

PRESSURE ULCER PREDICTION & PREVENTION

AN INTEGRATIVE REVIEW

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KAISER PERMANENTE®

SCAL Regional Nursing Research Program

PRESSURE ULCER



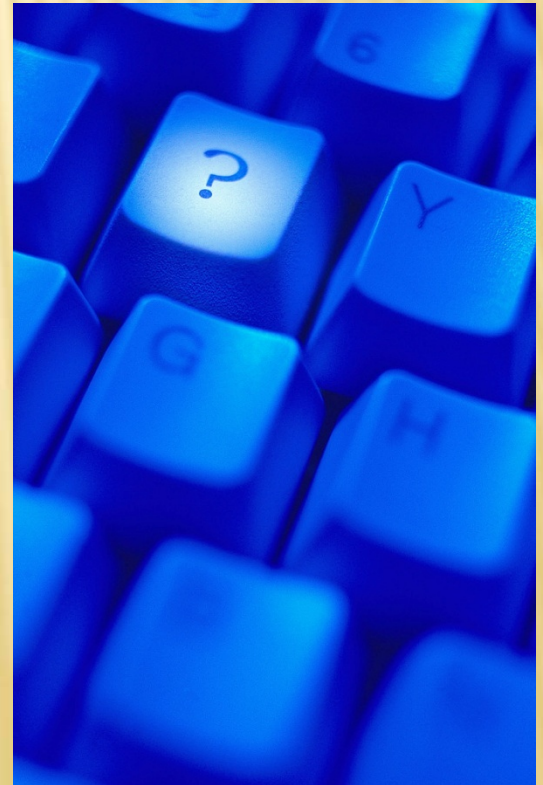
***A Review of the
Research Evidence***

TYPES OF EVIDENCE REVIEWS

- ✘ **Narrative or Literature Review:** Critical research summary on a topic of interest, often to put a research problem into context. ²³
- ✘ **Integrative Review:** A systematic review using a detailed search strategy to find relevant evidence to answer a clinical question. Does not use summary statistics. ²³
- ✘ **Systematic Review:** Comprehensive search strategies and rigorous research appraisal methods surrounding a clinical issue. Used to summarize, appraise, and communicate contradictory results or unmanageable amounts of research. ²³

THE CLINICAL QUESTION

“What is the quality of the evidence concerning Pressure Ulcer (PU) prediction and prevention in a variety of hospital settings and patient populations?”



THE SEARCHABLE QUESTION

- ✘ **Search Terms:** Braden Scale, operating room, pressure ulcer prevention, critical care, intensive care
- ✘ **Limits:** 1992-2006; 2002-2007
- ✘ **Databases:** Cochrane, CINAHL, Ovid, Medline, Pub Med
- ✘ **Web-Based:** AORN website, Yahoo, Google



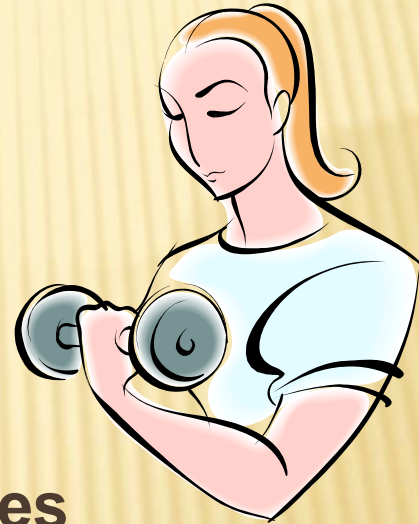
AN INTEGRATIVE EVIDENCE REVIEW

- × 2006 review for PU prediction & prevention**
 - + 83 articles/abstracts; 18 selected as relevant**
 - × Variety of topics, settings, patient populations**
 - * Critical Care, Pediatrics, Long Term Care, Rehabilitation, Nursing Homes**
 - * Operative patient experience evaluated**
- × 2008 review update**
 - + Critical care environment examined in detail**
 - + Two WOCN interviewed for expert opinions**
 - + 282 articles; 14 reviewed, 8 selected as relevant**
 - × 4 articles from original review eliminated**
 - × 22 total relevant articles**

