Where is the Evidence?
Unmasking the Sacred Cow
Objectives

1. Discuss the definition of a sacred cow.
2. Describe 4 clinical examples of when a sacred cow was turned over.
3. Describe the process of how you would debunk a sacred cow using the evidence-based practice process.
Sacred Cows

• This term alludes to the honored status of cows in Hinduism, where they are a symbol of God's generosity to humankind.

• The idiom appears to have emerged in America in the late 19th century.

• A figurative sacred cow is a figure of speech for a person or thing immune to question or criticism, especially unreasonably so....
Sacred Cows in Nursing

• In “Notes on Nursing” Florence Nightingale described her observations and findings related to the care of patients
  – Patient advocacy
  – Infection control
  – Physical care of the entire body not just disease or signs & symptoms

• Developed into the philosophy of nursing or what we call the Art & Science of Nursing

Nightingale F. Notes on Nursing 1859
Sacred Cows in Nursing

• Scientific basis for practice:
  – Use research to answer questions
  – Establish protocols
  – Promote critical thinking and decision-making at the bedside

• Must be willing and able to change practice
  – Regarding the tradition or commonly held beliefs
Evidence-Based Practice

• Institute of Medicine Definition
  – *The integration of best research, clinical expertise and patient values in making decisions about the care of individualized patients.*

• Using Research to guide Clinical Decision Making is a shift in culture

Decisions based on
• Opinions
• Past experiences
• Precedents

Decisions based on
• Science
• Research
• Evidence

Greiner, A.C. et al *Health Professionals Education: A Bridge to Quality* 2003
Tipping Our Sacred Cows

• Four Evidence-Based Practice Recommendations for change or implementation into practice
  – Lidocaine with/without Epinephrine: Jennifer Leone
  – Normal Saline IV bolus: Natalie Correll-Yoder
  – Aspiration prior IM injection: Jennifer Leone
  – Bathing at night: Natalie Correll-Yoder
Fingers, Nose, Penis, or Toes
Another Sacred Cow was Conceived

Procaine synthesized

1905
Einhorn meets Braun

Procaine used as local anesthetic replacing cocaine

Chemist Alfred Einhorn

Surgeon Heinrich Braun
Local Anesthetic Choices:

1905 → 1948

procaine or procaine w/ epi
By the 1940s, a Sacred Cow was Born

48 cases of reported digital gangrene after procaine injection
Epinephrine took the rap
1948 Lidocaine introduced

Xylocaine, lignocaine, lidocaine
By the 1980s, “Never Inject Epinephrine in Fingers, Nose, Penis, or Toes” had become medical dogma.
penile nerves results in local anesthesia. Optimal anesthetic effect is generally achieved in 5 minutes.

Complications
For any nerve block, large doses of local anesthetic injected into the intravascular space can cause systemic toxicity, including seizures and cardiovascular dysfunction (100). For this reason, it is important to aspirate the syringe before injecting an anesthetic. In addition, intraneural injection can damage the nerve, resulting in either transient or permanent injury. If the patient feels paresthesia, this may indicate that the nerve has been pierced, and the needle should be withdrawn somewhat before injecting the anesthetic solution. As with any injection, a small risk of bleeding and infection exists. Complications from digital nerve blocks of the fingers and toes are rare, but may include infection, bruising, and nerve damage.

CLINICAL TIPS: NERVE BLOCK ANESTHESIA

- An anesthetic solution containing epinephrine should never be used for nerve blocks of the fingers, toes, or penis.
- Nerve blocks are often preferred over local infiltration anesthesia for procedures involving the hands or feet because insertion of the needle at the appropriate sites for a nerve block is generally much less painful than through the highly innervated skin of the palm of the hand or sole of the foot.
- For certain procedures (e.g., nailbed repairs, replacing a minor fingertip avulsion, ingrown toenail repair, and incision and drainage of a paronychia), a digital block of the finger or toe is virtually always indicated.

