Implementing Clinical Nurse Leader into Microsystems

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August 25, 2017
Objectives

• Describe how the integration of the CNL role into microsystem staffing models is evidence based.
• Explain evidence based strategies to plan and execute improvement efforts.
• Articulate how to enhance front line staff engagement in improvement work.
Problem

• How was the project chosen?
  • Inpatient care microsystems
    • Patient care outcomes not reflective of care we want to give
    • EBP not embedded at the bedside—tools not consistently used
    • Patient education
    • Staff education
  • Human Resources
    • Several new CNLs in the organization—interested in using their education and skills
    • Keep new CNLs engaged at the microsystem
Significance

• Significance
  • CNLs are trained to address all of the issues mentioned above
  • Want to keep these RNs in the microsystem
  • Specific quality and patient safety issues need focused assessment and intervention in Microsystems to then effect macro system outcomes

• The question remained, how can I best leverage the skill set of the CNLs in the ICU microsystem.

• To answer this question, I needed to know the answer to the question “What exactly is a CNL?”
CNL Role
Background of the CNL role

• Institute of Medicine reports:
  • To Err is Human: Building a Safer Health System (1999)
    • High number of deaths from medical errors
    • Cost of errors
    • Fragmented care delivery system
  • Crossing the Quality Chasm (2001)
    • Health care system does not make the best use of resources
    • Health professionals and organizations need to promote safe, effective, patient-centered, timely, efficient, and equitable healthcare
  • Health Professions Education: A Bridge to Quality (2003)
    • Health professional education focused on patient-centered care delivery
    • Interdisciplinary team use evidence-based practice, quality improvement and informatics

(American Association of Colleges of Nursing, 2007)
Background of the CNL role

- American Association of Colleges of Nursing (2007)
  - Introduced a new role: Clinical Nurse Leader (CNL)

- 10 assumptions
- Core Competencies
- CNL Roles

A CNL is a master-prepared advanced generalist that practices at the microsystem level across the continuum of care. The purpose of the CNL is to defragment the system by promoting group processes of the interdisciplinary team through horizontal leadership and lateral integration. The CNL is accountable for quality outcomes for a specific group of patients.

(American Association of Colleges of Nursing, 2007)
10 assumptions of the CNL Role

1. **Practice is at the microsystems level**
2. Patient outcomes are the measure of quality practice
3. Practice guidelines are based on evidence
4. Patient-centered practice is intra and interdisciplinary
5. Information will maximize self-care and patient decision making
6. Nursing assessment is the basis for theory and knowledge development
7. Good fiscal stewardship is a condition of quality care
8. Social justice is an essential nursing value
9. Communication technology will facilitate the continuity and comprehensiveness of care
10. The CNL must assume guardianship for the nursing professions
Core Competencies

- Critical Thinking
- Communication
- Assessment
- Nursing Technology and Resource Management
- Health Promotion, Risk Reduction, and Disease Prevention
- Illness and Disease Management
- Information and Health Care Technologies

- Ethics
- Human Diversity
- Global Health Care
- Health Care Systems and Policy
- Provider and Manager of Care
- Designer/manager/Coordinator of Care
- Member of a Profession

Now how does this transfer to practice?
CNL Roles

 Clinician  Outcomes Manager  Client Advocate  Educator

 Member of a Profession  Team Manager  Systems Analyst/Risk Anticipator  Information Manager

 Lifelong Learner
Summarize

• Master-prepared nurse that acts as a leader in health care delivery system
  • can be any setting where health care is delivered (not just acute settings)
• **Not** an administration or management role
• Functions within a **microsystem** - assumes accountability for quality outcomes of a **specific group of patients within a unit or setting**
• Uses research-based information and improvement methodologies to design, implement, and evaluate plans of care
• Leverages unique knowledge of the microsystem to anticipate and mitigate risks and defragment the system through lateral integration
• Coordinates, delegates, and supervises care provided by the health care team **at the point of care**
Literature Search
PICOT Question

