UNIVERSITY OF UTAH
COLLEGE OF NURSING

Coping With Labor Algorithm: An Innovative Approach to Labor Pain

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Objectives

- At the conclusion of the session, participants will be able to articulate the original intent of the JCAHO standard and be able to verbalize alternatives to the 1-10 rating scale.
- At the conclusion of the session, participants will be able to describe the Total Quality Management (TQM) Process used to implement an alternative pain measurement tool.
- At the conclusion of the session, participants will be able to articulate how the CWLA can support Vaginal Birth and Reduce Primary Cesareans.

Overview

- Why we developed the Coping Algorithm
- Definition and review of pain
- Two divergent models
- The Joint Commission Standard
- Theoretical Framework
- Electronic Charting
- Evidence – based
- Advantages
- CMQCC

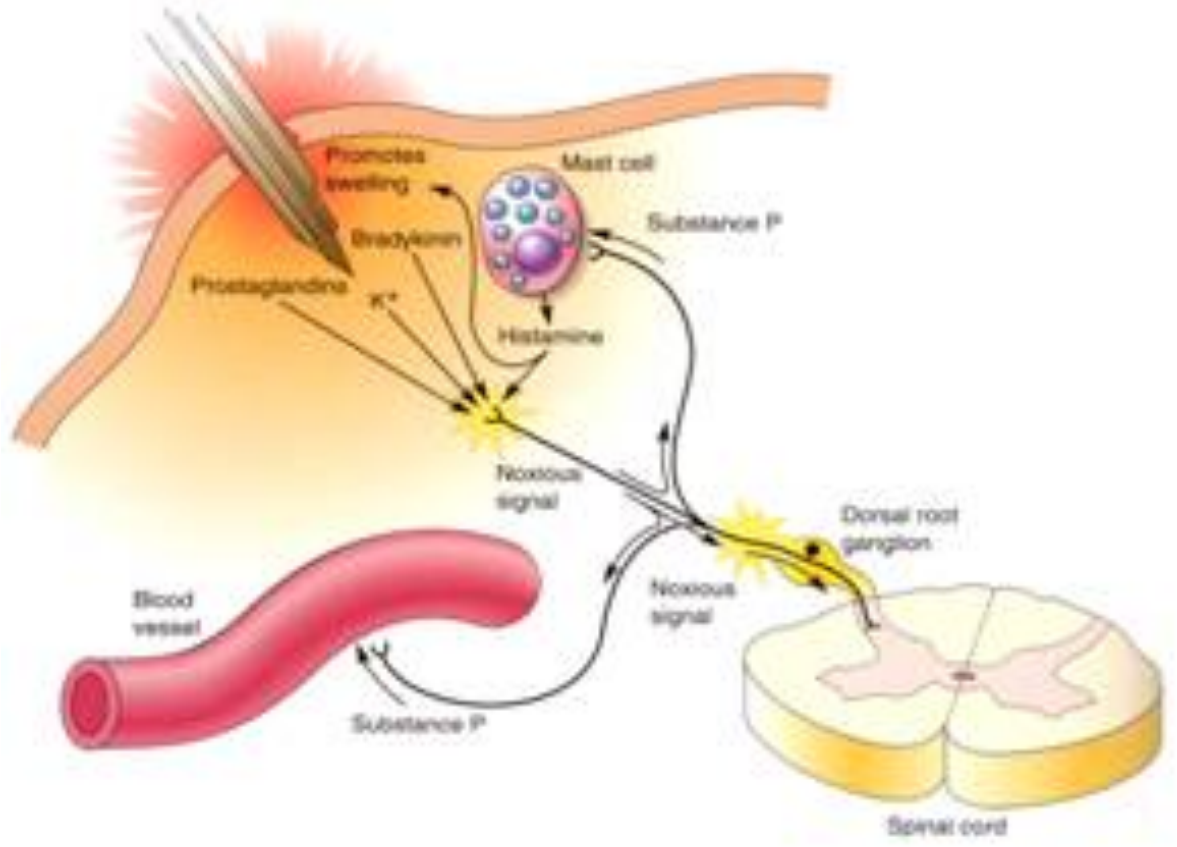
The Coping With Labor Algorithm

- ***PURPOSE***
  - *Develop and implement a pain assessment, documentation and management program that is unique to the laboring patient and replaces the 0-10 Numerical Rating Scale (NRS).*
  - ***QUESTIONS***
    - *What is Pain?*
    - *Can all pain be rated?*
    - *Is all pain bad?*
    - *Can you have pain without suffering?*

Pain

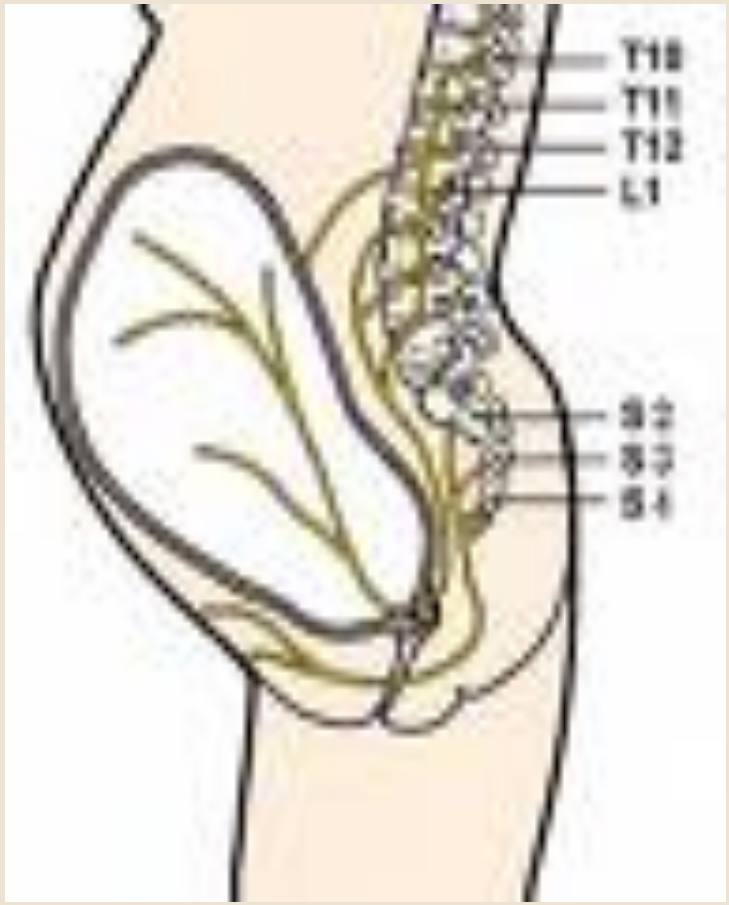
- *Pain is defined by the International Association of the Study of Pain (IASP) and the American Pain Society (APS) as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage"* *(Merskey, 1979, p. 250).*
- *Perceptions of pain are influenced by social and environmental factors, as well as a person's experiences and cultural factors* *(Caton et al., 2002; King & McCool, 2004; McCool, Smith, & Aberg, 2004).*