EVIDENCE QUALITY & STRENGTH

✘ **Strength of individual research articles ranged from “Insufficient” to “Good”**

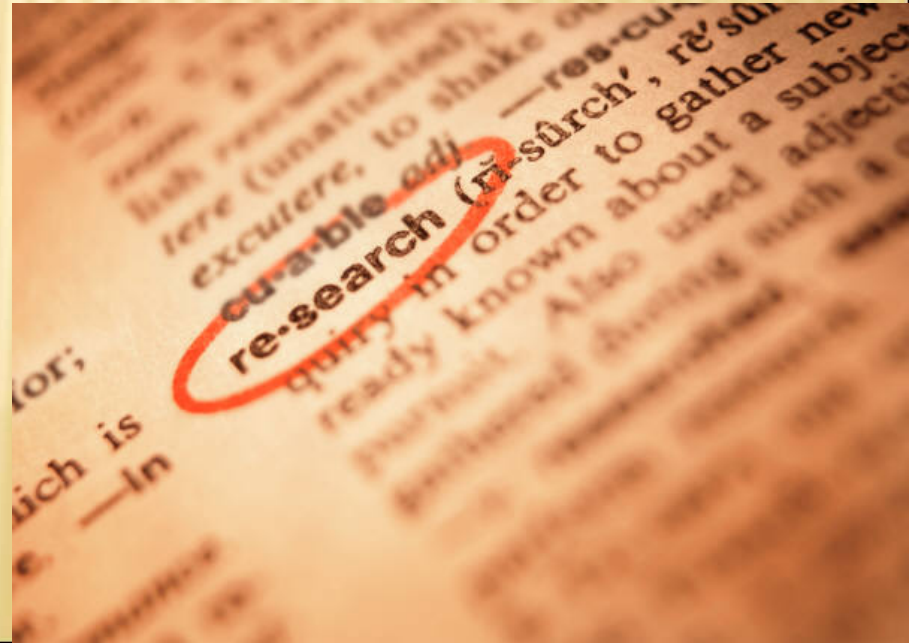
+ **Quality of most PU research studies was often “Insufficient” due to deficiencies in research methods**



Final Grade for Body of Research Evidence: “Fair”

USING EVIDENCE TO BUST MYTHS

- ✘ Research and other types of evidence allow healthcare providers to base their practice on science, rather than ritual, tradition, and myth



WHAT IS A MYTH?

- ✘ **A collectively held belief that has no basis in fact (www.wikipedia.org)**
- ✘ **A body of traditional beliefs & notions accumulated about a particular subject (www.answers.com)**
- ✘ **An unproved or false collective belief used to justify a social institution (www.dictionary.reference.com)**

HEALTH MYTHS

- ✗ **Drink 8 glasses of water per day** ²⁴
 - + *Depends on individual & activity level*
 - + *Can cause hyponatremia & heart failure*
- ✗ **We only use 10% of our brains** ²⁴
 - + *Detailed studies haven't found the missing 90%*
- ✗ **Reading in a dim light ruins eyesight** ²⁴
 - + *Unlikely to cause permanent eye changes*
- ✗ **The higher the SPF sunscreen, the better** ²⁵
 - + *SPF 15 blocks 93.3 % UV rays*
 - + *SPF 30 blocks 96.7% UV rays*
 - + *SPF 60 blocks 98.3 % UV rays*
 - + **Sunscreen tips:**
 - ✗ *Use frequently, with added blocking compounds*



PRESSURE ULCER MYTHS

- × **Examine 6 myths related to hospital acquired pressure ulcers**
 - + **Confirmed - true**
 - + **Plausible - maybe**
 - + **Busted - false**



MYTH 1

- ✘ **Risk assessment scales, such as the Braden Scale:**
 - + **decrease the incidence of pressure ulcers**
 - + **accurately predict which patients are at risk of developing pressure ulcers**



MYTH BUSTER

BUSTED!

