INSTITUTE FOR HEALTHCARE IMPROVEMENT

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**SUMMARY REPORT: 90-DAY PROJECT**

**Population Health and Outcomes**
Wave 21 August 1 – October 31 2011

***Executive Summary:***

This project is an experiment in combining work on the Triple Aim with R&D. The current phase of the Triple Aim has a theme of "change the results for individuals and populations." We recognized that changing the results would require more system design, testing and scale up than we have currently been doing in the Triple Aim. This is the next frontier for IHI, hence the use of R&D resources. We initially chose seven areas of focus:

1. Executing projects for population health
2. Archimedes simulation model
3. Total cost of care measurement and reduction
4. Hospitalizations and re-hospitalizations for chronic disease
5. Care for the frail elderly
6. Design for treatment of acute episodes
7. Mental health

For each topic we tried to connect with individuals who were knowledgeable and actually leading work on this subject. We connected that design lead with IHI faculty who would help translate some of the ideas into action. We worked with Triple Aim sites that were willing to work on and test these ideas. In the results section we will report on the design and testing work for these seven areas. There is variability in the amount of development and testing that we were able to achieve for each of these areas.

Based on this wave's accomplishments, indications are that this approach to combining program needs with R&D is working well. We will continue this work into Wave 22.

**I. Research and Development Team:**

- Tom Nolan
- John Whittington
- Ann Batdorf-Barnes

**II. Intent:**

- Why is this project needed?

- How will this project be done?
- What is the 'big picture' goal?

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| Population health is a key aspect of the Triple Aim. The big picture goal is to establish IHI as a leader in applying improvement methods to population health. There have developed opportunities to work on very important projects that will build IHI credibility and capability in this area. Two approaches to the projects will be used: 1.) Embed ourselves in ongoing projects and learn while doing. The design of the population health projects at CCHMC is an example; and 2.) Respond opportunistically to projects that arise during the wave. The dual eligible project with Community Solutions and NYHHC might be such an opportunity. |

**III. Background:**

- Clearly state the "why" for this project, including details of the context, current landscape including other efforts, and the issue that we are addressing.

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| Getting results in population health projects applying improvement methods would be a giant step for IHI and the field. Many community efforts are underway across the US but they rarely have a large magnitude of impact. |

- What previous R&D cycles, current projects, or existing learning communities feed into this project, both within and beyond IHI?

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| Two major areas on which this project will build are the outcomes work and the work on identifying counties that have outcomes that are better than their socio-economic status would predict. RWJF's Aligning Forces initiative, NQF work in population health, and CMMI grants related to population health are projects that are related to this work and that could benefit from a method for getting results. |

- Clearly articulate performance gaps (e.g., If one exists, how big is it? How is it applicable to this project? To IHI's work?)

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| The biggest gap is the resources put into community and population health initiatives with no results. Examples are numerous. In Memphis 41 agencies have been working on infant mortality with no results. |

**IV. Description of Work to Date:**

During this wave the main opportunity we had to learn more was by embedding ourselves in ongoing projects in the The Triple Aim community. We did look for opportunities outside of the Triple Aim community at IHI but that didn't work out.

The Triple Aim community has been working together since 2007. There are many great example of population health work in the community. A new wave of activity for the TA community started on 9/1/11 with a renewed focus on testing. That was perfect for our work in R and D. As we were observing TA sites and describing what we think are important principles and ideas from their work we had the chance to quickly test some of the ideas with TA sites.

We focused both the TA community and our research on the following 7 areas for design and testing.

| *Topic* | *Design Leaders* | *Testing Topics* | *Testers* |
|---|---|---|---|
| 1. Executing projects for population health | David Kindig<br>Rob Kahn | | |
| 2. Archimedes simulation for portfolio selection and measurement | Peter Alperin | | |
| 3. Total cost of care measurement and reduction | Sue Knudson | | |
| 4. Hospitalizations and re-hospitalizations for chronic disease | Joanne Lynn<br>Jane Brock | | |
| 5. Care for frail elderly | Joanne Lynn | | |
| 6. Design for treatment of acute episodes | | | |
| 7. Mental health | Lloyd Sederer | | |

For each topic we tried to connect with individuals who were knowledgeable and actually leading work on this subject. We connected that design lead with IHI faculty who would help translate some of the ideas into action. We worked with Triple Aim sites that were willing to work on and test these ideas. In the results section we will report on the design and testing work for these seven areas. There is variability in the amount of development and testing that we were able to achieve for each of these areas

**V. Results of the 90-Day Scan:**

**A. Executing Projects for Population Health**

The Triple Aim community has been working together for four years. We have moved from generally focusing on small populations to focusing on larger regional populations. During that time we have learned that there are a number of steps that an organization should work on to develop a regional plan. Those steps include at least some of the following: Have a clear understanding of opportunities and threats to local leaders; Develop a shared vocabulary; Do a community assessment; Identify governance structure for Triple Aim oversight; Develop clear purpose; Identify high level measures and a portfolio of projects. All of this was written up in more detail in our last round of R and D.

