Background/Clinical Question
Many hospitals struggle with issues of nursing work/life balance.
- Self-scheduling provides nurses greater control over this aspect of their work and life.
- Self-scheduling may have other benefits as well.
Therefore, the clinical question asked was, “Among hospital staff nurses, does self-scheduling increase autonomy, job satisfaction and retention, enhance patient outcomes and/or reduce cost?”

Literature Search:
Key words: nursing scheduling self-staffing self-rostering flexible scheduling collaborative scheduling self-contained closed unit hospital staff nurses professional autonomy staff autonomy control over nursing practice

Databases: Cinahl Medline Cochrane databases Full text @ OVID

Conceptual Framework: PARIHS Framework

Critical Appraisal and Synthesis
**Evidence**
Levels of evidence found:
- 1 good quality study – Level 4a
- 4 lesser quality studies - Level 4b
- 6 published expert opinion articles – Level 5

Apparent/Perceived/Reported:
- Increased Autonomy with self-scheduling in 4 studies and 3 articles.
- Increased Job satisfaction in 1 study and 4 articles.
- Increased Retention in 1 study and 5 articles.
- Reduced Cost in 1 study and 4 articles.
- Improved Patient outcome in 2 studies and 1 article.

Work/life balance was reported to be positively affected by self-staffing according to 3 of the studies and 2 of the articles found.

**Keys to successful implementation:**
- Participative management
- Staff education prior to implementation
- Committee structure to review the schedule
- Clear guidelines

**Grade for the Body of Evidence:** Moderate/Low

Evaluation/Results

**Evidence**
- Surveys completed by bedside nurses and families every 3 months from February to November 2009.
- Other data collected every monthly from February to November 2009.

**Do you like self-scheduling?**
- Yes = 90.9 – 100%

**Nurses’ job satisfaction** (n = 46)
- Murrells, Clinton & Robinson (2005) (scale 1-5; 5 = very satisfied)
  - Overall mean score 3.90 (SD 0.42, range 2.96 – 4.90 )
  - Best mean scores regarding Relationships: range 4.06 – 4.46
  - Worst mean scores regarding Resources: range 2.91 – 3.64

**Nurses’ group cohesion** (n = 46)
- Good & Nelson (1973) (scale 1-7; 7 = very much above average)
  - Overall mean score 1.71 (SD .72, range 1.36-2.1)
  - Best mean scores regarding Working together: range 1.23 – 1.4
  - Worst mean scores regarding Productivity: range 2.36 – 1.77 and Efficiency: range 2.45 – 1.69

**Family satisfaction** (n = 19)
  - (scale 1-7; 7 = to a very great extent the people who work with my child...)
  - Overall mean score 4.98 (SD 0.98, range 2.65-7)
  - Best mean scores regarding Fully explain treatment choices: range 6.00 – 6.50 and regarding Help you feel competent as a parent: range 6.17 – 6.50
  - Worst mean scores regarding Provide written information about what your child is doing in therapy: range 0-4.2 and Have information available about your child’s disability: range 2.00– 6.00

**Recommendation**
It is recommended that self-scheduling be used among hospital staff nurses.

Implementation

**Context**
- Complex Airway Unit was created.
- Formed a staff led scheduling committee
- Guidelines were created.
- Self-scheduling implemented from inception of the unit.
- Unit opened in October 2008

**Facilitation**
- Unit director educated staff on the evidence for self-scheduling.

Evaluation/Results, continued

**Safety issues**
- Serious safety events = none
- Medication error rates = unchanged
- Near miss rates = unchanged

**Nurse turnover rate**
- 3.22% for 7/09- 0% for all other months
- One RN did not finish orientation
- One RN became a PNP for the subspecialty utilizing the Complex Airway Unit
- Hospital median nurse turnover rate = 8.15%

**Overtime hours**
- Decreased from 103.1 for 2/1/09-4/30/09 to 35.9 for 8/1/09-10/31/09 (p = 0.033)
- Increased from 264 for 2/1/09-4/30/09 to 360 for 8/1/09-10/31/09 (p = 0.004)

**Unscheduled absences (hours)**
- Increased from 0 for 2/1/09-4/30/09 to 30 for 8/1/09-10/31/09

Conclusions

**Nurses on this unit**
- Satisfied with self-scheduling
- Satisfied with their jobs
- Need to work on making resources available
- Above average cohesion
- Need to work on Productivity
- Low turnover
- Decreased overtime
- Increased unscheduled absences

**Families were satisfied**
- Nurses need to have and provide more information

**Safety was maintained**
- Comparisons with other units are needed
Formal versus Informal Education to Improve the Discharge Process
Lois Siegle BSN, RN, CPN

Purpose
To evaluate the evidence on the methods used for education of caregivers to prepare for discharge to home.

