Quality by Design
How the Microsystem Approach Helps You Transform Health Care Systems

Marjorie M. Godfrey, PhD, MS, BSN, FAAN
Eugene C. Nelson, DSc, MPH
12th Annual Clinical Microsystem Festival
1315-1630
February 25, 2015
Jönköping, Sweden

Agenda Today

13:15  Welcome and Introductions

13:30  Microsystem Basics
14:00  Exercise #1: Identify and Map a Mesosystem

14:30  FIKA

15:00  Mesosystems Basics
15:15  Exercise #2: Develop a strategy to improve
16:00  Report Outs
16:20  Summary and Final Questions/comments
16:30  Adjourn
Clinical Microsystems

The long term experience of the concepts and proven approach achieve the best patients outcomes by developing reliable, efficient and responsive systems that have the capability of meeting the individual needs of one patient, continually improving care for the next patient, and creating a great place to work for all staff.

Health systems will have to break into new space for High Q & V &
This will take high performing clinical teams … or clinical microsystems
Value Based Health Care

- Health care systems around the world are struggling with *rising costs and variation* in health care delivery and outcomes.
- Move away from a *supply-driven health care system* organized around what physicians do to a *patient-centered system* organized around what patients need.
- *Shift the focus from the volume and profitability of services provided*—physician visits, hospitalizations, procedures, and tests—to the patient outcomes achieved.
- Transformation to a Value Based Health Care system *must come from within*.

Overarching Goal

- *Must be improving value for patients*, where *value is defined* as the *health outcomes achieved that matter to patients relative to the cost of achieving those outcomes*.
- Improving value requires *either improving one or more outcomes without raising costs or lowering costs without compromising outcomes*, or both.
Fundamentals

High performing clinical microsystems needed to provide high value care
What do we really want?

*What indeed?*

Q: How is a kilowatt-hour of electricity like a day in the hospital?

A: Nobody wants either.

*Hot showers, cold beer.*

*Better health, better care, lower costs for patients and communities.*

*End use, least cost.*

Negawatts and Negabeds: Berwick, Lovins, Fisher
Huffington Post, December 29, 2008

Amory Lovins

---

What is health care value?

\[
\text{Value} = \frac{\text{Health Outcomes (disease + risk + function)}}{\text{Costs Over Time}}
\]
The clinical microsystem is the smallest (replicable) unit of health care delivery. It is the sharp end of health care delivery. It is the place where patients and clinicians meet.
Microsystems
In the old days

Meet Amy!
6 months, 14 different microsystems, 21 visits

Microsystems Are The Building Blocks That Come Together To Form Macrosystems

The Big Idea
Health Care Depends on Interdependent, Aligned Systems

Macrosystem

Mesosystem

Microsystem

CT Clinic

ASC

CT Clinic

Surgical services

Ambulatory

Inpatient

Evolution of “Clinical Microsystems”

www.clinicalmicrosystem.org

Purpose

Processes

Professionals

Patterns

Patients

DRAFT

J. Brian Quinn, PhD

1992- mid-90's

1998

1998 Hierarchy of Systems

8 Success Characteristics

2000

DECS course on Hierarchy of Systems

2001

IOM 21st Century

10 Success Characteristics

2001

Robert W. Johnson Foundation Study

2001

Website Formed

2002-3

JQI Articles

2003

Palisades Center & 18 Patterns

2006

AHA Microsystems Toolkits

2007

European Clinical Microsystem Network

2006


2006

Future

2007

JQI Action Guide

JQI Invitational Fall 2007

JQI Invitational Fall 2007

2001

Batalden, Nelson Research and World

“Curative Care:eme compass: Caring for Pts & Populations

Deming

Late 1970's & 1980's World-wide research and study of best service organizations

• Batalden, Nelson Research and Knowledge Development

• Deming

• Caring for Pts & Populations

• Clinical Value Compass
Case 1. STRICU

High Performing Clinical Microsystems Exist for a Set of Reasons
Terry Clemmer & Vicki Spuhler