Building on that work we are now at the point where we are working with teams to accomplish their portfolio of projects. So one question we are trying to answer is: What would it take to accelerate and sustain collective action on a population health project in a region that must coordinate with multiple agencies? For example, think of a community that has decided that they want to work on childhood obesity. There are many organizations that would want to be involved in work like this: schools, childcare, healthcare, etc. How would you bring them together to accomplish this project?

Fortunately we have good examples of this work within our own Triple Aim community and in work outside of the Triple Aim. These were the basis for this paper.

On August 30th we visited Allegiance Health Care in Jackson, Michigan. They have a community approach to improving health. In 2000 the health system along with a community health plan formed a health improvement organization (HIO). It was a compact among patients, physicians, employers, the health system and the health plan. It was focused on employer health and was

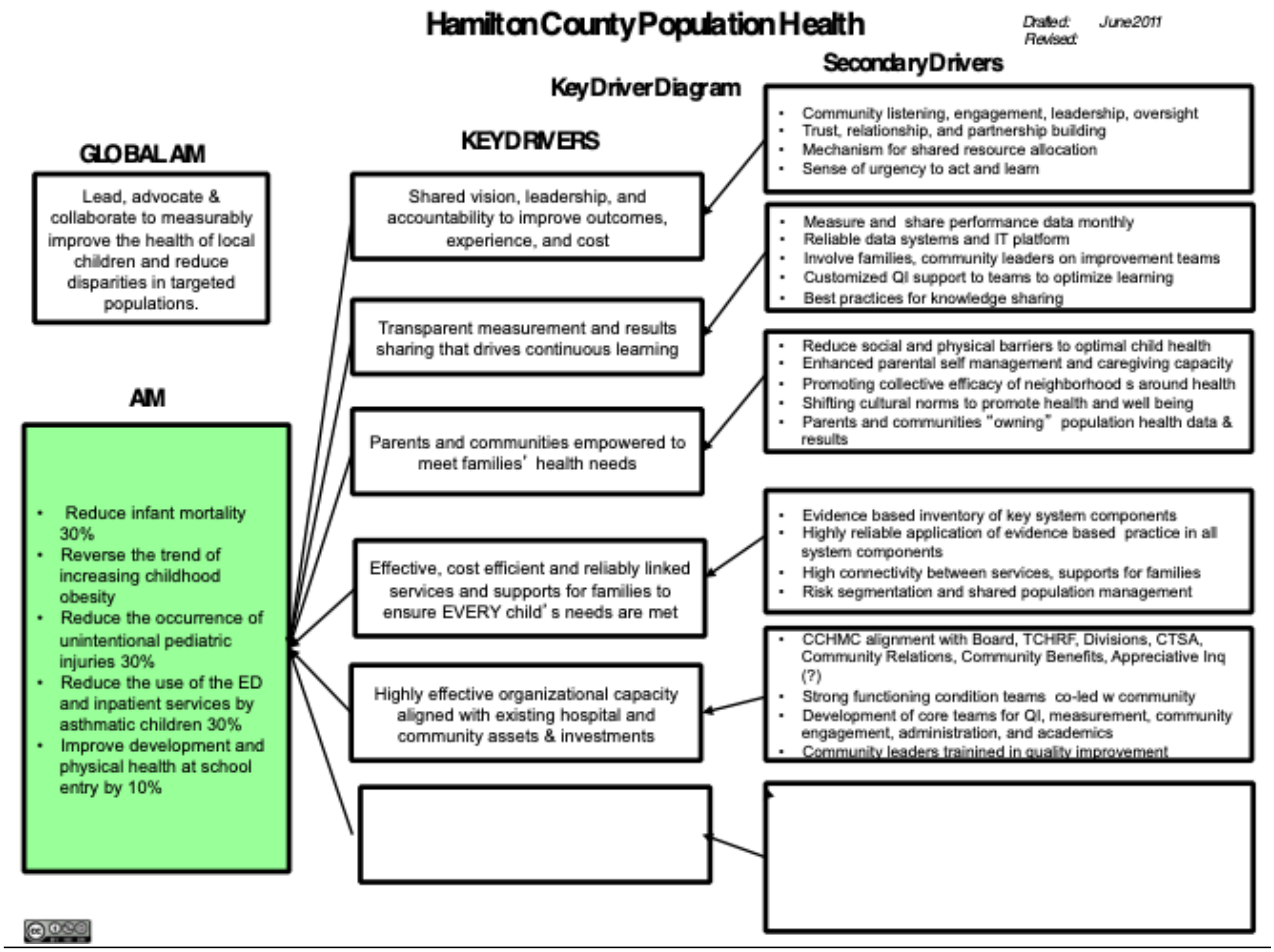
supported by a dedicated division within the health system. In 2006 a new vision statement was created: “The HIO will create a culture of continuous health improvement in our community.” The community formed an HIO coordinating council which consists of United Way, the County Strategic Planning and Allegiance Health. The purpose was to coordinate health-improving activities at the county level. A community wide assessment was done which found significant issues with obesity, smoking, exercise and mental health. This led to a community wide action plan. United Way used the community plan as a mechanism to align organizations they support with the community goals. Allegiance and Jackson County were able to supply infrastructure support through staff and resources. A common set of themes was identified at the project level around: communicating with the media, social support, preventive services, access and advocacy.