Background
Inconsistencies in patient/caregiver education were noted with the discharge of a complex medical patient. Discharge was delayed due to safety concerns stemming from lack of caregiver knowledge.

Clinical Question
Among pediatric nurses engaged in patient discharge process:
- P: pediatric nurses engaged in patient discharge process
- I: formal education plan
- C: informal education plan
- O: improve the patient/family satisfaction, safety, and timely discharge?

Methods
- **Databases**: OVID Medline, OVID EBIM Reviews (Cochrane), Ebocohost
- **CNAIL, PubMed Clinical Queries, Google Scholar, Scopus**

**Keywords:** Education plan, pediatric nurse, transition hospital, patient education, consistent education, nurse to patient education, structured education, discharge education, bedside education, and formal education.

Additional Searching
- Hand searching of literature
- National Association of Children’s Hospitals and Related Institutions (NACHRI) electronic mailing list.

Critical Appraisal
- 9 research studies were appraised, leveled and graded using the leveling and grading systems below:

### Table of Evidence Levels

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Best study design for domain</td>
</tr>
<tr>
<td>2</td>
<td>Fair study design for domain</td>
</tr>
<tr>
<td>3</td>
<td>Weak study design for domain</td>
</tr>
<tr>
<td>4</td>
<td>Insufficient design or execution, too few studies and inconsistent results</td>
</tr>
</tbody>
</table>

**Summary of the Evidence**

There is good quality evidence that a formal education plan can improve retention of learning and decrease infections (Gibson 1992 [2a], Moller 2005 [2a]).

There is no research that measured patient/family satisfaction or timeliness of discharge in relation to discharge education plans. There is one study that addresses parent perception of discharge readiness in which the predictor is the delivery of discharge teaching (Weiss 2008[4a]).

Methods to support formal education included in structured learning are: multi-media methods of education, oral & written instruction, demonstration, and reinforcement (Gibson 1992 [2a], Moller 2005 [2a], Parker 2002 [2b], Gregor 2001 [2b], Marten 1998 [2b], Thies 1995 [1a]).

Informal education is still needed to reinforce the formal education at the bedside (Habich 2006 [5], Gregor 2001 [2b], London 2004 [5], Thies 1995 [1a]).

### Definitions

Informal Education Plan: The unstructured, unscheduled, random bedside opportunity for education, used to teach patients and caregivers the patient’s needs.

Formal Education Plan: Structured, scheduled education, with tool or check off, at bedside or other location used to teach patients and caregivers the patient’s needs.

**Discovery**

- **Total 12 articles**
  - 9 articles appropriate for question
  - 3 qualitative studies
  - 2 randomized controlled trials
  - 1 Meta-Analysis
  - 1 Quantitative
  - 2 published expert opinions

**NACHRI question**

“Do you have measures that indicate that formal discharge education is more effective than informal education?”

4 responses, none had measures. All respondents expressed interest in the answer to the question.

**Translation/ Recommendation**

It is recommended that, a formal education plan be utilized with caregivers to learn the care required for their child.

It is recommended that informal education is needed to reinforce formal education at the bedside.

**Table of Recommendation Strength**

- **Strongly Recommended**
- **Strongly Recommended**
- **Moderate**

**Integration and Evaluation**

Plan to do an Outcomes measure study on the timeliness of discharge and family satisfaction with the implementation of formal education plans.

- IRB proposal in process
- Hope to complete study on Nursing unit, then integrate to other units, depending on findings.

- Plan to Publish findings

**Acknowledgements**

I would like to thank the EBP Mentors and the other POC Scholars in my group for the 12 months of assistance and education on the Evidence Based Process.

And my director for giving me the time to devote to the project.
Females with Anorectal Malformation (ARM): When is the best time to inform parents/guardians of associated gynecologic anomalies?