1. Cleanse base of penis with povidone-iodine or other antiseptic solution.
2. For neonates, use 0.8 mL 1% lidocaine without epinephrine in a 1-mL syringe. For older children, use 1 to 5 mL of lidocaine without epinephrine. For children over 12 years, use 1 to 5 mL of 0.25% bupivacaine without epinephrine.
3. Insert needle 3 to 5 mm beneath skin at the junction of the penile base and suprapubic skin at the 10 o’clock position; after a negative aspiration for blood, infiltrate half of the anesthetic dose.
4. Repeat step 3 at the 2 o’clock position and inject remaining anesthetic.
5. Wait 5 minutes and test for anesthetic effect before performing procedure.

INTRAVENOUS REGIONAL ANESTHESIA (BIER AND “MINIDOSE” BIER BLOCKS)

The desire for a rapid, safe, effective, and easy-to-perform technique to anesthetize extremities for orthopedic reduction or minor procedures led to the development of intravenous regional anesthesia by Bier in 1908 (107). This procedure
What does the evidence show?
Abstract

BACKGROUND: Digital nerve blocks are commonly performed in emergency departments. Health care practitioners performing blocks with epinephrine due to a risk of digital necrosis.

OBJECTIVE: To review the literature on the safety of epinephrine 1:100,000-200,000 (5-10 µg/mL) with local anesthetics in healthy patients and in patients with risk for poor peripheral circulation.

METHODS: PubMed, Web of Science, and the Cochrane Library were searched in June 2014 using the query OR digital block AND adrenaline*. The searches were performed without any limits.

RESULTS: Sixty-three articles were identified, and 39 of these were found to be relevant. These include trials, and 18 other articles. Most studies excluded patients with risk for poor peripheral circulation. Two on patients with vascular comorbidities. No study reported digital necrosis or gangrene attributable to epinephrine or in patients with risk for poor peripheral circulation. In total, at least 2797 digital nerve blocks with epinephrine 1:100,000-200,000 (5-10 µg/mL) is safe to use in digital nerve blocks with any complications.

EPI CONCLUSION: Epinephrine 1:100,000-200,000 (5-10 µg/mL) is safe to use in digital nerve blocks. Vasoconstriction to digits may be overstated.
Was it the procaine?

pH 3.6
2017
No Lido w/ Epi in digits
Still in NBHC Policy

<table>
<thead>
<tr>
<th>Department</th>
<th>Specific: Medical Staff</th>
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<tr>
<td>Committee</td>
<td>Interdisciplinary Practice &amp; Nursing/Emergency Services</td>
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**Hospitals:**
- NorthBay Medical Center
- Vaca Valley Hospital

**Effective Date:** JUN 1978

**Required Review:** Every 3 years
Reviewed: 10/94, 6/97, 12/98, 7/03, 7/04,
Revised: 6/81, 10/89, 9/90, 2/91, 12/92, 1/93,
10/93, 5/95, 5/96, 7/00, 10/01, 7/02, 8/05,
6/11, 11/14

**Responsible Position:**
- Director Emergency/Trauma Services
- Emergency Services Medical Director
- Approval Requirements: VP, Chief Nursing Officer, Department Emergency Medicine, Committee on Interdisciplinary Practice, MEC: Board

**Title:** WOUND INFILTRATION

**Purpose:**
To establish conditions in which credentialed Emergency Department nurses may perform wound infiltration, as a means of providing local anesthesia wound to allow for pain-free cleansing, debridement, and closure of the wound.

**Policy:**
A. Upon written order by a Physician, Physician Assistant or Nurse Practitioner, Emergency Department nurses who have been credentialed by the NorthBay Healthcare medical staff may perform wound infiltrations.