The next Triple Aim organization to discuss is Cincinnati Children’s Hospital Medical Center (CCHMC). Quoting from their vision and mission statement, “Cincinnati Children’s Hospital Medical Center (CCHMC) will be the leader in improving child health. Our Mission Cincinnati Children’s will improve child health and transform delivery of care through fully integrated globally recognized research, education and innovation. For patients from our community, the nation and the world, the care we provide today and in the future will achieve the best:

- Medical and quality-of-life outcomes
- Patient and family experiences
- Value

Their mission and vision reflect Triple Aim ideals but their actual work proves their deep commitment to this. CCHMC is located in the city of Cincinnati which is in Hamilton County, Ohio; a town and county that have many health needs. CCHMC along with others in the city and county are committed to five projects to improve the health of children: improve health for asthmatic children, decrease infant mortality, decrease childhood obesity and decrease unintended injuries. They also had great success as a community in decreasing violent crime against children. This is another project the CCHMC has supported. Common themes have been identified from these projects: risk segmentation of the population, engaged community leaders with shared purpose, care coordination collaborative approach, self management and improving the social and economic environment.

The following population health driver diagram from CCHMC will illustrate many of these ideas:




IHI also works in developing countries and there are similarities between that work and our work in regions of the US. In that situation the work is with Non-governmental organizations, government and other organizations. Some principles that they have found to be helpful are the need for a common aim, joint ownership, shared knowledge, common quality improvement language and a strong data framework.

Lastly a terrific article, *Collective Impact by John Kania & Mark Kramer Stanford, Social Innovation Review, Winter 2011 35-41* articulates an approach that reinforces the examples from above. They preface the article with the following: "Large-scale social change requires broad cross-sector coordination, yet the social sector remains focused on the isolated intervention of individual organizations". The article outlines the following keys for community wide collaborative work: a common agenda, shared measurement systems, mutually reinforcing activities, continuous communication, and backbone support organizations. They derive these principles from the Strive Partnership http://www.strivetogether.org/ in Cincinnati, which is focused on improving the education of students.

Based in large part on the above information, the following eight recommendations have been made.

1. Adaptive Leadership - In order to rally a group around this work you need a leader who can see the big picture and galvanize that group around a set of clear aims. The leader need not be a person —this can be done by a visionary organization which can also build a coalition. The project is a coalition within the larger coalition of the Triple Aim. The leader for this work must act as an honest broker, a neutral party that is working toward the betterment of the community. Finally, the initial leadership team will need to address the value of developing and supporting leadership capabilities within community members along with long term funding structures so that the work of transformation continues after the project/program is completed.

*Is there anyone in your community who can act as a leader for this project?*
*How will you make sure that the community voice will be heard by leadership?*
*Identify one potential leader and have a conversation with them.*

*Helpful References:*

- *Barbara Gray. Collaborating: Finding Common Ground for Multiparty Problems (San Francisco: Jossey-Bass, 1989).*
- *David D. Chrislip and Carl E. Larson. Collaborative Leadership: How Citizens and Civic Leaders Can Make a Difference (San Francisco: Jossey-Bass, 1994).*
- *Goleman, D. (1998). What Makes a Leader? Harvard Business Review, November-D.*
- *Kotter, J. P. (1995). LEADING CHANGE : WHY TRANSFORMATION EFFORTS FAIL. Harvard Business Review, 73(2), 59-67.*

2. Community assessment - We need to have an understanding of who is already working in this project space, but we will need more than this. To be successful we need to include information and stories from those we intend to help. This includes identifying the resources that the community turns to first, outside of the agencies, services, etc. While identifying existing services is important, we cannot make gains in improving outcomes if those we intend to help do not use those services due to lack of trust, lack of access, etc. If we are to succeed in moving the metrics in population health, we must "knock on every door" to find those in need. This is important especially among the underserved where there is little/no trust of "the system."