Debbie Morse, BSN, RN, CPN, GYN RN Care Manager, Kathleen Whitehead, BSN, RN, Christina Stewart, MSW, LISW-S, Sarah Brawkman, BA, CCLS, Susan McGee, MSN, CNP

BACKGROUND
- Due to the limited gynecological treatment available to ARM patients worldwide, many have difficulties obtaining comprehensive treatment for their malformation.
- Anecdotal clinical experiences suggest that few parents/guardians of females with ARM have a discussion with a health care provider about possible gynecologic anomalies associated with ARM (i.e., an informing interview).

IOWA MODEL of EVIDENCE BASED PRACTICE
- Organizational model
- Incorporates the conduct and use of research with other forms of evidence
  - Includes
    - Knowledge or Problem Triggers lead clinicians to ask clinical questions and search literature for answers
    - Teams formed to evaluate the evidence
    - Practice change recommended when research evidence strong
    - Research recommended when gaps in the research literature identified

CLINICAL QUESTION
P (population/problem) Among parents/guardians of females with ARM, does being informed about their daughter’s associated gynecologic anomalies at diagnosis of ARM
I (intervention) as opposed to later in the course of her care increase their satisfaction with healthcare decisions related to their daughter’s long-term sexual & reproductive health?
C (comparison) as opposed to later in the course of her care
Q (outcome) as opposed to later in the course of her care

METHOD
- Team formation: key stakeholders
- Literature search
  - Databases: Medline, CINAHL and PsychNFO
- Search terms: Ano-rectal malformation, anal rectal malformation, anal-rectal abnormalities, recurrence abnormalities, gynecologic malformations, gynecologic abnormalities, gynecological anomalies, reproductive anomalies, congenital anomalies, informing interview, parental attitudes, parental preferences.
- Pertinent literature critically appraised and synthesized
- Recommendation for practice change and research

REVIEWED ARTICLES
- 20 Pertained to ARM
- 12 Not relevant to ARM

RECOMMENDATIONS
- Each patient and parent(s)/guardian(s) should be offered information about all known aspects of the condition at the time of diagnosis. (Greenburg, et al., 1984[4a]; Krahn, et al., 1993[4b]; Byrnes, et al., 2003[4a]; Alte, et al., 2006[4a]; Leventhal, 2008[5a]; local consensus [5]).
- Due to insufficient specific evidence regarding satisfaction with long term healthcare decisions, it is recommended that research be conducted in our target population to evaluate the impact of offering information about all known aspects of the condition at the time of initial diagnosis of ARM.

RESULTS
1. All reviewed articles agreed that information about all known aspects of the condition should be shared with parents as soon as it is available
2. All reviewed articles agreed that disclosure of the details of a medical condition should be delivered in an individualized manner
3. No articles were identified which specifically addressed the informing interview about gynecologic concerns with parents/guardians of ARM patients

CONCLUSION
Recommends derived from studies about other types of congenital anomalies and chronic conditions may be applied to families with ARM to promote the provider-family relationship and more informed treatment decisions by parents.

One parent is quoted, “Knowing what you’re dealing with is so much easier, even if you don’t want to know.”
(Krahn, 1993, p. 581).

HEALTH BENEFITS
- Promotes trust between the health care provider and family (Girgis, 1995[5a]; Braun, et al., 1993[4b])
- Enhances the ability of the parent/guardian to make informed treatment decisions (Girgis, 1995[5a]; Greenberg, et al., 1984[4a])
- Earlier diagnosis/detection of gynecologic complications thereby reducing risk to reproductive organs and fertility (local consensus)

RISKS
- Potential for the inability of the parent/guardian to process large amounts of information (Girgis, 1995[5a])
- Possible short term negative emotional impact on parents/guardians (Girgis, 1995[5a]; Starke, et al., 2002[4b])

REFERENCES (evidence level in [] see Table of Evidence Levels)

TABLE of EVIDENCE LEVELS

<table>
<thead>
<tr>
<th>Quality Level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a or 1b</td>
<td>Systematic review, meta-analysis, or meta-analysis of multiple studies</td>
</tr>
<tr>
<td>2a or 2b</td>
<td>Best study design for domain</td>
</tr>
<tr>
<td>3a or 3b</td>
<td>Fair study design for domain</td>
</tr>
<tr>
<td>4a or 4b</td>
<td>1 or 2 studies with high internal validity</td>
</tr>
<tr>
<td>5</td>
<td>Other (e.g., expert opinion, case report, consensus report, guidelines)</td>
</tr>
</tbody>
</table>

