INSTITUTE FOR HEALTHCARE IMPROVEMENT

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FINAL REPORT: 90-DAY PROJECT
Triple Aim in a Region
Wave 17 August – October 2010

Executive Summary

Up until the present there have been no prerequisites for how an organization participating in IHI's Triple Aim initiative defines its population. The population could be the members of a health plan, all people whose primary care physician belongs to a medical group, the low income uninsured in a county, or all residents of a geographic area. A new focus for the Triple Aim is when the definition of the population is all residents of a geographic area. We acknowledge that the definition of a "region" is arbitrary and will vary among participants. We have found that some combination of Hospital Referral Region, HRR (Dartmouth Atlas) and county boundaries are useful ways of beginning the discussion about the regional boundary. The HRR does a reasonable job defining the health care market. The county boundaries often coincide with the jurisdiction responsible for public health.

This geographic definition brings new complexity to pursuit of the Triple Aim. In particular we believe that a region pursuing the Triple Aim would include in its efforts four components:

- Purpose – What are we trying to accomplish? Why?
- Measurement – Defining high level measures that operationally define what a region means by health of a population, experience of care, and per capita cost.
- Establishing and executing a portfolio of projects and investments to support the pursuit of the Triple Aim
- A means of governing and integrating the regional initiatives and investments

One important role of the IHI team is to accelerate the learning about how to successfully achieve the Triple Aim in a region by interacting with participating sites. Because of the complexity of the task and the time delays between actions taken in a region and the Triple Aim results, a sophisticated learning system will be needed. An outline of such a learning system includes the following components:

- *Case studies* of regional efforts that represent the best we know about achieving the Triple Aim in a region. For some time these case studies will be document incomplete but promising results as well as failed attempts. Each case study could be viewed as an individual data point in a chronology of evolving strategies.
- *Milestones* achieved by participating regions and how long it took them to get there. Key milestones include: agreement on a statement of purpose related to the Triple Aim, plotting and using a set of time series of measures suggested by the IHI for the Triple Aim, the establishment of a formal or informal governance structure, or a shared portfolio of projects and investments by different organizational entities within the region.

- *Evaluations of* interactions with participating regions. In these interactions the team IHI will be facilitating conversations and meetings intended to produce specific actions such as developing a measurement set or a balanced portfolio of projects and investments. The results of these interactions will vary and each interaction could be thought of as a Plan-Do-Study-Act cycle.

I. **Research Team**: Tom Nolan, Kevin Nolan, Samantha Henderson, Joanne Lynn

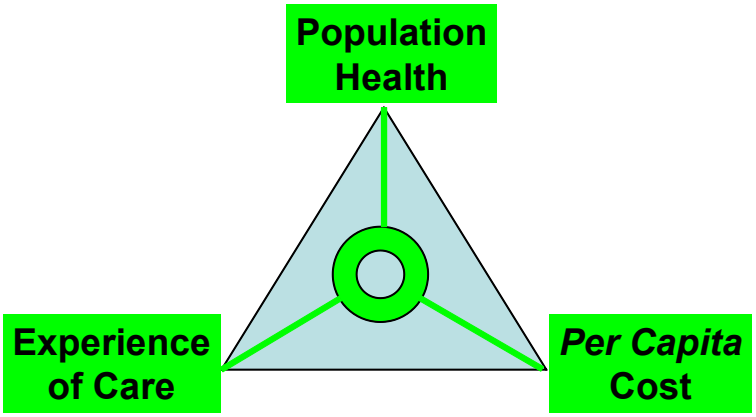
II. **Intent & Aim:**

The IHI Triple Aim initiative is in its fourth year. The initiative has expanded from 15 organizations to about 60 organizations in North America, Europe, Asia, and New Zealand. Prerequisites for participation are twofold: 1.assuming responsibility for a defined population and 2.pursuit of better health for members of the population, improved experience of care for those members entering the health care system, and lower per capita costs. There have been no constraints put on how an organization defines its population. The population could be the members of a health plan, all people whose primary care physician belongs to a medical group, the low income uninsured in a county, or all residents of a geographic area. A new focus for the Triple Aim is when the definition of the population is all residents of a geographic area. This geographic definition brings new complexity to pursuit of the Triple Aim. The aim of this project is to define and test methods that are necessary to pursue the Triple Aim successfully in a region.

III. Background

The existing framework for the Triple Aim consists of three parts: The Triple Aim triangle, the measure set that operationally defines the Triple Aim, and the concept design. These three components are contained in the follow three figures.

Three Dimensions of Value



Potential Triple Aim Outcome Measures 11/09

Dimension	Measure
Population Health	1. Health/Functional Status: single-question (e.g. from CDC HRQOL-4) or multi-domain (e.g. SF-12, EuroQol)
	2. Risk Status: composite health risk appraisal (HRA) score
	3. Disease Burden: Incidence (yearly rate of onset, avg. age of onset) and/or prevalence of major chronic conditions; summary of predictive model scores
	4. Mortality: life expectancy; years of potential life lost; standardized mortality rates. *Note: Healthy Life Expectancy (HLE) combines life expectancy and health status into a single measure, reflecting remaining years of life in good health. See http://reves.site.ined.fr/en/DFLE/definition/*
Patient Experience	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 CareQuality 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 of the population per month
	2. Hospital and ED utilization rate