The Experience of Pain



Pharmacologic management of pain during labor and delivery Gilbert J Grant, MD

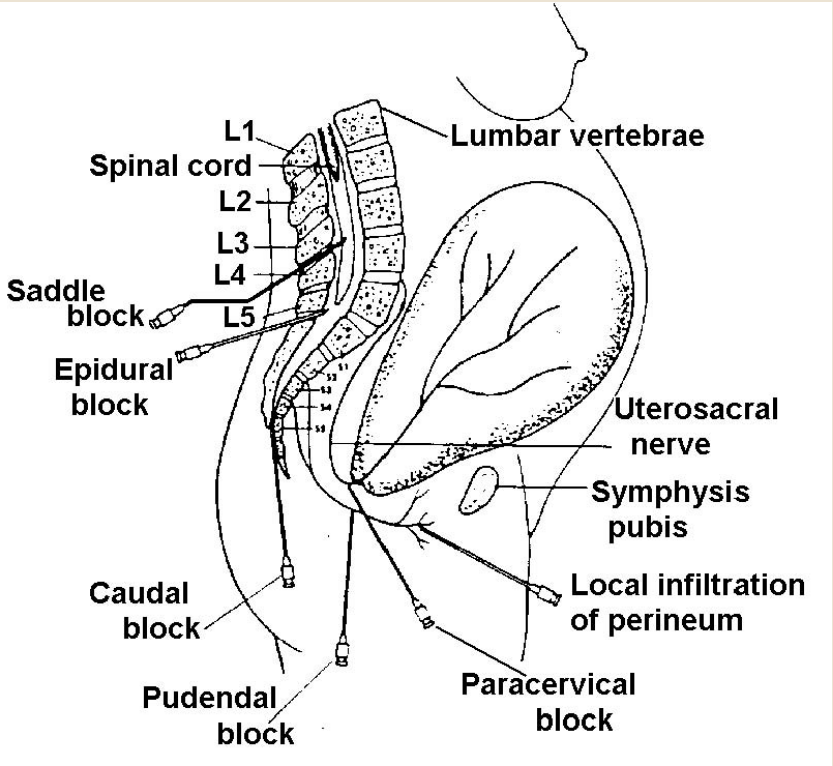
Uterine Pain Pathway



- ***Sensory Pain***
- First stage
- Late first stage and into the second stage

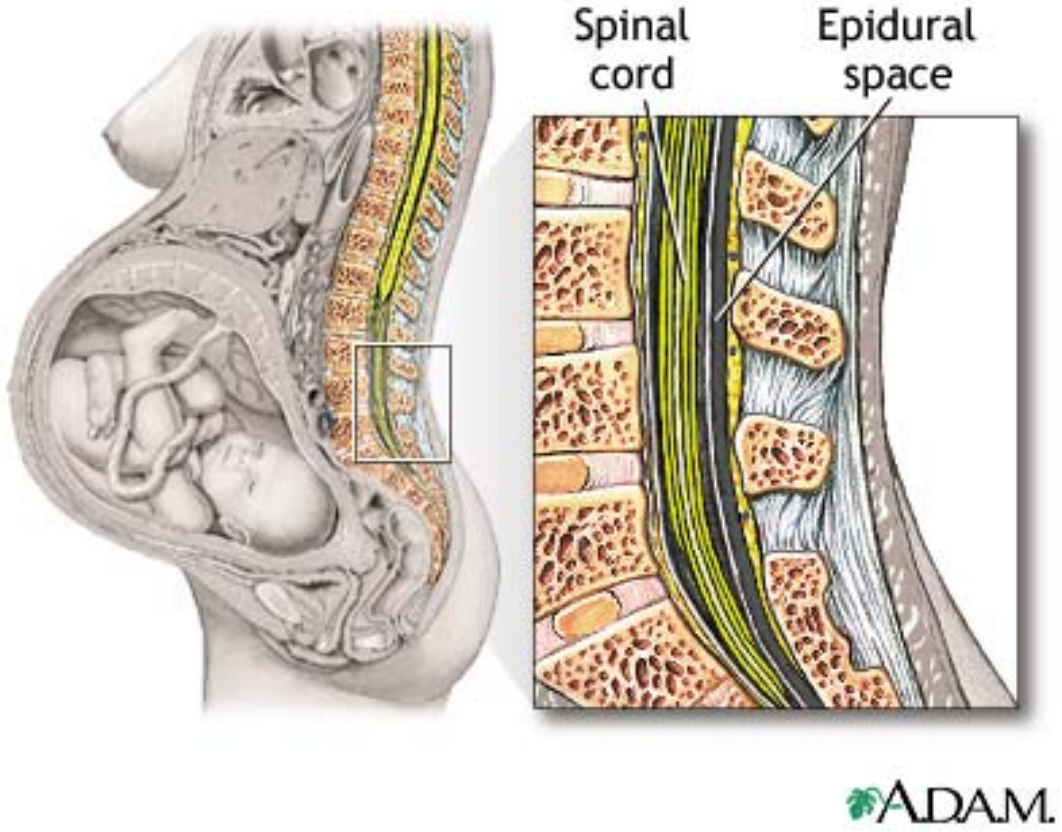
Two Divergent Models

- Pharmacologic Model



- Non-Pharmacologic Model

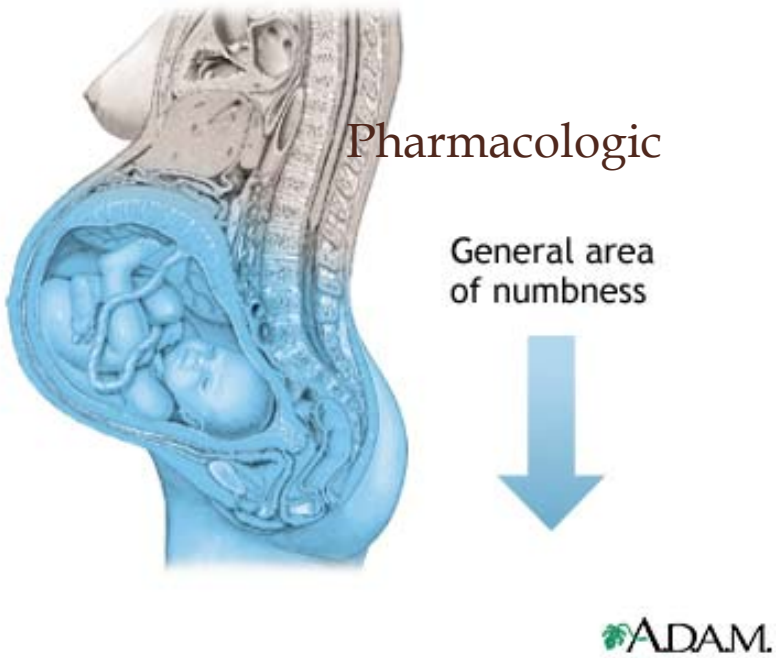
The Pharmacologic Model



z.about.com/d/p/440/e/f/19172.jpg

Epidural Anesthesia

"there is no other circumstance where it is acceptable for an individual to experience untreated severe pain amenable to safe intervention while under a physicians care……Pain management should be offered."



- http://adam.about.com/surgery/100195.htm#

•The American College of Obstetricians and Gynecologists 2006 Compendium.
•Practice Bulletin Number 36, July 2002.

"Unlike other acute and chronic pain experiences, labor pain is not associated with pathology but with the most basic and fundamental of life's experiences – the bringing forth of new life" (Lowe, 2002, p.S16)

The Non-pharmacologic Model

http://www.americanpregnancy.org/labornbirth/relaxationtechniques.htm
http://www.collegeofmidwives.org/temporary02/Photographs_%20NormBirth_Dec02.htm

The Aztec Model

WWW.FRESHGASFLOW.COM/.../SHARE_THE_PAIN.GIF

Questions

- Can all pain be rated?
- Is all pain bad?
- Can you have pain without suffering?
- Why do we care about pain?

Background

- TJC – The Joint Commission
  - Joint Commission on Accreditation of Healthcare Organizations
- Pain assessment standard
  - Introduced in 1999

The Joint Commission

- "Patients have the right to pain management." (R1.2.160)
- "The hospital defines in writing the data and information gathered during assessment and reassessment." (PC.2.20)
- To maintain The Joint Commission compliance and meet patients needs the Coping With Labor Algorithm was developed.

The Joint Commission Comprehensive Accreditation Manual, 2007, p. PC.2.20.

Justification

- A piece of the Pertinent Element of the JCAHO Assessment Standard (PC.2.20) states:

- "If applicable, separate specialized assessment and reassessment information is identified for the various populations served."

Problem Statement

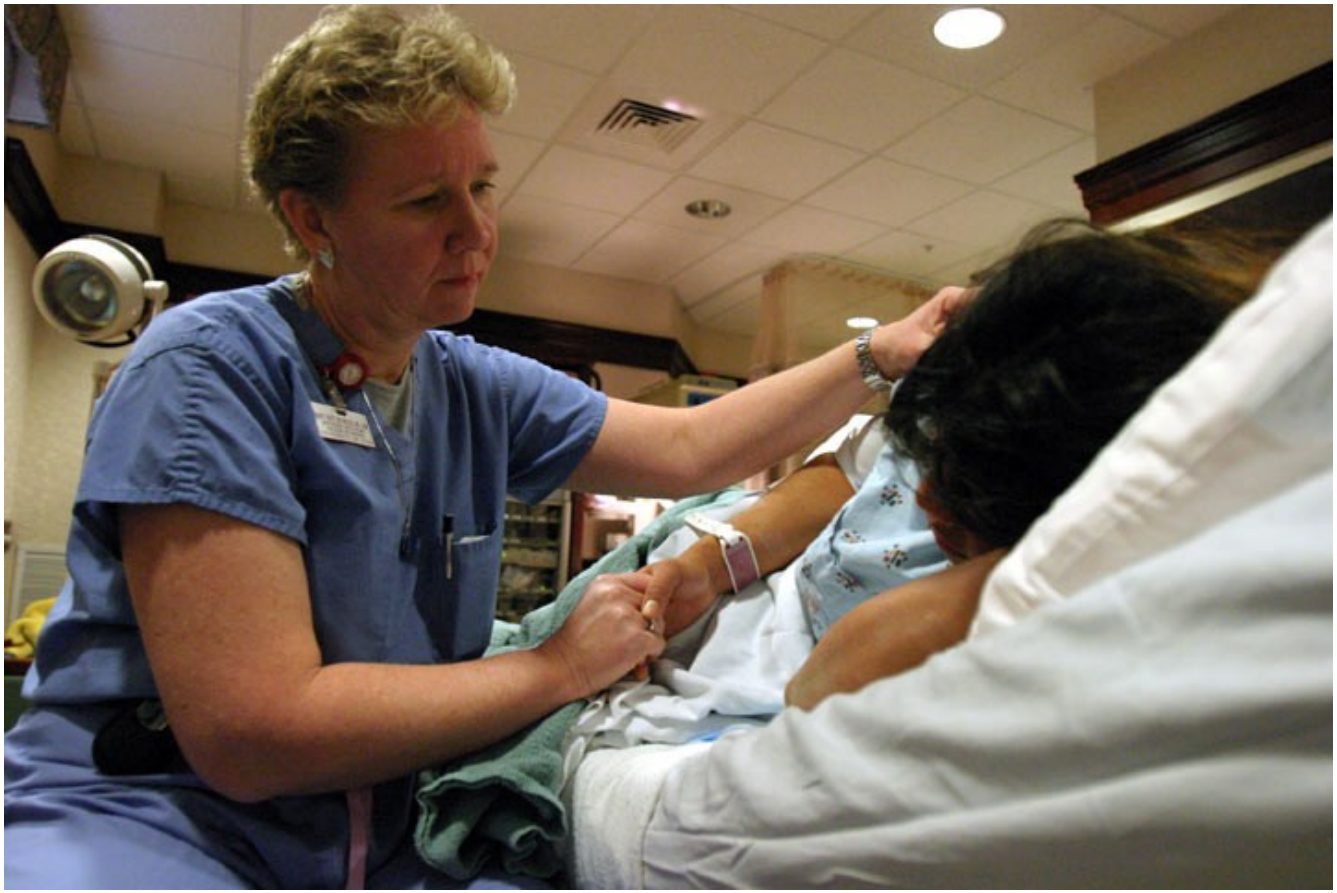
- *Prior to implementing the Coping Algorithm, University hospital's L&D unit utilized the hospital wide and Joint Commission approved numerical rating system (NRS) for pain assessment and documentation.*

- ***We all know -***
  - *It is difficult to quantify the "pain" of labor….*

Patients are Confused

- Some patient's request that they not be asked to rate their pain score
- Patients have stated, "Why are you asking me this?"
- There are reports of confusion as to whether the pain is rated with a contraction or between a contraction.