* Evidence level in [] see Table of Evidence Levels.
A Point of Care Scholar’s Evidence
Benefits of Pediatric Palliative Care Services
Lucy O’Quinn BSN, RN, CPN, Clinical Coordinator
Home Care StarShine Hospice, Point of Care Scholar

Clinical Issues/ Background
- Area’s only home based pediatric palliative care program has been in existence for over ten years.
- The following clinical (PICO) question was developed to guide the search for evidence on palliative care benefits using quality of life as outcome.

Clinical Question
P (population) = Among children with life limiting illnesses,
I (intervention) = does the use of a palliative care program
C (comparison) = compared with not using a palliative care program
O (outcome) = improve quality of life for patients and their families?

Discovery
Keywords: pediatric; palliative care; quality of life; life limiting illness; evidence based.
Databases: Ovid Medline, PubMed, Ebsco CINAHL
English articles from 1999-2008

Summary
- Two longitudinal studies [Hays et al 2006 (level 4a) Ringdal et al, 2004 (level 4a)] and one retrospective cohort study [Wolfe et al, 2008,(level 4a)] reported statistically significant positive results in the emotional and mental health constructs of health related quality of life (HRQoL).
- A systematic review on effectiveness of adult palliative care done by Zimmermann et al, 2008 (level1a) lacked statistical power in regards to HRQoL.
- Parents of dying and deceased children expressed common themes as revealed through semi-structured interviews in the following descriptive studies [Monterosso et al 2007 & 2008 (level 4a), Contro et al 2002 (level 4b)]:
  - Both parents and health providers lack good understanding of palliative care.
  - Parents want their child’s prognosis communicated to them clearly, honestly, & compassionately.
  - Parents want practical nutrition guidance, pain management and sibling support.
  - Parents want community resources regarding finance, respite, and bereavement.

Critical Appraisal
Seven studies were leveled and graded.

Grading a Body of Evidence
It is moderate for the HRQoL constructs of emotional and mental health.

Translation
It is recommended that clinicians offer patients with life limiting illnesses and their families palliative care services to improve quality of life in the areas of mental and emotional health.

Integration
- Disseminate outcomes through Best Evidence Statement, Nursing Grand Rounds, Educational conferences.
- Implement a comprehensive care planning tool for use with every palliative care patient.
- Promote education for health providers and general public.

Evaluation
- Advocate for evaluation of patient and family satisfaction.
- Participate in research, development, and validation of tools to measure the satisfaction of the pediatric palliative population.

Acknowledgements
- Cincinnati Children’s Hospital Medical Center Home Care, StarShine Hospice
- Point of Care Scholar Program
- Barbara K. Giambra, MS, RN, CNP  Evidence-Based Practice Mentor  Center for Professional Excellence - Research and EBP

Table of Evidence Levels

<table>
<thead>
<tr>
<th>Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Sufficient number of high quality studies with consistent results</td>
</tr>
<tr>
<td>Moderate</td>
<td>Multiple studies with some quality or with inconsistent results</td>
</tr>
<tr>
<td>Low</td>
<td>Sufficiently unclear, method and results not interpretable</td>
</tr>
<tr>
<td>Grade not acceptable</td>
<td>Insufficient design or intervention, too little evidence or inappropriate results</td>
</tr>
</tbody>
</table>

Source: CCMHC - Evidence-Based Decision-Making Website
http://groups.uc.edu/CEP/CEPWebsite.htm
Evidence Based Care Recommendations: Safe Sleeping Environment for the Hospitalized Pediatric Patient

Julie Alexander RN MSN, Charlene Morrow RN BSN, Andrea Ellis RN BSN, Kristen Laswell RN II BSN CPN, Jenny Merkle RNII MSN

Problem
Inconsistent use of proper bed for hospitalized infants and children creates an environment of confusion and potential harm for patients and families.