Site Visit Reveals Best Practices

- HIT enabled interdisciplinary rounds for care plan and treatment goals
- Computer assisted vent management using 80 parameters
- Local epidemiological surveillance of micro-organisms to aid Abx selection
- Routine use of PDSA tests of change leading to ….
- Best practice notebook: continuous development of best practice protocols in 1 page summaries
- Data on walls for public display: run charts, dashboards
- Outreach to smaller hospitals on guidelines for appropriate and timely transfer of patients to and from STRICU
- (But if you walked down the hall to the next ICU … you would have seen few of these innovations in use)
High performing clinical Microsystems exist for a set of reasons … but they do not spread automatically
"We've celebrated cowboys, but what we need is more pit crews."

"When Ted Kennedy was sick he wanted a heroic team, not a heroic individual."

"Some organizations, recognizing that their staff generates large and small insights and innovations that could have a tremendous impact on performance, develop routines for creating, capturing, and disseminating such knowledge."
Quality By Design: A Clinical Microsystems Approach

- Part One
  - Updated original Joint Commission Quality and Safety 9 Part Series
- Part Two
  - Dartmouth Microsystem Improvement Curriculum

**Meeting Skills/5Ps/Communication**

**Fishbones**

- Diagnose
- Assess
- Specific Aim
- Flowcharts
- Change Ideas
- Measures
- PDSA

**Meeting Skills/5Ps/Communication**
Building a Team to Manage A Panel of Primary Care Patients

Mission: The Dartmouth-Hitchcock Clinic exists to serve the health care needs of our patients.

Patients

Process

People with healthcare needs

People with healthcare needs met

Processes

Professionals

Patterns

Purpose

Teams

Ted O’Reilly, MD
Sherman Baker, MD
Leslie Cook, MD
Joe Karpicz, MD
Deb Urquart, NP
Ron Carson, PA
Erica, RN
Laura, RN
Maggi, RN
Missy, RN
Diane, RN
Katie, RN
Bonnie, LPN
Carole, LPN
Nancy, LPN
Mary Beth, MA
Lynn, MA
Amy, Secretary
Buffy, Secretary
Mary Ellen, Secretary
Kathy, Secretary
Charlotte, Secretary
Mary Beth, VA

TEAM MEMBERS:
Nashua Internal Medicine

Measuring Team Performance & Patient Outcomes and Costs

<table>
<thead>
<tr>
<th>Measure</th>
<th>Current</th>
<th>Target</th>
<th>Measure</th>
<th>Current</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panel Size Adj.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct Pt. Care Hours: MD/Assoc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Panel Seeing Own PCP:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PMPM Adj.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Referral Adj.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Access Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dartmouth Clinical Microsystems Toolkit

A Path to Healthcare Excellence Toolkit

www.clinicalmicrosystem.org

Micro-System Approach 6/17/98

Revised: 1/27/00
Know Your Patients
Know Your Professionals

Activity Surveys
Know Your Processes

Know Your Processes
Know Your Processes...CF Initial Visit

Dartmouth Hitchcock Medical Center Pediatric Outpatient CF Clinic: Initial Visit Flowchart

Patient & Family Arrive

Patient & Family Arrive

Core and Supporting Processes
Know Your Patterns

Patterns

Know Your Patterns

Inpatient Unit on ED Unplanned Activity Tracking Card

Unplanned Activity Tracking

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unplanned Activity Tracking

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Providence Hospital Anchorage Alaska
METRICS THAT MATTER

Inpatient Unit or ED Metrics That Matter

1. WED1
   - Hospital admission delay performance measure
   - Target time: 1 hour
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

2. ED1
   - ED admission delay performance measure
   - Target time: 1 hour
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

3. NPS
   - National patient satisfaction survey
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

4. LOS1
   - Length of stay performance measure
   - Benchmark: 5 days
   - Improvement: 10%
   - Improvement: 10%

5. ICU1
   - Intensive care unit performance measure
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

6. HCAHPS
   - Hospital Consumer Assessment of Healthcare Providers and Systems
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