Coping with Labor



Theoretical Framework

"Here is Edward bear, coming downstairs now, bump, bump, bump on the back of his head, behind Christopher Robin. It is, as far as he knows, the only way of coming downstairs, but sometimes he feels that there really is another way, if only he could stop bumping for a moment and think of it." (A.A. Miline, Winnie-the-Pooh, p.1)

Theoretical Framework

- A combination Total Quality Management (TQM) process was utilized for this project.
- W. Edwards Deming's PDCA cycle with a FOCUS framework.

Theoretical Framework

FOCUS

Find a process to improve,
Organize a team that knows the process,
Clarify current knowledge of the process,
Understand causes of process variation,
Select the process improvement

PDCA

Plan the improvement
Do the improvement
Check the results
Act to maintain gains.

FOCUS Format

Figure 1: FOCUS format.

Find an improvement – improving pain assessment for laboring women.

Organize a team – six RN's and one CNM joined together to create change.

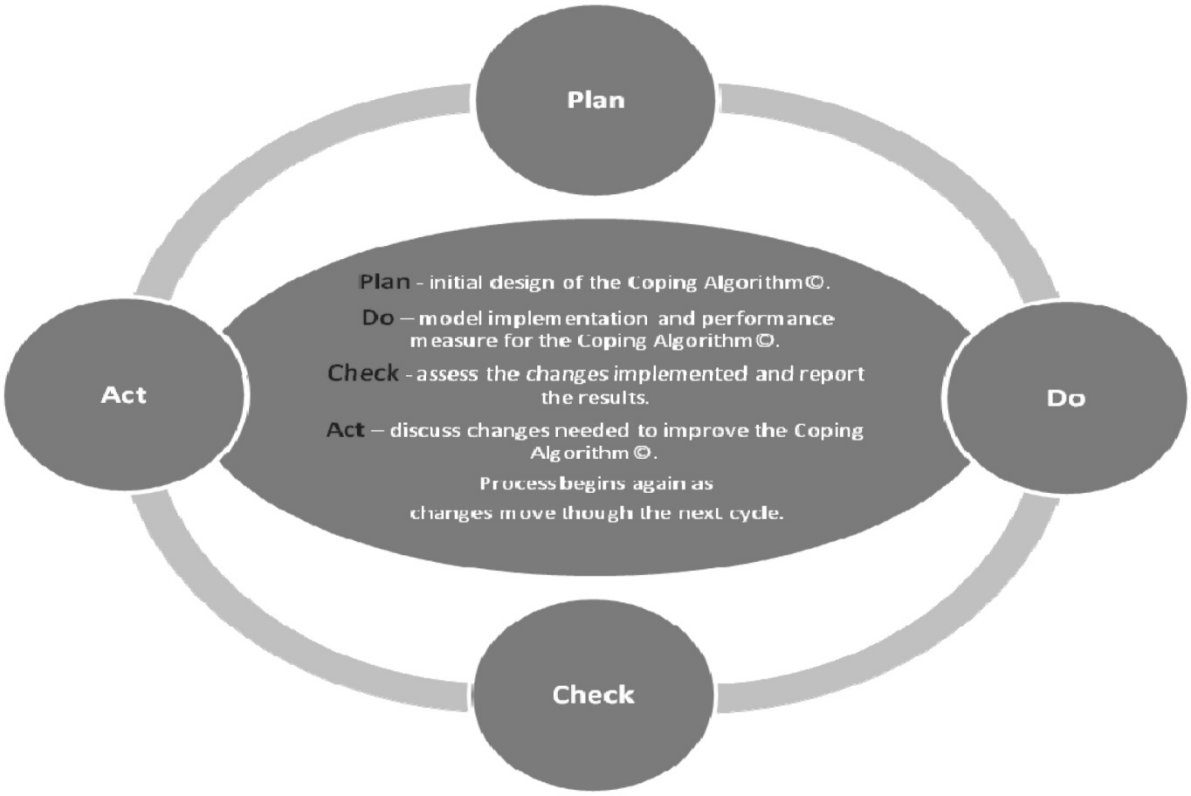
Clarify the current knowledge – perform a literature review.

Understand causes of process variation – all team members had over 10 years of experience that added value to understanding of the process.

Select the process improvement – find an acceptable alternative to use of the 0-10 NRS in documenting pain for laboring women

PDCA

Figure 2: Deming's PDCA cycle.



Why "Coping"?

- *"Coping, a complex and multidimensional phenomenon, has been found to have cognitive, emotional, and behavioral qualities"* *(Abushaikha, 2007, p. 35)*

- *"Coping is defined as a stress-specific pattern by which an individual's perceptions, emotions, and behaviors prepare for adapting and changing"* *(Abushaikha, 2007, p. 35)*

Continuing the Process

- **After development**
  - **Core group utilized on L&D**
    - **Feedback incorporated**
  - **Rolled out to all L&D staff**
- **Evaluation**
  - **Five yes-no questions**
  - **Opportunity for open-ended elaboration**

Implementation of the Coping Algorithm

- Created a Guideline for L&D nurses
- Describes Philosophy of Pain Care…..
  - *"To recognize the uniqueness of the laboring experience and that the characteristic of this pain is individual, subjective and intensely personal in nature."*

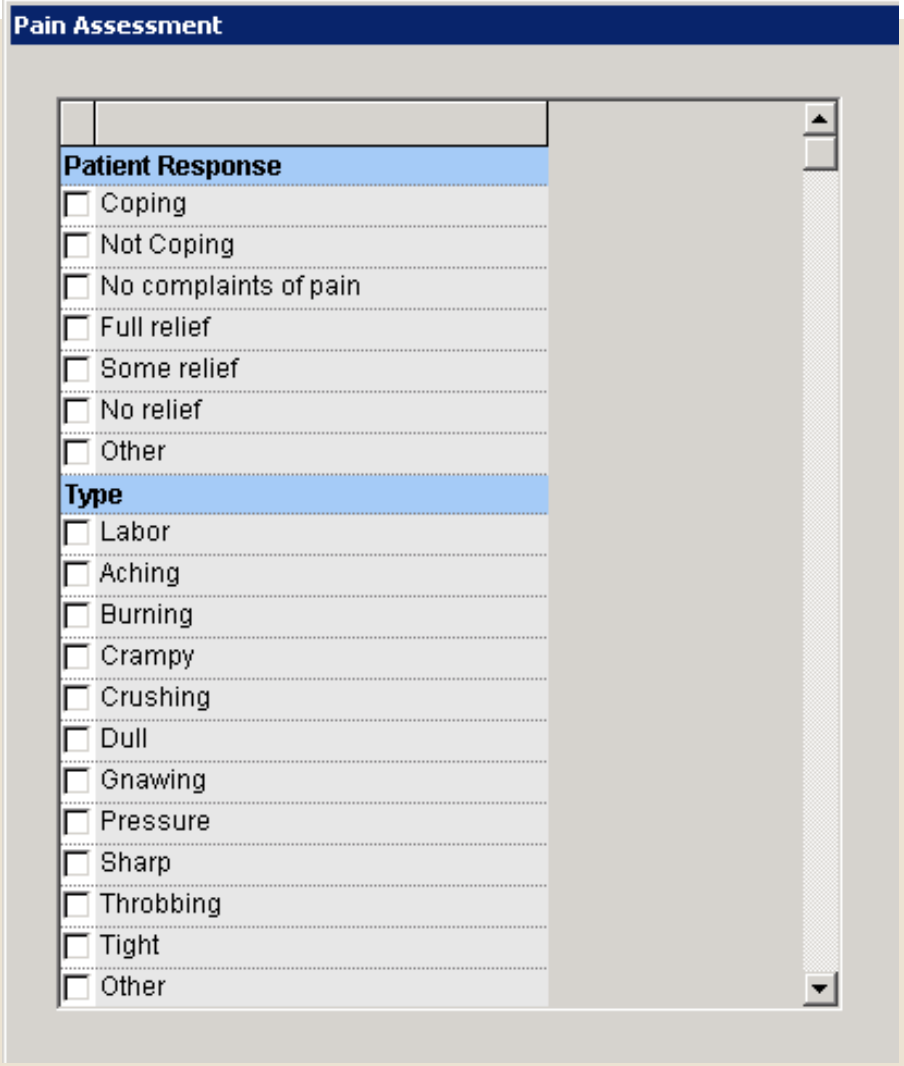
Implementation of the Coping Algorithm

- Defines vocabulary used for documentation purposes
- When the Coping Algorithm is used
- Frequency of assessment
- When to transition to the 1-10 NRS or when it should be implemented

