

Clinical Microsystems & Value Compass:
*Creating the Conditions for
Sustained Improvements & Measured Best Outcomes*

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Miami Beach
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Eugene C. Nelson
Director, Quality Education, Measurement & Research
Dartmouth-Hitchcock Medical Center
Professor, Community & Family Medicine
Center for the Evaluative Clinical Sciences
Dartmouth Medical School

www.clinicalmicrosystem.org

Goals for Session

- Introduce microsystem thinking as effective way to promote VON 4-habits, improve quality & improve worklife
- Develop prototype value compass to measure quality and cost of care provided in your ICNs
- Create interest in developing a “starter” value compass for use by VOB

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Acknowledgements

- Paul Batalden, MD
- Marjorie Godfrey, MS, RN
- William Edwards, MD
- Caryn Spielman McCoy, MSC, RN
- Vermont Oxford Network
- Stephen Plume, MD

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As Good As It Gets



Melvin and Carol



Melvin



Spencer

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Great care for _____



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The “True” Structure of the Delivery System?

- As experienced by the patient
 - People working together (or against each other)
 - In front line clinical teams (or tangles)
 - Often embedded in larger organizations (or Byzantine bureaucracies)
 - That are more or less loosely connected (or totally disjointed)
 - And provide more or less perfect (or deadly dreadful) care

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Agenda

- Background: Clinical Microsystem Thinking for Improving Quality
- Foreground: Clinical Value Compass Approach for Measuring Quality & Costs
- Planning for Next Steps

Themes to be addressed today

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Improving ICNs.

Think Microsystems

Part 1: Background/Context

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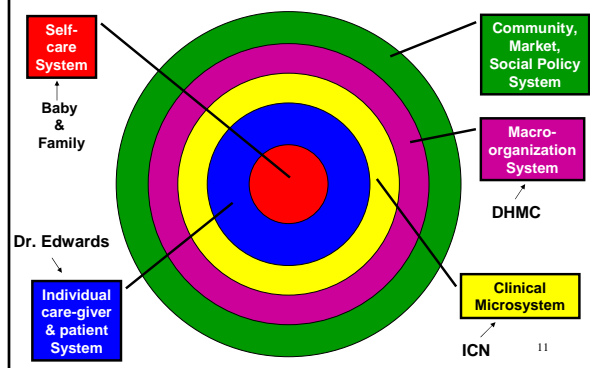
Levels of System

- Systems are embedded within systems

9



The way we work to “make” health care



IOM 2: The Chassis is Broken

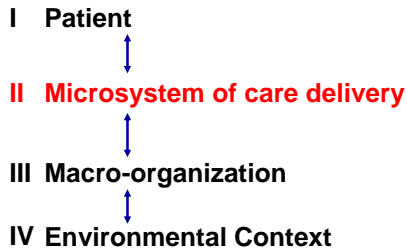


“The current care systems cannot do the job. Trying Harder will not work. Changing Systems of care will.”

National evidence

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The Chain of Effect in Improving Health Care Quality



The framework

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Focus on Microsystems

“Every system is perfectly designed to get the results it gets.”

Paul Batalden, MD

What is a “clinical microsystem?”

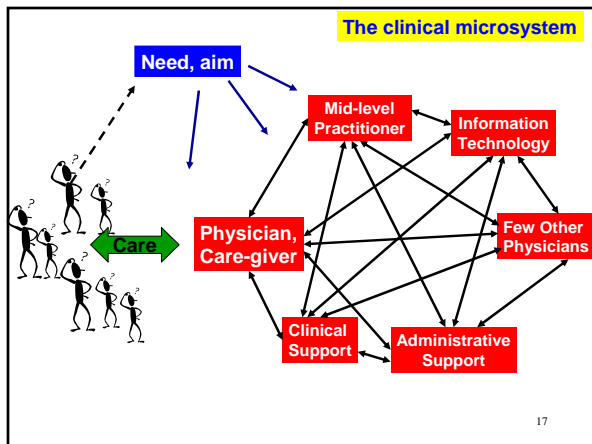
- Small group of doctors, nurses, other clinicians
- Some administrative support
- Some information, information technology
- A small population of patients
- Interdependent for a common aim, purpose