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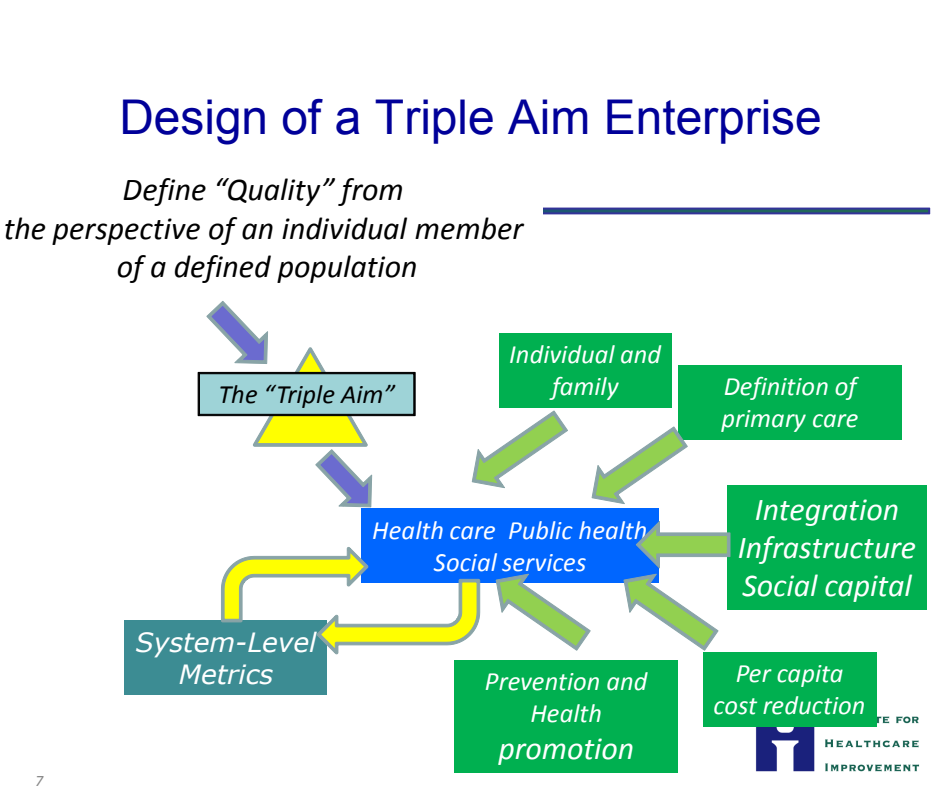


The faculty for the Triple Aim in a region believe that these three components will be necessary but not sufficient for successfully pursuing the Triple Aim in Region**.** IHI anticipates that difficult challenges will arise in the course of the initiative, including:

- Cooperating among competitors, and engineering cooperation without violating anti-trust regulations;
- Establishing regional governance structures that are effective and sustainable;
- Integrating health care with public health and social services so that the range of health determinants is addressed;
- Finding an effective way to involve businesses and unions in the effort;
- Developing business models and transition strategies that allow innovative care providers to remain or become financially viable as the demand or cost for high-intensity care is reduced;
- Maintaining a functioning balance between cooperation and competition among health care providers in a region; and
- Designing payment systems that support the pursuit of the Triple Aim.

IV. Description of the work to date

The R&D team committed to the following deliverables:

- *Approaches to regional measurement*
  A sub project was conducted by Kevin Nolan, Samantha Henderson, and Matt Stiefel. The project examined the feasibility of obtaining Triple Aim measures from publically available data. A test was run for Montgomery County, Maryland. Measurement will be discussed in the results section of this report. A list of publically available measures and the Montgomery County test results are in the appendix section.
- *A model portfolio of projects and investments in a region*
  Based on experience with current Triple Aim sites and work with sites participating in Triple Aim in a Region a method for establishing a portfolio of projects and investments was developed. A description of the method as well as a model portfolio is contained in the results section.
- *A model governance structure*
  Saleema Moore with guidance from Bruce Bradley catalogued various approaches to governance. Her paper is contained in the appendix section. Dan Fox also was contacted and provided a bit of a different view on governance and how IHI should interact with regions. Saleema's and Dan's work are represented in the results section.
- *Investigation and possible adaptation of Elinor Ostrom's work on governing the commons to regional health systems*
  Tom Nolan contacted Professor Ostrom and joined a small team of people who meet with her monthly by video conference. Ted Townsend the CEO of St. Luke's hospital in Cedar Rapids is also in the group. He and Tom have also met by video to discuss the applicability of this work to the situation in Cedar Rapids. The insights from these interactions are contained in the results section. A set of research topics has been proposed to Professor Ostrom regarding the application of common pool resource theory to health care. They are contained in the appendix.
- *Tests of these methods with participants in the Regional Triple Aim initiative*
  As the thinking on Triple Aim in a region has evolved the faculty has debriefed interactions with the sites and indentified the needs of the sites. These insights are the foundations of the conclusions and recommendations in the results section.

V. Results

This section contains the substantive elements of pursuing the Triple Aim in a region: purpose, measures, portfolio and governance. The section ends with a proposal for a learning system for the IHI team. (Before beginning the discussion we acknowledge that the definition of a "region" is arbitrary and will vary among participants. We have found that some combination of Hospital Referral Region, HRR and county boundaries are useful ways of beginning the discussion about the regional boundary. The HRR does a reasonable job defining the health care market. The county boundaries often coincide with the jurisdiction for public health.)

Purpose

We face a paradox with respect to pursuit of the Triple Aim. From the viewpoint of a region and our nation as a whole, it is essential; and yet, from the viewpoint of individual actors responding to

current market forces, it is irrational. A region seeking to build a health system must take on the task of establishing the Triple Aim as a viable operating purpose. This includes being specific on the meaning of the Triple Aim in the local setting: What are we trying to accomplish and why? Only then can meaningful design of a system to accomplish the Triple Aim be initiated. Before then projects related to health or investments in infrastructure such as Regional Health Information Exchanges serve narrow purposes and perhaps build trust.

Depending on who is convening, leading and participating in the initial efforts, the specific interpretation of the Triple Aim will differ region to region. The values and priorities for individuals and for the region will shape the interpretation. Examples of statements of purpose that provide explicit although qualitative weightings on the Triple Aim components include:

- Move the health care system towards more public accountability for health and cost to align actions of health care systems with their stated mission statements. Initial motivation came from the state Medicaid officials and the Chamber of Commerce. (*Primary focus: per capita cost*)

- Improve the health of the population with the investments for system design coming from reduced health care costs. We believe that the current allocation of resources between health care and other determinants of health is far from optimal. Making progress on the Triple Aim will make our region an attractive place to live and to do business thus raising the economic status of our residents. (*Primary focus: population health*)

- Expand the access to health care for all residents in the region with no new money thereby increasing the health of the population. We are motivated to pursue this purpose by a commitment to social justice and a pragmatic recognition that new money will likely not be forthcoming. (*Primary focus: experience of health care*)

- Improve the health of the population while maintaining or improving experience of care and lowering costs. We will begin by focusing on high risk and high cost members of the population whose care often adversely influence health care margins. (*Primary focus: population health*)

- Reduce health care costs while maintaining experience, thus allowing sustainable investments in other determinants of health. We are motivated to pursue this purpose by a belief that in the next several years the combination of the economic situation and the changes in the Patient Protection and Affordable Care Act will force severe cuts in payment. We want to get ahead of the trend. (*Primary focus: per capita costs*)

The conveners of the efforts to establish purpose will vary from region to region and might include health care executives, public health officers, social service executives, elected and non elected government officials, union leaders, business executives, insurance company executives, and other regional representatives. It has been our observation that a subset of these potential participators

feels comfortable starting the process and then expanding the participation rather than convening the largest possible group at first. Some have waited to include business, others waited to include insurance companies, and others waited to include the hospitals or sub specialty doctor groups. These decisions seem to be based on levels of trust and interest in changing the status quo.

