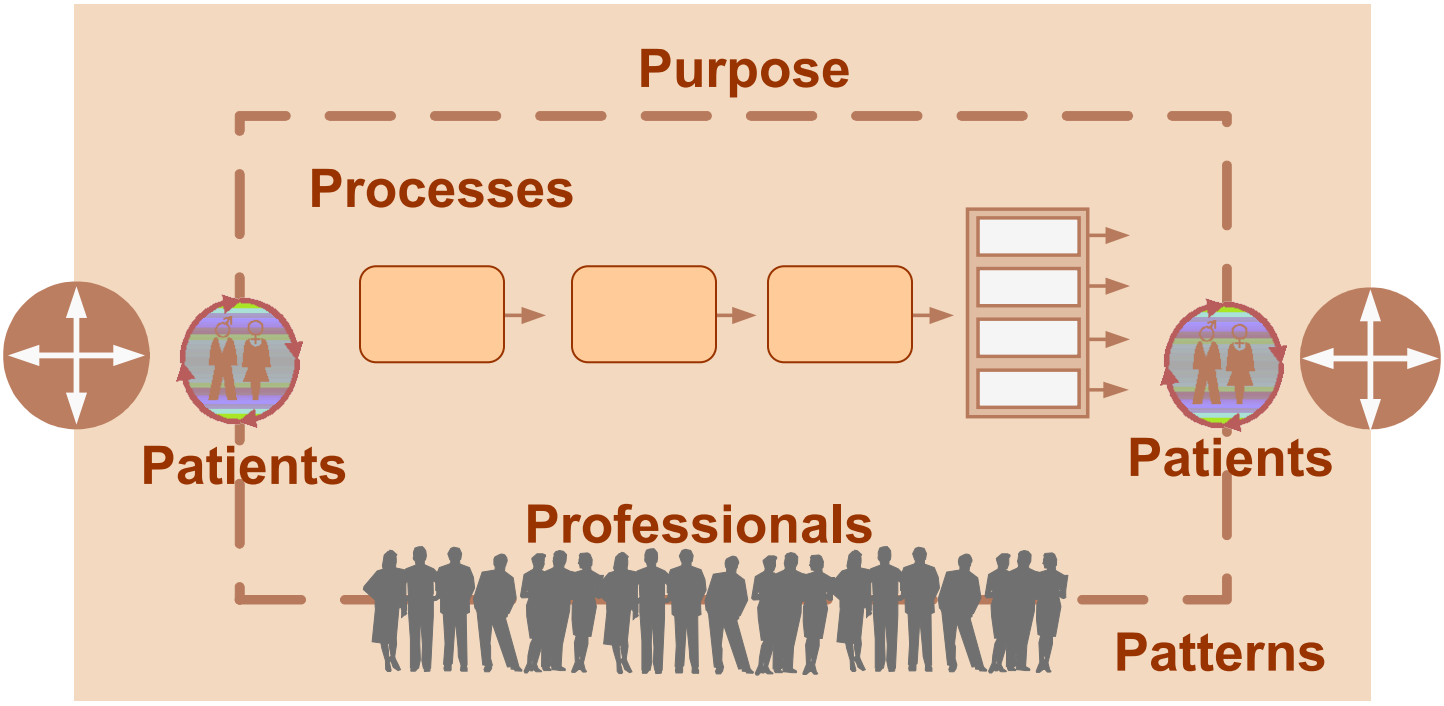
Assessing, Diagnosing and Treating Your Neonatal Intensive Care Unit

Know and Improve Your Microsystem



Introduction

Background

Clinical microsystems are the front-line units that provide most health care to most people. They are the places where patients and families and care teams meet. The patient is always the person at the center of every clinical microsystem. Microsystems are the place where care is made -- quality, safety, reliability, efficiency and innovation are made (or lost) here. Staff morale and patient satisfaction are made here. Microsystems include patients, families, clinicians, support staff, processes, technology and recurring patterns of information, behavior and results. Microsystems are the building blocks that form hospitals. The quality of hospital care can be no better than the quality produced by the small systems that come together to provide care. Here's the hospital quality equation:

Hospital Quality = Quality of Microsystem $_1$ + Quality of Microsystem $_2$ + Quality of Microsystem $_{3\text{-}n}$

All health care professionals -- and we believe all front line clinical and support staff are professionals -- have 2 jobs. Job 1 is to provide care. Job 2 is to improve care. Finding time to improve care can be difficult, but the only way to improve and maintain quality, safety, efficiency and flexibility is by blending analysis, changing, measuring and redesigning into the regular patterns, the daily habits, of front-line clinicians and staff. Absent intelligent, dedicated improvement work, by all staff in all units, quality, efficiency and pride in work will not be made nor sustained. This workbook provides tools and methods that busy clinical teams can use to improve the quality and value of patient care as well as the work-life of all staff who contribute to patient care. These methods can be adapted to a wide variety of clinical settings, large and small, urban and rural, community-based and academic.

A Path Forward and Table of Contents

This workbook provides a guide for making a path forward towards higher performance. Just as you can assess, diagnose and treat patients; you can assess, diagnose and treat your clinical microsystem. This workbook is designed to guide your clinical microsystem on a journey to develop better performance. There are many good ways to improve performance; research shows that this is one of those good ways.

The table of contents lists the basic steps on the path forward along with the page numbers in the Workbook that correspond to these steps. It should be adapted in ways that make sense to you. Throughout the workbook you will see **WWW.** to signal additional information, forms, tools and examples are available at www.clinicalmicrosystem.org

Neonatal Intensive Care Unit Profile

A. Purpose:

Why does your unit exist?