*Can you gather a list of all agencies working in this space?*
*Can you get the agencies together to discuss this work?*
*Can you call a community meeting to hear their voice on this issue?*

*Helpful References:*

- *Beaulieu, L. J. (2002). Mapping the assets of your community: A key component for building local capacity. Starkville, MS: Southern Rural Development Center. Retrieved from http://www.srdc.msstate.edu/publications/227/227.htm*
- *Kretzmann, J. P., & McKnight, J. L. (1993). Building communities from the inside: A path toward finding a community's assets. Evanston, IL: Center for Urban Affairs and Policy Research, Northwestern University.*

- *McKnight, J. L., & Kretzmann, J. P. (1996). Mapping community capacity (rev. ed.). Evanston, IL: Institute for Policy Research, Northwestern University. Retrieved from http://www.northwestern.edu/ipr/publications/papers/mcc.pdf*

3. Infrastructure to support the project work - Some core infrastructure support will be needed: project management, data management, quality improvement advising and logistical support... This support structure needs to assist in setting the tempo for the work.

Helpful Reference:

- *Lachance, Laurie L & Houle, Christy R & Cassidy, Elaine F & Bourcier, Emily & Cohn, Jennifer H & Orians, Carlyn E & Coughey, Kathleen & Geng, Xin & Joseph, Christine L M & Lyde, Michael D & Doctor, Linda Jo & Clark, Noreen M. Collaborative design and implementation of a multisite community coalition evaluation. Health promotion practice. 2006. n.p.*
- *Butterfoss FD, Francisco VT. Evaluating Community Partnerships and Coalitions with Practitioners in Mind. Health Promotion Practice. April 2004 5: 108-114.*

4. Common Working Knowledge, - The project needs a common skill set to tackle this initiative. Since there will be many organizations that come from distinctive approaches for working on issues (e.g. the medical model, public health and education), a universal approach and common language will be needed to help the group stay together. The development of a basic quality improvement framework might be that tool. The work on aims and measurement should also help with this common vocabulary.

*Do you have any resources to support quality improvement training and coaching?*

5. Measures - Any project needs a set of high-level measures that can be used to help the team know if it is making progress on its aims. This will also help the agencies know what they are being held accountable for as a group. These high level metrics can then be connected to the various process measures that are being used within subprojects that support the main community project.

*Can the group define a set of aims and measures for this work?*

6. Funders - Get funders involved in a unified way that will support the overall aims of a project or projects as defined by the measures. Work with funders to support "a long-term process of social change without identifying any particular solution in advance." In Jackson, Michigan, they have been able to work with United Way to get them to support a set of unified aims for the community.

*Can you identify all of the funders who are already working in this space in your community? Have a conversation with one of the funders to understand their expectations. Invite them to join the governance group (existing or forming) of the community population health work. Can I get one funder to be part of the coalition working on this project?*

*Helpful Reference:*

- *Collective Impact by John Kania & Mark Kramer Stanford Social Innovation Review Winter 2011.*
- *Grantmakers In Health, Improving Health Access in Communities: Lessons for Effective Grantmaking (Washington, DC: 2005).*

7. Design issues - Within the population health projects themselves, there are an emerging set of design issues that we are observing: high risk population segment, self management issues, care coordination issues, economic or social factors and patient and family involvement including self management issues.

8. Communication - Communication issues need to be addressed across the multiple organizations that are working on this project. A knowledge management system is needed that can support this work. In addition, a communication plan that will deal with outside media and other groups will need to be planned.

In appendix A we have shortened these 8 ideas into a check sheet that project organizers can use as they lead communities in this work.

During this cycle of R and D work we have been able to test this overall framework with Triple Aim communities: CCHMC, Jackson Michigan, 14 counties in east central Michigan, and 16 counties in Asheville North Carolina.

The first test of this tool has been by one of the authors. He used it as a checklist to guide questions and discussion with the Triple Aim sites. He found it helpful as a framework to highlight issues he otherwise might have overlooked.

In addition Triple Aim sites did some testing of their own using ideas that are outlined in the above document.