7. HEDIS
   - Health Care Effectiveness Data and Information Set
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

8. CMS
   - Centers for Medicare & Medicaid Services
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

9. JCAHO
   - Joint Commission on Accreditation of Healthcare Organizations
   - Benchmark: 85%
   - Improvement: 10%
   - Improvement: 10%

10. Leapfrog
    - Leapfrog Group
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

11. Magnet
    - Magnet Recognition Program
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

12. AHRQ
    - Agency for Healthcare Research and Quality
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

13. ASCP
    - American Society for Clinical Pathology
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

14. ACO1
    - Accountable Care Organization
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

15. SPRINT
    - Single Payer Insurance
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

16. ELDERLEAF
    - ElderLeaf
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

17. MEASURE
    - Medical Expenditure Panel Survey
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

18. CMS1
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

19. NQF1
    - National Quality Forum
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

20. CHF1
    - Congestive Heart Failure
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

21. COPD1
    - Chronic Obstructive Pulmonary Disease
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

22. HCC
    - Hierarchical Condition Category
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

23. HEDIS1
    - Health Care Effectiveness Data and Information Set
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

24. ACO2
    - Accountable Care Organization
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

25. ASCP1
    - American Society for Clinical Pathology
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

26. AHRQ1
    - Agency for Healthcare Research and Quality
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

27. JCAHO1
    - Joint Commission on Accreditation of Healthcare Organizations
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

28. LEAP4
    - Leapfrog Group
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

29. LEAP3
    - Leapfrog Group
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

30. LEAP2
    - Leapfrog Group
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

31. LEAP1
    - Leapfrog Group
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

32. SURGICAL
    - Surgical Care Improvement Project
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

33. MEDICAL
    - Medical Care Improvement Project
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

34. NURSING
    - Nursing Care Improvement Project
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

35. HCAHPS1
    - Hospital Consumer Assessment of Healthcare Providers and Systems
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

36. CMS2
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

37. CMS3
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

38. CMS4
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

39. CMS5
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%

40. CMS6
    - Centers for Medicare & Medicaid Services
    - Benchmark: 85%
    - Improvement: 10%
    - Improvement: 10%
Case 3. CCHMC

Whole Systems Can Be Transformed by Building Microsystem Capability
Uma Kotagal & Jim Anderson

Rapid Review of Path Forward

- Uma Kotagal (NICU) reports to BOT chaired by Jim Anderson
- Jim becomes CEO & Uma takes lead of Pursuing Perfection
- “All in” work on P2 across CCHMC
- Cascading performance metrics & transparency
- Deploying system-wide improvement projects
- Teaching improvement science to
  - Emerging leaders across system using ATP
  - Unit based leaders & teams using Dartmouth Microsystem Improvement Curriculum for action learning
- Playing catchball & building accountability for executing on annual plan = budget + operations + improvement
Mission

• For patients from our community, the nation and the world, the care we provide will achieve the best:
  – medical and quality of life outcomes
  – patient and family experience and
  – value
  – today and in the future

Ruskin. “Quality is never an accident, it begins with
The intention to make a superior thing.”

Clinical System Improvement (CSI) Team

Clinical System Integrating

Need to work the horizontal but set up vertical

Clinical & Non-clinical Support Processes

Provides strategic priority setting, resource allocation, organizational alignment; Serves as champions/coaches to Clinical Operations Teams.

Comprised of patient services, faculty, administrative & community physician leadership.
## Strategic Deployment Matrix

<table>
<thead>
<tr>
<th></th>
<th>Reduce ADEs</th>
<th>Improve patient experience</th>
<th>Improve flow</th>
<th>Evidence based</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 west</td>
<td>L</td>
<td>S</td>
<td>S</td>
<td>M</td>
</tr>
<tr>
<td>3 east</td>
<td>S</td>
<td>L</td>
<td>M</td>
<td>S</td>
</tr>
<tr>
<td>2 west</td>
<td>M</td>
<td>S</td>
<td>S</td>
<td>L</td>
</tr>
<tr>
<td>6 east</td>
<td>S</td>
<td>M</td>
<td>L</td>
<td>S</td>
</tr>
</tbody>
</table>

L = Lead, S = Spread, M = monitor

Catch ball! Sharing lead.