P: microsystem nursing departments
I: integration of CNLs
C: systems that do not employ CNLs
O: nursing sensitive quality scores (HAPU, CLABSI, VAP, CAUTI, Falls, Readmissions, Patient Satisfaction)
T: one-year period

In microsystem nursing departments (P), does the integration of CNLs (I) compared to systems that do not employ CNLs (C) affect nursing sensitive quality scores (O) over a one-year period of time (T)?
Search Strategy

• Databases: Pubmed, CINAHL, Joanna Briggs Institute

• Key words searched: CNL, Clinical Nurse Leader, nursing clinical outcomes, patient clinical outcomes, implementation

• Number of articles yielded: 38, further refinement yielded 21 applicable studies/articles

• Inclusion criteria:
  • 2006-2016
  • English
  • Studies that focused on outcomes and implementation of CNL role
  • Multiple healthcare settings

• Exclusion criteria:
  • Articles focused on CNL education models or collaborative models with schools and practice environments for students
  • Articles about other organizations endorsing the AACN’s position on the CNL role
## Synthesis Table

<table>
<thead>
<tr>
<th>Intervention</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient satisfaction</td>
<td>↑</td>
<td>↑</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Staff satisfaction/engagement with CNL role</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Team communication and collaboration</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>↑</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Patient specific positive outcomes</td>
<td>↑</td>
<td>NE</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
</tr>
<tr>
<td>Patient clinical outcomes (examples: pain management, HAPU, falls, procedure no-show rates)</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>↑</td>
<td>↑</td>
<td>NE</td>
</tr>
<tr>
<td>Patient/family education</td>
<td>↑</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>NE</td>
<td>↑</td>
<td>NE</td>
</tr>
</tbody>
</table>

Note: Corresponding articles noted on reference pages.
Conclusions

• Patient care and quality results of CNL implementation are encouraging despite minimal studies and lower levels of evidence
• Available published literature/studies largely case study, small including only one microsystem, and expert opinion
• CNL implementation not wide-spread
• CNLs not being used in a CNL role/Non-CNLs being used in the CNL role
• Difficult to directly link intervention of CNL implementation to outcomes since other simultaneous process improvement initiatives could impact outcomes
Literature Review

• Limited and lower levels of evidence
  • New role (role confusion, not widespread yet)
  • Not much research yet
  • Research difficult to directly link to CNL role (can mix with other improvement efforts)
Literature Review

• Promising outcomes related to quality and patient safety
  • Patient Satisfaction
    • Improvements in Willingness to Recommend and patients’ understanding of discharge information (Eggenberger et al., 2013)
    • Unit with CNL vs. control unit without CNL—statistical improvements in all patient satisfaction categories (Bender et al., 2012)
  • Quality and Patient Safety Outcomes (Hix et al., 2009; Wilson et al., 2013)
    • Improvements in:
      • Length of Stay
      • Readmissions
      • Pressure Ulcers
      • Vaccinations
      • VTE prophylaxis
      • Surgical/Procedure cancellations
      • Blood utilization
Implications for Practice

• Exciting case studies with positive outcomes
• Return on investment in education and training RNs
• Current model of care is fragmented
• Can CNLs help improve outcomes and care coordination in the microsystem?
• Implementation has included varying models of CNL role
• Further research with more a diverse look at outcomes and in varying settings where CNLs practice
• Use the AACN white paper to guide systematic implementation of CNL role in organizations
Hospital Acquired Infections (HAIs)
Data Review