MYTH BUSTER



- ✘ **No evidence that the use of a RAS decreases PU incidence ¹⁷**

MYTH BUSTER

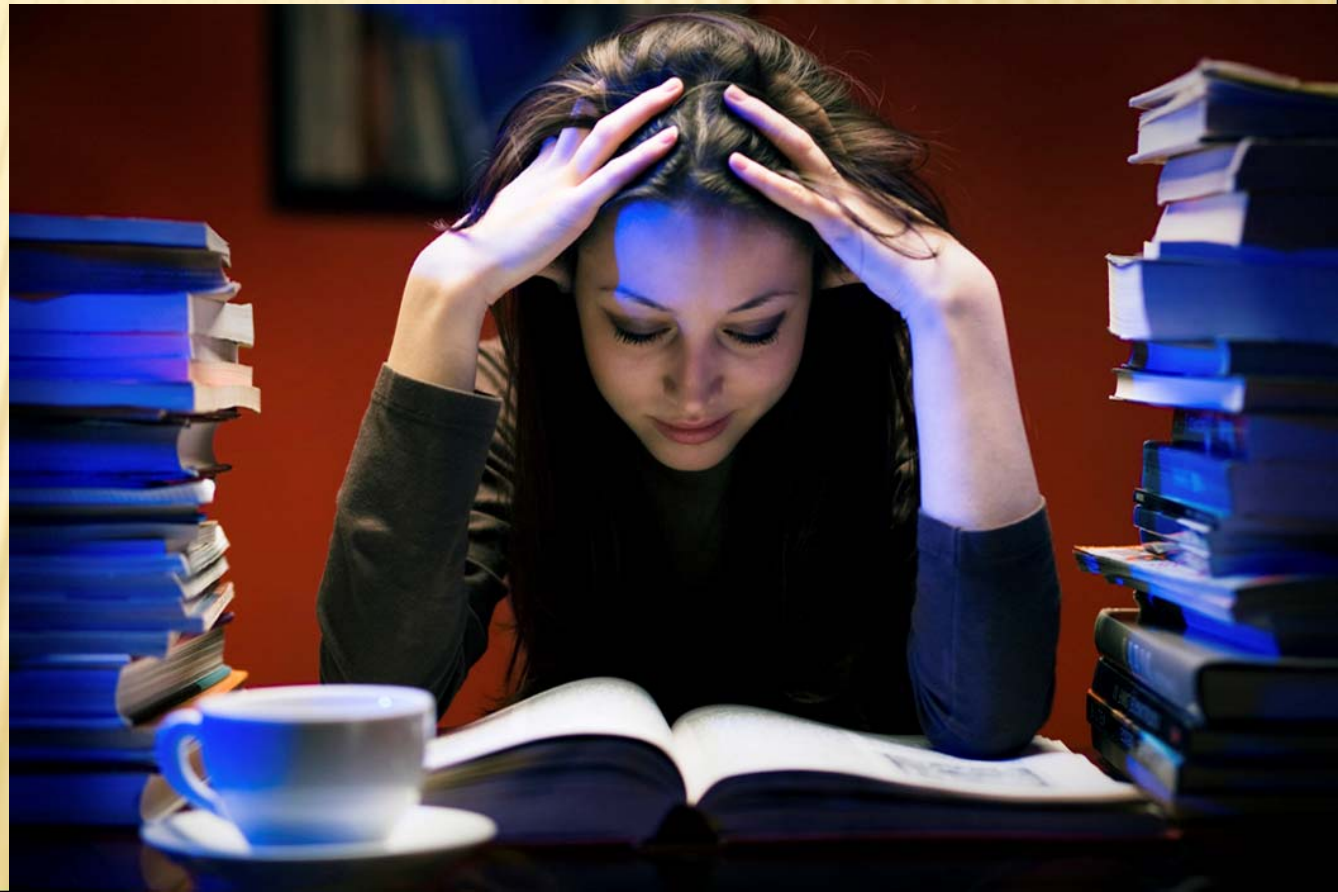
- × **Nurses are able to:**
 - + **Identify “no risk” & “high risk” patients ¹⁵**
- × **Nurses have difficulty in:**
 - + **Identifying “mild risk” & “moderate risk” patients ¹⁵**
- × **One study showed the greatest number of PU occurred in the “mild risk” category ¹⁵**
 - + **Shortened versions of RAS do not ensure its correct use ¹⁵**