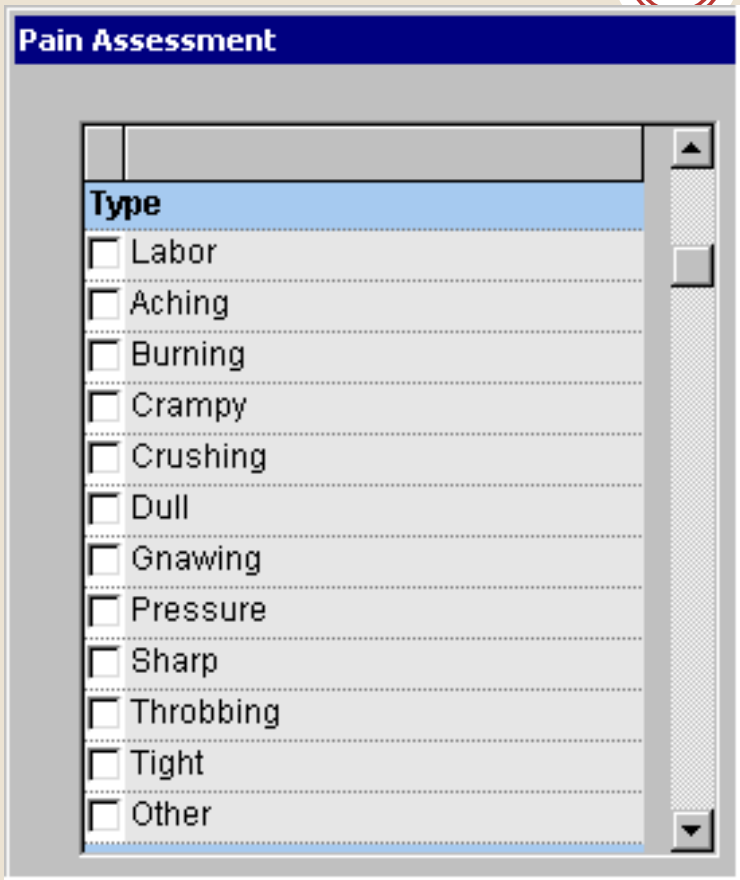
Charting

- *University of Utah, Philips OB TraceVue and the Coping Algorithm*

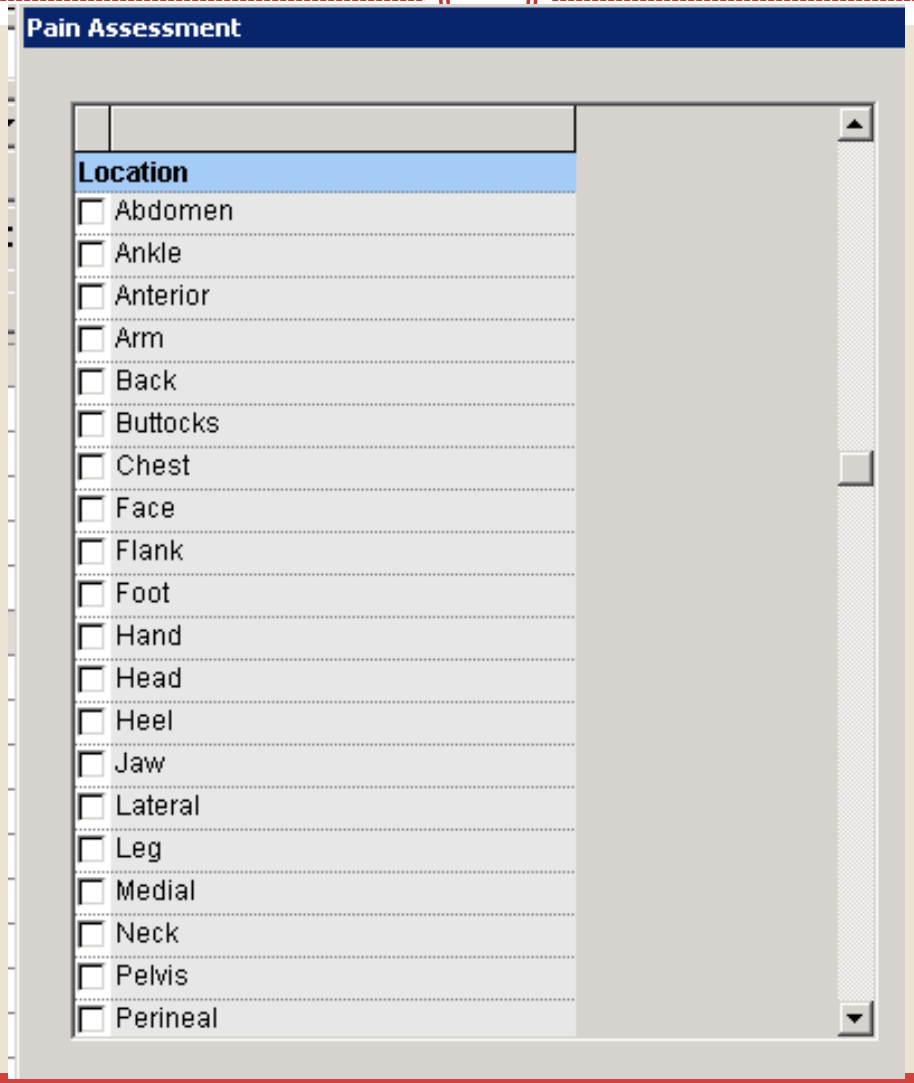
Patient Response



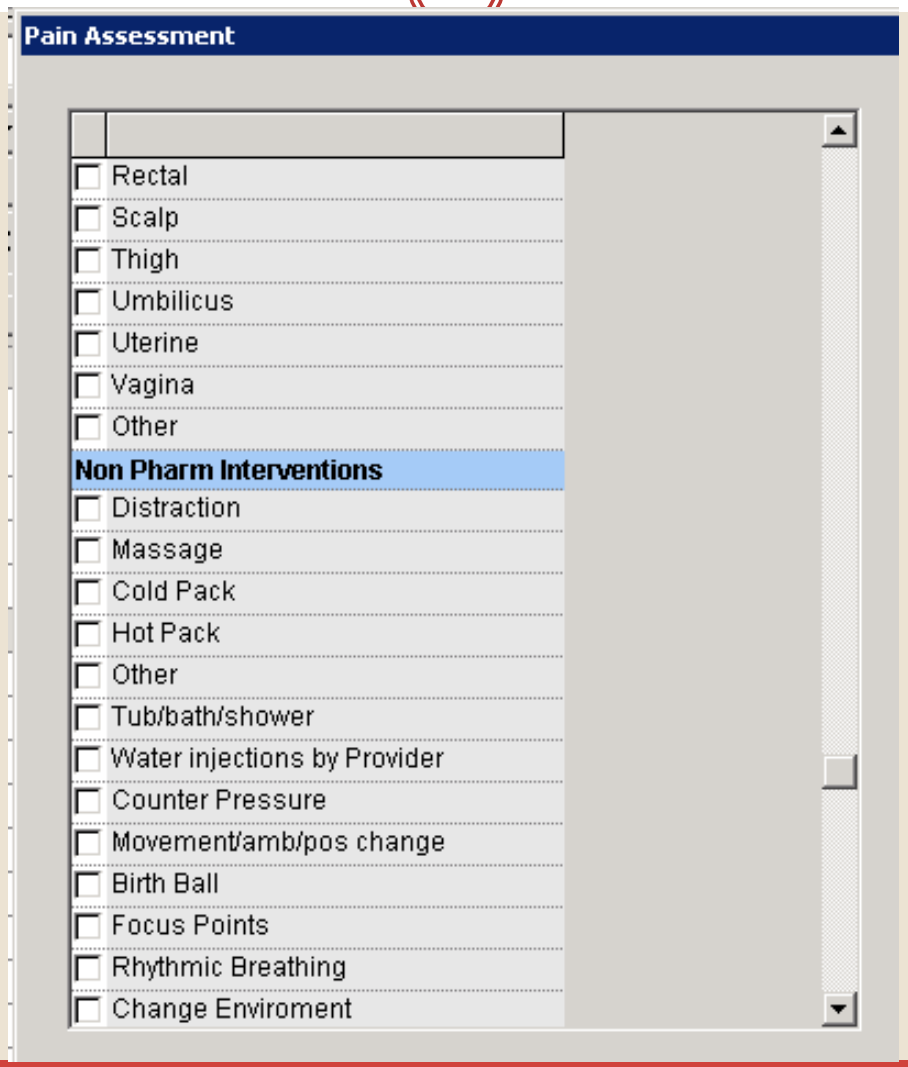
Pain Assessment



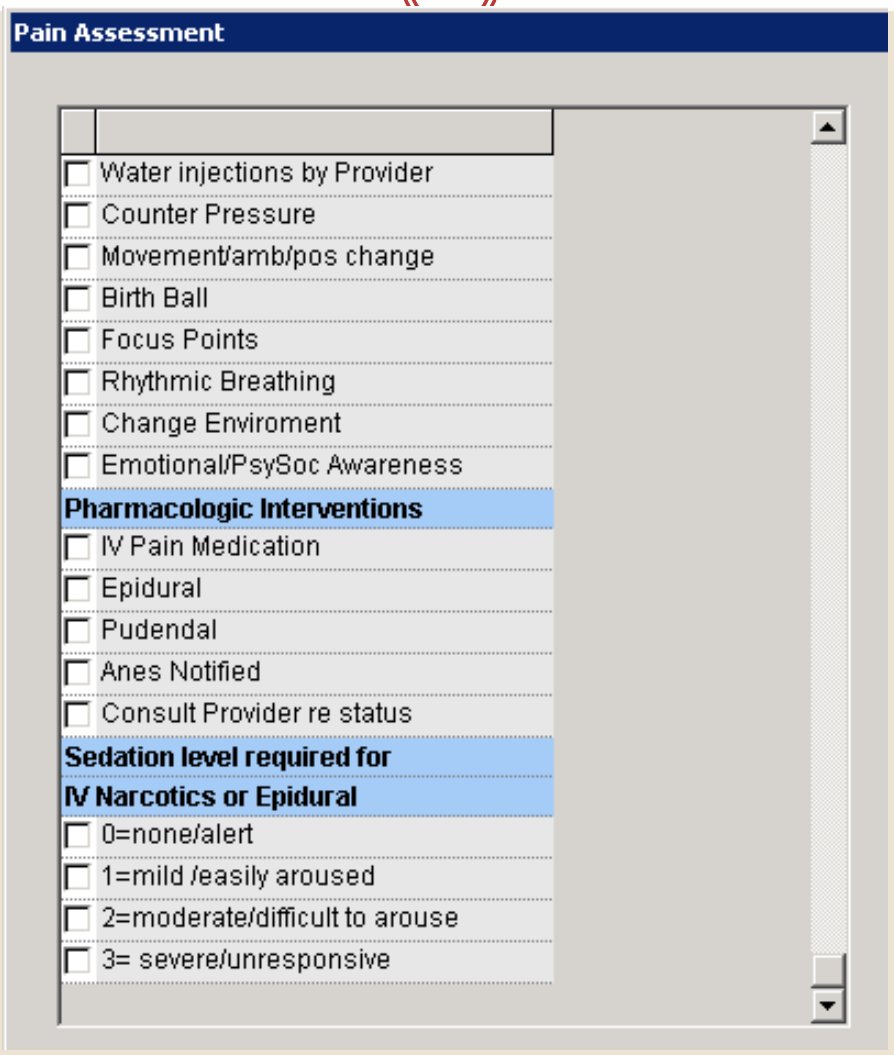
Pain Location



Non Pharmacologic Interventions



Pharmacologic Interventions



Results

Survey- July & Dec. 2005, N = 35

1. Is Coping /Not coping algorithm beneficial to the patient?
   - **100% yes (both)**
2. Does it provide for a better assessment than the NRS scale?
   - **July 95% – Dec 100% yes**
3. Do you feel the new Coping Algorithm© is an improvement in pain assessment?
   - **100% yes (both)**

L&D Nurses Quotes

Reference: theunnecesarean.com
Retrieved 2/22/2011

Nursing comments regarding use of the Coping With Labor Algorithm

COPING

"We focus more on how the patient feels rather than a number."

"It is so much easier and [more] logical than the scale because of the complexities of pain and labor."

PROCESS

"Allows use of nursing process and your own intuition as to what is happening with the patient rather than limiting it to a scale."

"Doesn't focus on labor as 'pain' but rather a process, in which pain isn't good or bad."

COMMUNICATION

"Patients understand what I am asking them and respond well to both the initial inquiry and the follow up to interventions."

"Patients feel like they need to give you a high number in order for their pain to be real."

Qualitative Analysis

- Analyze all quotes
- Pull out important words
- Discover themes

Qualitative Thematic Analysis

- 82 comments were analyzed
- 50 primary codes