• Reviewed all quality and patient safety outcomes for the past two years

• Organization experiencing higher Hospital Acquired Infections (HAIs) rates in 2016 than 2015
<table>
<thead>
<tr>
<th>Hospital Acquired Infection</th>
<th>2015 Occurrences</th>
<th>2016 Occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLABSI Number</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>CLABSI Rate (number of CLABSI infections/1000 line days)</td>
<td>1.15</td>
<td>1.15</td>
</tr>
<tr>
<td>CLABSI Benchmark (NHSN mean)</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>CAUTI Number</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>CAUTI Rate (number of CAUTI infections/1000 urinary catheter days)</td>
<td>0.89</td>
<td>1.35</td>
</tr>
<tr>
<td>CAUTI Benchmark (NHSN mean)</td>
<td>1.25</td>
<td>1.3</td>
</tr>
<tr>
<td>C. diff Number</td>
<td>66</td>
<td>61</td>
</tr>
<tr>
<td>C. diff Rate/10000 patient days</td>
<td>15.9</td>
<td>12.77</td>
</tr>
<tr>
<td>C. diff Benchmark (NHSN per 10,000 patient days)</td>
<td>7.4</td>
<td>7.4</td>
</tr>
<tr>
<td>Total number of all three HAIs</td>
<td>81</td>
<td>85</td>
</tr>
</tbody>
</table>
## The Cost of HAIs

<table>
<thead>
<tr>
<th>HAI</th>
<th>Estimated additional cost of care per HAI</th>
<th>2016 HAIs</th>
<th>2016 Estimated additional cost of care related to HAI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLABSI</td>
<td>$3,700 - $29,000</td>
<td>9</td>
<td>$33,300 - $261,000</td>
</tr>
<tr>
<td>CAUTI</td>
<td>$1,000 - $2,000</td>
<td>15</td>
<td>$15,000 - $30,000</td>
</tr>
<tr>
<td>C. diff</td>
<td>$13,000 - $28,000</td>
<td>61</td>
<td>$793,000 - $1,708,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>85</td>
<td>$841,300 - $1,999,000</td>
</tr>
</tbody>
</table>
Analysis

• Many HAIs are preventable

• HAIs harm patients

• HAIs are costly

• HAIs are quantifiable which helps make the business case for integration of CNLs into the staffing
Project
Aim

• Decrease Hospital Acquired Infections (HAIs), specifically:
  • Central Line Associated Blood Stream Infections (CLABSI)
  • Catheter Associated Urinary Tract Infections (CAUTI)
  • *Clostridium difficile* (*C. diff.*) Infections

by 20% in one year (2017 vs. 2016) by integrating the CNL role into microsystems and engaging a multidisciplinary workgroup to focus on improving processes and practices related to HAIs.

• Our goal by 2020 is that HAIs are never events
Pilot Project

Integrate the CNL role into the microsystem through a CNL-led HAI work team by focusing on:

• Process measures
• Practice measures
• Interventions
Pilot Project

Framework

• IHI model for improvement to make and measure improvement
Pilot Project

• Process measures
  • Evaluate if the system is accomplishing results as intended
  • Determine if policies, procedures, and standards are being following
  • Often audited by compliance of documentation
  • Examples: Chlorhexidine (CHG) bath completed every 24 hours, hand washing compliance

• Practice measures
  • Evaluate how people are actually following established process
  • Focus on technique, direct observation
  • Example: Maintaining sterility during urinary catheter insertion

• Interventions
  • CNLs will develop interventions to address findings from assessment
  • Aligns with CNL training, skills, and competencies
Project Intervention

• Ten CNLs representing:
  • Emergency
  • Critical Care
  • Acute Care
  • Maternal-Child

• Physicians

• Ancillary team members from Lab, Vascular Access RNs, Environmental Services, Clinical IT, Infection Prevention, Pharmacy, Rad/Procedural areas, CNSs, Lean Advisor, QI Analyst
Project Intervention

• Organization wide HAI workgroup
  • Help organization determine, at microsystem level, what steps in processes and practices related to HAIs are failing causing the current outcomes
  • Assess current situation related to CLABSIs, CAUTIs, C. diff
  • Based on assessment, develop interventions
  • Monitor and measure outcomes to evaluate if the interventions are resulting in improvement
Turning the Plan into Action
Kickoff

• First meeting kickoff
• All day
• Set the stage
• Clarified roles
• Approach
• RCA process for all three HAIs
• Plan for where to start
C. diff

Initial root causes team decided to work on:

• Appropriate specimen collection
• Handwashing process
• Doffing PPE
• Cross contamination of equipment/people from patient room to patient room
Appropriate specimen collection

Current state was:
- Confusion with collection algorithm
- CNL-led modifications
- Color to help guide
- Steps to reflect process
- Additional considerations based on workflow

Intervention:
- PDSA the tool based on staff feedback
- Align checklist with correct workflow
- Use red and green as visual cues
- Disseminate to staff and reinforce

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Does the patient have a history of C. diff in the past 90 days?</td>
<td>nurse notified and diagnosis tab as well as verbal confirmation with the patient</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Does the patient have diarrhea?</td>
<td></td>
<td>Go to step 3.</td>
</tr>
<tr>
<td>3</td>
<td>Has the patient been admitted for less than 2 calendar days?</td>
<td>Send specimen. Date/Time ________/RN ________</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Has the patient been on laxatives or stool softener?</td>
<td></td>
<td>Send specimen. Date/Time ________/RN ________</td>
</tr>
</tbody>
</table>

Additional considerations:
- a. Is there more than one order for C. diff specimen? Discontinue the second order.
- b. Has 24 hours elapsed since time of order with no stool sample collected? Contact provider to assess if order is still needed.
- c. If patient has formed stools or no stools for greater than 48 hours after the laxative was stopped was the order for C. diff testing discontinued? If negative results received was the order for isolation discontinued?
Appropriate specimen collection

- Colace (Docusate sodium)
- Dulcolax (Bisacodyl)
- Miralax (Polyethylene Glycol)
- Generlac, Kristalose, Enulose, (Lactulose)
- Senokot, Ex Lax (Senna)
- Glycerol, Fleet Glycerin, Osmoglyn (Glycerin)
- Reglan, OMetozolv ODT (Metoclopramide)
- Milk of magnesium
- Citrate of Magnesia, Citroma, LiquiPrep (Magnesium citrate)
- Kayexalate (Sodium Polystyrene Sulfonate)

Included Bristol Stool Chart and list of stool softeners on checklist and in EHR
Hand Washing

- Audit
- Huddle guide
- Standard work
- Re-audit
- Return demonstration

Proper way to wash your hands

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hands are under faucet</td>
</tr>
<tr>
<td>2</td>
<td>Arms angled downward</td>
</tr>
<tr>
<td>3</td>
<td>Wet hands</td>
</tr>
<tr>
<td>4</td>
<td>Use soap</td>
</tr>
<tr>
<td>5</td>
<td>20 seconds of friction</td>
</tr>
<tr>
<td>6</td>
<td>Scrub front of hands</td>
</tr>
<tr>
<td></td>
<td>Scrub back of hands</td>
</tr>
<tr>
<td></td>
<td>Scrub between fingers</td>
</tr>
<tr>
<td></td>
<td>Scrub thumbs</td>
</tr>
<tr>
<td></td>
<td>Scrub knuckles</td>
</tr>
<tr>
<td></td>
<td>Scrub fingernails in palm of hand</td>
</tr>
<tr>
<td>7</td>
<td>If wearing a ring, move it up and down to scrub underneath</td>
</tr>
<tr>
<td>8</td>
<td>Rinse hands</td>
</tr>
<tr>
<td>9</td>
<td>Dry hands</td>
</tr>
<tr>
<td>10</td>
<td>Use paper towel to turn off water</td>
</tr>
</tbody>
</table>
Doffing PPE

- Audit
- Huddle guide
- Standard work
- Re-audit
- Return demonstration

C. diff STINKS

Huddle Guide # 283
Date: 3/2/2017

Situation: NorthBay Healthcare had 61 hospital acquired C. diff cases in 2016. To date, in 2017, we have had 8. Our C. diff rate per 10,000 patient days is 12.77 compared to the CDC national benchmark of 7.4.

That STINKS!

Background: National studies show that hand washing and removal of PPE are high contributors to hospital acquired C. diff infections.