Allegiance worked directly with a school to assist them in running tests following the Jackson County Intermediate School District's training on "reducing bullying in schools." In another test to increase testing/PDSA thinking in the ongoing health improvement projects in Jackson County, Allegiance will summarize progress for the projects they are leading in a PDSA manner. Both of these tests are working with approach number 4, "Common Working Knowledge." They are specifically building QI into the organization to increase testing (and QI capability) in the community population health projects.

Another test that we promoted with several organizations during this wave was to get funders involved in a unified way that will support the overall aims of a project or projects as defined by the measures. The first step is to identify all of the funders who are already working in this space in your community. The objective for this PDSA is to have a conversation with one of the funders

to understand their expectations. Then invite them to join the governance group (existing or forming) of the community population health work. The test is whether you can get one funder to be part of the coalition working on this project.

In summary we have outlined an approach that answers the question, "What would it take to accelerate and sustain collective action on a population health project in a region that must coordinate with multiple agencies?

**B. Archimedes Simulation**

We became aware of the Archimedes simulation model several years ago. This year we made a connection with Peter Alperin the medical lead at Archimedes. Archimedes is a subsidiary of Kaiser Permanente (http://archimedesmodel.com/). Their website gives the following description.

> *Archimedes has developed a full-scale simulation model of human physiology, diseases, behaviors, interventions, and healthcare systems. By using advanced methods of mathematics, computing, and data systems, the Archimedes Model enables managers, researchers, administrators, and policymakers to run clinically realistic virtual trials on any population and create compelling evidence to make decisions in health and economic outcomes research, policy creation, clinical trial design, and performance improvement.*

Clearly if the Archimedes model could deliver on that claim, it would be a useful tool for planning and executing population health projects. We began testing the model this R&D wave and will continue into the next wave. Peter Alperin is helping us learn about the model and how to use it. He has given IHI two licenses to use the model. They can be accessed by contacting Tom Nolan or Marian Johnson. The model that we are currently using is a new simplified internet version. ("Archimedes for Dummies," perhaps) In November they are coming out with a new model that gives more functionality and flexibility. We will be given access to this model also and will us it in a variety of ways including connecting intermediate and outcome measures when they are separated in time, building a portion of a model portfolio for the Triple Aim, and assisting organizations to make decisions about projects that they should execute to accomplish their goals. Today we are using the Cardio-Metabolic Risk data set that is derived from Archimedes. This data set is representative of the total US population. With the new version we will be able to develop a data set specific to our intended uses for example low socioeconomic level.

To understand how the model might be applied in the Triple Aim initiative consider the table of population health measures that IHI is suggesting with the corresponding variables in the Archimedes model. In addition to these measures the model contains various interventions that can be tried. These interventions include drugs or standard protocols. They also include improvements in risk factors. For example, one could test the effect of lowering systolic blood

pressure for all members of the population to 130. One can also choose to run the simulation for various segments of the population based on combinations of age, sex, and disease burden. The results of interventions can be computed over any time between 1-20 years. For example a typical question might be: To get the best improvement in QUALYs for this population in the next five years should I focus on smoking session or lowering blood pressure? Does the answer differ in different segments of the population?

**Table of Population Health Measures**

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| 1. Health Outcomes:<br>-Mortality: Years of potential life lost; Life expectancy; Standardized mortality rates<br>-Health/Functional Status: single question (e.g. from CDC HRQOL-4) or multi-domain (e.<br>Note: Healthy Life Expectancy (HLE) combines life expectancy and health status into a s<br>reflecting remaining years of life in good health<br><br>Archimedes variables:<br>• Expected life years (mortality)<br>• Quality adjusted life years, QUALYs<br>• Cardiovascular events – stroke and heart attack |
| 2. Disease Burden: Incidence (yearly rate of onset, avg. age of onset) and/or prevalence<br>chronic conditions<br><br>Archimedes segments:<br>• Diabetes<br>• Heart failure<br>• Neither |
| 3. Risk Status: composite health risk appraisal (HRA) score<br>• Body Mass Index<br>• Smoking<br>• Blood pressure<br>• Blood glucose levels |

The simulation also allows one to estimate the cost – benefit of interventions using various statistics including cost per QUALY gained.

In this wave we have accomplished the following:

1. Procured two licenses
2. Learned how to use the simulation
3. Learned about the strengths and limitations of the model
4. Executed test runs
5. Discussed the trial of the simulation with Martin's Point to decide on their next population health project.

Conclusions

- Our degree of belief in the usefulness of the simulation has increased during this wave
- The current simplified version we are using has some limitations in flexibility which will become significant constraints as we try to use the model for real decision making. However, we will be given access to the more sophisticated version when it is released in November.
- We expect that the model will be useful for portfolio development, priority setting, measurement and teaching. An exercise as part of the Triple Aim seminar using Archimedes would be a good way to teach some of the concepts of developing a portfolio.

