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HOSPITAL

ANCC MAGNET RECOGNITION

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PEDIATRIC BLOOD PRESSURE MONITORING

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4TH FLOOR MEDICAL SURGICAL

August 14, 2008

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Objectives

- **Discuss the frequency of monitoring blood pressure in pediatrics in terms of sleep disruption.**
- **Describe the role of the nurse in promoting patient and family satisfaction with care.**
- **Outline the steps of an evidence-based practice project.**

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Background & Clinical Significance

- **A healthy child requires 9-12 hours of sleep.**
  - **Fragmented sleep disturbs the circadian rhythm that can lead to decrements in well being and impairs healing.**
  - **Hospitalized children often suffer sleep disruptions for a variety of reasons.**

- **The number one reason for frequent nocturnal interactions is for monitoring.**
  - **The most disruptive part of monitoring to the child's sleep is blood pressure.**

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Purpose of the Project

- **CHILD HEALTH**
  Promote the health of the hospitalized child by evaluating the effectiveness and safety of decreasing the frequency of blood pressure monitoring thereby promoting sleep.

- **ORGANIZATION**
  PCS Strategic Plan (2007-2009)
  -G2: Deliver exemplary patient care and services in an environment devoted to safety and quality.

- **UNIT/PATIENT/FAMILY**
  To increase the patient and family satisfaction through less disruptions in care.

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Team

- **C**linical **P**ractice **C**ouncil
- Hospitalists
- Educators
- Nurses
- Patients
- Families

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Clinical Question

- Among stable pediatric medical surgical patients, **does** checking blood pressure every 12 hours **compared to** checking a blood pressure every 4 hours **result in** increased patient/family satisfaction and promotion of sleep?

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Best Evidence

- **Data Bases**
  - CINAHL
  - OVID Medline
  - Cochrane
- **Time Frame**
- Searched 1950-August 2007
- Studies dated 1978-2007 with only 3 before 2001
- **Key Terms**

blood pressure	care	night
vital signs	ill	sleep
patients	wake	nursing
assessment	pediatric	practice
observations	clinical	routine
physiologic	child	monitoring

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Best Evidence

- **13 Studies/Reports/Reviews**
  - Related to blood pressure monitoring, nocturnal routines and sleep
- **1 Survey**
  - Conducted in California Children's Hospitals

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Critique & Synthesis of the Evidence

- **6 Sources of Evidence related to BP Monitoring**
  - 1 Systematic Review (Level I)
  - 1 Evidence Based Practice Guideline (Level I)
  - 1 Random Clinical Trial (Level II)
  - 1 Systematic Review of descriptive studies (Level V)
  - 1 Single descriptive study (Level VI)
  - 1 Expert Opinions (Level VII)

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Critique & Synthesis of the Evidence

- Child blood pressures are often falsely elevated
- Normal vital signs do not guarantee stable physiologic status
- Vital signs have become a routine procedure unrelated to perceived individual patient needs

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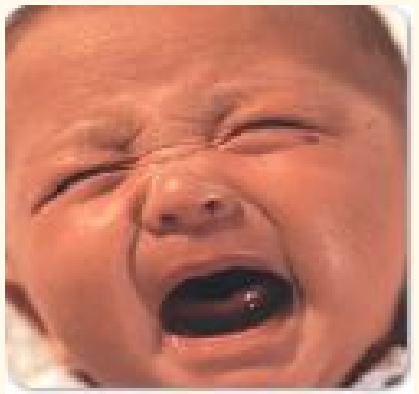
Critique & Synthesis of the Evidence

- 7 studies focused on sleep

- -1 Well-designed controlled trial without randomization (Level III)
- -2 Well-designed cohort studies (Level IV)
- -3 Randomized retrospective reviews (Level V)
- -1 Review of a descriptive study (Level VI)



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Critique & Synthesis of the Evidence

- Disturbed circadian rhythms can cause decrements in well-being & functioning
- Chronic partial sleep deprivation can cause deficits in function
- Acutely ill children have increased levels of sleep fragmentation
- Greater proportion of time in transitional (lighter) sleep
  - Lead to fatigue, anxiety, and increased illness

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Critique & Synthesis of the Evidence

- Impaired healing
- Memory loss
- Cognitive dysfunction
- Psychosis
- Interferes with immune system function, glucose metabolism, melatonin, growth hormone, cortisol & catecholamine levels, mood changes, and decreased pain tolerance
- Takes 1-7 weeks after discharge to return to pre-illness sleep patterns

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California Children's Hospital Survey

- 13 CA Children's Hospitals
- CHOC vital sign policy states blood pressures are done every 4 hours on all stable patients
- Each of the other 12 children's hospitals were called to compare CHOC VS P&P

Critique & Synthesis of the Evidence

Facility	Routine
UC Davis Children's Hospital	**Q 12 hours**
LLUMC Children's Hospital	**Q 12 hours**
Miller Children's Hospital (Long Beach)	**Q 12 hours**
Cedars-Sinai (Ahmanson Pediatric Center)	Q 4 hours
Children's Hospital Los Angeles	Q 4 hours
UCLA Children's Hospital	Q 4 hours
Children's Hospital of Central California	**Q 6 hours**
Lucile Packard Children's Hospital (Stanford)	**TID (Q 8 hours) varies by patient**
Children's Hospital Oakland	Q 4 hours
Children's Hospital Orange County	Q 4 hours
Rady Children's Hospital (San Diego)	Q4-6 hours varies by patient
UCSF Children's Hospital	**Q 6 hours**

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Critique & Synthesis of the Evidence

- Blood pressure is an important part of monitoring a patient
  - More than half of the children's hospitals in California check blood pressures on their stable patients less frequent than every 4 hours
- Disruption in sleep when a child is hospitalized
- Sleep has circadian and homeostatic properties and is necessary for repair, restoration, growth, and mental/emotional well being
- Children, especially ill children, need as much uninterrupted sleep as possible.

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Adopt Change into Practice

- Recommendation: Pilot on 4th floor (East)

  - Change the BP frequency on the stable pediatric patient to an interval less than every 4 hours (once a shift/q12 hours) and not during sleep.
    - This would not include cardiac patients, renal patients, patients within 24 hours post operative, or any other patients for whom a physician decides that a blood pressure is needed every 4 hours or more frequent.

  - Prior to beginning pilot, collaborate with nurse leaders & Hospitalists to finalized recommended practice change

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Adopt Change into Practice

- Outcomes to be evaluated
  - Press Ganey scores for change in patient/family satisfaction
  - Further consideration should be given to retrospective chart review to examine for delay in care and/or adverse events and physician satisfaction
- Modify the practice guidelines based upon the ongoing evaluation

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Acknowledgements

- Dr. Margaret Brady
  EBP Scholar Mentor

- Dr. Toni Christopherson
  Director, Special Projects