- 9 secondary codes
- 3 themes emerged

Primary Codes

Communication
Presence
Assessment
Evaluation
Nurse
Annoying
Perception
Suffering
Comfort
Preference

Cues
Caring
Joyous
Support
Annoying
Scales
Surge
Suffering
Control
Common Sense

Documentation
Intervention
Evaluation
Confusion
Culture
Education
Simplification
Intuitive
Easier
Badgering

Choices
Continuum
Joyous
Comfort
Preference
Easier
Perception
Nursing Process
Pain

Satisfaction
Control
Woman
Culture
Quality
Improvement
Understanding
Achievement
Validation
Coping

Secondary Codes

- Nursing Process
- Pain/Coping
- Common Sense
- Education
- Quality Improvement Process
- Choices
- Communication
- Satisfaction
- Presence

Themes

- COPING
- PROCESS
- COMMUNICATION

Washington State University Graduate Project

- Robyn Gibson, RNC, BS for particle credit of a Masters degree – completed May 2011
- Convenience sample
- Two L&D units in a 5 hospital system trialed the Coping Algorithm for 2 weeks
  - Community Hospital - 17 bed LDRP, 1000 births /year
    - Training received with a poster board
    - 31% response rate. N= 10
  - Urban Hospital – 14 bed L&D unit, 1600 births/year
    - Hands on training
    - 19% response rate. N= 9

Results
Washington State Grad Project

Survey- 2011, N = 19

1. Is Coping /Not coping algorithm beneficial to the patient?
   - **100% yes**
2. Does it provide for a better assessment than the NRS scale?
   - **July 79% yes**
3. Do you feel the new Coping Algorithm© is an improvement in pain assessment?
   - **100% yes (both)**

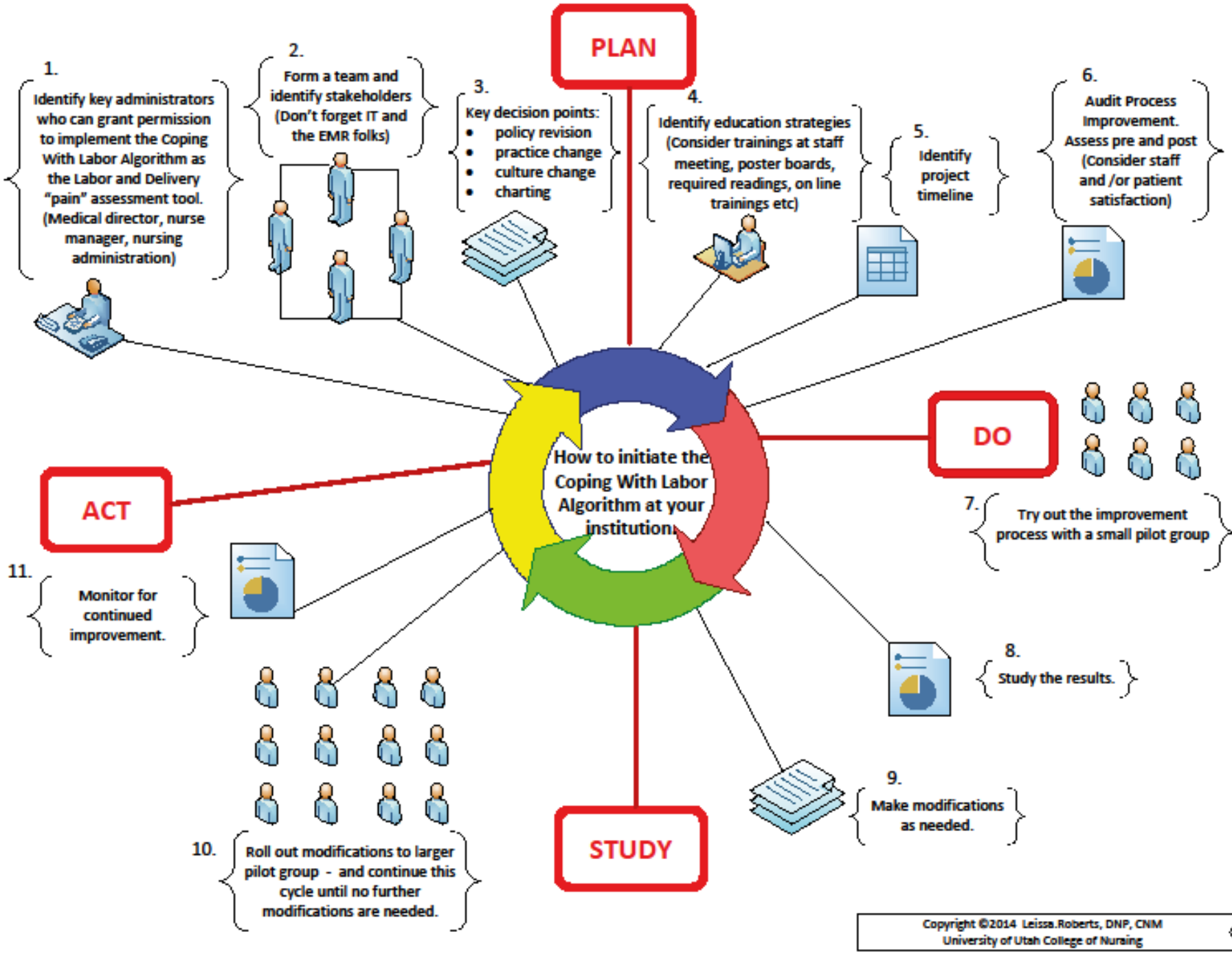
Baylor University: Louise Herrington School of Nursing - Graduate Project