B. Epinephrine may not be used on digits, ears, nose, or penis.

C. No direct supervision is required.

**Procedure:**
A. Patient conditions warranting wound infiltration:

- Digital lacerations, which a Physician, Nurse Practitioner, or
References


THANK YOU

Thank you, Brian Johnson, for your technical astuteness
Normal Saline Bolus

• Natalie Correll-Yoder, MN, RN, CCRN, CCNS
• Clinical Nurse Specialist, Critical Care
Normal Saline Bolus Question

• Normal Saline IV given when no obvious indication and/or instead of other crystalloid fluids.
• In the ED we give NS boluses to just about anyone getting an IV. Sometimes I am not sure why my patient is getting the bolus, especially before labs are back.
• I understand most instances it can help (i.e. dehydration, n/v, headache, etc.) I just think that sometimes the bolus is ordered out of habit and nurses like if for ease of medication administration.
• Studies are out that show that NS is not necessarily the best IV crystalloid fluid either. Most times LR is better, but the MD or ordering practitioner orders NS instead out of habit.
Normal Saline Bolus

- Normal: kidneys adjust to wide variations in dietary intake of water/fluids.
  - Water loss results in ↑ sodium & osmolality which ↑ release of ADH
  - Minimum water intake 500 mL/day
  - Water is also ingested via food and oxidation of carbohydrates

https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities
Normal Saline Bolus

• Maintenance Therapy
  – Replace ongoing losses from urine, sweat, respiration & stool
  – < 1 liter of electrolyte-free water will meet normal requirements
  – Normal physiological response will be to excrete the excess

• Replacement Therapy
  – Corrects existing water & electrolyte deficits from GI, urinary or skin losses, bleeding, & third spacing

UpToDate. https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities
Fluid Replacement

- Rate of fluid correction depends on the severity of the depletion
- With severe fluid loss 1-2 liters rapidly to improve clinical symptoms
  - Low blood pressure, low urine output or impaired mental status
- Fluid overload or excess can increase morbidity & mortality and should be avoided in most situations
Volume Deficit

- No formula can be used to accurately estimate the total fluid deficit
  - Weight pre and post
  - Blood pressure
  - JVD presence
  - Urine sodium concentration
  - Urine output
  - Hematocrit (if not bleeding)

UpToDate. https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities
Fluid Resuscitation Postoperatively

• Fluid replacement is needed in the postoperative period for one or more of the following reasons:
  – Incomplete replacement of
    • preoperative fluid deficit or preoperative fasting-associated deficit.
    • intraoperative sensible and insensible fluid losses.
    • blood loss, or ongoing postoperative blood loss.
  – Ongoing fluid loss related to the underlying condition (eg, septic shock, pancreatitis), which can be due to tissue (third-spacing) or external losses.
Hypotension

• Hypotension occurs in the majority of patients with shock.
  – systolic blood pressure <90 mmHg;
  – mean arterial pressure <65 mmHg),
  – relative (a drop in systolic blood pressure >40 mmHg),
  – orthostatic (>20 mmHg fall in systolic pressure or >10 mmHg fall in diastolic pressure with standing),
  – profound (vasopressor-dependent).

• Patients in the early stages of shock can be normotensive or hypertensive,
• Hypotension does not have to be present for the diagnosis.
• Conversely, not every patient who has hypotension has shock
  – chronic hypotension
  – drug-induced hypotension
  – autonomic dysfunction
  – vasovagal syncope
  – peripheral vascular disease

UpToDate.

https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities?
Shock

- Shock is a life-threatening condition of circulatory failure that most commonly presents with hypotension.
- Other vital sign changes or the presence of elevated serum lactate levels.
- The effects of shock are initially reversible but can rapidly become irreversible, resulting in multi-organ failure (MOF) and death.
- When a patient presents with undifferentiated hypotension and/or is suspected of having shock, it is important to identify the etiology so that appropriate therapy can be administered to prevent MOF and death.

https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities?
Clinical Manifestations of shock