---

**FY 2008 CCHMC SYSTEM LEVEL MEASURES**

#### Health Care Delivery

- **Accuracy**
  - Value: 99%
  - Target: 99%
  - Goal: 99%
  - FY 2008 Q2: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%

- **Process Quality**
  - Value: 99%
  - Target: 99%
  - Goal: 99%
  - FY 2008 Q2: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%

- **Patient Safety**
  - Value: 99%
  - Target: 99%
  - Goal: 99%
  - FY 2008 Q2: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%

- **Patient Experience**
  - Value: 99%
  - Target: 99%
  - Goal: 99%
  - FY 2008 Q2: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%
  - FY 2008 Q4: 99%

---

**L = Lead, S = Spread, M = monitor**
From 5 to 2 SSE’s per 10,000 pt days …
Goal is zero
High Reliability Microsystems

- Nurse-Physician Co-leadership
- Unit level outcomes
- Unit level innovation and improvement
- Learning system across Microsystems
- Locus of Prioritization for array of goals - “Catchball”
- High Reliability Unit pilot

Oh by the way …

In 2009 after 8 years of hard work, CCHMC won the national hospital quality award
CCHMC Key Lesson

Whole systems can be transformed by building microsystem capability … but it takes leading, measuring, learning at all levels of the system

Conclusion

High performing health systems capable of delivering value require high performing clinical teams
Exercise #1

1. Form a workgroup and identify a leader, a coach, team members including patient & family
2. Select a subpopulation of patients
   – From your registry
   – Heart Failure, Diabetes, Stroke Care
3. Create a Value Stream Map including clinical and supporting microsystems

Create a Map of the Patient Journey with a Value Stream Map

- Include representatives of all roles in all microsystems including patients and families
- Clouds represent “we are not sure”
- Observe the different microsystems and steps and modify
Processes and Value Stream Map--Lessons Learned

- No formal transition program
- No formal introduction to adult providers
- No streamlined admission process
- Better communication between pediatric/adult providers and team members
- Need more formal education processes for our adolescent and adult patients
- Need increased number of adult providers/hours
What is a Value Stream?

- A Value Stream is all the steps required to complete a process/service from beginning to end.
  - Flow of the patient (or product)
  - Flow of information or documents

What is a Value Stream Map?

A tool to show work flow and information flow/data, using:

- process time,
- wait time,
- lead time, and
- first time quality

as system metrics.
Why use a VSM?

To open our eyes to existing problems, issues, and waste
To identify shortfalls and process breakdowns, and to identify opportunities for improvement.

• PURPOSE:
  – Visualize the work
  – Build team consensus & perspective
  – Point to problems
  – Focus direction

Attributes of a VSM

• Focuses on patient/customer requirements
• Links work and information/data flow
• Documents metrics of delivery and quality performance
  – Is specific (uses data)
  – Exposes waste in the process
  – Identifies activities that add value for the customer and those that don’t
• Documents work complexity
• Highlights constraints to good process flow
• Allows process redesign to meet specific objectives
Waste Categories

Lean is about reducing waste

Non-Value Added, BUT essential (owing to regulatory environment)

Non-value added activities can be as much as 95% of the day!

Exercise #1

1. Form a workgroup and identify a leader, a coach, team members including patient & family
2. Select a subpopulation of patients
   - From your registry
   - Heart Failure, Diabetes, Stroke Care
3. Create a Value Stream Map including clinical and supporting microsystems
We Are in a Pickle

We need to make better outcomes, better care, lower costs
Evolution in approaches to improving health system quality:
from projects to microsystems to mesosystems to macrosystems
Developing Microsystems: The Strategic Advantage

“Organizations that have intentionally developed pervasive improvement capability in their microsystems have a strategic advantage when it comes to accelerating and sustaining system-level improvement. These organizations have an efficient and effective means of getting everyone involved to accomplish their strategic campaign.”