Measurement

The IHI Triple Aim team has put together a parsimonious set of measures that operationally define the Triple Aim thus adding clarity to purpose. This set is contained in the background section of this report. During this wave the team has compiled a list of publically available data and documented the sources of the data. This list is contained in the appendix. The team has also conducted a test for Montgomery County, MD to see whether a set of measures could be assembled. The results of the successful test are in the appendix. Assembly of the measures was enhanced by the quality of the Maryland Department of Health website which contains analysis and displays of the Behavioral Risk Factor Surveillance Survey, BRFSS, at the county level. Very few states have completed this kind of analysis. So the test may have uncovered a best case scenario.

The primary issue with measurement is how to use it at various levels and for various purposes. By now the IHI team has heard a set of frequently asked questions or criticisms regarding measures. Below is a list of questions/criticisms and proposed answers.

FAQ

1. *The measures you propose are too high level. They are not actionable.*

   High level measures, such as years of potential healthy life lost, are useful for operationally defining health and for establishing long range, 5-10 years, plans. Publically available data such as Hospital Compare or CAPHS from CMS or some the NCQA measures would be useful at a project level. Hospitals, doctors and other providers can and should develop the capability to use their existing data for improvement.

2. *The data are not current and therefore not useful.* It is true that some publically available data are a year or more behind. This limits their use in providing real time or even quarterly feedback to guide improvement efforts. However, they can be useful in several ways. One is to compare trends in the data against other comparison groups such as national or state results. Without some aggressive initiatives to change the relative results high level measures will be stable with respect to these comparison groups. They then are useful for building will and setting priorities. For more timely feedback these publically available data can be supplemented locally by utilization data from health plans for the under 65 year old population. Quality Improvement Organizations contracted in each state by CMS have access to current Medicare data. The trends in some of these "drill down"

data sources can be confirmed by the "official" data when they are available. For example, suppose a region provided equitable access to primary care and developed an integrated approach to chronic disease prevention and treatment. The region might expect to see an improvement in the self reported health status for people making less than 50,000 per year when the data becomes available.

3. *How long will it take to move these high level measures?*

   Of course for some initiatives there will be a delay between cause and effect. However, important measures such as self reported health status, readmission rates, admissions for exacerbations of chronic illness, trends in per capita cost can all be impacted in a three year period. It is useful to develop goals for 1, 3 and 5 year periods. Perhaps the most important factor in determining the speed at which results are produced is the capability and capacity for improvement in the region.

4. *The data are not aggregated at a useful level*

   This is often the case. Perhaps county data is needed but the data are aggregated only at the state level. Sometimes county data are available but target populations are mostly resident in a few zip codes. Often the reason the data are not available is that the researchers believe that the sample sizes are too small at these small geographic regions. This is probably true for one time snapshots. But a region with a sustained focus on the Triple Aim will accumulate years of data in these focused areas that can be plotted over time and analyzed using control chart methods. The Commonwealth Fund Team (now residing at IHI) that produces the state scorecards is completing a project to disaggregate the data into smaller geographic groupings.

A general principle to be used when establishing a regional measurement strategy is that the publically available data will be somewhat useful but will not be exactly on target. Ingenuity will be needed to define surrogate measures that are more targeted but less rigorous. These measures can provide useful feedback for learning. For example, it may be very difficult to get overall health spending in a region for the commercially insured population. However, the hospitals and some of the businesses could contribute their figures on yearly health care premium increases as an indicator of per capita cost trend. Emergency departments must report data on volume and condition to local health departments for surveillance purposes. These data could be used a source of data on trends in population health or health care experience.

Triple Aim Portfolio

The purpose and the regional measures operationally defining the purpose are long term guideposts, three to five years or longer. To accomplish this long term purpose will require a

portfolio of initiatives and associated projects and investments. Each region will develop a portfolio to meet its unique needs but our experience to date with the Triple Aim indicates that initiatives in the following areas will be part of a balanced and aggressive portfolio:

1. *Regional intelligence*: Almost any region in the United States has multiple sources of data that could be used to define priorities and measure progress. The list of data sources in the appendix contains data that is available nationally. However, various organizations at the local level have data for their own operational purposes that if pooled and made more widely available would serve improvement as well as operational purposes. Examples include claims data from insurance companies, data on admissions to the hospital emergency departments that must be submitted for surveillance to local departments of health, yearly increases in health insurance cost for local businesses including hospitals, counts of people living on the streets, and arrests for intoxication.

2. *Expanded and equitable primary care:* A redefined and redesigned primary care component has been an important focus of the Triple Aim work since its inception. Enhancements to primary care would include services built on relationships rather than visits, integration with mental health, redesigned working relationships with the specialties, cooperation with community resources, and significantly reduced administrative burden. Regional cooperation to assure equitable access to high quality primary care is a highly leveraged investment. A strong primary care system benefits everyone in the community.

3. *Integrated, longitudinal experience of health services:* That our health care system is fragmented and uncoordinated is by now a well worn cliché. Improving on this situation will take cooperation among health care providers, regional intelligence, information technology, and new business models such as Accountable Care Organizations. Projects such as design of cancer care services from diagnosis to survivorship or death is an example of a longitudinal service design.