- Hypotension
- Tachycardia
- Oliguria
- Abnormal mental status
- Tachypnea
- Cool, clammy, cyanotic skin
- Metabolic acidosis
- Hyperlactatemia
Fluid Volume Deficit in Shock

• At least one to two liters of isotonic crystalloid are given rapidly to restore tissue perfusion.
• Early correction of the volume deficit is essential in hypovolemic shock to prevent the decline in tissue perfusion from becoming irreversible.
• Irreversible shock is associated with
  – loss of vascular tone
  – a drop in systemic vascular resistance
  – pooling of blood in the capillaries and tissues
  – an impaired response to vasoactive medications

UpToDate.  
https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities?
Choice Of Replacement Fluid

For patients with hypovolemic shock, the three major classes of replacement fluids are:

- Crystalloid solutions — includes saline solutions, buffered solutions, (eg, Ringer’s lactate, bicarbonate buffered 0.45% saline)
- Colloid-containing solutions — includes albumin solutions, dextran, hetastarch
- Blood products — includes packed red cells

UpToDate. https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities?
Choice Of Replacement Fluid

• The choice of replacement fluid depends in part upon the type of fluid that has been lost
  – Blood components are indicated in patients who are bleeding.
  – Hematocrit Targeted not above 30 percent because
    • excessive increases are not essential for oxygen transport
    • may increase blood viscosity
    • potentially leading to stasis in compromised capillary circulation
  – Isotonic crystalloids are preferred for the management of patients with severe volume depletion not due to bleeding.

UpToDate .
https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities
Crystalloid Fluids

- Crystalloid fluids — A variety of crystalloids are used in fluid resuscitation after surgery, including 0.9% sodium chloride, Lactated Ringer's (LR) solution
  - Sodium concentration of 0.9% saline (154 mEq/L) is higher than the normal plasma sodium concentration,
  - chloride concentration of 0.9% saline is much higher than that of plasma because the solution contains no bicarbonate.
  - The sodium concentration of LR (130 mEq/L) is lower than that of blood. LR also contains potassium, calcium, and lactate, a buffer that is metabolized by the liver to bicarbonate.
## Fluids for Postoperative Replacement & Maintenance

<table>
<thead>
<tr>
<th>Solution</th>
<th>Sodium (mEq/L)</th>
<th>Potassium (mEq/L)</th>
<th>Chloride (mEq/L)</th>
<th>Lactate (mEq/L)</th>
<th>Acetate (mEq/L)</th>
<th>pH</th>
<th>Osmolarity (mOsm/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.9% Sodium Chloride</td>
<td>154</td>
<td>0</td>
<td>154</td>
<td>0</td>
<td>0</td>
<td>5.5</td>
<td>308</td>
</tr>
<tr>
<td>Lactated Ringers</td>
<td>130</td>
<td>4</td>
<td>109</td>
<td>28</td>
<td>0</td>
<td>6.5</td>
<td>273</td>
</tr>
<tr>
<td>5% Albumin</td>
<td>130-160</td>
<td>≤ 2</td>
<td>Varies</td>
<td>0</td>
<td>0</td>
<td>6.9</td>
<td>300</td>
</tr>
</tbody>
</table>

[UpToDate](https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities)
Crystalloid Choice

- Depending upon the solution chosen, recipients of a large volume of intravenous saline may develop hyperchloremic metabolic acidosis, hyponatremia, dilutional hypocalcemia, hypomagnesemia, or hypokalemia.
- Hyperchloremic metabolic acidosis – Large volume 0.9% saline fluid resuscitation generates a hyperchloremic acidosis and renal vasoconstriction, both of which contribute to unpredictable water retention and electrolyte derangement.
- Acidosis can be avoided with the use of a solution containing less chloride than 0.9% saline, such as LR or Plasma-Lyte.