- Esther Fairchild, RN, WHNP – BC, CNM, DNP
  - Implementing Roberts's Coping With Labor Algorithm: A Quality Improvement Project
- Used Demings PDCA and Stakeholder Theory
- 18 member RN task force – pre-implementation survey and education prior to this team piloting
  - Created a + influence for use system wide
- Voice over PP for training
- All RN staff (n = 80) used for 4 weeks

Results
Baylor Grad Project

Survey N = 25

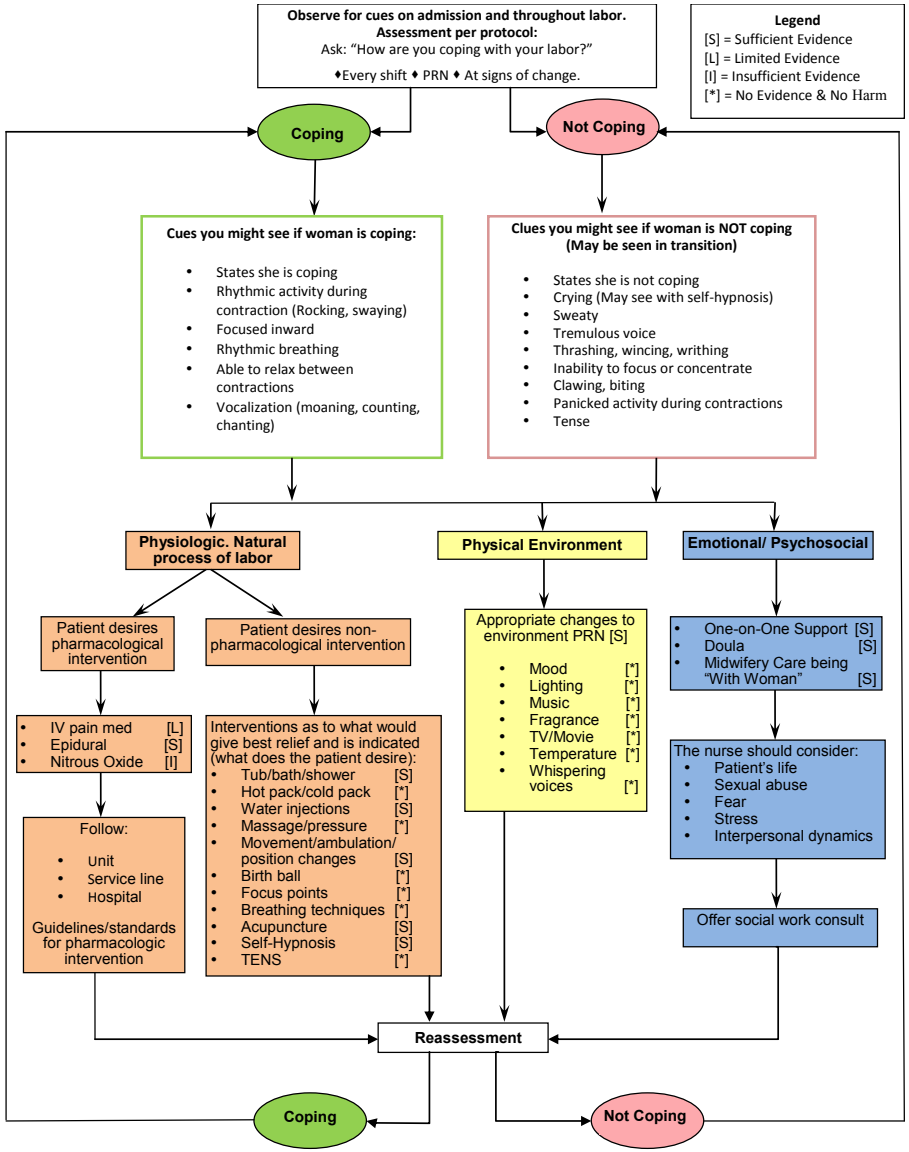
1. Is Coping /Not coping algorithm beneficial to the patient?
   - **96% (n = 24) yes**
2. Does it provide for a better assessment than the NRS scale?
   - **92% (n= 23) yes**
3. Do you feel the new Coping Algorithm© is an improvement in pain assessment?
   - **84% (n= 21) yes**



This is what it's all about!

Work Product of Leissa Roberts, DNP, CNM, FACNM ©

http://media.photobucket.com/image/Birth/raeben/birth55copy.jpg Retrieved 4/25/09



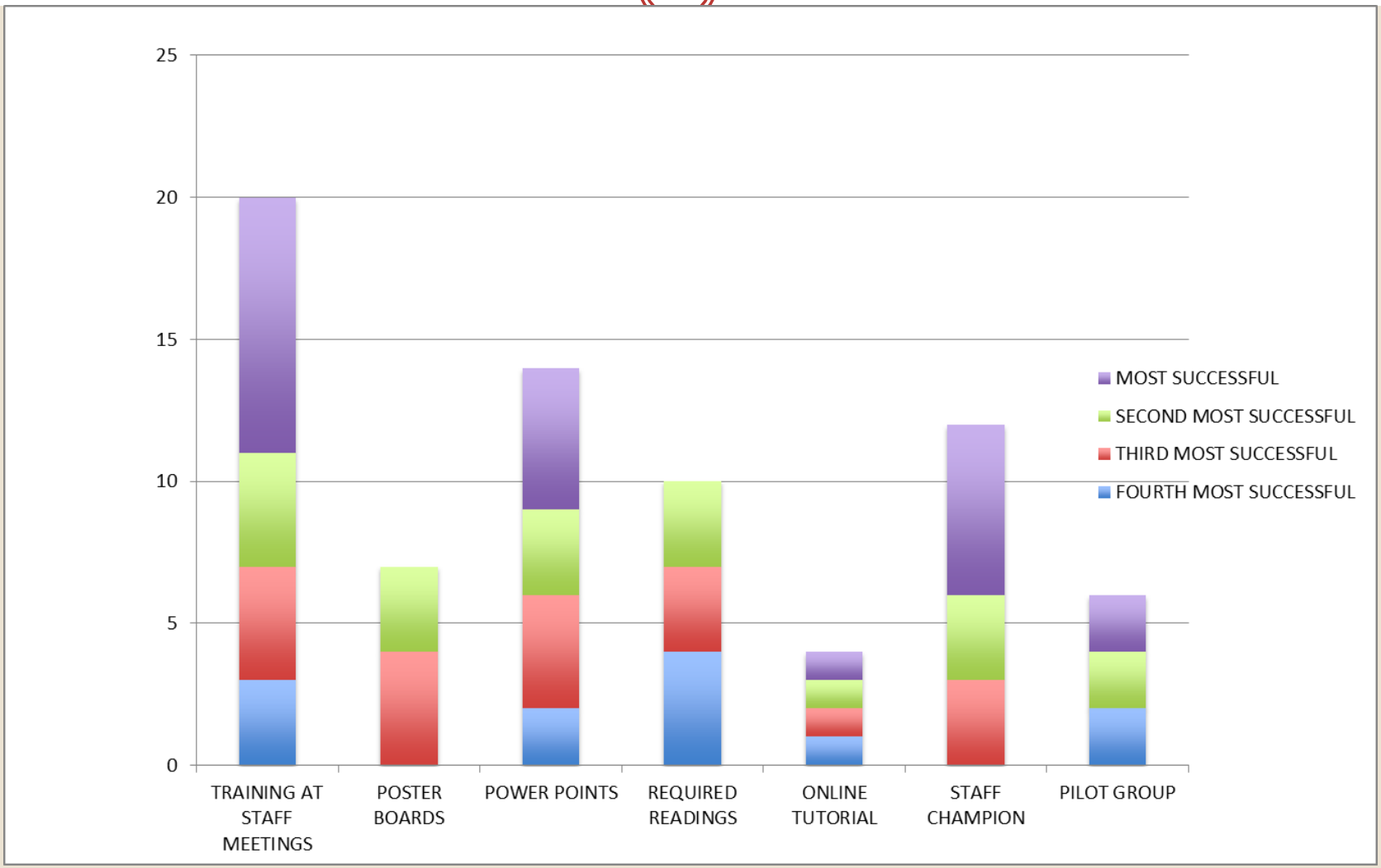
Preview of New Data

- 300 Requests to use of the Coping with Labor Algorithm
- Survey sent to 265 participants.
- 90 returned emails
- 175 Successfully sent
- 44 returned surveys (3 Incomplete)
  - Yes 56% (23)
  - No 44% (18)

Successful Implementation

- **Educational Strategies used:**
  - Most Successful: Training at staff meetings
  - 2nd: Training at staff meetings
  - 3rd: Tie between Training at staff meetings; Poster boards and PP presentation
  - 4th: Required readings