4. *Mechanisms of payment that control costs and foster innovation:* Unlike other countries or other parts of a regional economy such as education, health care has almost no mechanisms to control costs at the regional level. A credible Triple Aim strategy would seek to develop such mechanisms. Examples include:

    - Global payment strategies such as the Alternative Quality Contract developed by Blue Cross and Blue Shield of Massachusetts or Medicare Advantage offered by CMS
    - Public/Private partnerships to set budgets for health care spending such as the all payer system in place for hospital spending in Maryland
    - Mechanisms contained in the Affordable Care Act such as Accountable Care Organizations and bundled payments
    - Provider driven cost guarantees such as “Proven Care” at the Geisinger Health System, the services offered to local businesses by the Bellin Health System, or the cost control targets set by the alliance of HealthPartners and Allina in the Northwest Minneapolis metropolitan area.

5. *Community health improvement:* It is well known that health care has only a small impact on health. David Kindig and others have emphasized other determinants of health including health behaviors, social factors, and environmental factors. The Triple Aim began in the health care system but has had a goal from the beginning to foster cooperation between health care, public

health, social services and other community resources. A regional approach to the Triple Aim would be a natural platform for fostering this cooperation for prevention, health promotion, and solving health problems such as obesity, chronic disease, substance abuse, or injuries.

Broad initiatives of this type would be executed through projects and investment that were monitored by an advisory group and rebalanced periodically, perhaps yearly, as progress was made and new knowledge was gained. The following table provides some examples of the elements of a portfolio. The first column of the table contains the five major initiatives suggested for a model portfolio. The second column lists projects that might be executed to make progress on the initiative. The third column gives examples of typical investments that would be needed to achieve the initiative or support the projects. The fourth column indicates what capability the region would be building as a sustainable asset for use in other initiatives or projects.

Outline of a Model Portfolio for Pursuing the Triple Aim in a Region

Initiative	Typical project aims	Typical investments	Capability building
Regional intelligence	-Develop a data pooling strategy for insurance claims to monitor utilization and cost -Use ED data to set priorities -Develop regional chronic disease registries modeled after cancer registries -Promote the use of Personal Health Records by residents	-Fund a few positions to receive, maintain, and analyze the data, and produce reports for use by the community -Time investment to develop and monitor a community health plan -Time investment to monitor costs and make adjustments	-Timely knowledge of community health status -Interoperability of data sources -Increased participation of residents in health information exchange
Primary care	-Reduce cost and improve care for socially complex patients by coordinating multiple providers -Standardize, simplify, and reduce administrative requirements imposed by payers -Provide access to high quality primary care for low income, uninsured residents	-Jointly financed community care mangers such as those in Vermont or the District Nurses in England and Sweden -Operating subsidies to support care for the low income uninsured from taxes, community benefit requirements for not-for-profit organizations, pragmatic cost avoidance by hospitals, and pro bono services	-Cooperation and trust to develop shared resources -Ability to standardize across payers for the removal of waste and the benefit of patients -Capability to make regional resource allocation

Initiative	Typical project aims	Typical investments	Capability building
Longitudinal experience of care	-Reduce hospital readmission rates for chronic disease -Improve quality and lower cost of one or more types of cancer care beginning from diagnosis to survivorship -Improve integration of end of life care with curative care	-Jointly financed community care mangers such as those in Vermont or the District Nurses in England and Sweden -Change in restrictions to providing palliative care and curative care simultaneously	-A rationale for when to cooperate and when to compete with others -Confidence and ability to change laws and regulations that are impediments to high value services
Payment and cost control	-Reduce overall cost by setting spending targets and developing an early warning system for special cause variation in cost using pooled claims data -Develop and spread a system of shared decision making that is easily used by a majority of the community -Review the Dartmouth Atlas and Commercial data and redesign care and match supply to need to achieve lowest decile spending	-Infrastructure investment to design and maintain a system to set spending targets, monitor progress, and make real time adjustments. The Hospital Services Cost Review Commission in Maryland is one model. The cost control mechanism in an insurance company is another. -Investment in infrastructure for widespread shared decision making.	-Shared understanding of waste in health care -Business models that allow financial gain and sustainability for innovators -Regional culture of increased participation of individuals in their care
Community health	-Improve healthy behaviors including smoking, nutrition, and exercise -Improve health predictors in children age 0-5 -Work with school principals to improve educational performance for children with physical or mental health conditions	-Investment in media for public awareness communication -Investment in improvement teams	-Ability to reallocate health care spending to other determinants of health -Methods for collaboration among community organizations

Integration and governance

Since the initial stages of the Triple Aim initiative the integration of services has been believed to be an important component of a Triple Aim enterprise. Berwick, Nolan, and Whittington have

proposed in their Health Affairs paper that introduced the Triple Aim concept that the tasks for an integrator included:

1. Transparent measurement
2. Contracting for services and managing suppliers
3. Planning and execution of public health interventions
4. Design and coordination of care at the individual level
5. Assuring universal access to care
6. Providing a financial management system aligned with the Triple Aim
7. Informing and activating individuals in the population
8. Fostering and acting on a value for testing and learning how to achieve the Triple Aim

However, the IHI team or the participants have not reached a consensus on the structure of such an integrator. Some have advocated for an entity such as public health department, or a dominant health system, or a commercial payer with a large market share to lead the integration. Others have argued that in the US no one entity is naturally positioned to integrate services and resources to accomplish the Triple Aim. Hence, integration must be a shared value in the community that causes integrative mechanisms to evolve over time. We have recognized that integration happens at different levels in the system. We have used the terms “macro” and “micro” integrators to designate integrators of system resources and integrators of care for a subpopulation.

The current hypothesis of the IHI team regarding integration is that two responsibilities of an integrator are prerequisites and the others will evolve. One of these prerequisites is establishing purpose – what we intend to do and why we choose to do it – which was discussed earlier in this report. Perhaps we should label it task 0 for the integrator function. The second prerequisite is task 8 in the list above: Fostering and acting on a value for testing and learning how to achieve the Triple Aim. From this starting point an effective portfolio can be established to accomplish short term results and a longer term investment in infrastructure and capacity building.

Since the Health Affairs paper was written the topic of governance has surfaced as an important component. This is related to integration but requires its own consideration. Perhaps integrator tasks 0 and 8 are the ongoing concern of governance and might be thought of as Deming’s “Constancy of Purpose.”