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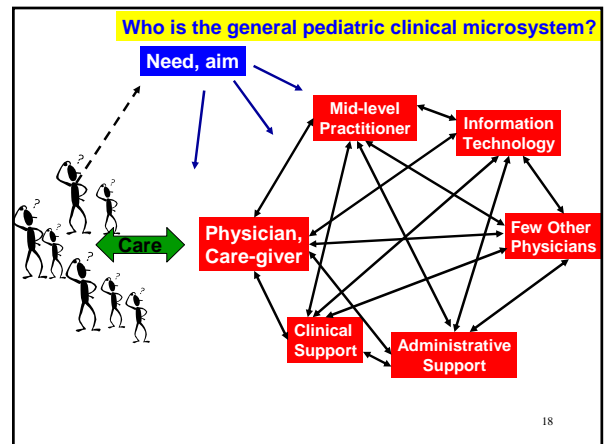
Isn't “clinical microsystem” just a different name for what others have called, the health care “team”?

- No, the clinical microsystem includes the small population of patients as part of the same system as the providers.
- No, it includes information & information technology as a “full” participant.

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Children

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Parent

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Jodi, MD, Pediatrician

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Holly, Receptionist, Scheduler

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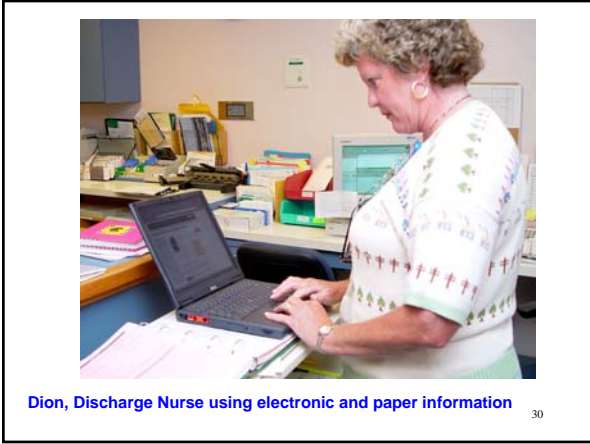
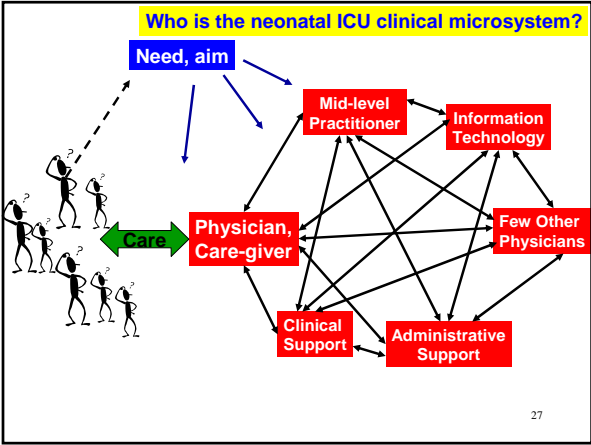
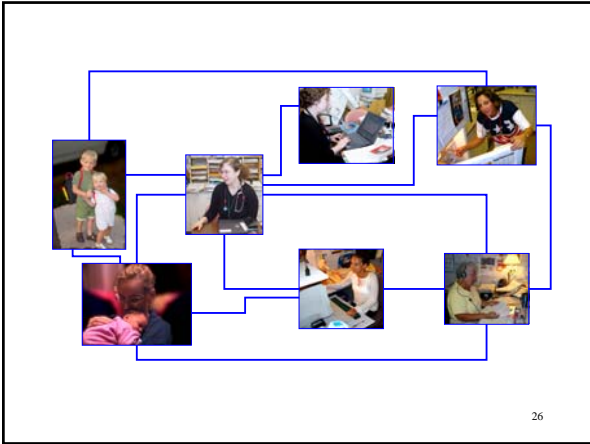
Electronic and paper information