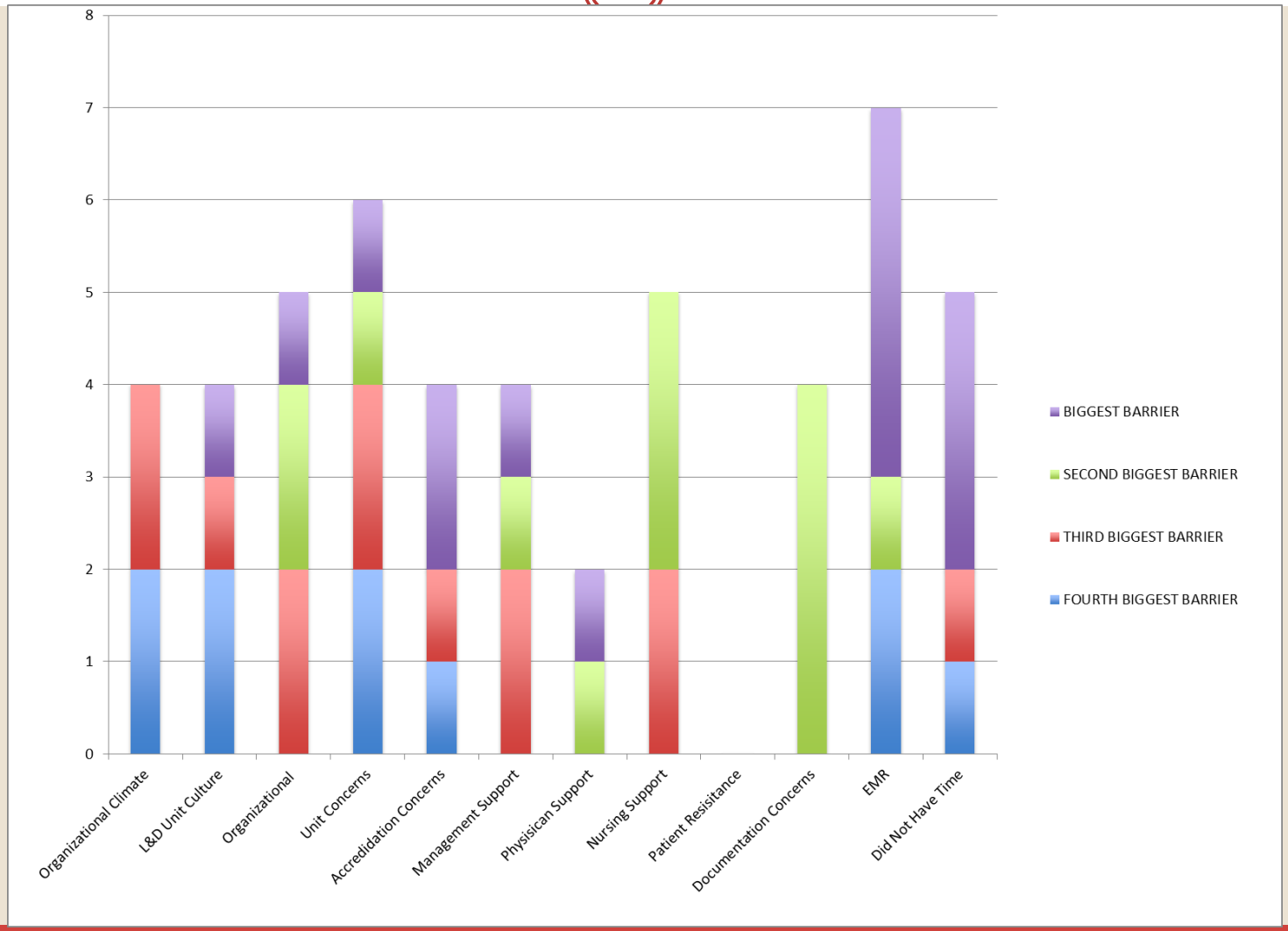
Facilitators



Barriers Encountered

- Biggest: Electronic record documentation
- 2nd biggest: Documentation concerns: how to chart in a new way
- 3rd biggest: Tie btw Org. climate, Org capacity for change, Unit capacity for change, Lack of management support, and Lack of nursing support
- 4th biggest: Tie btw Org. climate, L&D Unit culture, Unit capacity for change, other

Barriers


8
7
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Organizational Climate
L&D Unit Culture
Organizational
Unit Concerns
Accredidation Concerns
Management Support
Physisican Support
Nursing Support
Patient Resisitance
Documentation Concerns
EMR
Did Not Have Time
BIGGEST BARRIER
SECOND BIGGEST BARRIER
THIRD BIGGEST BARRIER
FOURTH BIGGEST BARRIER

Part Two: Looking at the Evidence

www.blossomingfamilies.com/…/index.html Retrieved 4/25/09

www.soulprintsphotography.com/…/ Retrieved 4/25/09

Grading the Evidence

Grade	Definition	Suggestions for Practice
A	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
B	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
C	The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is at least moderate certainty that the net benefit is small.	Offer or provide this service only if other considerations support the offering or providing the service in an individual patient.
D	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
I Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

http://ahrq.hhs.gov/clinic/uspstf/grades.htm#post

Summary of Care Measures

Care Measure	Algorithm Arm	Evidence for Use	Study or Review (Year)	Comments
One-on One Support	Emotional /Psychosocial	Sufficient	Simkin (2004)[9] Hodnett (2007)[23] Albers (2007)[24] NICE (2007)[25]	Most effective with lay person or trained doula. Greater benefit if began in early labor versus active labor.
Tub / Bath / Shower (Hydrotherapy)	Physiologic / Natural Process of Labor Non-pharmacologic	Sufficient	Lowe (2002)[1] Simkin (2004)[9] Hodnett (2007)[23] NICE (20007)[25] Cluett (2002)[26]	In first stage of labor reduces a woman's perception of pain and use of anesthesia. Timing of entry, duration and water temperature are important.
Intradermal Water Injections	Physiologic / Natural Process of Labor Non-pharmacologic	Sufficient	Simkin (2004)[9] Albers (2007)[24] Huntley (2004)[27] Mårtensson (2008)[28]	Reduces low back pain severity. Provides relief for up to 2 hours. Stinging at the injection sites.
Movement / Ambulation / Position Change	Physiologic / Natural Process of Labor Non-pharmacologic	Sufficient	Simkin (2004)[9] Albers (2007)[24] Simkin (2003)[29] Gupta (2004)[30]	May shorten labors and ↓pain with lateral or upright position. Possible ↑ in blood loss with upright posture. Encourage position of comfort.
Massage / Pressure (Acupressure)	Physiologic / Natural Process of Labor Non-pharmacologic	Insufficient evidence	Simkin (2004)[9] NICE (2007)[25] Huntley (2004)[27] Field (2008)[31] Smith (2006)[32] Trout (2004)[33] Tournaire (2007)[34]	Massage can reduce leg and back pain during pregnancy. No evidence of harm. Potential subjective benefit. Based on the Neuromatrix Theory of Pain should be considered as viable alternative therapies. Note: Although Acupuncture is not in the algorithm lower levels of pain have been reported with its use.

Summary of Care Measures				
Care Measure	**Algorithm Arm**	**Evidence for Use**	**Study or Review (Year)**	**Comments**
Rhythmic Breathing	Physiologic / Natural Process of Labor Non-pharmacologic	Insufficient evidence	Simkin (2004) [9] NICE (2007) [25] Huntley (2004) [27] Smith (2006) [32]	No indication of harm and may assist a woman with her ability to cope in labor.
Hot Pack / Cold Pack	Physiologic / Natural Process of Labor Non-pharmacologic	Insufficient evidence	Simkin (2004) [9]	Contraindicated with regional anesthesia. Otherwise no evidence of harm.
Music	Physical Environment	Insufficient evidence	Simkin (2004) [9] NICE (2007) [25] Smith (2006) [32] Tournaire (2007) [34]	No indication of harm and soft music without lyrics may reduce distress in labor. Potential subjective benefit.
Fragrance (Aromatherapy)	Physical Environment	Insufficient evidence	Simkin (2004) [9] NICE (2007) [25] Smith (2006) [32] Tournaire (2007) [34]	No indication of harm and may decrease anxiety. Potential subjective benefit.
IV pain medication (Parenteral Opioids)	Physiologic / Natural Process of Labor Pharmacologic	Limited evidence to support.	Bricker (2002)[35] McCool (2004)[36]	Doubts about efficacy for pain control. Maternal side effects of nausea, vomiting and sedation. Opioids cross the placental barrier showing adverse effects on the newborn.
Epidural Anesthesia (Regional Anesthesia)	Physiologic / Natural Process of Labor Pharmacologic	Sufficient for effective pain relief	McCool (2004)[36] Leighton (2002)[37] Lieberman (2002)[38]	Provides effective pain relief in labor. Most commonly used pain relief in the United States. Associated with ↑ length of 2nd stage, ↑ instrument delivery, ↑ maternal fever, ↑ maternal hypotension and ↓ in spontaneous vaginal birth.