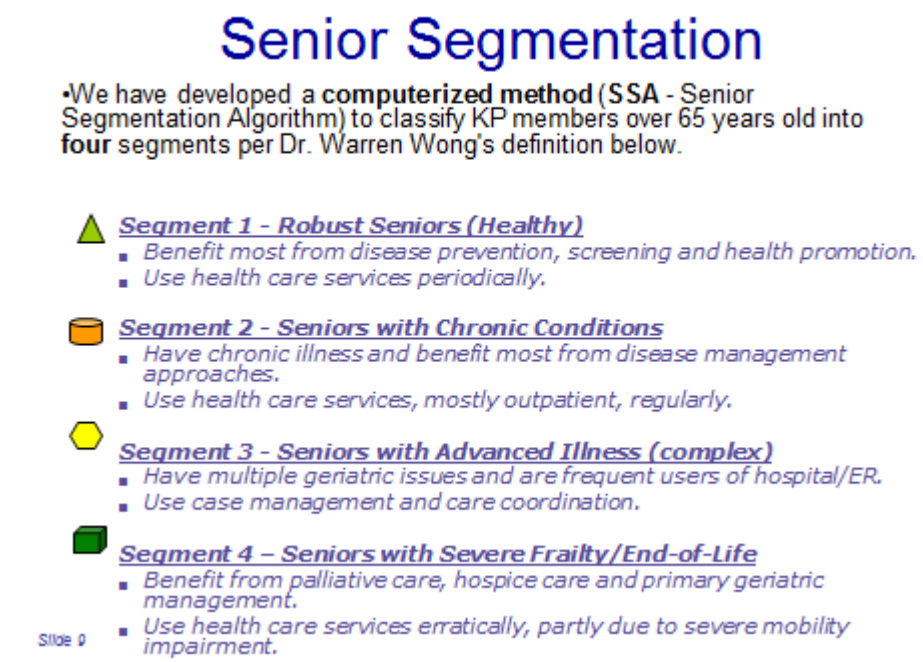
Potential deliverables for the next wave

- Learn and use ARCHES, the more sophisticated version of Archimedes model
- Develop a model portfolio based on the model. Include the expected outcomes and cost of the portfolio over time.
- Develop a customized population and test the use of the model for at least one Triple Aim participant.
- Test the use of Archimedes as a measurement device. For example, use the diabetes all or none bundle developed by HealthPartners and predict the increase in QUALYs for various degrees of compliance with the bundle. This may be of use to the diabetes team in Memphis.

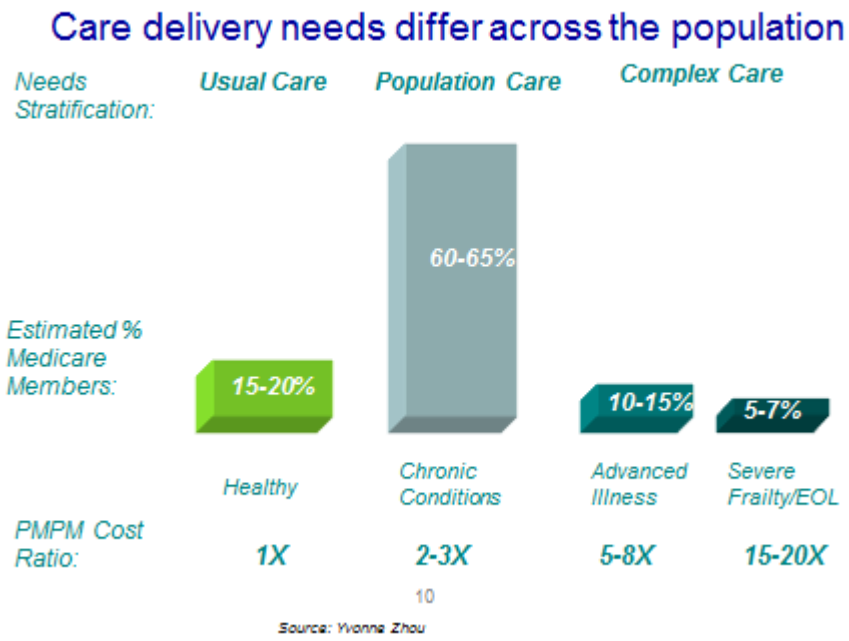
**C. Care for Frail Elderly**

A design team was put together consisting of Drs. Joanne Lynne, Warren Wong, Asan Akpan and Tom Nolan and Kathryn Brooks. The aim was to design a care system for the frail elderly. This wave we have had three 90 - 120 minute design meetings and one visit to House Call Management Solutions in Brooklyn NY, HCMS deploys a team of doctors to make house calls to home bound Medicare beneficiaries.