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Kathleen, Nurse

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William, M.D., Neonatologist

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Parent and Drs. Edwards and Little

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Rounding team, including parents

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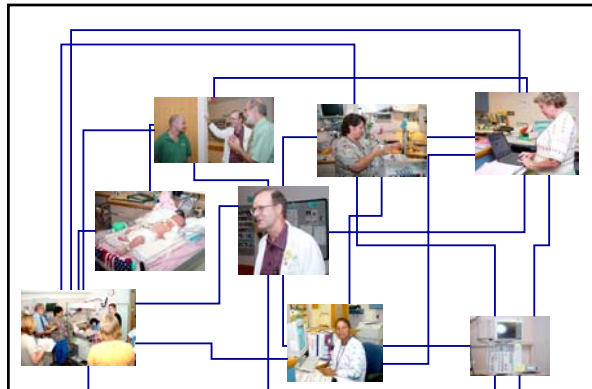
Theresa, Receptionist

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Information technology (monitors)

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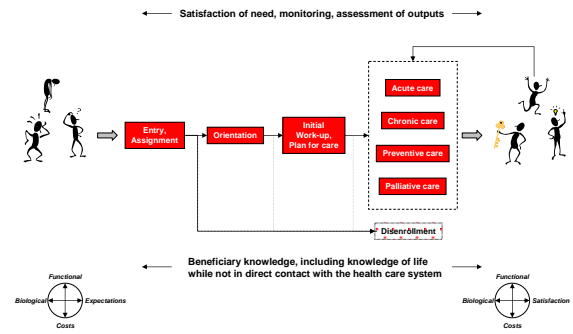


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A Picture of a Microsystem

The Physiology

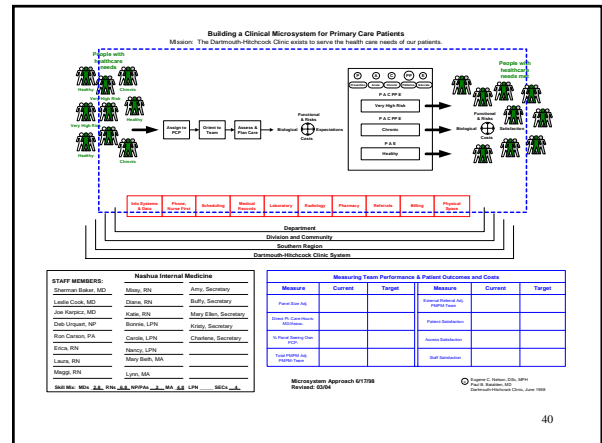
A "Generic" Clinical Microsystem model



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A Picture of a Microsystem

The Anatomy



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Why this focus?

- Basic building block of health care.
- Unit of clinical policy-in-use (vs. "espoused".)
- Good value & safe care "made" here.
- Patient satisfaction variables largely controlled here.
- Work practice "dissatisfiers" are controlled here and "genuine motivators" are present here— making real joy, pride in health professional work possible.
- Setting for life-long professional "formation."
- Living adaptive health care system "laboratory" with structure, pattern & process.

From our work with ~120 clinical microsystems in five countries 41

Microsystem Definition

A microsystem in health care delivery can be defined as a **small group** of people who work together on a regular basis to provide care to discrete subpopulations of **patients**. It has clinical and business **aims**, linked **processes**, shared **information** environment and produces performance **outcomes**. They evolve over time and are (often) **embedded** in larger organizations.

