Taron T.  Peebles
Abilene Christian University
School of Nursing
Doctor of Nursing Practice Program
September 2018

# INTEGRATION OF NURSE PRACTITIONERS INTO THE EMS SYSTEM

# Agenda

- Brief Overview
- Statement of the Problem
- Rationale for the Study
- Theoretical Foundations
- Scope and Limitations
- Literature Review Highlights
- Overview of Literature
- Methodology & Project Design
- Ethical & Legal Considerations
- Discussion of Results
- Relationship to DNP Essentials
- Recommendations for Future Research & Summary

# Brief Overview

- **Introduction:** With the passage of the Affordable Care Act (ACA), more individuals have obtained health coverage which has inundated the Emergency Medical Service (EMS) systems, proliferating the number of non-urgent and non-emergent transports.
- **Problem Statement:** Emergency Medical Services (EMS) contributes to emergency department overload, costly, and delayed sub-optimal care by unnecessarily transporting non-acutely ill or injured patients to the ED EMS (2013).
- **Background:** ED overcrowding is a well-documented problem that results in costly, delayed, and often sub-optimal care.
- **Purpose of Pilot Project**: To evaluate the impact of nurse practitioners to provide quality safe patient-centered care that is evidence-based and promotes innovative models of care delivery within the EMS system.

# Statement of the Problem

- EMS system transport of frequent patients and non-urgent and non-emergency patients is an unnecessary burdening cost.

# Significance of the Problem

- ED overcrowding is a well-documented problem that results in costly, delayed, and often sub-optimal care.  Emergency medical services (EMS)contributes to this problem by unnecessarily transporting non-acutely ill or injured patients to EDs when more appropriate and less costly care settings exist, including the home EMS, (2013).

Does the inclusion of a Nurse Practitioner within an EMS system decrease the number of patient transports to EDs over two months?

- **P**-EMS system
- **I**-Nurse Practitioners within the EMS system
- **C**-EMS system
- **O**-Decrease patient transports
- **T**-two months