UpToDate. https://www.uptodate.com/contents/overview-of-postoperative-electrolyte-abnormalities
Fill the Tank
Aspiration During IM Injections

Jennifer Leone, MS, RN, CNS, CEN
Clinical Nurse Specialist, Emergency Services
Old School vs New School?

Old School: Look for bloody aspirate for 5-10 seconds before injection of IM med or vaccine

New School: No need to aspirate
FEAR FACTOR

Inject....
Into....
A....

VESSEL
Method to the Madness

• WHY do we do the things we do?
  – That's how we learned it
  – Have you ever?
Deltoid

The Deltoid muscle of the upper arm which is the preferred site for vaccinations in adults.
The Ventrogluteal site is a safer option which accesses the gluteus medius muscle. Research of IM injections has shown this site to be the primary location for IM use as it avoids all major nerves and blood vessels; and there have been no reported complications (Beyea and Nicholl 1995).
The **Vastus Lateralis** is a quadriceps muscle situated on the outer side of the femur and is used as a primary site for children. It does have risks associated to it due to overuse but has been suggested safe for children up to seven months old.
Old Habits
Die Hard

-Taught in school
-Never got the memo
-Hard habit to break (thank you, Chicago)
• No major arteries/veins in the 3 recommended IM injection sites
• If do aspirate, 97% do not aspirate for 5-10 seconds
• Rapid injection without aspiration = less pain
• Bleeding at site is common—does not indicate incorrect technique
Systematic literature review
Reviewed 6 studies
RESULTS:
- Majority were not aspirating for 5-10 s
- Injecting faster was less painful than aspirating and injecting slower
- Only recommended aspiration is at dorsogluteal site due to proximity of gluteal artery
Aspiration before injection of vaccines or toxoids (i.e., pulling back on the syringe plunger after needle insertion but before injection) is not necessary because no large blood vessels are present at the recommended injection sites, and a process that includes aspiration might be more painful for infants.
With the thumb and index finger of your nondominant hand, gently displace the skin and subcutaneous tissue of the injection site by pulling the skin laterally for the Z-track technique. (See the "Z-track injection" procedure.)

Position the syringe at a 90-degree angle to the skin surface, with the needle a couple of inches from the skin. Tell the patient that there will be a prick as you insert the needle.

Quickly and smoothly insert the needle through the skin and subcutaneous tissue, deep into the muscle at a 90-degree angle.

Support the syringe with your nondominant hand if desired.

Pull back slightly on the plunger with your dominant hand to aspirate for blood if appropriate. Note that aspiration of blood isn't recommended for administration of immunizations and vaccines.

If no blood appears, slowly inject the medication into the muscle. A slow, steady injection rate allows the muscle to distend gradually and accept the medication under minimal pressure. You should feel little or no resistance against the force of the injection.

Clinical alert: If blood appears in the syringe on aspiration, the needle is in a blood vessel. Stop the injection, withdraw the needle, prepare another injection with new equipment, and inject at another site. Don't inject the bloody solution.

After the injection, wait 10 seconds to allow the medication to begin to diffuse into the surrounding muscle tissue and then withdraw the needle slowly at a 90-degree angle. If present, activate the needle's safety mechanism to prevent accidental needle-stick injury.

Release the displaced skin and subcutaneous tissue to seal the needle track.

Cover the injection site immediately with a gauze pad and apply gentle pressure, as shown below.

Remove the gauze pad and inspect the injection site for signs of active bleeding or bruising. If bleeding continues, apply pressure to the site; if bruising occurs, consider applying ice.
What’s the Verdict?
References


THANK YOU

It will only Sting for a second sweetie!
Promoting Sleep in the ICU

Natalie Correll-Yoder, MN, RN, CCRN, CCNS
Critical Care, CNS
Why do we give bed baths in the middle of night between 1-4am in ICU?

- The current tradition is for our night shift nurses to give all ICU patients their bed baths. I recently had an alert and oriented ICU patient angrily say to me, "Why would they wake me up at 4 am to give me a bath?" "Who takes a bath at 4 am?" He felt it was inconsiderate and was very upset.