Background
Staff nurses on a medical surgical inpatient unit identified safety concerns related to sleeping environment for hospitalized infants and children:
- Lack of evidence to support current bed placement policy
- Confusing policy that allowed for multiple interpretations
- No age restrictions for use with the Bed Placement Acknowledgment form
- Inconsistent practices from one inpatient unit to another

Theoretical Framework
Iowa Model of Evidence-Based Practice to Promote Quality Care
- Identification of Clinical Problem
- Assembly relevant research and related literature
- Critique and synthesize research for use in practice
- Pilot the change in practice OR Conduct research
- Institute the change in practice
- Evaluate quality of care and new knowledge

"Were there none who were discontented with what they have, the world would never reach anything better"
~Florence Nightingale

Clinical Question
In pediatric patients from birth to three years of age that are hospitalized, does the use of a crib versus an adult bed for sleeping result in fewer injuries and deaths?

Method
- An exhaustive search of the literature was conducted
- Five articles and one guideline found applicable to the PICO question

Data Bases Searched:
- National Guidelines Clearinghouse
- CINAHL
- Medline
- Cochrane

Findings
Critical appraisal and synthesis of the evidence was achieved using the Let Evidence Guide Every New Decision (LEGEND) tools created by Cincinnati Children’s.

Table 1
<table>
<thead>
<tr>
<th>Alphabetic Reference List</th>
<th>Type</th>
<th>Level</th>
<th>Strength</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search Terms:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crib</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sleeping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suffocation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Falling</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entrainment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Co-sleeping</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role over syndrome</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient access</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphyxia</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transitioning from crib to adult bed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2
<table>
<thead>
<tr>
<th>Table of Evidence Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Level</td>
</tr>
<tr>
<td>5a– or 5b†</td>
</tr>
<tr>
<td>4a or 4b†</td>
</tr>
<tr>
<td>3a or 3b</td>
</tr>
<tr>
<td>2a or 2b</td>
</tr>
<tr>
<td>1a† or 1b†</td>
</tr>
</tbody>
</table>

References

Recommendations for Practice
The evidence supports the development of the following clinical practice guidelines:
1. Hospitalized infants younger than one year of age admitted to a non-intensive care unit are placed to sleep in an infant crib.
2. Hospitalized children younger than 3 years and older than one year of age admitted to a non-intensive care unit are placed to sleep in a crib or adult bed.
3. Pillows and excess linens are not used with hospitalized infants younger than one year of age.
4. Hospitalized infants and children less than 3 years of age do not share sleeping spaces, i.e. co-sleep, with other persons (parents/guardians, siblings).
5. Nursing staff provide education to parents and guardians of hospitalized children younger than three years on:
   - Proper bed size for child’s age
   - Dangers associated with use of pillows and excess linens
   - Potential risks associated with co-sleeping with infant/child

Next Steps
- Incorporate evidence and care recommendations into current Bed Placement Policy
- Creation of educational materials for parents/guardians of hospitalized infants and children on safe sleeping practices
- Creation of best evidence statement (BESt)
Improving Collaboration to Increase Satisfaction within the Cardiac Intensive Care Unit

AUTHORS: Angela Kinstler, MSN, RN, CNL, Diana Young, BSN, RNII, Amanda Woodard, BSN, RNII, Rhonda Schum, RRTII, Vicki Newsom, BSN, RNII, Christine Ryan, BS, RN, and Kimery Crace, BSN, RN

CLINICAL ISSUE
- Diverse disciplines witnessing a lack of communication during a period of transition between leadership.
- Expressed concerns for the lack of effective communication between nurses and physicians and impact on outcomes

Examples:
- Patient outcomes: Patient Safety
- Staff outcomes: Job Satisfaction

SEARCH METHOD
Key Words:
- Nursing satisfaction
- Nurse job satisfaction
- Nurse physician collaboration
- Nurse physician communication

Databases:
- CINAHL
- Pubmed
- Ebsco
- Medline

FINDINGS
Evidence Synthesis
The literature indicates increased job satisfaction among nurses when a feeling of open and honest communication amongst the healthcare team exists.

The literature recommends the use of communication worksheets, continuing education on effective communication techniques and encouraging a collaborative environment.