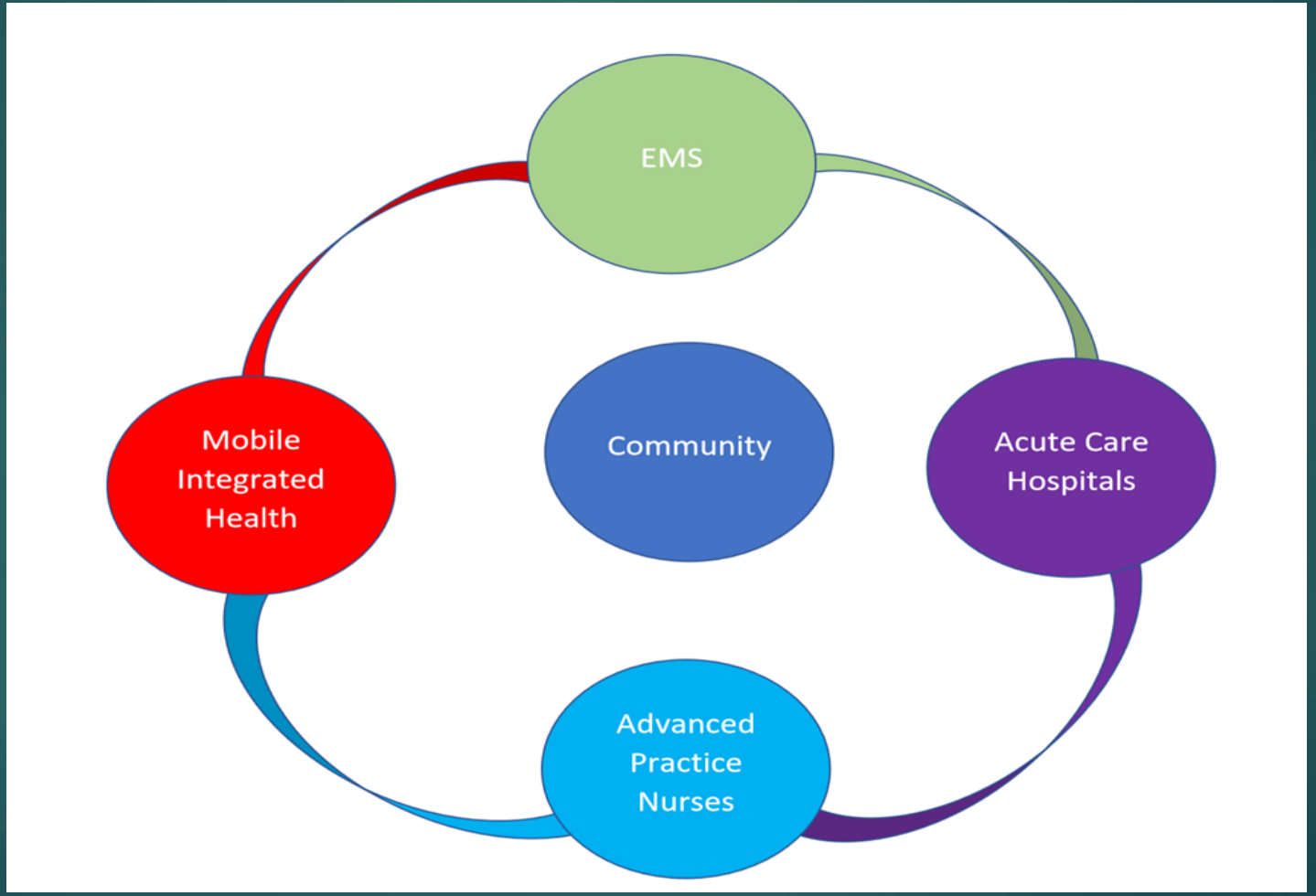
# Rationale for the Study

- Research has shown that Nurse Practitioners (NPs) provide cost-effective quality primary care and are efficacious in the management of chronic diseases, and are critical to care coordination.
- Multiple research studies have shown the ability of nurse practitioners to provide quality safe care in numerous specialty settings, to a myriad of populations and diverse communities.

# Theoretical Foundation

- Nursing care in Levine's theoretical framework is conservation of health and wholeness via therapeutic supportive nursing interventions (Medford & Alligood, 2011).
- Levine's theoretical framework restores homeostasis through adaptation of the individuals' internal and external environment.
- Levine's theory of conservation focuses on the structural integrity of the person, the person's environmental structure and the person's biophysical and psychological adaptation.

# NP Inclusion- Integration of Levine's Theory



# Scope and Limitations

- Despite tremendous diversity in how emergency medical services (EMS) are provided in municipalities around the country, most U. S. EMS systems share one commonality: They remain solely focused on responding quickly to serious accidents and critical emergencies even though patients increasingly call 911 for less severe or chronic health problems (Fitch, Knight, & Griffiths, 2015, p. 1).
- Defining community paramedicine along with improved resource utilization through NP inclusion within the 911 EMS system is critical to collaborative patient-centered care.
- There is a lack of clearly defined NP roles within in the EMS system and the fact that community paramedicine is a relatively new concept specifically as it relates to NP inclusion within the EMS system.

# Literature Review Highlights

- Emergency Departments continue to be overburdened with non-urgent, non-emergency and preventable transports to their facilities.
- The EMS system is a major contributor to this costly and burdensome problem EMS (2013).
- The dynamics currently underway with community paramedicine along with the expanded call for EMS systems to improve service delivery and become more involved in healthcare in its entirety demands a strong nursing presence and nursing leadership.
- The EMS system has failed to progress and adapt in its service delivery model. Most U. S. EMS systems remain solely focused on responding quickly to serious accidents and critical emergencies even though patients increasingly call 911for less severe or chronic health problems (Fitch, Knight, & Griffiths, 2015).

# Overview of Literature

- In 2009 over 136 million emergency department (ED) visits in the United States occurred with 15.8 percent of them arriving by 911-response ambulance EMS (2013).
- With the changes in full practice authority (FPA), compact licensure changes and the increase of NPs within the workforce, it is imperative to understand and define nursing impact, influence, and contribution as drivers of healthcare delivery to improve health outcomes.
- Quality care improvement measures compliments established health outcome measures and demonstrate the effectiveness of systems management as well as providing information about successful changes and implementation of evidence-based practices (Melnyk & Fineout-Overholt, 2015).

# Methodology & Project Design

- The design of this projects focuses on the Emergency Medical System (EMS) population that consists of the entire general public as well as anyone who accesses the EMS system.
- The exploration of this project utilizes a descriptive quantitative design supported by a pilot study.
- Pilot studies are frequently conducted by advanced practice nurses and other master's prepared clinicians and can be used to develop the intervention as well as to trial the intervention (Melnyk & Fineout-Overholt, 2015).
- Piloting a practice change is used by multiple caregivers in a natural clinical setting, trialing the EBP change is essential for identifying issues before instituting a house-wide rollout (Melnyk & Fineout-Overholt, 2015).

# Pilot Study Design

- **Instrument Measurement Tool**
- This pilot study utilized nominal scale measurements to identify and quantify the data gleaned from the pilot study and was developed by the project implementor.


- Inclusion of NPs into the EMS system for pre-hospital evaluations and interventions decreases the number of 911 transports to EDs.
- A pilot study,  quantitative research  design is best to expand evidence-base practice and begin working collaboratively with interdisciplinary professionals to redesign healthcare systems, specifically the EMS system in further research in cost-effective, quality patient-centered care.