Mesosystems

• Share the work of helping to get the best outcomes of care at the lowest cost and at the highest level of satisfaction

• Mesosystem members are part of a “community” and have relationships and activities which frequently are not revealed, studied, discussed or improved

Mesosystem Community

• The individual microsystems operate in ways that make or break the mesosystem as it attempts to provide high value care to individual patients and to clinical populations
  – Share vision and mission?
  – Good hand offs and transitions?
  – Feed forward and feedback of information?
  – Create a “memory” of patients and families?
  – Regular communications and improvement?
  – Schedule time to discuss and improve care across the mesosystem?
  – Value stream design and patient & family centered co-design
Meta/Macro/Meso/Microsystem

Align Strategy
Metasystem- County Council (Registries)

Macrosystem- Organizations

Mesosystem- Pathways for subpopulations

Microsystem- Front Line

Back and forth improvement planning

Align Measurement & Accountability

“Catch Ball” or “Be on the same team with the same goal”

Hoshin Kanri

“Ho” means direction
“Shin” means needle
“Hoshin” means compass

“Kan” means control or channelling
“Ri” means reason or logic
Hoshin Kanri

• Hoshin is a planning and implementation process which gives ‘direction’ to an organization when looking at future strategy.
• The analogy that is used is directing a fleet of ships to all arrive at the same destination, at the same time!!

Hoshin Planning

• Facilitates the creation of business processes that result in a sustained competitive advantage in Quality, Delivery Cost and Innovation.
• Aligns the major strategy objectives with the specific resources and action plans.
• Consists of a process that begins with high level strategic objectives and ends with the local level improvement targets.
• ‘Catchballing’ is the driving force of alignment, clarification, and employee involvement.
“Catch ball”

• A top down and bottom up approach
• Stakeholders ‘catch’ the improvement topic and through Kaizen, VSM etc develop ideal current state, identify other issues etc
• This is then thrown back to the management team with a plan for improvement

Benefits

• Every employee is clear of their role and objectives
• Leadership evident at all levels
• Everyone understands the goals of the organisation
• Aligns resources, objectives and metrics to all goals and at all levels of the organization
• Employees are involved in setting targets, improvement schedules and reviews
• There is a clear line of sight
Coaching and Leadership

Connecting
Teams, Coaching and Leadership

Teams & Coaches
- Expectations
- SPIs/Performance
- POSA
- Sustain

Leadership
- Regular meetings: Provide time & space
- Anticipate & assist with data
- Rapid Tests of change with measures
- Inspire, Know & Tell Stories
A Pathway to Consider

1. **Connect national registry with front line teams**
   providing care to populations of people.
2. Develop **Leadership skills** to lead quality improvement
3. **Provide “help”** with **coaching**
4. **“Activate” care teams** to provide care and simultaneously improve care (**ownership**) 
5. **Measure real time and over time outcomes**
   (process and clinical outcomes)

2. Leadership Development

- Support the **development of leaders**
  associated with front line clinical teams and coaches.
- The leaders will **cultivate the conditions** to support improvement capabilities of front line staff to achieve strategic improvement based on registry data and front line data and information.
How Leaders Can Help

• Describe the mesosystem from the patient perspective
• Use the voice of the patient to help create the “WILL”
• Create the conditions for microsystem members to come together to discuss, study and improve the mesosystem
  – Use patient-experience based design
  – Use lean and value stream mapping
• Define the aim and value measures
• Fully embrace patient and family knowledge
• Support “coaching”

3. Coaching

• Improve value and quality of healthcare through development of the art and science of coaching to help coaching front line interdisciplinary clinical and supporting microsystems with knowledge, processes and tools including the Dartmouth Microsystem Improvement Curriculum.
Team Coaching Model

Pre-Phase
Getting Ready

*Context
- Review of past improvement efforts and lessons learned
- Preliminary system review
  - Micro/Meso/Macro