Saleema Moore and Bruce Bradley have written a report entitled: Guiding Principles on Regional Governance Structures that supplements this report. One of their key conclusions is worth keeping in mind as we work with regional coalitions. “Regional governance structures can range in form and evolve from an informal working committee, to a subsidiary or committee of an existing organization, to an independent 501c3 Corporation.” IHI is not expert in governance structures but

we should be aware of structures that are developing and what their strengths and weaknesses. We can help regions develop their governance structures by asking what they are trying to accomplish with their governance structures and how they could test and learn what structures might work for them.

Another aspect of governance attributable to Elinor Ostrom and other economists is governing the commons. If we think of money for health care as a common pool resource, optimal use of the resource will require some type of governing structure. (It is still uncertain how health care might be formulated as a common pool resource. A set of research topics has been suggested to Professor Ostrom for her and her graduate students.) The topics are contained in the appendix. She suggests the following design principles for an effective system of governing the commons in her book Governing the Commons p90.

1. Clearly Defined Boundaries:
   - Common Pool Resource – What's at Stake?
   - "Appropriators" – Who Can Draw Resources from the Pool?
2. Adaptation of Rules to Local Conditions
3. Collective Choice Agreement
4. Monitoring Compliance
5. Graduated Sanctions for Violators
6. Mechanisms for Conflict Resolution
7. Minimal Constraints on Rights to Organize at the Local Level
8. Nested Enterprises Follow the Same Design Principles

One example of a governance structure that has several of these elements is the agreement between HealthPartners and Allina that forms the basis for the alliance based on Triple Aim goals for a population in the northwest metropolitan area of Minneapolis. See outlines of the affiliation agreement and the payer agreement below.

Affiliation Agreement

- Overarching agreement that outlines the relationship
- Defines goals, principles and key measures
- Oversight Council
  - Structure and process for joint planning and joint venture developments (commitment to explore joint developments in the market)
  - Dispute resolution process that includes escalation to CEOs
- Clinical Services Committee
  - Physicians and other team members from HealthPartners and Allina jointly plan triple aim improvements
  - Project manager to support
- 7 year term

Payer Agreement

- Creates shared "Triple Aim" goals
  - Health and Experience
  - Total cost of care goal to moderate trend compared to metro market
- Shared financial risk (withholds and incentives) for Mercy, Allina Clinics, and HealthPartners Clinics
- HealthPartners Clinics' commitment to use Mercy Hospital
- 7 year term

IHI execution and learning system

The IHI core Triple Aim team had a conference call with Dan Fox who spoke to us about working in a community. He approached the task of community collaboration for action from the viewpoint of a social scientist and community organizer. He persuasively argued that if one is to be helpful to a community or region than one must know the political context. He described his approach as one that required frequent interactions and interviews with key members of the community. He used the phase made famous in cowboy movies: "Casing the joint." He offered to assist us in our work.

"Casing the joint"

The IHI team for Triple Aim can assist local leaders in establishing an effective coalition but that is neither our core capability nor the focus of the services we will provide to participants. None the less we do need to be aware of context and work within it at first and in the long run help to make the context supportive of pursuing the Triple Aim in that region. Some elements of understanding the context are listed in the table below.

Understanding the Regional Context
"Casing the Joint"

1. Form a close working relationship with at least one of the leaders in the region who knows the context. Use discussions with this person to obtain a first impression and to gain access to other regional leaders

2. Discuss and observe who is at the table, who is not and why. In one region the answer to this question was that the primary payer in the region is not at the table because of extreme mistrust between the payer and the hospitals. In another region businesses were not at the table because they had been strident critics of cost increases. In each case a plan is needed to eventually bring them to the table. IHI might play the role of honest broker to assist in bringing them into the discussion. Eventually, leaders of health care, health departments, local government, business, social service, and payers should be at the table. In most regions some subset of these leaders will begin the initiative.

3. When those at the table discuss the purpose of their collaboration observe the level of commitment to the Triple Aim. Who is committed to making it work? Who is neutral? Who is skeptical? The

most likely flaw in the conversation relative to the Triple Aim will be a reluctance to address per capita cost reduction.

4. Observe whether the discussion of purpose is supported by a commitment to transparent regional measurement. The IHI team can start this discussion by presenting the publically available measures of the type contained in the appendix for Montgomery County MD.

5. Observe their ability to put together an effective portfolio of projects and investments. Does the region have the improvement capability to execute the portfolio?

6. Observe the commitment to focus on the low income uninsured by the mainstream health care providers. This group will be an important focus for improving population health.

Understanding the context is just the starting point. We must then provide ongoing technical support to participants. We at IHI must be continuously improving our capability to provide this technical support. The proposed components of the learning system include:

- Case studies
- Milestones
- Evaluation of components
- Evaluation of interactions

Case studies

The Commonwealth Fund has developed case studies of Genesys, CareOregon, and QuadMed. The case studies provide a qualitative way to assess the progress of the Triple Aim initiative. These three case studies were focused on organizations not regional coalitions but do provide a template for other case studies. These and future case studies could be accompanied by a narrative from the IHI team or an external reviewer that would assess progress in Triple Aim results and the key Triple Aim regional components outlined in this report. These case studies would become the highest level evidence of progress toward Triple Aim in a region if they contained time series of Triple Aim measures.

Milestones

To our knowledge few if any regions are actively and purposefully pursuing the Triple Aim in a region. Therefore progress can be assessed by documenting when a region reaches a key milestone and how long it took them to reach it. Key milestones include:

- Completion of a statement of purpose to pursue the Triple Aim and agreement to use the statement as a foundation for future efforts.
- Plotting and using a set of time series of measures suggested by the IHI for the Triple Aim or equivalents.
- The establishment of a formal or informal governance structure

- A shared portfolio of projects and investments by different organizational entities within the region.

