Agenda

- **12:00 - 1:00pm**: Lunch

- **1:00 pm to 1:45 pm**: Improvement at different levels of the system – what does it take to engage the multiple levels into one view? Sodzi Sodzi-Tetey

- **1:45 pm to 2:30 pm**: Executing large scale MCH programming
  - Case study: National Scale up in Ghana – Sodzi Sodzi-Tetey
  - Execution Designs for Large Scale Change - Charlie Homer

- **2:30 pm to 2:45 pm**: Break

- **2:45 to 3.15pm**: How does this all relate to scale issues in your own system –Facilitator- Sue Gullo

- **3:15 pm to 4:00 pm**: Design Ideas and Reflection. Faculty

Driver Diagrams as a Tool to View the System

- Describe the use of driver diagrams to explore causes, measures, and ideas for improving maternal and infant care. Charlie Homer

- Brainstorm drivers with the attendees. Sue Gullo
Theory Drives Improvement

“Without theory, there are no questions; without questions, there is no learning.”

Driver Diagrams as a Tool to View the System

The Driver Diagram is a tool to help us understand the system, and the processes that drive the outcomes. Determine where your work fits into the picture!
Driver diagrams: Harnessing Ideas for System Improvement

Aim

Bold, specific, time-bound goal: "some is not a number, soon is not a time"

1st drivers

Group of primary processes that link cause and effect

2nd drivers

Processes, norms, structures that link to 1st drivers – (processes are evidence-based)

Change ideas – context specific, evolve over time

What are the drivers of your system?

- Facilitators Sue Gullo
Ideas for System Improvement

Driver diagrams: Harnessing Ideas for System Improvement

Aim
1\textsuperscript{st} drivers
2\textsuperscript{nd} drivers
Ideas from the field

- Reduce infant mortality to x\% by 20xx
- Reducing elective deliveries <39 weeks
- Expanding inter-conception care in Medicaid
- Reducing SIDS/SUID
- Increasing smoking cessation among pregnant women
- Enhancing perinatal regionalization

Driver Diagram: articulates a multicomponent theory of change. e.g. Chronic Care Model

CC
Community Resources and Policies
Health System
Health Care Organization
Self-Management Support
Delivery System Design
Decision Support
Clinical Information Systems

Informed, Activated Patient
Productive Interactions
Prepared, Proactive Practice Team

OUTCOME
Improved Outcomes
e.g. COIN Initiative to reduce infant mortality

- Aim
  - Reduce infant mortality to x% by 20xx

- 1° drivers
  - Reducing elective deliveries <39 weeks
  - Expanding interconception care in Medicaid
  - Reducing SIDS/SUID
  - Increasing smoking cessation among pregnant women
  - Enhancing perinatal regionalization

- 2° drivers

Ideas from the field

Processes only, need to include other drivers – e.g. norms, environment, leadership, data

Driver Diagram: articulates a multicomponent theory of change. e.g. Chronic Care Model

- CC
  - Community Resources and Policies
  - Health System
    - Health Care Organization
      - Self-Management Support
      - Delivery System Design
      - Decision Support
      - Clinical Information Systems
  - Informed, Activated Patient
  - Prepared, Proactive Practice Team

Better OUTCOMES

Improved Outcomes

© McColl Institute
e.g. COIN Initiative to reduce infant mortality: more complex view

Aim

1^0 drivers

Leadership

Community structures

Evidence based Processes 1, 2, 3, 4, 5

Data systems

Patient – community engagement

2^0 drivers

Ideas from the field

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Infant Mortality COIN Project Feedback on Strategy Team Driver Diagrams and Next Steps

Submitted to HRSA MCHB

Contract Team

DRAFT November 12, 2012
Infant Mortality COIIN Project
Overall Driver Diagram

AIM  FOCUS AREAS  PRIMARY DRIVERS  STRATEGIES*

Reduce infant mortality to X% by 20**

Elective Deliveries < 39 weeks

Inter-conception Care

SIDS/SUID

Smoking Cessation

Perinatal Regionalization

Leadership at the Federal, State and Community Level

Capacity and Capability for Comprehensive Systems

Enhancements in Financial and Other Policies/Payments

Community Engagement

Public Awareness

Data Collection, Monitoring and Innovation

* Described on next two pages

COIIN Infant Mortality Project
Overall Strategies of Primary Drivers

Primary Drivers  Strategies

Leadership at the Federal, State and Local Level

- Identify and engage leaders/stakeholders/champions at all levels to ensure/advocate for:
  - COIIN strategies and activities
  - competent, trained, available workforce
  - use of national guidelines as standards
  - use of national data for improvement
- Mobilize political will through an articulate case of the needs and engagement of legislators, advocates, providers and public health professionals