REPLACING MYTH WITH EVIDENCE

- ✘ **RAS are useful tools for improving**
 - + **The effectiveness of providing pressure-reducing surfaces** ¹⁷
 - + **Preventive interventions** ¹⁷
- ✘ **Braden Scale offers the best balance between sensitivity, specificity, and risk estimate** ¹⁷
- ✘ **Experienced nurses are more likely to:** ¹²
 - + **Consistently assesses the skin**
 - + **Identify PU stages**
 - + **Use Braden scale correctly**

MYTH 2

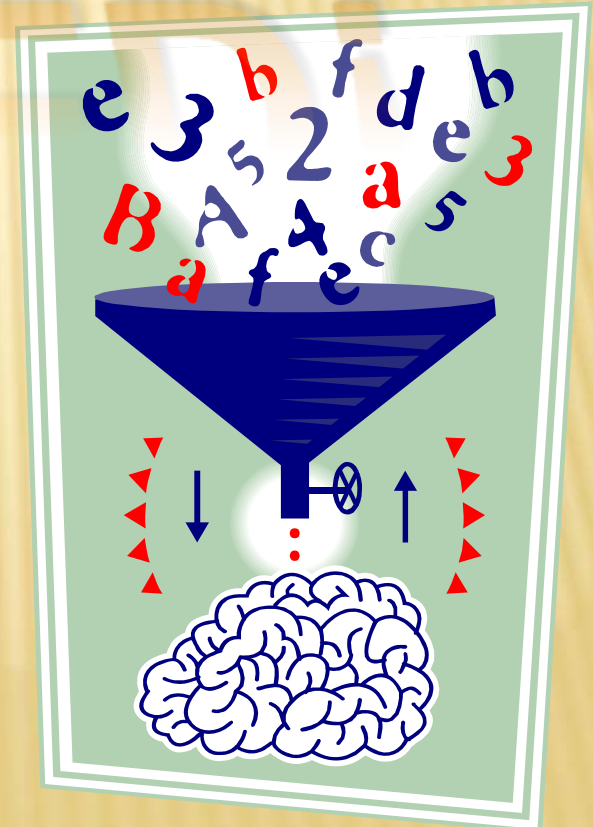
- ✘ **Proper education and training will change a healthcare provider's behavior**



MYTH BUSTER

BUSTED!

- ✘ The presence of knowledge does not guarantee changes in traditional behavior ¹⁰
- + Behaviors related to PU prevention can be erratic ¹⁹



MYTH BUSTER



- ✘ Intensive staff PU education can *initially* reduce PU incidence ⁸
 - ✘ Gains are often lost over time ⁸
- ✘ Nurses will alter practice if change is not: ¹¹
 - + Difficult or burdensome
 - + Time consuming
 - + Adding to the workload
- ✘ Nurses may not be interested in changing their routines! ¹⁰