One of our first tasks was to define who was in the population called frail elderly. We have various overlapping criteria but the categories 3 and 4 in the table below developed by Dr. Wong for Kaiser Permanente serves as a simple definition.




Dr. Wong also supplied the distribution of members and costs in the following figure.




We used the model for service and production system design to guide our efforts. We have produced a first draft of a concept design including a definition of quality, key features, and key elements of the production system.

**Definition of Quality**

- Our period of frailty will have us be confident, comfortable, and enabled to live meaningfully on our own terms.
- Complications that are degrading and miserable such as pressure ulcers, decaying teeth, loss of hearing and sight, and impoverishment will have high priority to avoid.

**Features**

- Aging in place will be valued, but moving to supported housing will be expected as frailty increases
- Family will remain first-line support, but the community will also enable neighbors to take a more active role
- Interventions that provide only thin chances of longer survival and that impose burdens will be harder to get – and realistically available only to patients with very strong preferences (and perhaps some personal assets)
- Families will be protected from bearing the full costs of "winning the roulette" and getting to live a long time with serious disability.

**Elements of the Production System**

- Right-sizing services will require deliberate preparation for accommodating a broader variety of situations.
- Right-sizing services will depend greatly upon feedback loops and monitoring of persistent shortage or relative oversupply. Benchmarks from other communities will be helpful.
- We will learn to use technology to monitor hazardous situations, provide feedback on actual course and adequacy of care plan, support better decision-making, actuarialize assets to "make a deal" on long-term care costs, move information to the place it is needed, and for other purposes.

We have also built an extensive archive of materials on this topic that is housed in a Drop Box internet folder. Kathryn Brooks has taken the responsibility to build and update the archive.

Potential deliverables for the next wave

- Complete the design
- Complete a rigorous cost analysis of the design and compare to the current money flow for these patients
- Test the design in parallel by studying individual cases or programs and how the design might improve care or lower total cost. This was begun on our visit to HCMS.
- Compare the design against the program that is now in place in some regions in KP.
- Decide if and how IHI might partner with Altarum on spread of the design

## D. Mental Health

This project is aimed at creating a design for integrating mental health with primary care. We contacted Dr. Lloyd Sederer, a psychiatrist, of the New York State Department of Health and asked for his help as a design lead. Fortuitously, he had been planning a collaborative approach in developing countries with two colleagues Dr. Gary Belkin of NYU and Jurgen Unutzer of the AMES Institute at the University of Washington. They plan a kick off meeting in Abu Dhabi in December 2011. They had previously contacted Pierre Barker of IHI and he subsequently assigned Pedro Delgado to work with them on starting the collaborative. In Drs. Sederer, Belkin, and Unutzer we seem to be working with some of the leaders in the field. In particular the AMES center headed by Dr. Unutzer seems to be the mental health equivalent of Ed Wagner's McColl Institute for chronic disease. Notably Jürgen Unutzer advised the Diamond project sponsored by the Institute for Clinical Systems Improvement, ICSI, in Minneapolis on integrating depression care with primary care.

http://www.icsi.org/health_care_redesign_/diamond_35953/what_is_diamond_/

HealthPartners research group is evaluating the results. We can follow up on this. Jürgen described AMES in an email as follows.

*We are an applied health services research group and we don't have a delivery system. Consequently, we have worked with delivery systems and practices all over the US (about 600 practices) to implement and study ways for mental health providers and primary care providers to collaborate more effectively. We started with several large scale randomized controlled trials such as the IMPACT trial which was carried out in 18 clinics in 5 states and have recently completed a large trial of quality improvement for depression, diabetes, and heart disease which showed substantial improvements in both mental and physical health outcomes. In recent years, we have also focused on dissemination and implementation of evidence-based programs. For example, we worked closely with ICSI in Minnesota to help implement an evidence-based collaborative care program for depression working with 6 health plans, 25 medical groups, and 80 primary care clinics in Minnesota. We provided the content and ICSI did a superb job providing the learning / practice change support. A great partnership. We believe that our research and implementation experience has suggested a clear set of principles such as patient centered teams, a focus on populations using registries, measurement-based treatment to target, and payment for performance. But we are not set in the particulars of how programs are implemented in unique local settings. We work with organizations to find an approach that fits their population / setting and then to make sure it is effective. Our most recent work has been with a Health Plan that has implemented an integrated care program in over 110 community health centers and 30 mental health centers state-wide - with a pay-for-performance component that has been very helpful in improving quality and outcomes of care. We try to learn from the work we do, and we have a data base of over 45,000 patients who have received integrated care in diverse settings that helps us with benchmarking and systematic quality improvement efforts. We are also working with LA County Mental Health where we are helping to implement an integrated care program in over 100 community health centers over the next year.*