Capacity and Capability for Comprehensive Systems

- Identify and engage the participants to be involved in the intervention(s)
- Provide training in strategy areas, relevant standards and guidelines (e.g., ACOG, AAP), quality improvement and outcomes
- Identify and secure funding and resources necessary to implement intervention/activities
- Develop (as needed), implement standardized care, including approaches and tools
- Systems coordination and integration (e.g., referrals, Title V programs)
- Create learning system for improvement in provider, public health and community settings
- Use the Life Course Model as a framework for change
### COIIN Infant Mortality Project
#### Overall Strategies of Primary Drivers (Continued)

<table>
<thead>
<tr>
<th>Primary Drivers</th>
<th>Strategies</th>
</tr>
</thead>
</table>
| Changes and Enhancements in Financial and Other Policies/Payments | - Identify and implement the specific insurance (e.g., Medicaid) payment policies and practices to be changed, including reimbursement practices and potentially hard stops  
- Identify financial implications of policy and payment changes  
- Develop and implement supportive regulations and laws, as appropriate |
| Community Engagement | - Secure community involvement through advisory groups, community forums, etc. to include/prioritize the family and community voice  
- Identify and engage community partners (e.g., perinatal collaboratives, home visiting/case management programs) for enhanced collaboration/coordination |
| Public Awareness | - Develop/adapt strategy messages and distribute through public education and social media  
- Coordinate consistent messaging at the Federal, state and community level |
| Data Collection, Monitoring and Innovation | - Identify data elements and acquire data for benchmarking  
- Use data to support feedback for improvement  
- Identify best practices/innovations |

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### Evolution of DD over time….
Evolution of DD over time:

- Unlike a RCT research design, theory of change for a QI project should change over time.
- DD changes most during prototype phase.
- Highly evolved DD can be used for large scale change.

Improvement at different levels of the system?

- What does it take to engage the multiple levels into one view?

Sodzi Sodzi-Tettey
Improvement at different levels of the system?

Each level of the system needs to be “engaged”
Community engagement: Lessons from other settings

Community launch: wide community engagement to build will

Community engagement: Lessons from other settings

The “new” BTS: Broader community engagement
Community engagement: Using link structures to bridge the community-facility divide

Each level of the system needs to be “engaged”
Each level of the system needs to be “engaged”

- Leaders
- Providers
- Patients
- Community

Working at multiple levels of the health system
The 3 delays model: Designing an integrated care system that accounts for the patient journey

**Delay 1**
- **DEMAND:** Delays in deciding to seek care

**Delay 2**
- **LINKAGE:** Delays in identifying and reaching appropriate care setting

**Delay 3**
- **SUPPLY:** Delays in receiving routine and emergency high quality care

Focus on demand, linkage and supply

**Delay 1:** Creating Demand
- 650 women’s groups

**Delay 2:** Ensuring reliable Referral & Access to services
- 707 task forces

**Delay 3:** Ensuring High Quality services
- 13 CEmONC Hospitals
- 42 Health Centres
Putting it together: Design for a dynamic process in a complex system

Execution Designs for Large Scale Change

Designing and Executing Large Scale Interventions for Improving Perinatal and Infant Outcomes
IHI Forum, December, 2012
Case Study: large scale-up of a maternal child health intervention

- Sodzi-Sodzi-Tettey

Ghana: under five mortality profile

- Under 5 mortality 76/1000 (2010)
- Stagnating Neonatal mortality
- Maternal Mortality 350/100,000 (2006)
Project Fives Alive!

**AIM:**
- Assist and accelerate Ghana’s efforts to achieve
  **Millennium Development Goal 4** (66% reduction in Under-5 mortality to 40/1000 livebirths by 2015)
- through the application of
  **quality improvement methods**

**COLLABORATORS:**

Funded by the Bill & Melinda Gates Foundation

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Is there a better way to accelerate more effective large scale programming for reducing child mortality in Africa?
**Project Fives Alive!**

**AIM:**

Assist and accelerate Ghana’s efforts to achieve Millennium Development Goal 4 (66% reduction in Under-5 mortality to 40/1000 livebirths by 2015) through the application of quality improvement methods.