REPLACING MYTH WITH EVIDENCE

- ✘ **Regular & ongoing educational programs^{7,8}**
- ✘ **Reframe PU Programs from a leadership & management viewpoint ⁸**
 - + Create positive PU experiences ^{7,19}
 - + Role modeling by respected colleagues ¹⁰
 - + Staff input regarding attitudes & beliefs surrounding PU assessment & prevention ¹⁹
- ✘ **Provide staff with weapons for PU prevention**
 - + Resources, checklists, guidelines, RAS ^{7,19}



MYTH 3

- ✘ **Turning regimes (i.e. turning a patient every 2 hours) are a key strategy to pressure ulcer prevention**



MYTH BUSTER

- × There is insufficient evidence to recommend specific turning regimes ^{4,5,21}



**SO
BUSTED!**

MYTH BUSTER

- ✘ Anecdotally linked to Florence Nightingale: took her 2 hours to reposition every injured soldier on her ward (Crimean War, 1853-1856) ⁷
- ✘ Attributed to a 1961 research study by Koziak which examined a 2 hour turning schedule ⁷
- ✘ More frequent repositioning on a pressure reducing mattress does not *necessarily* lead to fewer PU ⁵



REPLACING MYTH WITH EVIDENCE

- × **Individualize care for at-risk patients** ¹⁴
 - + **Combine nursing judgment with PU tools and interventions** ¹⁴
 - + **Utilize the Braden Scale subscales to target specific PU prevention interventions** ^{3,5,17,20,21}
 - × **Nutrition, Friction & Shear, Moisture, Mobility, Activity, Sensory Perception**
 - + **Apply intensive PU prevention measures for patients for whom turning protocols are not effective** ⁵
 - + **Optimize patient's nutritional status** ^{4,18}