*In my experience, our best work has been done working directly with large health plans and delivery systems to implement evidence-based programs working in close partnership with an organization that is excellent in facilitating learning and practice change. I see IHI in this category, and we'd be happy to explore potential partnership.*

*Jurgen Unutzer, MD, MPH, MA*
*Professor and Vice Chair*
*Psychiatry and Behavioral Sciences*
*University of Washington*

The next steps here are to continue to build the relationship with leaders in the mental health field. We have what amounts to a PDSA cycle with Pedro working with them in the initial set up for the developing countries collaborative on mental health. IHI is also planning a WIHI program on mental health with Brenda Reis-Brennan of Intermountain on their experience with integrating mental health into primary care on a regional basis. We have contacted Brenda and she is interested in working with IHI if we have a well thought out plan for spreading the work.

Potential deliverables for the next wave

- Assimilate the different approaches to mental health care into a coherent design for a health care organization and for a region
- Complete a rigorous cost analysis of the design and compare to the current money flow for these patients
- Test the design in parallel by studying individual cases and how the design might improve care or lower total cost
- Compare the design against the programs at Intermountain, South Central Foundation, and Minneapolis
- Decide if and how IHI might partner with the leaders on spread of the design

**E. Hospitalizations and Re-Hospitalizations for Chronic Disease**

During this R and D cycle no new design work was carried out for this section. The IHI has been working for several years with health care organizations in a number of states to prevent avoidable rehospitalizations. They have created a number of improvement guides for this work. http://www.ihi.org/offerings/Initiatives/STAAR/Pages/Materials.aspx
In addition Joanne Lynne who is part of the Triple Aim faculty has created a terrific web resource for care transitions. http://medicaring.org/

Even thought there was no new design work we did have Erlanger Health System share their testing on this subject with the Triple Aim community. And this was reported out on the November 1st Triple Aim call.

### F. Design for Acute Episode of Care

No new work occurred on this. There has been a great deal work done on this subject in previous R and D cycles under the heading of production system design. No one shared any testing around this work during the cycle. However we see a potential opportunity in the next wave of R and D using some of the production system design ideas with cancer care.

### G. Total Cost of Care

Total Cost of Care is a methodology that Health Partners has developed. http://www.healthpartners.com/tcoc

We have suggested to sites that this would be a good area to work with HealthPartners. However we did not have any volunteers who are testing at this time. A new participant in the Triple Aim, Nemours is beginning a Triple Aim initiative in the entire state of Delaware. They have expressed an interest in TCOC. We will connect them with Sue Knudson of HealthPartners.

## VII. Conclusions and Recommendations:

In order to make progress on the Triple Aim and R and D during this wave of activity, we created a structure around seven design and testing areas: executing projects for population health, Archimedes simulation for portfolio selection and measurement, total cost of care measurement and reduction, hospitalizations and re-hospitalizations for chronic disease, care for frail elderly, design for treatment of acute episodes and mental health. We attempted to embed ourselves in ongoing projects and learn while doing. Our goal was to work with content experts on design as well as helping Triple Aim teams on testing the design. We were able to make progress in a number of these design and testing areas and plan to pursue some of them more in the next wave. We see clear opportunity for some of this work to develop into independent IHI products, particularly executing projects for population health, frail elderly and design for treatment of acute episodes. We would strongly encourage incorporating Triple Aim the principles that we have learned in the larger community into these projects.

## VI. Open Questions:

**VIII: Appendices:**

**Appendix A.**

## Check Sheet for Community Population Health Projects

**Project name:** **Today's date:**

1. Find a leader who can galvanize the community around a clear set of aims.

2. Do a community assessment of who is already working in the project space and gain an understanding of other resources that will be needed.

3. Develop infrastructure for the work: project management, data management, quality improvement advising and logistical support.

4. Establish a common skill set to tackle the initiative by developing a basic quality improvement framework.

5. Develop a set of high-level measures that can be used to help the team know if it is making progress on its aims.

6. Involve funders in a unified way that will support the overall aims of the project.

7. Consider the high-risk population segment, self management issues, care coordination issues, economic or social factors and patient/family involvement including self management issues.

8. Address communication issues across the multiple organizations that are working on this project.