List Neonatal Intensive Care Unit Leaders:	Site Contact:	Date:
Unit Leader:	Unit Leader:	Unit Leader:

B. Know Your Patients: Take a close look into your unit, create a "high-level" picture of the PATIENT POPULATION that you serve. Who are they? What resources do they use? How do the patients view the care they receive? (WWW.)

Est. Age Distribution of Pts:			
Gest. Age	%	Days of Life	%
22 - 25 wks		< 1 week	
26 - 29 wks		1 wk - 1 mo	
30 - 34 wks		> 1 mo	
35 - 37 wks			
38 - 42 wks		% Female	
Multiples: twins, triplets			
Age Range at Admission:			

Family	%
Single Parent Home	
2 Parent Home	
Parent & Partner	
Live with Other Extended Family	
Foster Care	
Group Home	
Skilled Care Facility	
Homeless	

Patient Type	LOS avg	Range
VLBW		
Term		

Point of Entry	%
In born	
In-house Transfer	
Transport	
ED	
Home	

Top 4 Diagnosis	Top 4 Discharges
1.	1.
2.	2.
3.	3.
4.	4.

Discharge Disposition	%
Home with/without Health Supports	
Home with Special Care Equipment	
Transfer	
In-house Transfer	
Extended Care Facility	

Gestational age at D/C _____

Mortality Rate _____

***Complete "Through the Eyes of Your Patient", pg 5**

Parent Satisfaction Scores- % Met Expectations			
Parents:	%	Parents:	%
Social Support		Feel Like a Parent	
Pain		Financial Concerns	
Know Your Baby		Participate in Care	
Quality = "Excellent"		Prepared at Discharge	
Parents Would Recommend this Hospital			

Pt Population Census: #s Change by Season?					Y/N
Census	# Ventilated	# CPAP	# ECMO	# Chronic	
6 am					
noon					
6 pm					
11 pm					
Day					
Week					
Year					

# of 7 Day Readmit Rate from Home	
# of 7 Day Readmit Rate from Hospital	
# of Our patients in Other Units	
# of Off Service Patients on Our Unit	
# of Turn-a-ways	

C. Know Your Professionals: Use the following template to create a comprehensive picture of your unit. Who does what and when? Is the right person doing the right activity? Are roles being optimized? Are all roles who contribute to the patient experience listed? (WWW.)

Current Staff-Actual	Day FTEs	Evening FTEs	Night FTEs	Weekend FTEs	Over-Time by Role
Neonatologists Total					
Fellows Total					
Residents Total					
NNP/CNSs Total					
Physician Assistant Total					
RNs Total					
LPNs Total					
PCA/LNAs Total					
Child Development Total					
Discharge Coordinator					
Respiratory Therapy Total					
Social Worker Total					
Nutrition Therapy Total					
Pharmacist Total					
Nurse Educator Total					
Other Ancillary Staff Total					
Who are your learners?					
Staff Satisfaction Survey	How stressful is the unit? __% Not Stressful			Would you recommend it as a great place to work? __% Strongly Agree	

Admitting Medical Service	%
Neonatology	
Cardiology	
Pediatrics	
Surgery Specialties	
Other	

Supporting Diagnostic Departments

(e.g. Lab, Cardiology, Radiology)

Do You Use:

Per Diem/Standbys	___Yes	___NO
Travelers	___Yes	___NO
Float Pool	___Yes	___NO
On-call Staff	___Yes	___NO

***Each staff member should complete the Personal Skills Assessment and "The Activity Survey", pgs 7- 9**

D. Know Your Processes: How do things get done in the microsystem? Who does what? What are the step-by-step processes? How long does the care process take? Where are the delays? What are the "between" microsystems hand-offs? (WWW.)

1. Create flow charts of routine processes.

a) Admit to Unit
b) Usual Unit Care (critical, intermediate, transitional)
c) Attending High Risk Deliveries
d) Change of Shift Process
e) Discharge Process
f) Transfer to Another Facility Process
g) Adverse Event

Do you use/initiate any of the following?

Check all that apply

☐ Standing Orders/Critical Pathways
☐ Rapid Response Team
☐ Bed Management Rounds
☐ Multidisciplinary/with Family Rounds
☐ Midnight Rounds
☐ Preceptor/Charge Role
☐ Discharge Goals

Capacity	# Rooms _____	# Beds_____

Rooming-in Capability # Beds_____

Linking microsystems

(e.g. PICU, Labor & Delivery, Step down)

2. Complete the Core and Supporting Process Assessment Tool, pg 11

E. Know Your Patterns: What patterns are present but not acknowledged in your microsystem? What is the leadership and social pattern? How often does the microsystem meet to discuss patient care? Are patients and families involved? What are your results and outcomes? (WWW.)

- Does every member of the unit meet regularly as a team?
- How frequently does the team meet?
- What is the most significant pattern of variation?
- Do the members of the unit regularly review and discuss safety and reliability issues?
- What have you successfully changed?
- What are you most proud of?
- What is your financial picture?