CRITICAL APPRAISAL
CICU Inquiry Council critically appraised 15 articles
Descriptive studies
- 6 good quality
- 2 lesser quality
Published expert opinion
- 6 good quality
- 1 lesser quality

Cincinnati Children’s Table of Evidence Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a or 1b</td>
<td>Systematic review, meta-analysis or meta-synthesis of multiple studies</td>
</tr>
<tr>
<td>2a or 2b</td>
<td>Peer study, design for disease</td>
</tr>
<tr>
<td>3a or 3b</td>
<td>Peer study, design for domain</td>
</tr>
<tr>
<td>4a or 4b</td>
<td>General review, expert opinion, case report, consensus report, or guidelines</td>
</tr>
</tbody>
</table>

Cincinnati Children’s Grading a Body of Evidence

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Sufficient number of high-quality studies with consistent results</td>
</tr>
<tr>
<td>Moderate</td>
<td>Multiple studies with lesser quality or with inconsistent results or a single well-done study</td>
</tr>
<tr>
<td>Low</td>
<td>Single opinion, case studies and general review</td>
</tr>
<tr>
<td>Grade not assignable</td>
<td>Sufficient sample design or execution, too few studies and inconsistent results</td>
</tr>
</tbody>
</table>

RECOMMENDATIONS
To Improve Nurse - Physician Collaboration

Leadership continue to support:
- RN presentation on rounds
- Situational Awareness rounds
- SBAR
- Simulation Trainings with all disciplines

All Disciplines
- Enhance effective communication styles

Resource list of Cincinnati Children’s communication in-services

ACKNOWLEDGEMENTS
Lisa English Long, MSN, RN, CNS - EBP Mentor
Cincinnati Children’s Center for Professional Excellence
Laurie Mustin, MSN, RN, PNP – Outcomes Manager
Cincinnati Children’s Heart Institute

CLINICAL QUESTION
P: Among critical care nurses and physicians
I: Increased collaboration
C: Current communication
O: Improve job satisfaction for critical care nursing staff
**BACKGROUND**

Children with Sickle Cell Disease (SCD) are predisposed to pneumococcal infections and are at high risk for influenza complications. Vaccinations for pneumococcal and influenza reduce morbidity and mortality for children with SCD. In order to ensure all children with SCD are properly immunized, a method was developed to increase immunization rates. An evidence-based practice project was undertaken to identify whether there is research evidence to support the effectiveness of implementing a structured method for immunizations.

**PICO QUESTION**

Among children with SCD, does providing a structured process of confirming immunization status at each healthcare provider encounter and immunizing appropriately, compared to standard care, increase immunization rates of the influenza and pneumococcal vaccines?

**METHOD**

A comprehensive search of the following databases:

- PubMed
- Medline
- CINAHL

The following search terms were used:

- Sickle Cell
- Chronic Illness
- Immunizations
- Pneumococcal immunizations
- Pneumococcal immunizations
- Influenza
- Registry
- Compliance adherence
- Care management
- Children

Nine studies were identified and critically appraised leading to a moderate grade for the body of evidence.

**EVIDENCE-BASED PRACTICE MODEL**

Rosswurm’s and Lararbee’s Model for Change to Evidence-Based Practice

The model incorporates theoretical and research literature related to evidence-based practice, research utilization and change theory. Rosswurm and Lararbee define a systematic process of six steps:

- Assess- assess need for change in practice
- Link- link the defined problem with interventions and outcomes
- Synthesize- provides framework for combining best evidence in literature and using a structured critique worksheet that rates the quality of the evidence
- Design- design a change in practice based on evidence collected
- Implement and evaluate- implementing and evaluating the process and outcomes
- Integrate and maintain- the integration of the evidence-based standard into practice

**RESULTS**

<table>
<thead>
<tr>
<th>Journal Title</th>
<th>Type of Study/Study Design</th>
<th>Level of Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bundy (1998)</td>
<td>Systematic literature review</td>
<td>A.A.</td>
</tr>
<tr>
<td>Findley (2006)</td>
<td>Descriptive Study</td>
<td>A.A.</td>
</tr>
<tr>
<td>Hambridge (2009)</td>
<td>Randomized Control Trial</td>
<td>A.A.</td>
</tr>
<tr>
<td>Hate (1996)</td>
<td>Randomized Control Trial</td>
<td>A.A.</td>
</tr>
<tr>
<td>Ingrop (2005)</td>
<td>Randomized Control Trial</td>
<td>A.A.</td>
</tr>
<tr>
<td>Nalley (2005)</td>
<td>Systematic Review</td>
<td>A.A.</td>
</tr>
<tr>
<td>Taran (2007)</td>
<td>Cohort Retrospective</td>
<td>A.A.</td>
</tr>
<tr>
<td>Wood (1998)</td>
<td>Randomized Control Trial</td>
<td>A.A.</td>
</tr>
</tbody>
</table>

**FINDINGS**

The published research evidence indicates that structured processes for basic immunization of children improve immunization rates. Some of the structured processes in the literature included using national registries, reminder cards and chart reviews. A combination of chart reviews and use of a registry has also been found to significantly increase the number of adequately vaccinated children.

