Business site education and remediation of triggers --
- Support employees in effective self-management
- Workplace environment trigger remediation
- Ensure employee’s insurance coverage aligns with clinical best practices for asthma
- Education, environmental and support for Asthma Action Plans for affected employees

In Their Community

General community education about asthma prevention and triggers --
- Cigarette smoking exposure risk
- In-home triggers that can be mitigated
- On-site school and business-related exposure mitigation
- Initiation and Adherence to Asthma Action Plans
- Ongoing self-management support through community resources within the community
- Geospatial Information Systems (GIS) mapping to target hot spots
In Their Community

Community-led peer-to-peer support groups and self-management support --

– Led by Community Health Workers, Promotoras, African American Health Conductors, faith-based organizations, etc.

– Develop Community Health Worker training and certification programs at high schools and community college through the existing Health Academies, Contra Costa Community College and Contra Costa Employment and Human Services Department

Integrate with Healthcare Delivery System

Education for self-management for those with chronic uncontrolled asthma – intensive ambulatory care case management and in-home health education--

– Peer-to-peer support groups within the healthcare delivery system and in the community

– Train and fully utilize Promotoras, African American Health Conductors, Community Health Workers for healthcare delivery, in-home, and community-based support services

– Fully utilize each healthcare team member to highest level of practice competency

– Build multiple strategies for access outside of the face-to-face visit such as email, text messaging, telephone visits and groups convened where people spend their time – schools, worksites, coffee shops, churches, etc.

– Utilize smart phones/mobile apps and other social networking strategies
Connect to Healthcare Delivery System

- Targeted intensive healthcare ambulatory care case management for high utilizers of healthcare services –
  - Connect each individual to a health home
  - Develop community-wide asthma registry – share data across healthcare systems public health and other key sectors
  - Intensive disease and case management
  - Evaluate for co-morbidities that may be asthma triggers
  - Connect individuals to community resources

Connect to Healthcare Delivery System

Targeted outreach to individuals with chronic uncontrolled asthma identified through claims data from health plans, self-insured employers and insurance companies and hospital emergency room data -
  - Shared-decision making care management
  - Develop community-wide asthma registry – share data across healthcare systems and sectors
  - Develop school-based and business-based interventions
Health Leads
Expanded Model of Care Addressing Context and Circumstance

- Enables doctors, nurses, and other healthcare providers to “prescribe” food, housing, or other basic resources—just as they would medication

- Patients take their prescriptions to the clinic waiting room, where Health Leads’ Advocates are ready to connect them to community resources

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Screening Tool
The Process

1. Families seek medical care at UMass Memorial Health Center
2. Families complete pre-visit screener
3. Physician addresses basic resource needs and refers patient to Health Leads
4. Patient brings referral prescription to Health Leads and obtains resource information from Advocate
5. Health Leads Advocate follows up with families
6. Health Leads Advocate closes the loop with physician through the EMR

Guiding Principles

1. Build all systems around the individuals/people within their communities
2. Align aims, measures and initiatives across community through partnerships and coalitions
3. Utilize all intersections of each individual and the personal healthcare delivery system to address clinical preventive services, provide health promotion information and support (physical activity, healthy diet, tobacco cessation, ETOH moderation) and health literacy, link to community resources and with specific conditions consider related implications for family and broader community
4. Utilize intersections of places where individuals spend their time to impact their health – schools, businesses, pharmacies, groceries, parks
5. Promote ‘Health in all Policies’
   - Health impact considered in all policy decisions in a community
   - Health and well-being are primary goals of each community and impacts are measured in key sectors
6. Develop shared accountability recognizing no one sector can provide all necessary services or health-promoting conditions alone – shared accountability between healthcare, governmental public health and key community stakeholders
7. Build a learning community
   - Transparent data sharing of outcomes over time
   - Adapt strategies over time to achieve outcome targets
   - Apply proven local model to other initiatives
**Shared Savings Model - Social Impact Bonds**

Essential Benefits

- **Sustainable funding** mechanism –
  - Rather than grants that end

- **Outcomes driven with specified targets**
  - Rather than inputs and outputs
  - Allows for course corrections throughout initiative

- **Novel capital investors**
  - Expand to equity investors not traditionally in the public health or healthcare investment sphere

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**Social Impact Bonds**

Shared-Savings /Pay for Success Model

- First Social Impact Bond launched 2010 –
  - Peterborough Prison in UK – goal to reduce prisoner recidivism by ≥7.5% over 6 years

- **Social Impact Bond core components:**
  - **Financial stakeholders** - government or entity that will save money if program reaches target
  - **Investors** – foundations or investment organizations who define target outcomes to be reached over specified timeframe
  - **Intermediary** – financial transaction management and/or program management
  - **Service providers that are paid up front** to deliver evidence-based interventions with the goal of reaching specified contracted targets
  - **Independent External Evaluator** – validate targets achieved and savings
  - **Shared Savings pay-out** - if target outcomes are met, investors receive funds from financial stakeholders—repayment of initial investment plus a previously agreed upon financial return
A Private Sector Model for Social Impact Investing