***Complete "Metrics that Matter", pg 15**

Family Satisfaction with Neonatal Intensive Care Unit Experience Survey "Point of Service"

Families have valuable insight into the quality and process of care we provide. Real time feedback can pave the way for rapid responses and quick tests of change. This "Point of Service" Survey can be completed at the time of hospitalization to give real time measurement of satisfaction. **WWW**

Neonatal Intensive Care Unit Parent Survey

Date: _____

During your baby's hospital stay:

1. Was someone available to help you if you needed or wanted help (social support)?

   ❑ Yes, as much as I wanted ❑ Yes, quite a bit ❑ Yes, some ❑ Yes, a little ❑ No, not at all

2. How much pain or discomfort do you feel your baby has experienced?

   ❑ None at all ❑ A little bit ❑ Some ❑ Quite a bit ❑ Severe

3. How well do you know your baby: personality, likes and dislikes, ways your baby is calmed?

   ❑ Very well ❑ Pretty well ❑ Some ❑ A little ❑ Not well at all

4. During your baby's stay, how often did you feel like a parent?

   ❑ Always felt like my baby's parent ❑ Felt like a parent most of the time ❑ Often felt like my baby's parent ❑ Only felt like parent once in a while ❑ Did not feel like my baby's parent at all

5. How concerned are you about the effect of your baby's care on your family's financial health?

   ❑ Not at all ❑ Slightly ❑ Moderately ❑ Quite a bit ❑ Extremely

6. How often have you been able to participate in your baby's care?

   ❑ Never ❑ Some ❑ Just right ❑ Too much

7. Overall, how would you rate the care you and your baby have received in this hospital?

   ❑ Excellent ❑ Very good ❑ Good ❑ Fair

8. Would you recommend this hospital to other parents if their baby had a problem like yours?

   ❑ Yes ❑ No ❑ Not sure

9. How ready do you feel you are to care for your baby after discharge from the hospital?

   ❑ Extremely ready ❑ Quite ready ❑ Moderately ready ❑ A little bit ready ❑ Not at all ready

Thank You For Completing This Survey

Adapted from www.How's Your Baby.com © 2004

Through the Eyes of Your Patients' Families
"A Day in the Life of a Baby and Family"

Gain insight into how your families and babies experience your Neonatal Intensive Care Unit. One simple way to understand the baby and family experience is to experience the care. Members of your staff should do a "A Day in the Life of a Baby and Family" on your unit. Try to make this experience as real as possible, this form can be used to document the experience.

You can also capture the baby and family experience by making an audio or videotape. WWW.

Tips for making the "Day in the Life" most productive:

1. Determine with your staff where the starting point and ending points should be, taking into consideration admissions, the actual Neonatal Intensive Care Unit process, change of shift, discharge process and other processes.
2. Two members of the staff should role play with each playing a role.
3. Set aside a reasonable amount of time to experience the baby and family journey. Consider doing multiple experiences along the journey at different times.
4. Make it real. Include time with lab tests, rounds, medications, and shift reports. Sit where the family sits. Make a realistic paper trail including chart, lab reports and discharge planning.
5. During the experience note both positive and negative experiences, as well as any surprises. What was frustrating? What was gratifying? What was confusing? Again, an audio or video tape can be helpful.
6. Debrief your staff on what you did and what you learned.

Date: _____ Staff Members: _____

Walk Through Begins When: _____ Ends When: _____

Positives	Negatives	Surprises	Frustrating/Confusing	Gratifying

Adapted from the original version, Vermont Oxford Network, Version 1, January, 2005.

Neonatal Intensive Care Unit Staff Satisfaction Survey

Creating a joyful work environment starts with a basic understanding of staff perceptions of the unit. Each staff member should complete this survey. Provide a box for staff to drop completed surveys. Use a tally sheet to summarize results. (WWW.)

Neonatal Intensive Care Unit Staff Survey

1. I am treated with respect every day by everyone that works in the unit.

❑ Strongly Agree ❑ Agree ❑ Disagree ❑ Strongly Disagree

2. I am given everything I need - tools, equipment, and encouragement - to make my work meaningful to my life.

❑ Strongly Agree ❑ Agree ❑ Disagree ❑ Strongly Disagree

3. When I do good work, someone in the unit notices that I did it.

❑ Strongly Agree ❑ Agree ❑ Disagree ❑ Strongly Disagree

4. How stressful would you say it is to work in this unit?

❑ Very stressful ❑ Somewhat stressful ❑ A little stressful ❑ Not stressful

5. How easy is it to ask anyone a question about the way we care for patients?

❑ Very easy ❑ Easy ❑ Difficult ❑ Very difficult

6. How would you rate other people's attitudes about working here or their morale?

❑ Excellent ❑ Very Good ❑ Good ❑ Fair

7. This unit is a better place to work than it was 12 months ago.

❑ Strongly Agree ❑ Agree ❑ Disagree ❑ Strongly Disagree

8. I would recommend this unit as a great place to work.

❑ Strongly Agree ❑ Agree ❑ Disagree ❑ Strongly Disagree

9. What would make this unit better for patients?

_____

_____

10. What would make this unit better for those who work here?

_____

_____

Neonatal Intensive Care Unit Resources – Personal Skills Assessment

Development of each member in the unit is key to success for staff and the microsystem. The Personal Skills Assessment Tool can help determine education and training needs of each staff member. Each member completes this assessment survey and then discusses the action plan with leadership and other staff. A plan is developed to help members achieve goals so they can become the best they can be. WWW.