*Site Visit
- Resources (data & time)
- Logistics
*Expectations
  - Clarity of aim
  - Leadership & Team discussions about roles and logistics

Action Phase
Art & Science of Coaching

*Relationships
- Helping
- Keep on track

*Communication
- Virtual
- Face-to-Face
- Available & accessible
- Timely

*Encouragement
*Clarifying
  - Improvement Knowledge
  - Expectations

*Feedback
*Reframing
  - Different perspectives
  - Possibility
  - Group dynamics-new skills

*Improvement Technical Skills
  - Teaching

Transition Phase
Reflection, Celebration & Renew

Reflection on improvement journey
- What to keep doing or not do again
- Review measured results and gains
- Assess team capability and coaching needs & create coaching transition plan

Celebration!
Renew and re-energize for next improvement focus

Evaluate coaching

Godfrey, MM et al. 2013

Right Level, Right Topic, Right Dose

<table>
<thead>
<tr>
<th>Level</th>
<th>Topic &amp; Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metasystem</td>
<td>Registries/Core Measures</td>
</tr>
<tr>
<td>Leaders</td>
<td></td>
</tr>
<tr>
<td>Macrosystem</td>
<td>Dashboards/Control charts</td>
</tr>
<tr>
<td>Leaders</td>
<td></td>
</tr>
<tr>
<td>Mesosystem</td>
<td>PDSA Dashboard/Control charts</td>
</tr>
<tr>
<td>Microsystem</td>
<td>Definitions, data collection plans, SP, PDSA measures Data walls</td>
</tr>
<tr>
<td>Leader and staff</td>
<td></td>
</tr>
</tbody>
</table>

Coaching Capability to “bridge” levels
4. Activate Front Line Teams (Microsystems)

- Leadership *creates the conditions* for regular weekly meetings of multidisciplinary improvement team using effective meeting skills
- All staff know *standardized improvement discipline*
- *Ownership* rather than buy in
- The *pace of improvement* is matched with “continuous improvement” – a marathon

Mesosystem Assessment Tools

- Use “Through The Eyes of the Patient” (mesosystem intense immersion)
  - Value Stream Mapping Tool
  - Use Cycle Time Tool (Stopwatch)
  - Map external microsystems
  - Observation
- Transitions and Handoffs (within microsystem and between/Care plans and patient timeline)
- Exchange programs (microsystems visit each other)
- Spaghetti Diagram Tool
- 5 Whys
- Clinical Value Compass
5. Real Time and Over Time Measures

**Front Line Care Teams**
- Aims
- Driver Diagrams
- PDSA Measures
- Data Collection
- Tick & Tally
- Run Charts

**Leaders**
- Registries
- Strategic Measures
- Driver Diagrams
- Creating Conditions
- Run Charts & SPC

---

**Meta/Macro/Meso/Microsystem**

*Meta System - County Council (Registries)*

*Leadership* - Decision Makers

*Registries* - Pathways for Subpopulations

*Macro System - Organizations*

*Mesosystem - Pathways for Subpopulations*

*Microsystem - Front Line Care Teams*

---

**Assessment Theme**

- Global Aim
- Specific Aim
- Change Ideas
- Conceptual Definition
- Operational Definition
- Measurement Plan

**Global Aim**
- The 'big picture'

**Specific Aim**
- The 'component parts'

**Change Idea**
- Conceptual Definition
- 'The Measure'

**Measurement Plan**
- 'Specify & Quantify'

---

**PDSDA**

1. Specify
2. Design
3. Implement
4. Assess
Driver Diagrams to Link Registries to Front Line Improvement

Driver Diagrams

Aim

Outcome

Primary Drivers

1

2

3

Secondary Drivers

A

B

C

D

'Cause the outcome'

'Multiple influences'

Credit: S. Harrison, Sheffield MCA (2014)
Prevention of 2nd infarction

Aim
Outcome – Healthy life after heart infarction

Primary Drivers
- Smoking
- LDL
- Exercise
- Compliance medication

Secondary Drivers
- Motivation
- Habits
- Food

Background: Making meaningful improvement based on registry measures can be overwhelming. Where does one start? Leaders can support front line improvement teams to understand, plan and link the registry measures to the organization, mesosystems and microsystems of care.