Evaluation of components

In this report four components have been discussed: statement of purpose, measurements, portfolio, and governance. Each of these components could be evaluated against some reference standard. For example we could collect statements of purpose and rank them from best to worst and eventually have a means of describing the attributes of a useful statement of purpose. The measurement system could be compared to the IHI set of measures. The experience and cost measures could be evaluated against the measures proposed by Michael Porter to promote value based competition. A governance system could be evaluated against Elinor Ostrom's design principles. A portfolio of projects could be evaluated against the portfolio template in this report. Our evaluations will serve to assess where a region is in their development. But also the assessment will help us improve the reference standards as we learn from sites which do not match the standard but which are making good progress none the less.

Evaluations of interactions

During the next year the IHI team will have important, high- level interactions with several regions. In these interactions the team will be facilitating conversations and meetings intended to produce specific actions such as developing a measurement set or a balanced portfolio of projects and investments. The results of these interactions will vary and each interaction could be thought of as a Plan-Do-Study-Act cycle. The interactions could be rated on a 5 point scale calibrated as follows: 1.No interest, 3. Some action taken, and 5. Action produced a model product. Trends over time will provide feedback for learning and improvement of the IHI processes.

VI. Appendices

- Data sources
- Montgomery County, MD (Excel file on the extranet)
- Guiding Principles on Regional Governance Structures (Separate report on the extranet)
- Research Topics – Health Care and Common Pool Resources

Data Sources

Data Source	Indicators	Latest	Comments
1. Behavioral Risk Factor Surveillance Survey (BRFSS) Population: County	**Population Health** -Self Reported Health Status -Mental and physical unhealthy days -Health Behavior Experience -Access	2008	- 5% sample (random-digit dial survey) of non-institutionalized U.S. pop. over 18 years of age living in households - Core set of questions but local questions can be added relatively inexpensively. Can also pay to have sample increased. - Sampling biases are adjusted so reports reflect the population - Spanish and English versions -Misses other languages, persons w/o phones or cell, persons who won't talk on the phone. - States report results in different formats
2. County Health Ranking (MATCH) Population: County	**Population Health** -YPLL* -Self Reported Health Status* -Health Behaviors -Socio-economic -Physical Environment Experience -PCP rate -Diabetic screens Cost	2006, 2008	Multiple databases are used, for example: - Data on deaths and births are based on certificates from info routinely reported to the National Vital Statistics System (NVSS) - Morbidity and Health Behaviors are from BRFSS. Seven years of data, 2002–2008, are used to generate more stable estimates of self-reported health status. - Preventable hospital stays were calculated by the authors of the Dartmouth Atlas using Medicare claims data for the years 2005–2006
3. Vital Statistics Population: Jurisdictions (e.g. County, State, National)	Population Health Deaths (age, race, diagnoses) Experience and Cost Hospital adm., ER, Nursing home at the time	varies	- NVSS, http://www.cdc.gov/nchs/, administered by CDC. Dep't of Health administered at State and local levels. - Vital records are collected in nearly the same way over long periods of time and have few restrictions on use.
4. Medicare Claims *(MedPAR)* Population: Patients covered by Medicare	**Cost** -Utilization of health care services (e.g. adm for ACSC, readmissions) -Total reimbursement per enrollee Population Health Hospital Standardized Mortality Rate (HSMR)*	CMS - own data within about 4-8 months; researchers -once-per-year about a year after the end of the year	- Getting the data requires privacy protections, skill in working with the claims database, and tolerating a substantial delay. -Data are available for use of Preventive Services by state and county for 2005-2008 http://www4.cms.gov/PrevntionGenInfo/20_prevserv.asp#TopOfPage. - HSMR requires construction by Brian Jarman (constructed for HRR with 2007 data).

Data Source	Indicators	Latest	Comments
5. Dartmouth Atlas Population: Medicare patients by State, HRR, HSA, PCSA, Hospitals	**Cost** -# and % Medicare population* -Adj. Medicare expenditures* -Hospital Care Intensity Index (EOL)* -Ratio of PCP to specialists* Experience -Hospital Compare Composite Quality Score*	2007	Uses Medicare Claims data to document variation in medical resources. Summary statistics are available on the site so does not require analytic skill to work with the Medicare Claims database. http://www.dartmouthatlas.org/
6. Medicaid Claims Population: Patients covered by	**Cost** Utilization of health care services	Similar to Medicare Claims	-Many states do not have the data cleaned up and do not have analysts skilled at looking at Medicaid data. -Dual eligible patients have substantial Medicaid records.
7. HHS CAHPS Population: Health Plans (HP) and Hospitals (H)	**Experience** Global questions and questions focused on specific areas (e.g. for Health Plans: health care, personnel MD, specialists, health plan)	2009	-CMS Mandated surveys of all adults (e.g. HCAHPS) and sometimes only of Medicare patients who use particular service types. - HP-CAHPS results available to individual participants. www.cahps.ahrq.gov/default.asp
8 HHS Hospital Compare Population:	**Experience** Comparison of hospitals on key quality indicators by condition	2009	- Medicare data. - 2009 data can be viewed. Links to the data used for previous Hospital Compare postings are provided. http://www.hospitalcompare.hhs.gov/
9. Joint Comm. Quality Check Population:	**Experience** Key quality indicator rates by condition	2009	- Comparisons to other accredited hospitals. - Data from non-accredited hospitals provided by that hospital http://www.qualitycheck.org/Consumer/SearchQCR.aspx.
10. NCQA Health Effectiveness Data and Info Set (HEDIS) Population: Health Plan	**Experience** -Quality indicators by condition -Effectiveness of care index Cost Relative Resource Use (RRU)	2009-2010	- Accreditation rating available for free but detail quality indicators by condition (Quality Compass - 2009) needs to be ordered http://www.ncqa.org/tabid/59/Default.aspx. - RRU indicates how intensively a health plan uses health care resources such as physician visits and hospital stays (cost and utilization) to care for its members compared with other plans in the same

Data Source	Indicators	Latest	Comments
Milliman Population Commercially insured patients	**Cost** Indexed Commercial PMPM MD, inpatient, and outpatient cost*	2007	Not publicly available data; agreement needed.