Funded by the Bill & Melinda Gates Foundation

**Framework for large-scale spread**

- Build Will
- Build QI capacity
- Build data support

1. Locate Will (Build on existing programs)
2. Find, vet, and test Ideas using a scalable unit
3. Demonstrate under varied conditions
4. Demonstrate at scale
5. Sustainability Plan

Execution
Framework for large-scale spread

- Total Pop’n: 350,000
  Under 5 Pop’n: 60,000
- 5 million
- 11 million
- 22 million

Wave 1: 9 – 22
Wave 2: 23 – 63
Wave 3: 24 – 89
Wave 4: 63 – 89

Start-up: months 1 – 8
No of QI Teams: 30

Phase 0: Building Will

Understanding environment and context:
1. Align with national priorities – MGD stalled for neonates and maternal health
2. Nothing “new” - Interventions closely tied to MoH plan
3. High value assistance - Northern rural regions worst U5 mortality.
4. Focus on Data - Data systems weak, but we built on existing culture of reflection on data.
5. Minimal outsider presence – build health system capacity in improvement
6. Early engagement of regional leaders in design
Wave 1: Understanding the System - Establishing a prototype

Phase 1: 35 sub-districts in 3 regions (each with its own learning network)

- Testing innovations, getting results
- Understanding connections between community and different levels of care
- Developing a “change package” for spread
- Getting “buy-in” from district leaders
- Building capacity (QI, data) within the health system – getting ready for spread
Intensive pilot/testing in Wave 1: Skilled Delivery /early neonatal review

Change package: 18 tested interventions associated with improved performance
Wave 2: Regional Spread

Spread from 35 to 230 sub-districts in 3 regions
- Spreading the change package
- Building will and capacity with MoH
- Working with MoH to test more remote QI support in preparation for national scale up

Scale up to 600 facilities in Wave 2: Early ANC Attendance

*Figure 6:* Wave 2 Improvement Collaborative Network – ANC registration in first trimester, Jan’09 to July’12

*Initial evaluation results:* Facilities that had more changes implemented (greater intensity) had increased early antenatal care ($\beta = 0.034; 95\% CI: 0.004-0.063$) and increased skilled delivery ($\beta = 0.046; 95\% CI: 0.021-0.072$)
Wave 3: Theory of Change: Driver Diagram of Preventable Child Deaths in Ghana

Rapid reduction of deaths due to severe acute malnutrition (SAM)

Changes tested:
1st delay
- targeted messages delivered through community radio (to counter cultural myths re SAM).

2nd delay
- Community health workers were trained to diagnose SAM with prompt referral to hospital.
- SAM destigmatized through patient friendly approach

Reliable protocols
- In hospital clinical management of SAM was improved through workshops
- Intensive feedback – data and photos of successful interventions.
Wave 3
Reducing U5M – improvement in six innovation hospitals

Phase XI: Sustainability
How does this all relate to scale issues in your own system

- Facilitator- Sue Gullo
What are the steps in adopting new technologies?

<table>
<thead>
<tr>
<th>Knowledge (awareness)</th>
<th>Persuasion</th>
<th>Decision</th>
<th>Implementation</th>
<th>Confirmation</th>
</tr>
</thead>
</table>

- Pre-contemplation
- Contemplation
- Action
- Maintenance

Theoretical Framework:
Model of Five Stages in the Innovation Decision Process (Rogers, 2003)
Adoption of Hybrid Seed Corn in Two Iowa Communities

Cumulative Number of Adopters

Source: Based on Ryan and Gross (1943).

Adoption of an Innovation

Spread of Chronic Care Model Across Clinics

Total of 80 Clinics in Organization
The “Tipping Point”

“The name given to that one dramatic moment in an epidemic when everything can change all at once.”
- M. Gladwell

“The part of the diffusion curve from about 10 percent to 20 percent adoption is the heart of the diffusion process. After that point, it is often impossible to stop the further diffusion of a new idea, even if one wished to do so.”
- E. Rogers

What influences the pace?

- Nature of the innovation
- Type of decision
- Nature of the social environment
- Channels of communication
- Leadership and management of spread (Promotion)
Attributes of the Change that Affect the Rate of Adoption

- Relative advantage of the change idea
  (evidence from testing that idea is better)
- Compatibility of change with current system
  (reflects values of adopter, structure, and practices)
- Simplicity of the change and the transition
  (how easy to understand idea)
- Testability of the change
  (how easy to test the idea)
- Observability of the change
  (how visible is the change and results)

Executing and spreading change

from E. Rogers, 1995
How can we accelerate process of change?

Is the change “ripe” for spread?