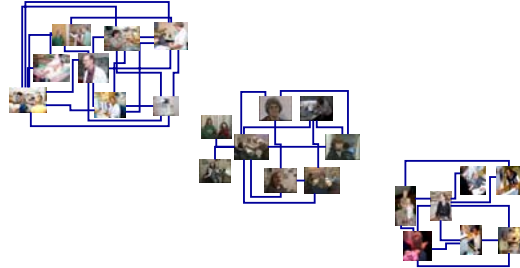
As a type of complex adaptive system, they must: (1) do the work, (2) meet staff needs, (3) maintain themselves as a clinical unit.

Isn't "clinical microsystem" just a different name for what others have called, the health care "team"?

- No, the clinical microsystem includes the small population of patients as part of the same system as the providers.
- No, it includes information & information technology as a "full" participant.

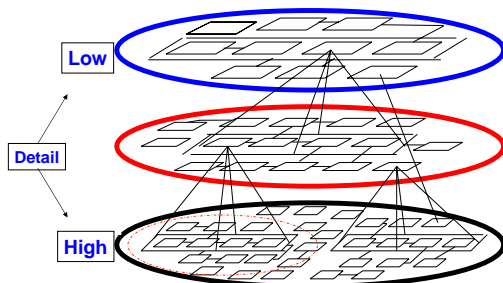
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Microsystems are the *building blocks* that come together to form **Macro-organizations**



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An example from Jönköping, Sweden



Mats Bojestig, Anette Petersson

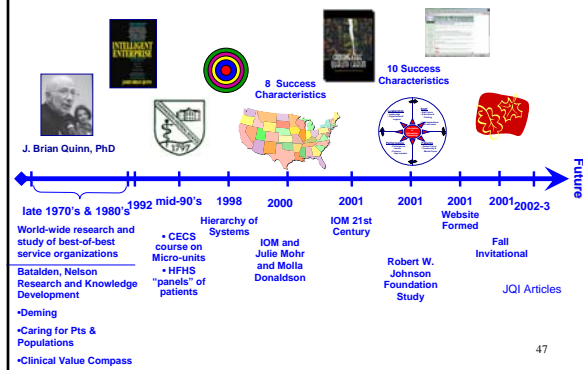
Research on High Performing Microsystems.

What makes the best the best

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Evolution of "Clinical Microsystems"

www.clinicalmicrosystem.org



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Recent Research

- Institute of Medicine Study 2000
- Dartmouth - Robert Wood Johnson Foundation Study 2002

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Dartmouth Study 2002

Eugene C. Nelson, DSc, MPH
Paul B. Batalden, MD
Thomas P. Huber, MS
Julie J. Mohr, MSPH, PhD
Marjorie M. Godfrey, MS, RN
Linda A. Headrick, MD, MS
John H. Wasson, MD



Series of Articles

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Aim

- To study 20 **“best”** performing (high quality and low cost) microsystems
 - Funded by Robert Wood Johnson Foundation
 - Builds on IOM Study by J. Mohr et al.

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Methods

- Sampled across continuum
 - Ambulatory, Inpatient, Home Health, Nursing Home, Hospice
- Screened over 150 potential sites
- Selected **“best”** 20 small clinical units
- Data collection
 - Primary: Qualitative interviews
 - Supplemental: Record review, financial data

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Search for High Performance

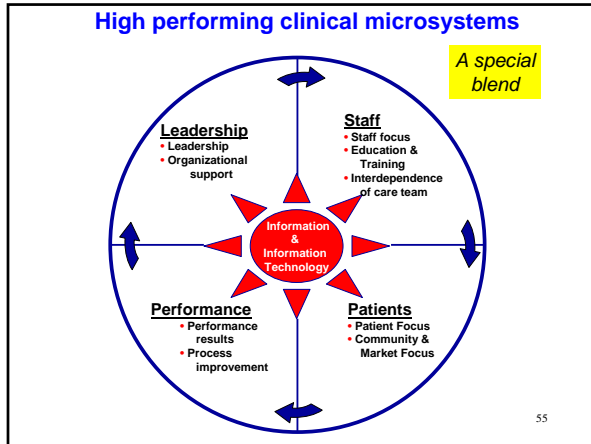
- Site selection used 5 search patterns
 - **Literature**: Reviewed Dow Jones Interactive, LexisNexis, Tablebase and ProQuest
 - **Winners**: Searched for award winners and benchmark (best of best) performance
 - **Expert Opinion**: Queried national experts
 - **Prior research**: Reviewed previous studies looking for best practice sites (IOM and IHI)
 - **Best within Best**: Went to excellent systems and asked for their best unit