Personal Skills Assessment Tool

Name: _____ Unit: _____

Role: _____ Date: _____

Clinical Competencies:

Please create your list of clinical competencies and evaluate.	Want to Learn	Never Use	Occasionally	Frequently
	❑	1 2 3	4 5 6 7	8 9 10
	❑	1 2 3	4 5 6 7	8 9 10
	❑	1 2 3	4 5 6 7	8 9 10
	❑	1 2 3	4 5 6 7	8 9 10
	❑	1 2 3	4 5 6 7	8 9 10
	❑	1 2 3	4 5 6 7	8 9 10

Clinical Information Systems (CIS):

What features and functions do you use?	Want to Learn	Never Use	Occasionally	Frequently
Provider/On Call Schedule	❑	1 2 3	4 5 6 7	8 9 10
Patient Demographics	❑	1 2 3	4 5 6 7	8 9 10
Lab Results	❑	1 2 3	4 5 6 7	8 9 10
Pathology	❑	1 2 3	4 5 6 7	8 9 10
Problem List	❑	1 2 3	4 5 6 7	8 9 10
Review Reports/Notes	❑	1 2 3	4 5 6 7	8 9 10
Documentation	❑	1 2 3	4 5 6 7	8 9 10
Direct Entry	❑	1 2 3	4 5 6 7	8 9 10
Note Templates	❑	1 2 3	4 5 6 7	8 9 10
Medication Lists	❑	1 2 3	4 5 6 7	8 9 10
Insurance Status	❑	1 2 3	4 5 6 7	8 9 10
Durable Power of Attorney	❑	1 2 3	4 5 6 7	8 9 10
Radiology	❑	1 2 3	4 5 6 7	8 9 10
OR Schedules	❑	1 2 3	4 5 6 7	8 9 10

NOTE: CIS refers to hospital or clinic-based systems used for such functions as checking in patients, electronic medical records, accessing lab and x-ray information. Customize your list of CIS features to determine skills needed by various staff members to optimize their roles.

Technical Skills:

Please rate the following on where and how often you use them.	Want to Learn	Never Use	Occasionally	Frequently
CIS*	❑	1 2 3	4 5 6 7	8 9 10
E-mail	❑	1 2 3	4 5 6 7	8 9 10
PDA (i.e. Palm Pilot)	❑	1 2 3	4 5 6 7	8 9 10
Digital Dictation Link	❑	1 2 3	4 5 6 7	8 9 10
Word Processing (e.g. Word)	❑	1 2 3	4 5 6 7	8 9 10
Spreadsheet (e.g. Excel)	❑	1 2 3	4 5 6 7	8 9 10
Presentation (e.g. Power Point)	❑	1 2 3	4 5 6 7	8 9 10

Neonatal Intensive Care Unit Resources – Personal Skills Assessment page 2

Development of each member in the unit is key to success. The Personal Skills Assessment Tool can help determine education and training needs of each staff member. Each member completes an individual survey and then discusses the action plan with leadership and other staff. A plan is developed to help members achieve goals so they can become the best they can be. **WWW.**

Name: _____ Unit: _____

Technical Skills cont'd:

Please rate the following on where and how often you use them.	Want to Learn	Never Use	Occasionally	Frequently
Database (e.g. Access or File Maker Pro)	❑	1 2 3	4 5 6 7	8 9 10
Patient database/statistics	❑	1 2 3	4 5 6 7	8 9 10
Internet/Intranet	❑	1 2 3	4 5 6 7	8 9 10
Printer access	❑	1 2 3	4 5 6 7	8 9 10
Fax	❑	1 2 3	4 5 6 7	8 9 10
Copier	❑	1 2 3	4 5 6 7	8 9 10
Telephone system	❑	1 2 3	4 5 6 7	8 9 10
Voice Mail	❑	1 2 3	4 5 6 7	8 9 10
Pagers	❑	1 2 3	4 5 6 7	8 9 10
Tube System	❑	1 2 3	4 5 6 7	8 9 10
Acudose/Pyxis	❑	1 2 3	4 5 6 7	8 9 10

Meeting & Interpersonal Skills:	Want to Learn	Never Use	Occasionally	Frequently
What skills do you currently use?	❑	1 2 3	4 5 6 7	8 9 10
Effective meeting skills (brainstorm/multi-vote)	❑	1 2 3	4 5 6 7	8 9 10
Timed agendas	❑	1 2 3	4 5 6 7	8 9 10
Role assignments during meetings	❑	1 2 3	4 5 6 7	8 9 10
Delegation	❑	1 2 3	4 5 6 7	8 9 10
Problem solving	❑	1 2 3	4 5 6 7	8 9 10
Patient advocacy process	❑	1 2 3	4 5 6 7	8 9 10
Open and effective communication	❑	1 2 3	4 5 6 7	8 9 10
Feedback – provide and receive	❑	1 2 3	4 5 6 7	8 9 10
Managing conflict/negotiation	❑	1 2 3	4 5 6 7	8 9 10
Emotional/spiritual support	❑	1 2 3	4 5 6 7	8 9 10

Improvement Skills and Knowledge:	Want to Learn	Never Use	Occasionally	Frequently
What improvement tools do you currently use?				
Flowcharts/process mapping	❑	1 2 3	4 5 6 7	8 9 10
Trend charts	❑	1 2 3	4 5 6 7	8 9 10
Control charts	❑	1 2 3	4 5 6 7	8 9 10
Plan/Do/Study/Act (PDSA) improvement model	❑	1 2 3	4 5 6 7	8 9 10
Aim Statements	❑	1 2 3	4 5 6 7	8 9 10
Fishbones	❑	1 2 3	4 5 6 7	8 9 10
Measurement and Monitoring	❑	1 2 3	4 5 6 7	8 9 10
Surveys-Patient and Staff	❑	1 2 3	4 5 6 7	8 9 10
Star Relationship Mapping	❑	1 2 3	4 5 6 7	8 9 10
Genograms				

Other Needs:

Neonatal Intensive Care Unit Activity Survey

What do you spend YOUR time doing? What is your best estimation of how much time you spend doing it? Everyone in the unit fills out the activity survey which is a listing of the activities they perform and the amount of time they think they spend doing them.
A **second option** is for each member to make a list of activities performed over the course of a week without time estimation. When one of these options is completed, the group can discuss which activities are or are not appropriate for the individual's level of education, training, and licensure. The goal is to have the right person doing the right thing at the right time. (WWW)

Example

Position: MD	% of Time
Activity: See Babies Specific Items Involved: • Review chart history • Assess/diagnose baby • Meet with family • Determine treatment plan	35%
Activity: Document Patient Encounter Specific Items Involved: • Write/dictate admission notes • Write/dictate progress notes	20%
Activity: Write Prescriptions	5%
Activity: Complete Forms Specific Items Involved: • Referrals • Consults	10%
Activity: Telephone Calls/Pages Specific Items Involved: • Answer nursing questions • Family calls	10%
Activity: Evaluate Test Results Specific Items Involved: • Review results and determine next actions	5%
Activity: Manage Charts	6%
Activity: Coordinate Care/Discharge Plan Specific Items Involved: • Meetings with Clinical Resource Coordinator • Meetings with family and social worker	5%
Activity: Miscellaneous Specific Items Involved: • CME; attend seminars; attend meetings	4%
Total	100%

Example

Position: RN	% of Time
Activity: Reports • Shift • Other facilities •	15%
•	
Activity: Family Education Specific Items Involved: •	3%
Activity: Direct Baby Care • Incubator / Bedside • Transfer babies • •	30%
Activity: Phone Calls with Ancillary Departments Specific Items Involved:	5%
Activity: Patient Care Documentation Specific Items Involved: • Nursing care • Orders • •	22%
Activity: Complete Forms Specific Items Involved: • Lab Requisitions • Referrals	18%
Activity: Page Physicians Specific Items Involved:	5%
Activity: Miscellaneous Specific Items Involved: • CME; attend seminars; attend meetings	2%
Total	100%

Activity Occurrence Example:

What's the next step? Insert the activities from the Activity Survey Here.

Activities are combined by role from the data collected above. This creates a master list of activities by role. Fill-in THE NUMBER OF TIMES PER SESSION (AM and PM) THAT YOU PERFORM THE ACTIVITY. Make a mark by the activity each time it happens, per session. Use one sheet for each day of the week. Once the frequency of activities is collected, the practice should review the volumes and variations by session, day of week, and month of year. This evaluation increases knowledge of predictable variation and supports improved matching of resources based on demand. (WWW)

Role: RN	Date:	Day of Week:	
Baby Activities	AM	PM	Total
Transfer Babies	𝍸 ||	𝍸 ||	14
Family Education	𝍸 |||	|||	11
Incubator / Bedside Care	𝍸 𝍸 𝍸 𝍸 |	𝍸 𝍸 𝍸 𝍸 |	42
Indirect Patient Activities			
Phone Calls	𝍸 𝍸	𝍸 𝍸 𝍸 |	26
Orders	𝍸 𝍸 |	𝍸 |||	19
Reporting	𝍸 |	𝍸 𝍸	16
Page Physicians	𝍸 𝍸	𝍸	15
Documentation	||	|||	5
Total	75	73	148

Neonatal Intensive Care Unit Admission Transport Time Tool

This tool is designed for staff to document detailed information about a patient's admission to the Neonatal Intensive Care Unit. Use the tool to follow the patient's admission transport, noting a time for each point in the process. Cycle times can also be measured for other care processes from beginning to end. WWW.

Admission Transport Time Tool

Day: _____ **Date:** _____

*** Please note if Transport Team is activated to travel to receive baby. Track times from notification to return with baby.**

Time	
	1. Notification of need for admission.
	2. Baby Team departs from referring facility.
	3. Baby arrives at unit.
	4. RN initiates admission process.
	5. Baby assessed by provider.
	6. Implementation of appropriate treatment/diagnostic tests.
	7. Parents oriented to unit.
	8. Admission complete.

Comments:

Neonatal Intensive Care Unit Know Your Processes
Core and Supporting Processes

Ask each member of the staff to rate the core and supporting processes using this worksheet. Based on the results, staff members choose what to work on improving. Rate each process by putting a tally mark under the heading which most closely matches your understanding of the process. Also mark if the process is a source of patient complaints.
Steps for Improvement: Explore improvements for each process based on the outcomes of this assessment tool. Each of the processes below should be flowcharted in its' current state. Once you have flowcharted the current state of your processes and determined your change ideas, use the PDSA Cycle Worksheet to run tests of change and to measure. WWW.