One study identified strong evidence of effectiveness that provider reminder systems alone proved to be effective in increasing vaccination rates in targeted populations (Nalty, 2005). Another study reported influenza Immunizations impacted the rate of influenza related hospitalizations in the Sickle Cell population (Bundy, 2010). However, we found no studies that specifically addressed methods of increasing pneumococcal and influenza vaccinations in children with SCD.

The process currently in use at the Cincinnati Children’s Hospital Medical Center Sickle Cell Clinic is that of comprehensive chart review, no missed opportunity, and the use of a state registry for vaccinations. This combined method has increased our influenza and pneumococcal vaccination rates significantly.

**CONCLUSION**

Although few studies addressed children with Sickle Cell Disease, our literature review indicates the importance of a structured process confirming immunization status in children at each healthcare provider encounter.

Therefore, using a structured process may be effective in maximizing the number of children with SCD receiving pneumococcal and influenza vaccinations.

This is supported by our quality improvement data from the years 2006 and 2009 and would additionally be supported by further research.

**REFERENCES**

Purpose: to describe current published research and other evidence about the woman’s experience of satisfaction with informed consent when considering open maternal-fetal surgery

Clinical Question

P (population) – Women undergoing open uterine fetal surgery

I (intervention) – Informed Consent Process

C (comparison) – None

O (outcome) – Satisfaction

How do women who undergo open uterine fetal surgery describe their satisfaction with the informed consent process?

Method

A concern about the process of informing mothers about the risks and benefits of maternal-fetal surgery triggered the clinical question.

A comprehensive literature search

- databases CINAHL, Medline, and PsycINFO
- key words: maternal-fetal surgery, fetal surgery, informed consent, patient satisfaction, woman, mother, ethics, morbidity and mortality
- Critically appraised and synthesized 23 pertinent articles

Table of Evidence Levels

<table>
<thead>
<tr>
<th>Quality level</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1α† or 1b†</td>
<td>Systematic review, meta-analysis, or meta-synthesis of multiple studies</td>
</tr>
<tr>
<td>2a or 2b</td>
<td>Best study design for domain</td>
</tr>
<tr>
<td>3a or 3b</td>
<td>Fair study design for domain</td>
</tr>
<tr>
<td>4a or 4b</td>
<td>Weak study design for domain</td>
</tr>
<tr>
<td>5</td>
<td>Other: General review, expert opinion, case report, consensus report, or guideline</td>
</tr>
</tbody>
</table>

†a = good quality study; b = lesser quality study

From: http://www.cincinnatichildrens.org/research/project/ceb-5ebs/resources.htm

Findings

No research studies or other published evidence directly answered the PICO question

Grade for the body of evidence: grade not assignable

- Overall, women want to read and discuss information about surgery; to know what the risks are and what the quality of life will be with and without the surgery.
- Specific to maternal-fetal surgery, expert opinion indicates that couples need time and encouragement, with explicit discussion to understand their basic motivations to guide decision making.

Other related topics identified in the literature:

- satisfaction with informed consent
- decision-making & ethics in relation to women’s surgery & MFS

Evidence-Based Practice Model

The Iowa Model

- Problem or Knowledge Focused Triggers – either can lead clinicians to question practice
- Relevance to the organization is determined
- Assemble pertinent research and related literature
- Critiqued and synthesize literature
- Determine if sufficient research to guide practice
  - If yes, make practice change
  - If no, design research study or base practice on other type of evidence
- Evaluate quality of care and new knowledge
- Disseminate results

References


Acknowledgements

Myra Huth, PhD, RN and Lisa Long, MSN, RN, CNS

Center for Professional Excellence, Research & EBP

Cindy Bedingham MSN, RN, Sr. Clinical Director Perioperative Services

Devin Adler MSN, RN, Clinical Manager, PACU
Clinical Issue & Background

Clinical nurses in the Cincinnati Children’s Hospital Medical Center (CCHMC) Pediatric Intensive Care Unit (PICU) question if there is evidence to support using sterile water for flushing enteral tubes.