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Site Visits

- Interviews: Multiple in-depth interviews at each site
 - Leaders, Finance, IT, Administrative Assistant, Physicians, Nurses, Medical Assistants, Social Workers, Therapists to Assess Quality Performance
- Record Review
 - Perform an archival data review of 100 medical records at each site to evaluate the technical quality of care provided by the microsystems
- Finance Review
 - Collect annual reports, productivity charts, salary costs, cost and revenue per patient, operating costs, etc.

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Clinical Microsystem Assessment Tool

Instructions: Each of the "success" characteristics (e.g., leadership) is followed by a series of three descriptions. For each characteristic, please check the description that best describes your current microsystem and the one it achieves. OI rate a microsystem you are MOST familiar with.

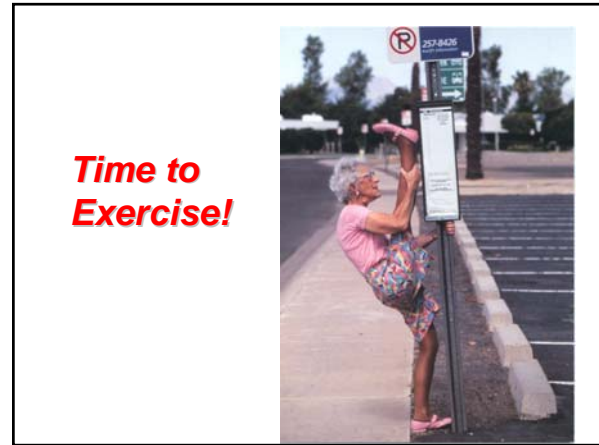
Characteristic and Definition	Descriptions	Rate
<p>1. Leadership: The role of leaders is to balance setting and meeting collective goals, and to engender individual autonomy and accountability through building knowledge, respectful action, reviewing and reflecting.</p>	<p>D Leaders struggle to find the right balance between meeting performance goals and respecting and empowering the staff.</p>	D C S R A
<p>2. Organizational Support: The larger organization looks for ways to support the work of the microsystem and coordinate the hand-offs between microsystems.</p>	<p>D The larger organization is not responsive to the needs of the microsystem and does not make it easier for us to meet the needs of patients.</p>	D C S R A
<p>3. Staff Focus: There is selective hiring of the right kind of people. The orientation process is designed to fully engage new staff into values and work roles. Expectations of staff are high regarding performance, continuing education, professional growth, and mentoring.</p>	<p>D I am not made to feel like a valued member of the microsystem. My orientation was unresponsive to my continuing education and professional growth needs as we begin our work.</p>	D C S R A
<p>4. Education and Training: All clinical microsystems have responsibility for the ongoing education and training of staff and for aligning daily work roles with training competencies. Academic/clinical microsystems have the additional responsibility of training patients.</p>	<p>D Training is accomplished in traditional ways (e.g., lecture with power presentation, textbooks, etc.). The educational efforts are not aligned with the focus of patient care, so that education becomes an "add-on" to the work day.</p>	D C S R A
<p>5. Interdependence: The interaction of staff is characterized by trust, collaboration, willingness to help each other, appreciation of complementary roles, respect and recognition that all contribute individually to a shared purpose.</p>	<p>D I work independently and I am responsible for my own part of the work. There is a lack of collaboration and a lack of appreciation for the importance of complementary roles.</p>	D C S R A
<p>6. Patient Focus: The primary concern is to meet all patient needs — caring, listening, advocating, and responding to patient requests, responding to meet patient needs, and smooth service flow.</p>	<p>D Most of us, including our patients, would agree that we do not always provide patient centered care. We are not always clear about what patients want and need.</p>	D C S R A

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Please continue on Side B

Credit for making CMAT ... Dr. Julie Mohr

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Exercise

- Microsystem Assessment Tool (MAT)
- Complete the MAT for the ICN microsystem that you know best
- Discuss your results with a neighbor

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Measuring Outcomes

Think Value Compass

Developing a Value Compass to Measure Outcomes in Your ICN

Part 2: Foreground/Action Step

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1 snowy night ...