Registry to Front Line Improvement
Driver Diagram and Measurement

Aim: Provide a clear path forward to link registry data and front line improvements

Meta/Macro/Meso/Microsystem
- Metasystem- County Council (Registries)
- Macrosystem- Organizations
- Mesosystem- Pathways for subpopulations
- Microsystem- Front Line

It is through identification of aims, evidence based practice and best practices, assessment of processes of care in the meso/microsystems and daily measures that the front line team improvement can lead to improvement of the registry outcomes representing population health. This worksheet will help leaders, coaches and the front line interprofessional improvement teams to reflect on the processes and measures in a step-by-step manner to achieve the desired improvements.

Credit: S. Harrison, Sheffield MCA (2014)
Registry to Front Line Improvement

Path Forward Using Driver Diagram and Measurement Worksheets:

1. Identify the population of interest and associated registry
2. Define the Global Aim statement and document the registry level measure(s)
3. Review evidence based practice, best practice benchmarking and other improvement literature information to determine the best change ideas to adapt and test.
4. Define specific aim statements including improvement targets and deadlines
5. Define the operational definitions for each of the specific aim statements.
6. List the PDSA cycles

Driver Diagram Worksheet
Registry to Front Line Improvement

Driver Diagram Example

Global Aim
We will improve staff satisfaction with communication during Tuesday clinics to 80% of staff satisfied by July 1, 2014.

Specific Aims
1. We will improve patient arrival time to ≥80% of patients arriving within 30 minutes of their scheduled appointment time on Tuesday clinics by July 1, 2014.
2. We will reduce the number of Tuesday clinics with >28 patients booked to less than 25% of all clinics by November 1, 2014.
3. We will reduce waiting time from arrival to PFTs by 50% on Wednesday clinics by October 7, 2014.

Drivers
- Implementation of pre-clinic huddle to improve communication
- Requisitions given to patients upon arrival in clinic
- Clerical staff input comments (e.g., follow-up when booking appointments)
- Exploration of an alternate pre-clinic prep day by multi-disciplinary team

Test 1 – Pre-clinic huddle implemented to improve communication
Test 2 – Requisitions given to patients upon arrival in clinic
Test 3 – Clerical staff input comments (e.g., follow-up when booking appointments)
Test 4 – Clinic flow coordinator trialed
Test 5 – Exploring an alternate pre-clinic prep day by multi-disciplinary team

Measures
- Patient Appointment Time
- Patient Arrival Time
- Patient Arrival Time – Appointment time in minutes to demonstrate arrival reliability
- Participating MDT satisfaction with communication measured on a 5 point scale (1 = poor, 5 = excellent) following each Tuesday clinic.

PDSA Cycles
- Test 1 – Arriving policy created; letters mailed out to patients
- Test 2 – Letter posted in clinic, given to patients in clinic; reinforced verbally
- Test 1 – Pre-book dedicated spirometry time slots for Wednesday patients

Gantt Chart Example

Create a Gantt chart to strategically plan the PDSA cycles using an excel worksheet like the example below.
Exercise #2

• With your workgroup
• Develop the Driver Diagram and practice “Catch ball”
  – Start with the leader and the registry data
  – Engage the coach to bridge the leader and front line care team
  – Front line care team receives and adds to driver diagram
  – Pass back to Leader
• What happens and what is the plan?

Driver Diagram Worksheet

Global Aim Statement (include registry data)

Specific Aim Statements

Measures (Operational Definitions)

PDSA Cycles

Registry Data:
Team Report Outs

Summary

• Value based health care
• Microsystem basics help build mesosystems
• Mesosystem basics including value stream mapping and linking registry improvement to registries and measures
Getting on the Same Team with the Same Goal