- I really started thinking about, "Why do we wake our patients up in the middle of the night to give them a bath?" I could see giving them a bath at 9pm, giving them their night time meds, tucking them in, and letting them sleep the rest of the night the best we can.

- That schedule is a more realistic natural way of doing things, keeping our patients happy. The research shows the importance and effects of interrupting our patients sleep pattern.
Sleep

• Sleep is an essential function many physiological changes that contribute to growth and the maintenance of homeostasis occur during sleep.
Sleep in the ICU

Sleep is often disrupted in the ICU patient

• Care routines: oral care and baths. frequent laboratory tests, invasive procedures
• Noise: equipment, alarms, light
• Visitors: providers and family
Consequences of Lack of Sleep

- Worsening symptoms
- Physical and cognitive dysfunction
- Mood instability

- Nurses need to restructure their work flow and
- Environment to maximize sleep of critically ill patient
Sleep

• REM sleep, the fourth stage,
  – considered the most restorative and valuable stage of sleep.
  – Most people spend 75% to 80% of their sleep time in NREM sleep, and 20% to 25% in REM sleep

• Thus interrupting a patient’s sleep every 60 minutes prevents a patient from achieving true restful sleep.
Delirium

• Many ICU patients are at risk of experiencing both sleep deprivation and delirium, especially elderly patients and/or patients receiving mechanical ventilation.

• Delirium has been associated with
  – increased mortality
  – greater long-term
  – cognitive impairment
  – increased health care costs
Sleep and Delirium

- The overall magnitude that sleep disruption has in relation to delirium is unknown,
- Current evidence supports that optimizing sleep is an important intervention for reducing the incidence of delirium
Sleep & the Immune System

• Lack of sleep adversely affects the immune system, resulting in catabolic states and cytokine dysfunction.
• Sleep deprivation may create a shift in immune activity away from humoral immunity toward cell-mediated immunity, creating an imbalance.
• Hormonal mediators (cortisol & catecholamines), can intensify the stress response seen during critical illness.
Noise in the ICU

- Noises most commonly reported to be disruptive to patients
  - Staff conversations
  - Alarms
  - Overhead pages
  - Telephones
  - Televisions
  - Family
Sleep and Sedation

- Sedation may increase the total sleep time, but it lacks normal sleep architecture:
  - Reduction in REM sleep
  - Disorganization of circadian rhythmicity
  - Sleep-wake regulation

Anxiolytics

- Dexmedetomidine
  + Short acting
  + Delirium
  - Hypotension
  - Bradycardia

- Haloperidol
- Benzodiazepines
- Propofol
Sleep & Ventilators

• Mechanical ventilation disrupts sleep
  – Discomfort of the endotracheal tube,
  – Uncomfortable set respiratory rates,
  – Ventilator alarms
  – Reduced total REM sleep
  – Dyssynchrony with the ventilator
Nurse Perceptions

A study of nursing perceptions of sleep in the ICU found that most nurses (>80%) considered the patient to be sleeping if the patient’s eyes were closed and the heart rate, respiratory rate, and blood pressure were decreased.
Nurse Perceptions

• Nurses in that study believed that the average ICU patient slept moderately well and that noise was the predominant factor affecting sleep.

• Another study of nursing care showed that a mean of 42.6 care interactions occurred at night, with 62% of baths occurring between the hours of 9 PM and 6 AM,

• Limiting overall sleep time
What do we do Now?

• Nurses should question unit practices that encourage bathing patients during optimal sleep times, consider clustering care, limit unnecessary conversations at the bedside, and manage alarms.

• Critical care nurses can optimize the sleep environment by restructuring work-flow habits.
What can we do

• Nurses can improve the patient’s sleep cycle through modifications of the environment
  – Reduce noise and light
  – Clustering care to minimize sleep disruptions
  – Limiting sedation
  – Optimizing mechanical ventilation modes that enhance sleep,
  – Assessing for the presence of signs of delirium
How would you debunk a sacred cow?