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Assumption

Building a value compass for your ICN is a good way to progress your own developmental journey & may provide the basis for measuring outcomes for the VON

First Steps of One Microsystem's Developmental Journey

- Dartmouth-Hitchcock's ICN
- William Edwards, MD, ICN Director
- Caryn Spielman McCoy, MSN, RN

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ICN: Making Better Quality

"Quality is never an accident ..."

"Gene, I would like our ICN to be the best in the world."



- Bill Edwards, MD

(Director, NICU)

Aim

- To optimize the outcome of < 1500 gm babies
- To decrease the incidence and severity of major morbidity and mortality
 - Bronchopulmonary Dysplasia
 - Acute Brain Injury
 - Poor Developmental Outcome
- Do this at a lower cost

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ICNs Developmental Journey

- Goal: Starts with will to be the best
- Team: Interdisciplinary & all roles
- Diagnosis: Find important problem and develop causes & effects model
- PDSA: Plan and run tests of change
- Involvement: Get everyone in game
- Outcomes: Measure results over time

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ICNs Developmental Journey: Silence Pleases!

- **Goal:** Starts with will to be the best
 - Not to be king of hill but to do best for patients
- **Team:** Interdisciplinary & all roles
 - System change requires changing everyone in system
- **Diagnosis:** Find important problem and develop causes & effects model
 - Value compass thinking identifies intracranial hemorrhages as major risk factor & *evidence suggests hi noise levels toxic*

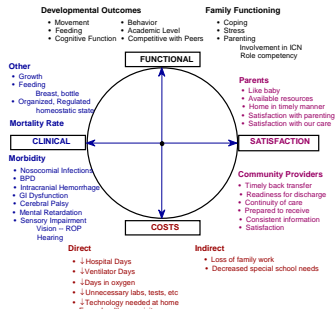
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ICNs Developmental Journey Continued:

- **PDSA:** Plan and run tests of change
 - First reduce people noise
 - Second reduce machine noise
- **Involvement:** Get everyone in game
 - Staff meetings, discussions, buttons, and dashboards
- **Outcomes:** Measure results over time
 - Monitors of noise levels and adverse events

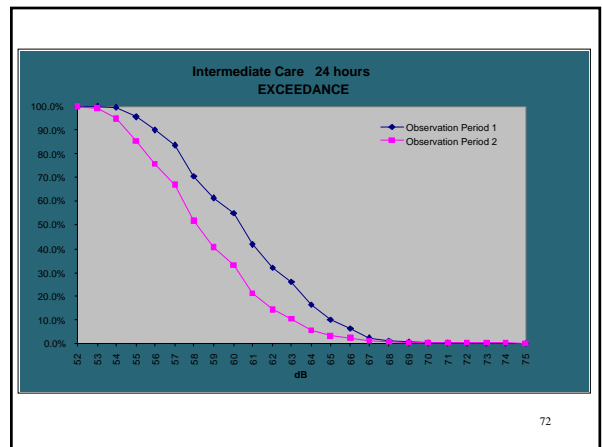
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OUTCOMES: BABIES <= 1500 GRAMS



Compass has provided guidance since 1992

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“Evolutionary” (or “Transformation”) Principles

- Begin with the intention to excel
- Involve all the players
- Focus on values that matter
- Keep both discipline and rhythm
- Use measurement and feedback
- Create a learning system
- Align macro-organization (mission, vision, values, strategy, operations, accountability) with each and every clinical microsystem

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Value Compass

“In God we trust. All others
bring data.”