*Currently included in IHI HRR Data Report

Other Sources of Data

HHS Community Health Status Indicators (CHSI) - The goal of CHSI is to provide an overview of key health indicators for local communities. The CHSI report contains over 200 measures for each of the 3,141 United States counties. Although CHSI presents indicators like deaths due to heart disease and cancer, the report can serve as a starting point for community assessment of needs, quantification of vulnerable populations, and measurement of preventable diseases, and disabilities. CHSI compares performance in a specific county with counties similar in geography and economic status. The data is drawn for different sources so the currency of the data varies. http://www.communityhealth.hhs.gov

The Gallup-Healthways Well-Being Index – This index is the first-ever daily assessment of U.S. residents' health and well-being. At least 1,000 U.S. adults are interviewed every day on the domains of life evaluation, physical health, emotional health, healthy behavior, work environment, and basic access. Data is available at the national level monthly and at the state, big city, and congressional district levels annually. http://www.well-beingindex.com/

CMS Minimum Data Set (MDS) and Outcome and Assessment Information Set (OASIS) – Every person who is resident in a nursing home has a "minimum data set" reported to their state and then to CMS at admission, discharge, every 90 days, and with major changes in health status. Every person whose home care is paid by Medicare and most of Medicaid has a similar data set collected and sent to the state and to CMS. Since the data is collected on everyone in a standard way, one could probably find a great deal of insight as to the lived experience of people coming toward the end of life. For example, one could estimate the rate of serious pressure ulcers, the use of restraints, the prevalence of advance care plans, and the status of family caregivers. These databases have been used mostly for regulatory and financial purposes, and not for monitoring quality, so analytic approaches would need to be developed. CMS compiles claims, MDS, OASIS, and a few other databases into a consolidated record (Chronic Data Warehouse) for research. http://www4.cms.gov/MinimumDataSets20/ and http://www.cms.gov/oasis/.

Partner

The Commonwealth Fund - The Commonwealth Fund is developing a local version of their Health System Performance Scorecard. Current plans are to focus on the 306 hospital referral regions (HRRs) as defined by the Dartmouth Atlas. The local scorecard will measure health system performance across 5 domains: Access, Quality, Cost/Efficiency, the ability to lead a Healthy Life, and Equity. Each domain will have approximately 5-10 indicators with approximately 40 total in the scorecard. Data availability is a critical consideration, as it, more than other considerations, will influence indicator selection. David Radley of The Commonwealth Fund is leading the project. His plan is to have data elements available (initial data will be from BRFSS) by the end of 2010.

Research Topics – Health Care and Common Pool Resources
Tom Nolan and Ted Townsend October 17, 2010

Excerpts from Governing the Commons by Professor Elinor Ostrom

1. The term "common pool resource" refers to a natural or man-made resource system that is sufficiently large as to make it costly (but not impossible) to exclude potential beneficiaries from obtaining benefits from its use. (P.30)

2. … it is essential to distinguish between the resource system and the flow of resource units produced by the system, while still recognizing the dependence of the one on the other. Resource systems are best thought of as stock variables that are capable under favorable conditions of producing a maximum quantity of a flow variable without harming the stock of the resource system itself. Examples of resource systems include fishing grounds, ground water basins … parking garages, mainframe computers… Resource units are what individuals appropriate of use from the resource systems. Resource units are typified by the tons of fish harvested from a fishing ground, …, parking spaces filled,… (p.30)

3. The distinction between the resource as a stock and the harvest of use units as a flow is especially useful in connection with renewable resources where it is possible to define a replenishment rate. As long as the average rate of withdrawal does not exceed the average rate of replenishment a renewable resource is sustained over time.(p.30)

4. Appropriators also use resource units as inputs into production processes (e.g. irrigators apply water to their fields to produce rice). (p.31)

5. The analysis of scarce, renewable resources is made from the perspective of the appropriators. This is not the only perspective that can be used in an analysis of complex CPR problems. If the appropriators of a resource unit gain considerable market power, such as by creating a cartel to influence price, their strategies affect themselves as well as others. This analysis relates to situations in which CPR appropriators have no power in the final-goods market, nor do their actions have significant impact on the environment of others living outside the range of their CPR. (p.31)

6. The term I use to refer to those who arrange for the provision of a CPR is "providers." I use the term "producer" to refer to anyone who actually constructs, repairs, or takes actions that ensure the long-term sustenance of the resource system itself. (p.31)

The Boundary of the CPR system.

One way to establish the boundary of the CPR system is to use a Hospital Referral Region (as defined by researchers at Dartmouth www.dartmouthatlas.com). The technical details of how the HRRs are defined are beyond the scope of this discussion but the logic underpinning the construction of the HRRs is straightforward. People go to doctors that are close to where they live. Doctors admit patients to hospitals that are close to their medical offices. Community hospitals that do not perform cardiac or neurosurgery refer patients to a tertiary care hospital that is close to them. The Dartmouth team looked at these patterns of referrals by zip code and defined the total customer base of the local health system, the HRR. (Despite the name the HRR defines the health care economy in general not only the hospital component.) From the viewpoint of most of its residents, the US has 306 health systems, the boundaries of which are defined by the zipcodes in each of the 306 HRRs.

Research topic 1 HRR as the boundary of an independent health care economy. Is the HRR an adequate division of the health care economies in the US? Not all residents of the HRR will receive all of their health care at facilities within the HRR. What percentage of health care must be given within the HRR boundary for it to be a useful boundary of a CPR system? How often and for what reasons should the boundaries of HRRs be redrawn?