One on One Support

- **Pros**
  - Emotional/physical needs met
  - Consistent person
  - Greater benefit if begins early in labor
  - Most effective with familiar lay person or a doula
  - Better Outcomes

- **Cons**
  - Not always available
  - Can be difficult for support person if labor is long

Evidence Grading: Sufficient

References: Simkin, 2004; Hodnett, 2007; Albers, 2007; NICE, 2007; Essex, 2010;

Hydrotherapy

- **Pros**
  - Easy to use
  - Non Pharmacologic
  - Reduces perception of pain and medication use

- **Cons**
  - Timing of entry, duration and water temp are important for effect
  - Not always available
  - Sometimes practice standards don't allow

Evidence Grading: Sufficient

References: Lowe, 2002; Simkin, 2004; Hodnett, 2007; NICE, 2007; Cluett, 2002

Intradermal Water Injections

Pros

- Reduces lower back pain
- Can be administered more than once
- Relief for up to two hours
- Easy to administer
- Minimal risks

Cons

- Not all practices have knowledge
- Stinging at the injection site

Evidence Grading: Sufficient

References: Simkin, 2004; Albers, 2007; Simkin, 20003; Gupta, 2004

Movement/Ambulation/Position

- **Pros**
  - May decrease labor and pain with lateral or upright position
  - Mom has control of what is comfortable for her
  - Widens the pelvis
- **Cons**
  - Possible increase in blood loss with upright positions
  - Not always possible with certain interventions

Evidence Grading: Sufficient

References: Simkin, 2004; Albers, 2007; Simkin, 2003; Gupta, 2004

Massage / Acupressure

- **Pros**
  - Reduces pain during pregnancy
  - No evidence of harm
  - Subjective benefit
- **Cons**
  - Can be hard for support person in long labors

Evidence Grading: Insufficient

References: Simkin, 2004; NICE, 2007; Huntley, 2004; Field, 2008; Smith, 2006; Trout, 2004; Tournaire, 2007

Acupuncture

- **Pros**
  - Lower pain intensity
  - Increased relaxation
- **Cons**
  - Not always available

Evidence Grading: Sufficient

References: Fan, 2006

Rhythmic Breathing

- **Pros**
  - No indication of harm
  - May assist a woman to cope
  - Any type will work if its working for mom
- **Cons**
  - Some patterns are too complicated
  - Hyperventilation

Evidence Grading: Insufficient

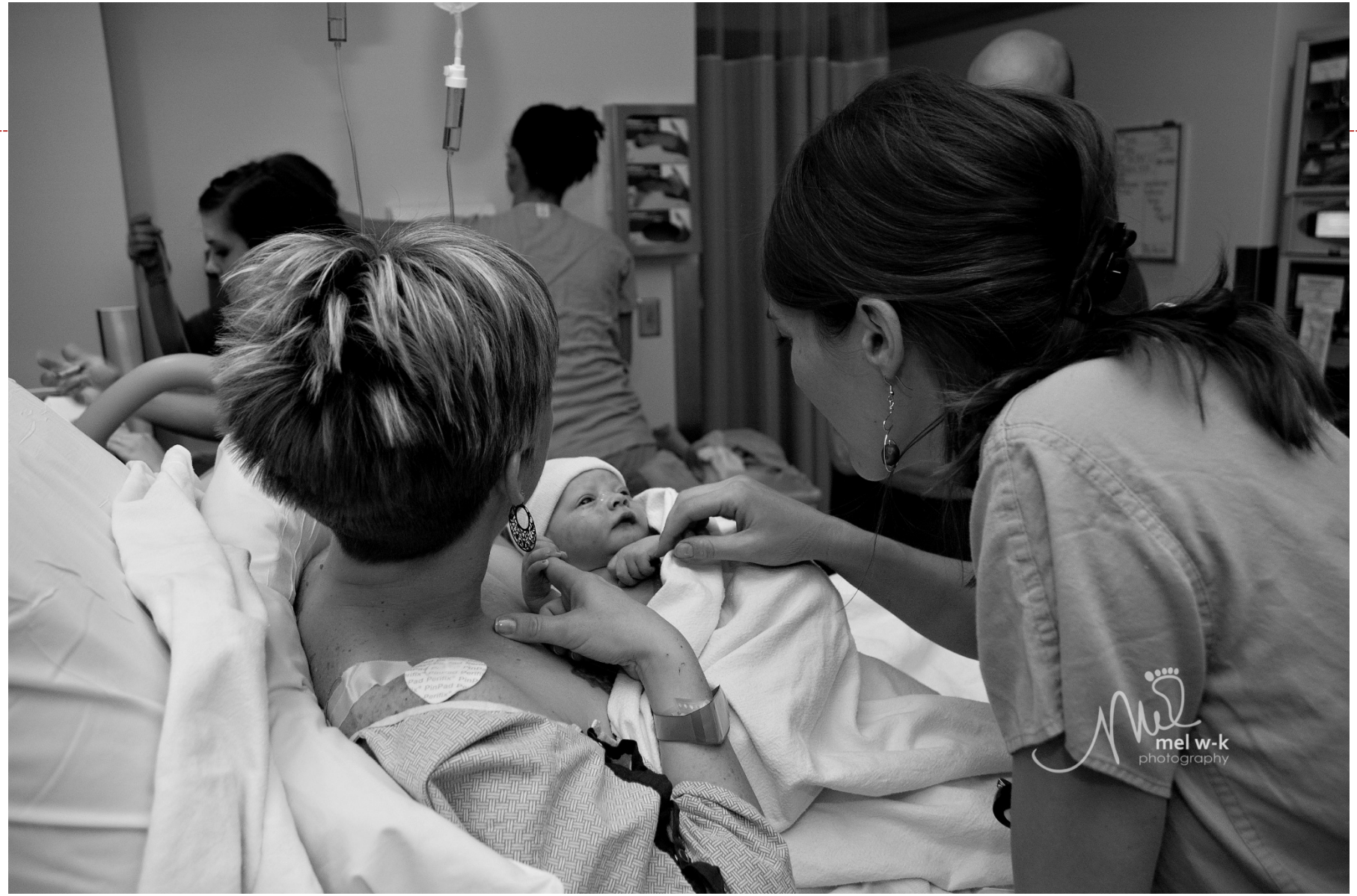
References: Simkin, 2004; NICE, 2007; Huntley, 2004; Smith, 2006; Simkin 2010

Hot and cold Packs

- **Pros**
  - No harm in most cases
  - Perceived decrease in pain
  - Easy to make if none are available
- **Cons**
  - Contraindicated with regional anesthesia

Evidence Grading: Insufficient

References: Simkin, 2004


mel w-k
photography

Audio Analgesics

- **Pros**
  - Perceived reduction of pain
  - Easy to provide
  - Relaxes mom
  - No indication of harm
- **Cons**
  - Availability of player

Evidence Grading: Insufficient

References: Simkin, 2004; NICE, 2007; Smith, 2006; Tournaire, 2007

Aroma Therapy

Pros

- May decrease anxiety
- Easy to use
- Scents can evoke positive emotions
- No indication of harm

Evidence Grading: Insufficient

Cons

- Hospitals policy against use due to allergies
- Expertise & Understanding
- Some fragrances are contra-indicated for labor
- Essentials oils are the recommendation
  - Expensive
  - Harder to find

References: Simkin, 2004; NICE, 2007; Smith, 2006; Tournaire, 2007

IV Medication

Pros

- Shorter Acting
- Sedation in between contractions
- Takes off the edge
- Anecdotally can be effective in transition

Evidence Grading:
Limited Evidence

Cons

- Doubts about efficacy for pain control
- Cross the placental barrier
- Maternal side effects
  - Nausea
  - Vomiting
  - Sedation

References: McCool, 2004; Leighton, 2002; Lieberman, 2002

Epidural

Pros

- Provides effective pain relief

Evidence Grading: Sufficient

Cons

- Limited mobility
- Increase 2nd stage, instrumental delivery, maternal fever, maternal hypotension, posterior position
- Decreased NSVD

References: MaCool, 2004; Leighton, 2002; Lieberman, 2002, Simkin 2008

Hypnotherapy

- **Pros**
  - Mother directed
  - Incorporates other pain relief methods
  - Lifeskill
- **Cons**
  - Must be learned and practiced
  - Occasional lack of support in birth facility

Evidence Grading: Sufficient

References:

TENS

- **Pros**
  - Perceived pain reduction
  - Patient satisfaction
- **Cons**
  - Requires equipment

Evidence Grading: Insufficient

References:

Birth Setting
Alternative vs Traditional

- **Pros**
  - Less pain medication used
  - Increases maternal relaxation
  - Increased breastfeeding rates
  - Possible in hospital setting to do some modification
- **Cons**
  - Often dictated by insurance
  - Not always available with higher risk

Evidence Grading:
Limited Evidence

References: Barrett. 2010

Nitrous Oxide

Pros

- Minimal effect on baby
- Commonly used in other countries
- Less expensive than epidural medication
- Allows personal control

Evidence Grading:
Limited Evidence

Cons

- Requires equipment not always available
- Takes the "edge off" but doesn't eliminate pain
- Limits ability to move
- Some maternal side effects
  - Nausea
  - Dizziness
  - Grogginess

References: J Midwifery Womens Health. 2010 May-Jun;55(3):292-6., AP 2011

Advantages

- Allows for specialized assessment and reassessment of the laboring women as a specialized population.
- Care measures are Evidence-Based.
- Teaching tool for new staff.
- Allows women to achieve goals of certain birthing plans while adhering to hospital criteria for documentation.

- Page 91 of the CMQCC
- ACNM Healthy Birth Initiative – Reducing Primary Cesareans – Promoting Comfort in Labor Bundle
  - http://birthtools.org/birthtools/files/BirthToolFiles/FILENAME/000000000090/Bundle-Promoting-Comfort-v2.pdf

Questions?

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