W.E. Deming, PhD

Clinical Value Compass

- A way to measure outcomes that matter most for your patients
- A way to clarify the particulars of what quality means for your patients
- A way to guide and monitor improvement in quality and value
- A seat for everyone at the table

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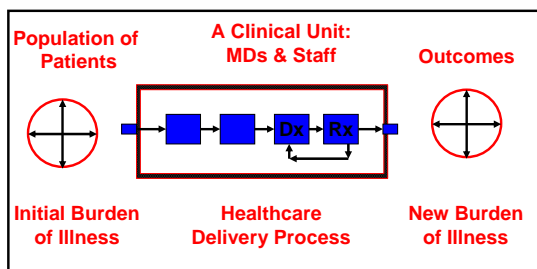
Value Compass answers the question ...

Is the system providing care and
services that meets patients’ needs for
high quality and value care?

Note. Unit of analysis is the patient

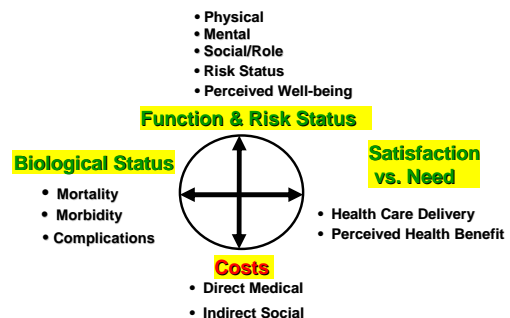
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Value compass offers a way of thinking about
patients’ & families needs being met by health care.



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Value Compass



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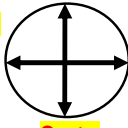
Spencer's Asthma Compass

- Able to play soccer
- Able to go to school
- Feel normal, like other kids
- Free from worry and fear

Function & Risk Status

Biological Status

- Acute exacerbations
- Lung Function FEV1
- Systemic side effects from inhaler meds



Costs

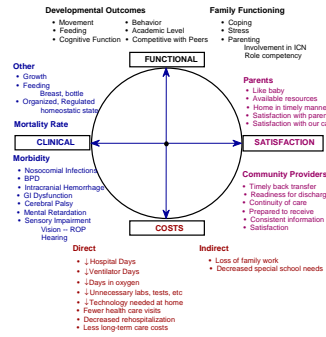
- ED visits
- MD visits
- Laboratory tests
- Meds
- Lost work time for mother

Satisfaction vs. Need

- Needed treatments given
- Prepared to prevent problems
- Able to manage problems
- Trust in doctor & nurse
- Doctor who is accessible
- Costs affordable

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OUTCOMES: BABIES <= 1500 GRAMS



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Clinical Value Compass Worksheet, Side A

① OUTCOMES → Select a population _____ (Specify patient population)

② AIM → What's the general aim? Given our wish to limit or reduce the illness burden for "this type" of patient, what are the desired results?

③ VALUE → Select starter set of outcomes/cost measures

Functional

- Physical function
- Mental health
- Social/Role
- Other (eg. pain, health risk)

Satisfaction

- Health care delivery
- Personal health benefit

Costs

- Direct medical
- Indirect social

Clinical

- Mortality
- Morbidity
- Complications

Steps:

1. Select a clinically significant population.
2. Assemble an interdisciplinary team.
3. Use brainstorming or nominal group technique to generate "long" list of measures.
4. Start with most (critical) on the compass and go clockwise thereafter.
5. Use brainstorming to identify "short" list of 4 to 12 key measures of outcomes and costs.
6. Determine what data are needed versus what data can be obtained in real time at affordable cost.
7. Use side B of worksheet to record names and definitions of selected measures of value.

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Clinical Value Compass Worksheet, Side B

④ SPECIFIC OPERATIONAL DEFINITIONS → for key outcome and cost measures

IPS: Writing Definitions

A conceptual definition is a brief statement describing a variable of interest. It should list people **about** you want to measure and who "own" it.