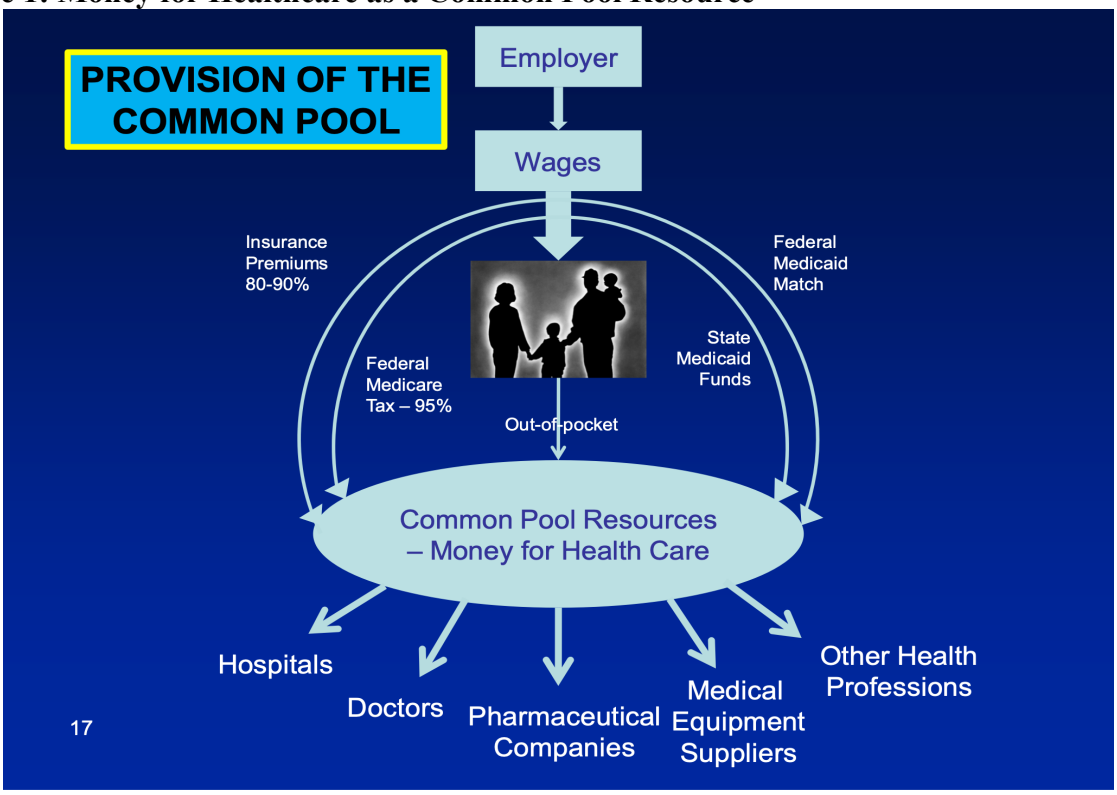
Research topic 2. Formulation of aspects of health care as a CPR. The aim of using CPR theory and approaches to governance is to increase the value and sustainability of health care in the US. There are, no doubt, several formulations of aspects of health care as a CPR. For example the money for health care is the CPR or the providers of health care services make up the CPR. What are some formulations of health care as a CPR that are consistent with the theory of CPR? What are the strengths and weaknesses of each formulation? What formulation would result in the most insight and innovative solutions? In may be that the usefulness of different formulations depends on the characteristics of the market, for example large urban versus rural.

Tom Nolan and Don Berwick introduced the diagram in the figure below at the Institute for Healthcare Improvement's annual Forum in December 2009. They investigated the situation where the money for health care within an HRR is the CPR. In their formulation the appropriators are health care providers. Joanne Lynn and Jane Brock in a white paper on the application of CPR to health care suggest that appropriators be defined as licensed providers in a region, including doctors, hospitals, nursing homes, and hospice. These appropriators take resource units from the common pool as inputs to their health care production processes. This seems to be a very useful definition.

Excerpt 3 above deals with the resource as a stock and the harvest of its units as flow. In the formulation in Figure 1 the replenishment comes from wages of people in the HRR. Because of the varied payment mechanisms in the US these replenishment sources and the CPR itself are opaque to residents of the HRR and perhaps even to most of its appropriators. Because of the way the insurance system works the money paid into the CPR is about equal to the money pulled out of the CPR. However, this situation masks the fact that the source of the replenishment is wages that are growing historically at about 3% per year, far below the growth in appropriation.

Research topic 3 Dynamics of stock, flow, replenishment, and sustainability. How much "leakage" (money paid by residents of one HRR that is appropriated for use in another HRR) of money from the local CPR is sufficient to change the dynamic of the resource system such that the CPR formulation in the HRR is not longer useful? In health care the appropriators have significant market power in the ends good market. This is counter to the situation described in excerpt 5. How do the methods for governance of a CPR change when the appropriators have market power?

Figure 1: Money for Healthcare as a Common Pool Resource



Research Topic 4 Health care as part of a larger CPR It is well known that health care is only one of several determinants of health. Others include educational level, socio-economic status, healthy behaviors, and the living environment. The money spent on health care takes away funding from other societal investments. David Orzag recently discussed the tradeoff in health care spending and spending for public universities in an article in the New York Times, September 19, 2010. http://www.nytimes.com/2010/09/19/opinion/19orszag.html?ref=contributors The questions similar to those in research topics 1,2,3 could be approached from this broader perspective forming a parallel set of research projects.

Potential Partners

Regional Health Information Organization (RHIOs) – Some areas have cooperative health information interchanges. Such interchanges generate useful databases that some are learning to mine for measures of quality and population health. Sometimes, the exchanges were set up without attention to this possibility, so you do have to get appropriate usage agreements. But then it is possible to see what is happening at a clinical level in a population of users of services in a particular area. This can include all ages and conditions (except for military, veterans, incarcerated persons, and Native Americans who use separate government health care that is not participating in the RHIO).

Health Care Systems have a wealth of data (experience/quality of care and utilization – ER visits, readmissions, etc.) on the population of patients they treat. In areas without a functioning RHIO, one might find that some critical elements of the care system are concentrated in one or two providers and that tapping into their data may show important indicators. For example, outpatient laboratory data may sit in one or two companies, or virtually all patients with a particular illness or disability may use one provider.

Public Health - Many jurisdictions create utilization reports form monitoring ER and hospital use at least for detecting public health threats.

Note: IHI is not endorsing either of the following commercial products but offers them as examples.

Comprehensive Assessment for Tracking Community Health (CATCH) is an analytic tool that allows and encourages stratification of data down to zip codes or census tracts (neighborhoods) utilizing available healthcare and public health data. CATCH can look at the data through cross-cutting lenses – by race, age and disease for example, to determine what the priority areas for intervention might be, asking questions based on what has been learned learn and continuing to analyze until the questions are answered. http://www.ncpublichealthcatch.com.
Healthy Communities Institute has developed an interactive dashboard of ~150 measures (primarily at the county level). It provides a link to source data. The site also provides links to promising practices. The latest data are mostly from 2008 and shows trends over time from 2002. http://www.healthycommunitiesinstitute.com.