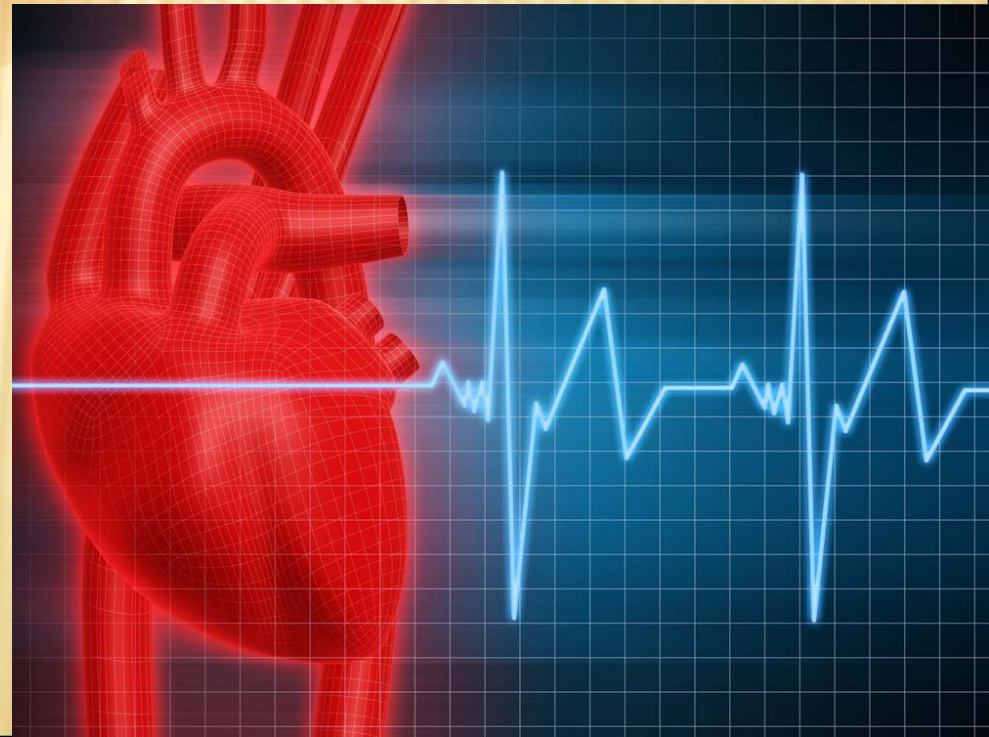
MYTH 4

- ✘ **Patients in critical care areas are more prone to developing PU**



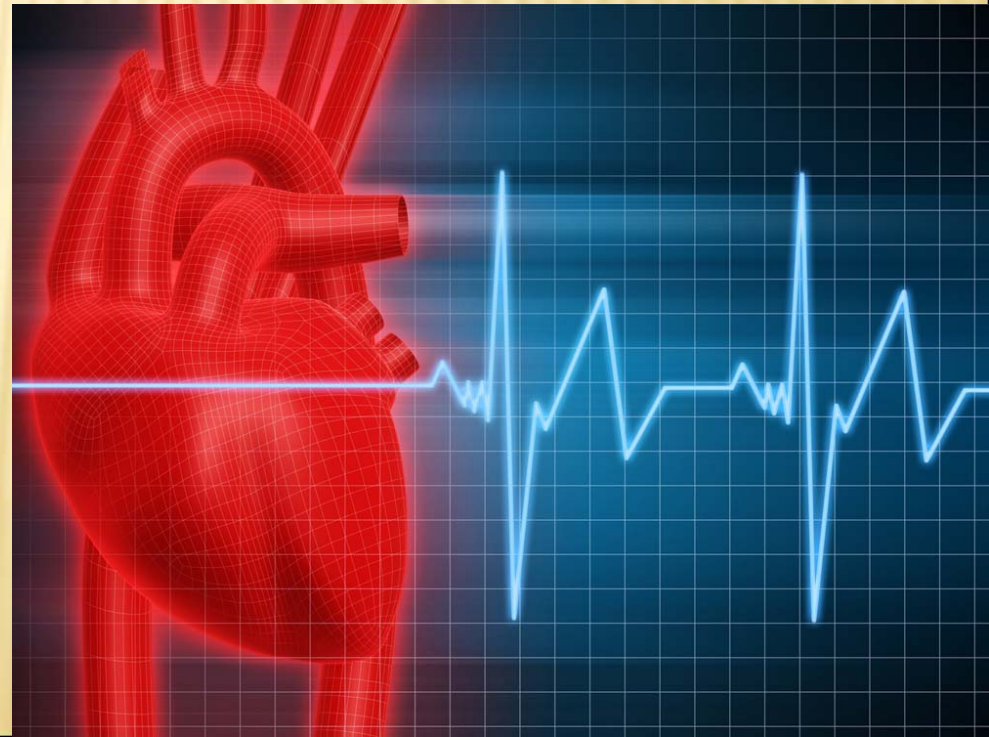
MYTH BUSTER

PLAUSIBLE



MYTH BUSTER

- ✘ **No single valid or discriminatory risk factor can be identified for PU development in the critically ill population ²⁰**
- + **Research data specific to the ICU is difficult to find ²⁰**



REPLACING MYTH WITH EVIDENCE

- ✘ **Use daily Braden scores from ICU admission to discharge** ²⁰
 - + One study reported 55% of patients with PU developed them within 2 weeks of admission ²⁰
- ✘ **Target specific ICU-related Braden subscales** ^{20,22}
 - + Mobility
 - + Nutrition
 - + Moisture



REPLACING MYTH WITH EVIDENCE

- ✘ **Sedative effects on patient mobility may have an impact on PU development** ²⁰
 - + Patients most at PU risk were on sedatives, either alone or in combination with other vasopressor drugs
- ✘ **Most critically ill patients are not routinely repositioned** ²¹



REPLACING MYTH WITH EVIDENCE

ICU Specific Equipment*

- ✗ Rotational beds do not reduce PU ⁴
- ✗ Higher-specification foam mattress preferred ²¹
- ✗ Cushioned surface facemasks may prevent facial PU ²¹
- ✗ Bowel Management Programs (i.e. Zassi, Flexi-Seal), may reduce moisture & decrease PU ²²
 - + Paired with aggressive PU prevention program ²²

**No studies documenting a superior device in PU prevention in critically ill patients ²¹*

MYTH 5

- ✘ **ALL** surgical patients are at high risk of developing PU



MYTH BUSTER

CONFIRMED!