An operational definition is a clearly specified method for reliably sourcing, classifying, or measuring a variable. It should be written as an instruction set, or protocol, that would enable **any** person to measure the variable, by using the same process and thereby producing the same result. It should explain to people **how** a variable should be measured.

Variable name and brief conceptual definition	Source of data and operational definition
A. _____ Owner: _____	
B. _____ Owner: _____	
C. _____ Owner: _____	
D. _____ Owner: _____	
E. _____ Owner: _____	
F. _____ Owner: _____	
G. _____ Owner: _____	
H. _____ Owner: _____	

Time to Exercise!



Exercise

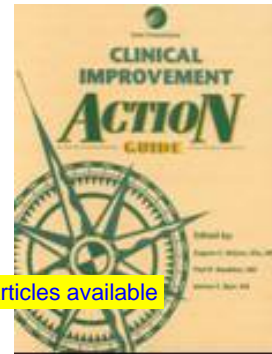
- Use Clinical Value Compass Worksheet
- Complete side 1 of the Worksheet for your ICN ... use a flipchart to make your value compass
- Be prepared to report out your results

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Value Compass Approach: The Benefits

- Way to link fundamental clinical goals to measured outcomes
- Links patient case mix variables with real clinical care processes with key outcomes
- A place (compass point) for everyone – patients, families, doctors, nurses, employers, payors, et. al.

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Book & Articles available

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Next Steps

Part 3: Thinking Ahead

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Your ICN Value Compass: Next Steps for Consideration

1. Complete the value compass worksheet
2. Select 1 or 2 measures from each compass point
3. Begin measuring at shortest possible interval (e.g., daily, weekly, monthly)
4. Start a data wall to display your results
5. Reflect on results and use for improvement (PDSA) if below target value or monitoring (SDSA) if at target value

***References: www.clinicalmicrosystem.org
(Locate relevant pages on web)

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Von Value Compass: Next Steps for Consideration

1. Identify sites that wish to collaborate on designing a VON-wide, version 1.0 value compass
2. Select a “captain” for this work
3. Establish aim, vision, guiding principles
4. Design & test prototype VON value compass for use for learning and benchmarking – best measured results & best practices used to achieve these results

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Better Organizing Your Own Clinical Microsystem: 2 Ideas

1. Coach Development
 - Send a “coach” to the Dartmouth summer camp on learning to be a microsystem coach
2. Self Assessment & Improvement
 - Complete the Assessing Your Practice Workbook (“Greenbook”) and make improvements based on your results and using Clinical Microsystem Action Guide

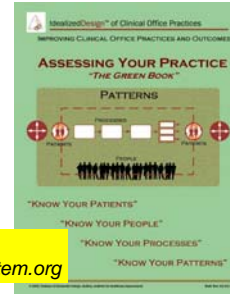
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Caring for Patients & Growing Microsystems

- PATIENTS ...
 - Assess
 - Diagnose
 - Treat
 - Involving the patient & family in the process
- MICROSYSTEMS...
 - Assess
 - Diagnose
 - Treat
 - Involving the microsystem players in the process

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Assess & Diagnose: Assessing Your Practice



See
Clinicalmicrosystem.org

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Treat: Clinical Microsystem Action Guide



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Wrap Up



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Making it the best

- Develop good “habits” -- measuring & improving processes/outcomes, using evidence-base, scientific method, interdisciplinary approach, & collaboration
- Build your own capacity to improve -- quality of care and quality of worklife -- from the inside out at the frontline of care
- Strive to deliver perfect care and to make perfect handoffs

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The Last Word

Great microsystems come from great leaders and great staff.

They give patients & families what they need and enable staff to be proud of their work.

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If you want to learn more . . .

www.clinicalmicrosystem.org

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If you want to learn more . . .

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If you want to learn more . . .

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If you want to learn more . . .

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If you want to learn more . . .

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If you want to learn more . . .

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