The Steps of Evidence-Based Practice

Elisa Jang, MS, RN, CNS
Clinical Nurse Specialist
Translational Research
Putting Sacred Cows out to Pasture

• Nurses cannot knowingly continue practice despite research showing it is harmful or not helpful
  – Many practices based on intuition and tradition
  – Older practice habits hard to change -- considered routine and beyond dispute

OPPORTUNITIES FOR IMPLEMENTING EVIDENCE-BASED PRACTICE AT THE BEDSIDE ARE WAITING TO BE DISCOVERED!
EBP Models

• EBP process models helpful for step-by-step approaches
  – Provides framework for effective change

- Iowa model
- Stetler’s model
- Rosswurm and Larrabee’s model
- Johns Hopkins Nursing model
- ACE Star Model of Knowledge Transformation
- ARCC
- AHRQ
- PARIHS
- Colorado model
Steps of Evidence-Based Practice

**Step 0**
- Cultivate a spirit of inquiry & EBP culture

**Step 1**
- Ask the PICO(T) question

**Step 2**
- Search for the best evidence

**Step 3**
- Critically appraise the evidence

**Step 4**
- Integrate the evidence with your clinical expertise and patient preferences to make the best clinical decision

**Step 5**
- Evaluate the outcome(s) of the EBP practice change

**Step 6**
- Disseminate the outcome(s)

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Clinical Inquiry

• Encourage ongoing curiosity about best evidence to guide clinical decision making

• Must create culture that supports questioning practice for clinicians to embrace EBP
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<thead>
<tr>
<th><strong>P</strong></th>
<th><strong>Patient / Problem / Population</strong></th>
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<tr>
<td></td>
<td>meaning the individual, the condition or group that is the subject of the clinical question</td>
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<tr>
<th><strong>I</strong></th>
<th><strong>Intervention</strong></th>
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<tr>
<td></td>
<td>the treatment that might be applied to the patient, problem or population</td>
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<table>
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<th><strong>C</strong></th>
<th><strong>Comparison</strong></th>
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<tr>
<td></td>
<td>an alternative treatment that might provide similar if not greater benefits to intervention.</td>
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*Please note:* there may not always be a comparative intervention

<table>
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<tr>
<th><strong>O</strong></th>
<th><strong>Outcome</strong></th>
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<tbody>
<tr>
<td></td>
<td>the expected result of the intervention</td>
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</table>
Search for the Evidence

• Search within bibliographic databases
  - Cochrane Library
  - Joanna Briggs Institute
  - CINAHL
  - OvidSP
  - ProQuest
  - PubMed/MEDLINE

• Use levels of evidence to choose best available sources in literature search
Levels of Chocolate

Godiva Truffles
See’s Candies
Ghirardelli Chocolate
Toblerone
Hershey’s Kisses
Nestle’s Quik

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Critical Appraisal

- Assess for strength, quality, and scientific merit of a study
  - Use levels of evidence
- Ensures relevance and generalizability to specific patient population
Critical Appraisal

1. What were the results of the study?
2. Are the results valid and reliable?
3. Will the results of the study help me in caring for my patients?
Integrate the Evidence
Utilizing the Change Process

- Implement practice change
- Use a Change Team
- Identify key stakeholders
- Talk with CNS, Clinical Educator
- Build administrative support
- Utilize shared governance structure
- Pilot the change
Measure & Evaluate Outcomes

• Provide outcomes of practice change
• Monitor and analyze process and outcome data
  – Structural and fiscal implications
  – Partner with your Quality Improvement Dept
Disseminate Results

• IMPERATIVE to share evaluation data from implementation of EBP
  – Formal and informal methods
  – Presentations, posters
  – Publications
Thank you!