Current hospital policy does not endorse type of water to be used for flushing. Nurses report using sterile water for convenience and reduction of nosocomial infections.

Clinical Question

In pediatric patients with gastric, duodenal, or jejunal tubes, does flushing with sterile water as opposed to flushing with tap water decrease the rates of nosocomial infections?

Findings

The National Institute for Clinical Excellence (2003) recommends that to prevent blockage, enteral feeding tubes should be flushed with fresh tap water before and after feeding or medication administration. Enteral feeding tubes for patients who are immunocompromised should be flushed with either cooled freshly boiled water or sterile water from a freshly opened container.

According to O’Neill & Humphreys (2005), legionella may be present in hospital water systems, and can be easily tested for and removed from the hospital water system.

Recommendations

- In pediatric patients with gastric, duodenal or jejunal tubes who are immunocompromised, sterile water should be used for flushing the tube at all times.
- In pediatric patients with gastric, duodenal, or jejunal tubes who are immunocompetent, it is unclear as to whether tap water is more likely to cause nosocomial infections.
- Further research is needed to determine if testing water for legionellosis and other nosocomial infectious agents is useful in prevention of nosocomial infection.
- Further study is needed to determine if there is a cost benefit versus risk ratio of using sterile water for flushes of gastric, duodenal or jejunal tubes.

Search Strategy

<table>
<thead>
<tr>
<th>Keywords</th>
<th>Databases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tube</td>
<td>Ovid</td>
</tr>
<tr>
<td>Enteral</td>
<td>PubMed</td>
</tr>
<tr>
<td>Gastric</td>
<td>CINAHL</td>
</tr>
<tr>
<td>Duodenal</td>
<td>Other</td>
</tr>
<tr>
<td>Jejunal</td>
<td>Google Scholar</td>
</tr>
<tr>
<td>Feeding</td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
</tr>
<tr>
<td>Tap</td>
<td></td>
</tr>
<tr>
<td>Sterile</td>
<td></td>
</tr>
<tr>
<td>Flush</td>
<td></td>
</tr>
<tr>
<td>Pediatric</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td></td>
</tr>
<tr>
<td>Nosocomial</td>
<td></td>
</tr>
<tr>
<td>Hospital Acquired</td>
<td></td>
</tr>
</tbody>
</table>
**Discovery**

Clinical Issue & Background: Several enteral feeding administration set usage standards are practiced throughout our institution. A referral was submitted through the shared governance structure from a nurse who found the inconsistencies confusing.

**PICO:** Among Pediatric hospitalized patients, does changing the feeding sets every 24 hours versus every 4 hours create no adverse impact on patient safety?

An interdisciplinary group was organized. Current hospital policies were reviewed.

**SEARCH:**
- Keywords: feeding sets, hang time, bacterial contamination.

- 22 articles reviewed and critically appraised.
- Manufacturer recommendations
- Expert Clinical Opinion

Conceptual Model: Ace Star Model of Knowledge Transformation

**Translation**

It is recommended that enteral feed administration sets should be changed at least every twenty four hours.

**Summary**

- 4 studies (Levels 2a – 4b) demonstrated that feeding administration sets could safely be used for 24 hours.
- 5 articles and the manufacturer (Levels 5a – 5b) concluded that feeding administration sets could safely be used for 24 hours.
- 2 studies did not measure for 24 hours (4a, 4b) safety demonstrated for 8 and 15 hours.
- The grade for the body of evidence was moderate.

**Evaluation**

- Compliance will be evaluated by adding measures to the electronic charting system (EPIC).
- It is anticipated costs will be reduced for supplies and nursing time while increasing patient, nurse and family satisfaction.

**Acknowledgements**

Barbara K. Giambra MS, RN, CPNP, Evidence-Based Practice Mentor
Angela Kinstler MSN, RN, CNL, Clinical Manager, Cardiac ICU, Heart Institute

Authors: Christine Combs BSN, RN II, CPN; Kathleen Hautman RN II; Allison Bourgraf RD, LD, CNSC; Claire Burkhart BSN, RN III, RNC-NIC; Melisa Gosney RN; Megan Koons RD, RL; Briane Martin RN, CPN