MYTH BUSTER

✘ **ALL surgical patients should be considered at risk of PU development because of uncontrollable factors:** ^{6,16}

- **Age**
- **Ethnicity**
- **Gender**
- **Body size**
- **OR time**
- **Hemodynamic state**
- **Vasoactive Medications**
- **Comorbid conditions**
- **Nutritional status**
- **Pre-operative hypotension**
- **ASA scores**
- **Albumin levels**

REPLACING MYTH WITH EVIDENCE

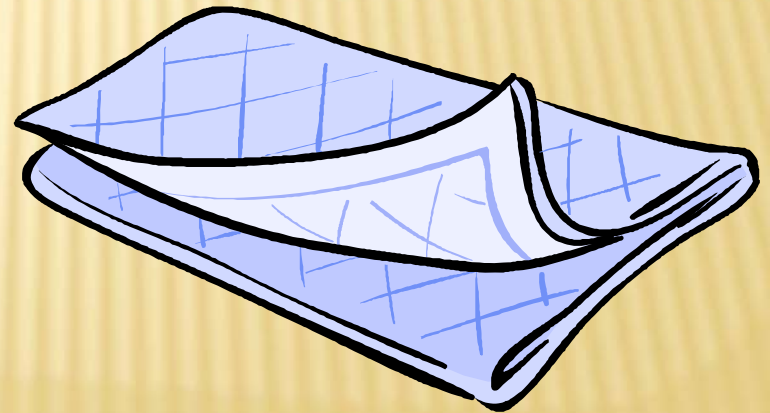


- × RAS can identify surgical patients at risk for PU development ¹⁶
- + Pre-operative Braden Scale scores may be a predictor of PU formation ²
 - × Nutrition & mobility subscales may be predictive for OR acquired PU ¹⁸

REPLACING MYTH WITH EVIDENCE

Monitor the Controllable Factors ⁶

- ✗ Pooled Prep Solutions
- ✗ Shearing & Friction
- ✗ Surgical Position
- ✗ OR Surface
- ✗ Warming Blankets ^{2,6}
 - + *OR patients placed on warming blankets are at higher risk for PU*



MYTH 6

- ✘ **PU prevention is a staff nurse responsibility**



MYTH BUSTER

- ✘ **PU prevention needs a multidisciplinary team effort to achieve the best outcome** ^{4,19}
 - + Nursing
 - + Physicians
 - + OT/PT
 - + Nutritional Services
- ✘ **Nursing leadership and nursing management play a key role in supporting evidence-based PU initiatives** ¹⁰
 - + **Example: Management rounding of daily Braden Scores** ²⁰

BUSTED!

REPLACING MYTH WITH EVIDENCE

- × **Sustained commitment by leaders is necessary to make a change in philosophy stick and become embedded ¹¹**
- + **Organizations tend to underestimate the time needed to adopt the use of evidence to change nursing practice ¹¹**
 - × **Complex healthcare environments**
 - × **Large groups of nurses**



BECOMING

MYTHBUSTERS

- ✘ **Question long-standing routines & protocols**
 - + What are they based on – ritual, tradition, myth?
- ✘ **Learn computer skills to find the best evidence**
 - + Data base searches
 - + Organizational websites
 - + Web-based search engines
- ✘ **Change nursing practice in a systematic fashion, based on the best research evidence**
 - + Not just one journal article that you like

FLORENCE NIGHTINGALE

1820-1910

“For us who nurse, our nursing is a thing which, unless we are making progress every year, every month, every week, take my word for it, we are going back.”



TRACKING DOWN CECELIA

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QUESTIONS?



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