Assessment: The HAI work group observed our NorthBay health professionals’ practice around donning (removing) PPE for isolation patients and discovered inconsistencies in practice.

Recommendation: Communicate a standard, evidence based, plan for proper PPE donning (see attached) with the following goals:

- Provide safe, infection free environment for our patients
- Keep each other accountable. Utilize the NorthBay Way to provide collegial feedback if you do not see the standard process followed.

Questions: See your department HAI work group representative.
Cross Contamination

- Audit
- Trip ticket
- 2-step cleaning process
- Transport huddle (pending)
- Re-audit (pending)
Disseminating info

- Visual management boards for huddles
- Fall out stories
- Near miss stories
Staff Engagement Successes

- Standard work for hand washing at all sinks - now disseminated to even outpatient areas
- Standard work posters for all isolations rooms
- Increased awareness and communication on our HAI areas of focus
Outcomes
C. difficile 2016 vs 2017

2016 total as of 8/15: 43
2017 total as of 8/15: 19
Cost Avoidance = $312,000--$672,000
Next Steps for C. diff

• Sustainment, sustainment, sustainment
• Continue to hardwire processes
• Re-audit periodically to measure sustainment
• More interventions through this year and beyond
  • Cross contamination major priority
• PDSA data/fallout dissemination methods to best solicit front-line staff improvement ideas
We haven’t forgotten about our other initiatives:

• Followed the same process
  • RCA
  • Created a work plan
  • Disseminated data and fallout stories

• On going work for CAUTI and CLABSI
• Great front-line feedback on the interventions to date
<table>
<thead>
<tr>
<th>Root cause focus area</th>
<th>Status</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluate other/more tools available - Female urinals</td>
<td>Completed</td>
<td>Female urinals obtained and now stocked on all units</td>
</tr>
<tr>
<td>Evaluate current indwelling catheter kits that are available</td>
<td>Completed</td>
<td>New standardized catheter kits to be rolled out with education in nursing skills fair next month</td>
</tr>
<tr>
<td>Update indwelling catheter policy—align with evidence-based practice</td>
<td>In progress</td>
<td>Aligning with Lippincott procedures – insertion done, maintenance next month</td>
</tr>
<tr>
<td>Create a series of huddle guides to dispel rumors about indwelling catheters</td>
<td>In progress</td>
<td>Holy foley series started – tools in the toolkit</td>
</tr>
<tr>
<td>Work with clinical informatics to evaluate catheter orders</td>
<td>In progress</td>
<td>Identified need to remove the automatic catheter order in admission sets and add reason for necessity on the order</td>
</tr>
</tbody>
</table>
# CLABSI

- Partnering with BARD
- Assessment of current state revealed focus areas:

## Root cause focus area | Status | Interventions
--- | --- | ---
Update central line policy—align with evidence based practice | Completed | Aligned with Lippincott Procedures – awaiting final approval
Evaluate current tools | Completed | New standardized dressing kits obtained and stocked on all units
Practice variability | In progress | HAI CNLs leading unit-based BARD champion groups to educate and evaluate all nursing staff with return demonstration
  - Dressing changes
  - Hub maintenance
  - Blood draws
  - Med administration
Lessons Learned

• Smaller scope - choose one HAI
• Challenges with CNL not in dedicated CNL role - showed the importance of investing in dedicated CNL positions - could we have made an even bigger impact?
• Stick to the IHI improvement process—not jumping to solutions before identifying and understanding the problem
• Education for new staff in hospital and department orientation
• Senior leadership and departmental leadership support
Conclusions/Implications for Practice

- Very happy with our progress on improving HAIs to date
- The CNLs have been a big factor in this improvement
- Submitted a business case, based on cost avoidance of HAIs, to integrate CNLs into each hospital based microsystem—pending approval of the 2018 operating budget
- CNLs can be incorporated into any microsystem to lead improvement efforts:
  - Falls
  - Sitter utilization
  - HAPUs
  - Patient satisfaction
  - Department specific improvements
Thank You
References