Adaption to Health Impact Contracts

- Identify high-cost population
- Determine who is paying for their care – financial stakeholder (health plans and self-insured employers)
- Estimate costs for care – ER visits, hospitalizations, medication costs, provider visits
- Identify evidence-based interventions and competent service providers
- Estimate costs to implement interventions
- Determine Return On Investment (ROI) which is the savings for financial stakeholder minus intervention costs
- Attract investors to provide capital for interventions who will be repaid with interest if target outcomes reached (foundations, organizations, market investors)
- External evaluator to validate savings
The Approach Path for the Private Sector

- **Phase 1: Development and Design** – Funds managed by Regional community foundation
- Identify target population and determine interventions for impact investing
- Identify savings potential attributed to intervention
- Engage all community stakeholders (community population, healthcare, public health, businesses, policy-makers, schools, etc.)

- **Phase 2: Establish Sustainable Health Shared Savings Fund**
  - Identify the financial stakeholders
  - Secure capital for intervention
  - Create term sheets for investors
  - Establish agreements among all key players (contracts)

- **Phase 3: Conduct 2 – X year intervention**
  - Track outcomes over time – adapt interventions to target
  - Regular progress updates to stakeholders

- **Phase 4: Validate Savings from intervention**
  - Regular progress updates to stakeholders

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Multiple US Applications in Process

- President Obama’s 2012 budget - $100M to fund “Pay for Success” Initiatives for several government agencies – 7 pilot programs including job training, education, and juvenile justice

- New York – recidivism - Goldman Sachs investor $9.6 million backed by Bloomberg Philanthropies 75%

- Massachusetts – homelessness and recidivism

- Maryland – youth recidivism and job programs

- New Jersey – legislation for a health-related impact bond

- Connecticut – enabling legislation and developing a recidivism model

- Minnesota - passed legislation for appropriation bond and issued RFI

- LA County – motion by Board of Supervisors to examine the feasibility of implementing PFS to expand the “Just in Reach” program to serve homeless repeat offenders

- Pennsylvania – pre-Kindergarten Special Education bond

- Dallas – dedicated group of impact investors exploring model for workforce development

- Cuyahoga County, OH – county manager has secured Dept of Justice award for pay for success project
What Is Possible...

**Cuba**

“They do so much with so little -
*We do so little with so much*”
Life Expectancy United States, 2011

Figure 2. Life expectancy at birth, by Hispanic origin, race for non-Hispanic population, and sex: United States, 2006–2010 final and 2011 preliminary

HEALTHY LIVES

Infant Mortality Rate

Infant deaths per 1,000 live births

National average and state distribution

International comparison, 2007

^ Denotes years in 2006 and 2008 National Scorecards.


Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2011.
Immunizations for Young Children

Percent of children ages 19–35 months who received all recommended doses of DTP vaccines:

- 4+ doses of diphtheria-tetanus-pertussis (DTP)
- 3+ doses of polio
- 1+ doses of measles-mumps-rubella
- 3+ doses of Haemophilus influenzae type B
- 3+ doses of hepatitis B
- 1+ doses of varicella


Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2011.
Children with a Medical Home, by Top and Bottom States, Race/Ethnicity, Family Income, and Insurance, 2007

Percent of children under age 18 who have a personal doctor or nurse and receive care that is accessible, comprehensive, culturally sensitive, and coordinated*

<table>
<thead>
<tr>
<th>Category</th>
<th>U.S. Variation</th>
</tr>
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<tbody>
<tr>
<td>U.S. average</td>
<td>58</td>
</tr>
<tr>
<td>Top 10% states</td>
<td>68</td>
</tr>
<tr>
<td>Bottom 10% states</td>
<td>69</td>
</tr>
<tr>
<td>White</td>
<td>49</td>
</tr>
<tr>
<td>Black</td>
<td>44</td>
</tr>
<tr>
<td>Hispanic</td>
<td>39</td>
</tr>
<tr>
<td>&lt;100% of poverty</td>
<td>39</td>
</tr>
<tr>
<td>400%+ of poverty</td>
<td>67</td>
</tr>
<tr>
<td>Private insurance</td>
<td>67</td>
</tr>
<tr>
<td>Uninsured</td>
<td>36</td>
</tr>
</tbody>
</table>

* Child had a personal doctor/nurse; had a usual source for sick care; received family-centered care from all health care providers; had no problems getting needed referrals; and received effective care coordination when needed.


Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2011.

Percent of Adults Ages 19–64 Uninsured by State

1999–2000

2009–2010


Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2011.
Did not get medical care because of cost of doctor’s visit; skipped medical test, treatment, or follow-up because of cost; or did not fill Rx or skipped doses because of cost.

AUSTRALIA; CANADA; FRANCE; GERMANY; NETHERLANDS; NEW ZEALAND; NORWAY; SWEDEN; SWITZERLAND; UNITED KINGDOM; UNITED STATES.

Data: 2010 Commonwealth Fund International Health Policy Survey.

Source: Commonwealth Fund National Scorecard on U.S. Health System Performance, 2011.
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