Degree of belief that the changes will result in improvement

Successful changes

Changes still need further testing. There is a risk of moving to spread/scale-up.

Unsuccessful proposed changes
Level of confidence that system changes will result in improved outcomes

- Low (hunch, ideas, etc.):
  - Prototype
  - Innovation
  - Collaborative Innovation Network (agreement on goal, little agreement on “how” to achieve it)
- Moderate: limited understanding of variability in application to different settings, substantial support needed for implementation
  - Breakthrough Series
- High: Scale Up and Spread

Methods for spread and scale up

1. Natural diffusion
2. Executive mandates (and training).
5. Affinity group - develop superior model, then dissemination to other sites in the system.
6. Collaborative (physical or virtual) – networked structured learning and exchange around shared aims, measures, and goals.
7. Wave sequence - systematic spread within integrated multi-level systems
8. Campaigns - shared, quantitative aim connected to a targeted social system (evidence-based intervention, measurement, communications, and distributed field operations).
9. Hybrid approaches, where combined elements from different approaches form a new approach.

Environmental Context

A Framework for Spread

Leadership
- Topic is a key strategic initiative
- Goals and incentives/policies aligned
- Executive sponsor assigned
- Day-to-day managers identified
- Aim developed

Set-up
- Adopter audiences
- Successful sites
- Key partners
- Infrastructure supports to enable adoption
- Initial spread strategy (leverage system structures)

Social System
- Early adopters
- Key messengers
- Communities
- Technical support
- Transition issues

Communication (awareness & technical)

Measurement and Feedback

Better Ideas
- Develop the case
- Describe the ideas

Knowledge Management

Results at scale: USA

1. Deploy Rapid Response Teams
2. Deliver Reliable, Evidence-Based Care for Acute Myocardial Infarction
3. Prevent Adverse Drug Events
4. Prevent Central Line Infections
5. Prevent Surgical Site Infections
6. Prevent Ventilator-Associated Pneumonia

Clear Aims
Organizational Partners
Create infrastructure (Hospital Engagement Networks)
Transitional materials (guides)
Leadership engagement (NPP)
How was the “campaign” run?

- IHI and Campaign Leadership (8)
- NODES (approx. 75)
  - *Each Node Chairs 1 Network
- Mentor Hospitals
- FACILITIES (2000-plus)
  - *30 to 60 Facilities per Network

Close alignment with other organizations promoting health system improvement - JCAHO, CMS, Leapfrog, SCIP, AMA, ANA

Implementation (with roles for each stakeholder in hospital and use of existing spread strategies)

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Improving Early Childhood Environments for Obesity Prevention

- Pilot Program (Delaware)
  - Draft measures, draft curriculum
- Second Pilot (More diverse sites, DE + elsewhere)
  - Simplified measurement, sequenced curriculum and training materials
- Five states
  - Key national partners
  - Links to quality rating systems
  - Training improvement coaches, regional ECE leaders
How can we apply these concepts to reducing infant mortality?

- Is this a leadership priority?
- Do we have the changes well defined? Will the changes lead to improved outcomes?
- Are they easy to adopt?
- Is there a suitable measurement system in place?
- Do we have examples of success?
- Is there sufficient technical support?
- Are incentives aligned?
- Are there appropriate partnerships? Are the appropriate communities engaged?

Example: A Campaign for Early-Term Birth Reduction

<table>
<thead>
<tr>
<th>Aim</th>
<th>8 * 14</th>
<th>8 * 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Governor, Secretary HHS. Messages 8 times 8 ways</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Set up</td>
<td>Ob’s, Hospitals, Payers, Women, Employers, Medicaid, NGO’s (e.g., March of Dimes)</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Ideas</td>
<td>Administrative approval; stop the line; regional collaboratives; public data</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Communication</td>
<td>media; web site; social media; professional conferences; stories</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Social System</td>
<td>Opinion leader ID and engagement; sequential messages; anticipate financial impact</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Knowledge Management and Learning</td>
<td>Centralized data; Swat teams; newsletter; field coordinator</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>Measurement and Feedback</td>
<td>Vital statistics; Performance measures (JCAHO, Leapfrog)</td>
<td>8 times 8 ways</td>
</tr>
<tr>
<td>External Environment</td>
<td>Payment reform; licensure; accreditation</td>
<td>8 times 8 ways</td>
</tr>
</tbody>
</table>
2:30 pm to 2:45 pm Break

How does this all relate to scale issues in your own system?

- Sue Gullo - facilitated discussion
Reflection on day

faculty