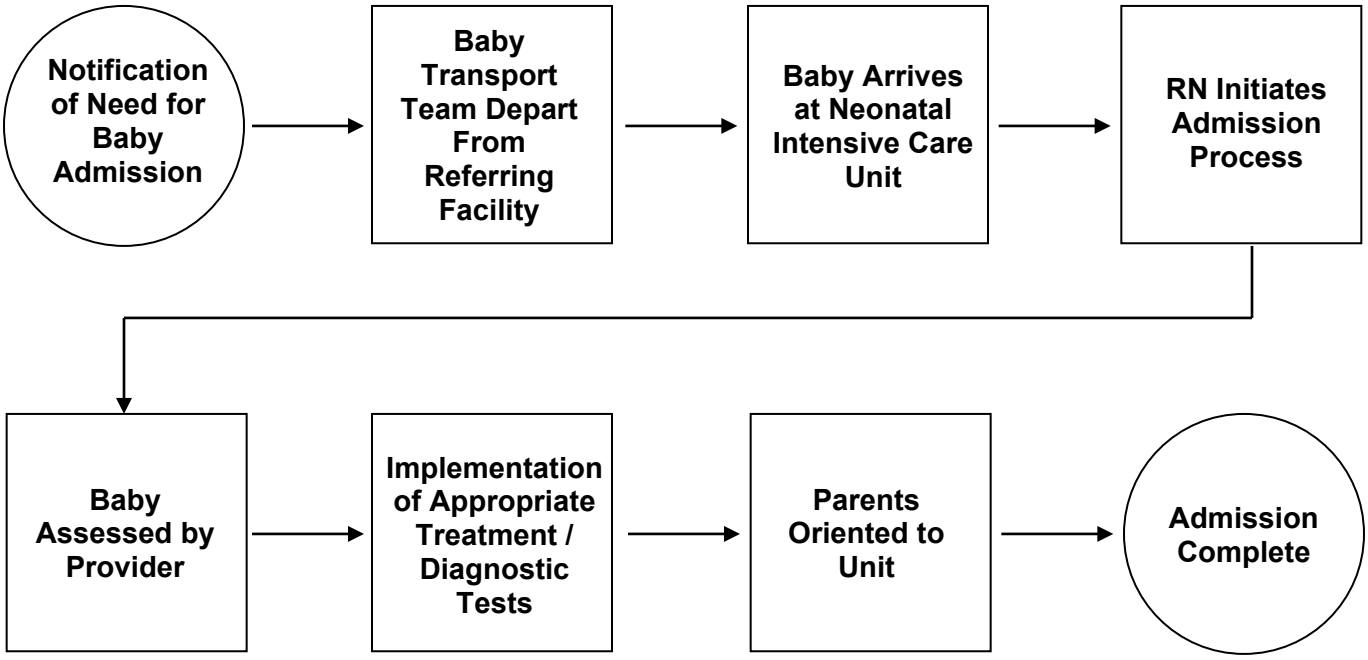
Processes	Works Well	Not a Problem	Small Problem	Real Problem	Totally Broken	Cannot Rate	We're Working On It	Source of Patient Complaint
Admission								
Routine Care								
Transfer								
Discharge								
Rocking Babies								
Medication Administration								
Adverse Drug Event								
Code								
Feeding Babies								
Pain Management								
Answering Baby Alarms								
At Risk for Skin Breakdown								
Communicating with Families								
Laboratory Specimens								
Pharmacy Ordering								
Pharmacy Receiving								
Pharmacy Questions								
Dietary Process								
Provider Orders								
Medical Records								
CIS								
Follow Up Appointments								
End of Life/Code Status								
Bed Management								
Answering Phones								
Hazardous Materials								
Housekeeping								
Consultations								
Materials and Equipment								
Bedside Safety Assessment								
Transport								
Discharge Home								
Discharge Hospital								

Neonatal Intensive Care Unit High Level Flowchart

C. Know Your Processes: WWW.

With your interdisciplinary team:

1) Create a flowchart of the current admission process.
2) Create a flowchart of the core patient processes in the Neonatal Intensive Care Unit. Use the Core and Supporting Process Tool as a guide, pg 11.
3) Review the flowchart to identify unnecessary rework, delays and opportunities to streamline and improve.



Symbol Key:

- Process beginning or end
- Activity step
- Decision points
- Waits and delays
- Process flow direction
- Connector (e.g. off page)

The Unplanned Activity Tracking Card assists the staff in identifying waits and delays in the process of providing smooth and uninterrupted patient care. Each staff member carries the card during a shift and documents when patient care is delayed or interrupted. Noticing patterns of unplanned activities can alert staff to possible improvements. This collection tool can be adapted for any role in the unit to discover interruptions in work flow. Circle the tally mark totals to indicate processes to further evaluate for possible improvements. **WWW.**

Unplanned Activity Tracking

Name: _____

Date: _____ Time: _____

Place a tally mark for each occurrence of an unplanned activity	Total
Admissions	
Interruptions	
• Phone	
• Secretary	
• Pharmacist	
• Nursing	
• Students/Faculty	
• Dietary	
• Housekeeping	
• Clinical Resource Coordinator	
• Family Discussions	
Pages	
Alarms	
Missing Chart	
Missing Supplies	
Missing Test Results	
Equipment Alarms	
Other	

Unplanned Activity Tracking

Name: _____

Date: _____ Time: _____

Place a tally mark for each occurrence of an unplanned activity	Total
Admissions 𝍸 𝍸 𝍸 𝍸	20
Interruptions	
• Phone 𝍸 𝍸 𝍸	15
• Secretary	
• Pharmacist 𝍸 𝍸	10
• Nursing	
• Students/Faculty 𝍸 𝍸 𝍸	12
• Dietary	
• Housekeeping 𝍸 𝍸 𝍸 𝍸	20
• Clinical Resource Coordinator	
• Family Discussions 𝍸	5
Pages 𝍸 𝍸	10
Alarms	
Missing Chart	◯
Missing Supplies	
Missing Test Results 𝍸	5
Equipment Alarms	
	◯
Other	

Neonatal Intensive Care Unit Unplanned Activity Tracking Card

Neonatal Intensive Care Unit Telephone Tracking Log

The demand telephone tracking log will help you understand what calls and the volumes that are being made to the unit. Put a tally mark each time one of the phone calls is for one of the listed categories. Total the calls for each day and then total the calls in each category for the week. Note the changes in volume by the day of the week and am/pm. www.

Week of _____	Family		Other Hospital		Social Workers		Clinical Resource Coord.														Total
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Monday																					
Total																					
Tuesday																					
Total																					
Wednesday																					
Total																					
Thursday																					
Total																					
Friday																					
Total																					
Saturday																					
Total																					
Sunday																					
Total																					
Week Total																					

Neonatal Intensive Care Unit Metrics That Matter

Introduction and Guidelines

Measures are essential for microsystems to make and sustain improvements and to attain high performance. All clinical microsystems are awash with data but relatively few have rich information environments that feature daily, weekly and monthly use of Metrics That Matter (MTM). The key to doing this is to get started in a practical, doable way and to build out your Metrics That Matter and their vital use over time. Some guidelines for your consideration are listed below. Remember these are just guidelines and that your microsystem should do what makes sense in the way of collecting, displaying and using Metrics That Matter. (WWW)

1. **W**hat? Every microsystem has vital performance characteristics, things that must happen for successful operations. Metrics That Matter (MTMs) should reflect your microsystem's vital performance characteristics.

2. **W**hy? The reason to identify, measure and track MTMs is to ensure that you are not "flying blind." Safe, high quality and efficient performance will give you specific, balanced and timely metrics that show:
   a. When improvements are needed
   b. If improvements are successful
   c. If improvements are sustained over time, and
   d. The amount of variation in results over time

3. **H**ow? Here are steps you can make to take advantage of MTMs.

Lead Team

Work with your Lead Team to establish the need for metrics and their routine use.
Quality begins with the intention to achieve measured excellence.

Balanced Metrics

Build a balanced set of metrics to provide insight into what's working and what's not working. Some categories to consider are: process flow, clinical, safety, patient perceptions, staff perceptions, operations, and finance/costs. Avoid starting with too many measures.
Every metric should have an operational definition, data owner, target value and action plan.
Strongly consider using the "national" JCAHO*, CMS* metrics whenever they are relevant to your microsystem. Consider other "vital" metrics based on your own experience, strategic initiatives and other "gold standard" sets such as standards from NQF* and professional organizations like ASTS*.

Data Owner

Start small and identify a data wall owner(s) who is guided by the Lead Team.
Identify a data owner(s) for each metric. The owner will be responsible for getting this measure and reporting it to the Lead Team. Seek sources of data from the organization systems.
If the needed data is not available, use manual methods to measure. Strive to build data collection in the flow of daily work.

Data Wall

Build a data wall and use it daily, weekly, monthly, and annually.
Gather data for each metric and display it on the "data wall" reporting:

- Current value
- Target Value
- Action Plan to improve or sustain level

Display metrics as soon as possible –daily, weekly, monthly metrics are most useful– using visual displays such as time trend charts and bar charts.

Review and Use

Review your set of metrics on a regular basis- daily, weekly, monthly, quarterly, annually.
Use metrics to make needed improvements whenever possible.
Make metrics fun, useful and a lively part of your microsystem development process. Discuss Metrics That Matter frequently and take action on them as needed.

* JCAHO, Joint Commission on Accreditation of Healthcare Organizations
CMS, Centers for Medicare and Medicaid Services
NQF, National Quality Foundation
ASTS, American Society of Thoracic Surgeons

Neonatal Intensive Care Unit Metrics That Matter

Name of Measure	Definition & Data Owner	Current & Target Values	Action Plan & Process Owner
General Metrics			
Patient-Centered Outcome Measures			
Flow			
Staffing Patterns			
Safety			
Patient Satisfaction			
Infections			
Finance			

Neonatal Intensive Care Unit Metrics That Matter

Name of Measure	Definition & Data Owner	Current & Target Values	Action Plan & Process Owner

Diagnose the Neonatal Intensive Care Unit

Introduction and Guide

With the Interdisciplinary Lead Team, review the data and information gathered from the assessment of the microsystem and the Metrics That Matter. Look not only at the detail of each of the assessment tools, but also synthesize all of the assessments and Metrics That Matter to "get the big picture" of the microsystem. Identify linkages within the data and information. Consider:

- Mismatches between the patient population needs and the professionals assembled to provide care and services. Maybe new services and care should be designed.
- Waste and delays in the process steps. Look for processes that might be redesigned to result in better functions for roles and better outcomes for patients.
- Patterns of variation in the microsystem. Be mindful of smoothing the variations or matching resources with the variation in demand.
- Patterns of outcomes you wish to improve.

Use the "Purpose" of the microsystem to help determine the direction of the improvements.

Once the review is completed, select a first "theme" to focus on improvements. This theme will be followed by many specific aims and Plan-Do-Study-Act cycles to lead to the improvement of the overall theme. Some of the themes to consider:

- Safety
- Flow
- Reliability
- Patient/family satisfaction
- Diagnosis specific
- Supply and Demand

Write your Theme for Improvement www

Overall Theme Aim Statement

Create an aim statement that will help keep your focus clear and your work productive:

We aim to improve: _____
(Name the process)

In: _____
(Clinical location in which process is embedded)

The process begins with: _____
(Name where the process begins)

The process ends with: _____
(Name the ending point of the process)

By working on the process, we expect: _____
(List benefits)

_____

_____

It is important to work on this now because: _____
(List imperatives)

_____

_____

_____

Treat Your Neonatal Intensive Care Unit

Once you have completed the assessment and diagnosis of your Neonatal Intensive Care Unit and have a clear theme to focus on, review current Best Practice and Change Ideas to Consider.
The Change Ideas will be changing as more field testing is done and more colleagues design improvements.

Neonatal Intensive Care Unit Change Ideas to Consider:

1.
2.
3.
4.
5.
6.
7.
8.
9.

Consider the Change Concepts on page 295 of The Improvement Guide by Langley, Nolan, Norman and Provost (1996). The main change categories are listed below.

a. Eliminate Waste
b. Improve Workflow
c. Optimize Inventory
d. Change the Work Environment
e. Enhance the Producer/Customer Relationship
f. Manage Time
g. Manage Variation
h. Design Systems to Avoid Mistakes
i. Focus on the Product or Service

Langley G, Nolan K, Nolan T, Norman T, Provost L. *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance*. 1st ed. The Jossey-Bass Business & Management Series. San Francisco, CA: Jossey-Bass Publishers; 1996: xxix, 370.

Treat Your Neonatal Intensive Care Unit

Specific Aim Statement

Draft a Specific Aim Statement related to the theme that you intend to improve. WWW.

Specific Aim Statement

Create a sample aim statement that will help keep your focus clear and your work productive.
Use numerical goals, specific dates, and specific measures.

Specific Aim: _____

_____

Measures: _____

_____

_____

Plan-Do-Study-Act

Complete the Plan-Do-Study-Act Worksheet to execute the change idea in a disciplined measured manner. WWW.

***P**lan* → How shall we PLAN the pilot? Who? Does what? When? With what tools? What baseline data will be collected?

Tasks to be completed to run test of change	Who	When	Tools Needed

Do → What are we learning as we DO the pilot? What happened when we ran the test? Any problems encountered? Any surprises?

Study → As we study what happened, what have we learned? What do the measures show?

Act → As we ACT to hold the gains or abandon our pilot efforts, what needs to be done? Will we modify the change? Make a PLAN for the next cycle of change.

Treat Your Neonatal Intensive Care Unit

Plan-Do-Study-Act cont'd

The Lead Team should continue to meet weekly to review progress in the design of the PDSA and then during the execution of the test of change in a pilot format to observe and learn about the Change Idea implementation. Remember to always test change ideas in small pilots to learn what adaptations and adjustments need to be made before implementing on a larger scale. Data collection and review during the testing is important to answer the question: How will we know if the Change Idea is an improvement?

Once the PDSA is complete and the Lead Team reviews the data and qualitative findings, the plan should be revised or expanded to run another cycle of testing.
When the Change Idea has been tested and adapted to the context of the clinical microsystem and has demonstrated data to know it makes an improvement, the Lead Team should design the Standardize-Do-Study-Act (SDSA) process to ensure the process is performed as designed. Important to this step is to continually learn and improve by monitoring the steps and data to identify new opportunities for further improvement.

Standardize-Do-Study-Act SDSA

S: standardize the process (specify what roles do what activities in what sequence with what information flow). A good way to track and standardize process is through the creation of a Neonatal Intensive Care Unit Playbook. The Playbook is the collection of process maps to provide care and services that all staff are aware of and accountable for. The Playbook can be used to orient new staff, document current processes and for performance appraisals.

D: do the work to integrate the standard process into daily work routines to ensure reliability and repeatability.

S: study at regular intervals. Consider if the process is being "adhered" to and what "adjustments" are being made. Review the process when new innovations, technology or roles are considered. Review what the measures of the process are showing.

A: based on the above, maintain or "tweak" the standard process and continue doing this until next "wave" of improvements/innovations takes place for a new series of PDSA cycles.

Follow-Up www.

Improvement in health care is a continuous journey.

The new patterns need to be monitored to ensure the improvements are sustained. Embedding new habits into daily work with the use of "huddles" to review and remind staff as well as weekly Lead Team meetings to stay focused on improvements and results can lead to sustained and continuous improvements.

Datawalls, storyboards and monthly all-staff meetings are methods to embed new habits and thinking for improvements.

The Lead Team should repeat the process for newly identified themes and improvements as identified in the assessment and Metrics That Matter.

Neonatal Intensive Care Unit Case Study

An example of a Neonatal Intensive Care Unit journey through this process is presented by Vermont Oxford Network. The accompanied storyboard provides information and data to be embedded in the unit environment to "get everyone in the game" of improvement through illustration and updates of improvement progress and data. **WWW.**

Introduction

Our Developmental Journey

Assess: Getting to know our Purpose:

Getting to know our Patients:

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Getting to know our Professionals:

Getting to know our Processes:

Getting to know our Patterns:

Diagnosis:

Treatment:

Results:

Lessons Learned

Conclusion and Next Steps

Neonatal Intensive Car Unit Storyboard

AIM:

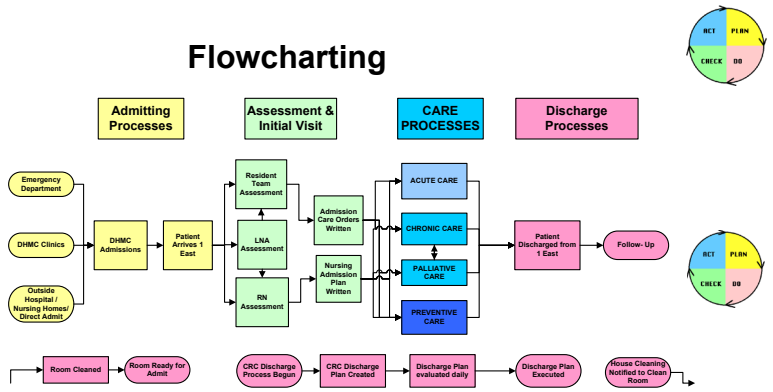
SPECIFIC AIM:

TEAM LEADERS

METHODOLOGY

CHANGES

BACKGROUND



RESULTS

TIMELINE