# Ethical & Legal Considerations

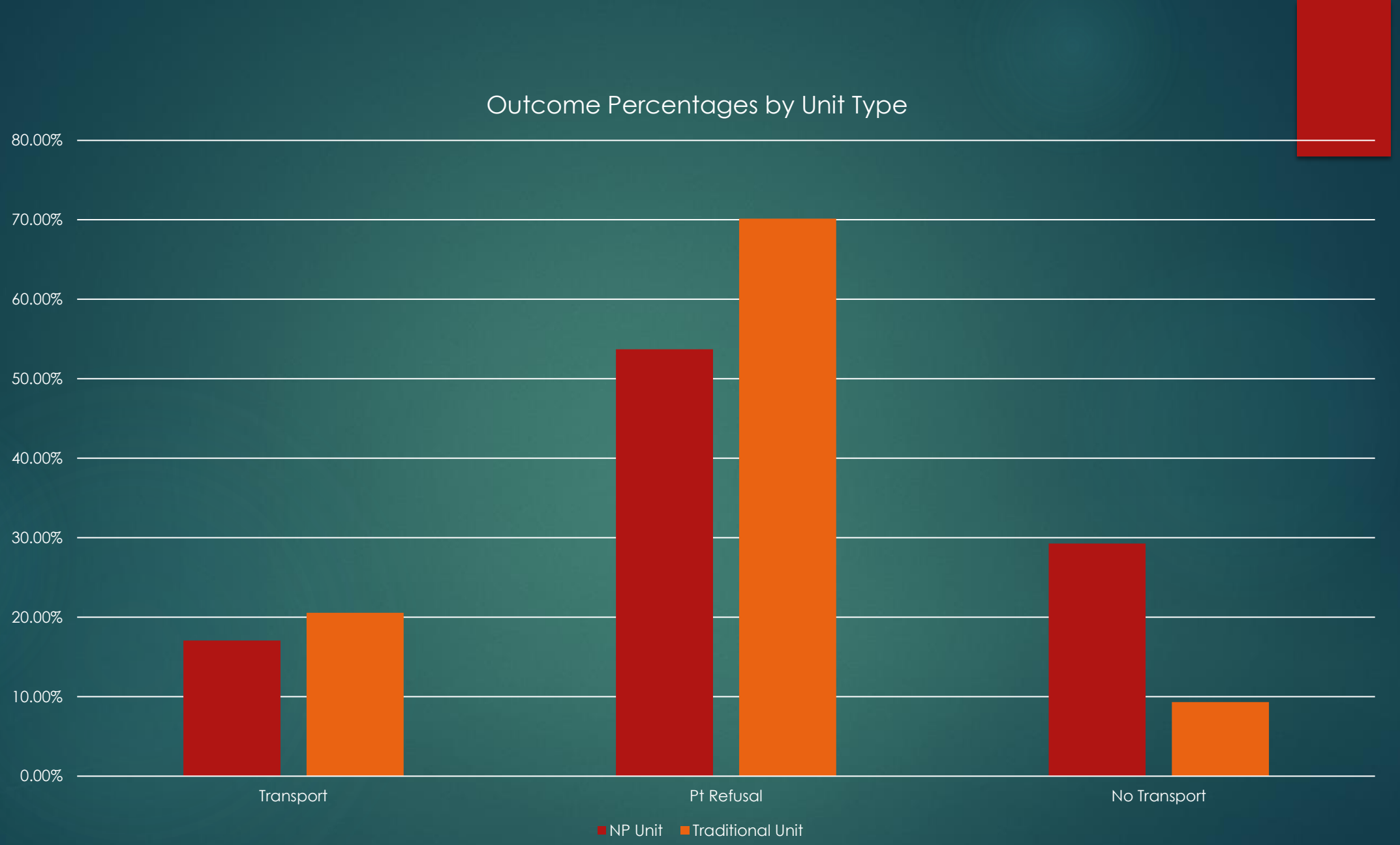
- The rights of participants in this study were protected through the El Paso Fire Department's Health Insurance Portability and Accountability Act, (HIPAA) and Compliance Division.
- Institutional Review Board (IRB) approval was gained from Abilene Christian University, (ACU) and The Hospitals of Providence (THOP) a Tenet corporation.
- All Tenet hospitals and the El Paso Fire Department's privacy and confidentiality practices and procedures that were in place prior to pilot design study remained unchanged and enforceable without deviation from standard practices throughout the pilot design study.

# Data Analysis

- NPs as the independent variable in an EMS transport system for prehospital evaluations and the dependent variable being a decrease in non-urgent and non-emergent hospital transports will be explored.
- A comparison of the NP response unit against traditional EMS response unit will be appraised.
- Nominal scale data representing: 0-Patient Refusal, 1-Transport and 2- No Transport will be charted and measured for both the NP response unit and traditional EMS response unit.
- After two months, data gleaned from pilot study will evaluate if the inclusion of NPs reduced 911 transports.

# Data Interpretation: EMS NP unit versus Traditional Unit responses

| Type Of Unit | Total | Patient Refusal (0) | Transport (1) | No Transport (2) |
|---|---|---|---|---|
| NP Unit | 311 | 91 | 167 | 53 |
| Traditional Unit | 258 | 24 | 181 | 53 |


Outcome Percentages by Unit Type
80.00%
70.00%
60.00%
50.00%
40.00%
30.00%
20.00%
10.00%
0.00%
Transport
Pt Refusal
No Transport
NP Unit
Traditional Unit

# Chi Square Analysis

- A Chi Square analysis was used to statistically analyze the findings related to the NP unit and the  Traditional unit.  A Chi Square presented as ($X^2$ (1) = 16.0782, p =.000, with the p value being this small the null was rejected as the two outcomes were indeed statistically different.  The NP unit reduced overall ambulance transports when compared to the Traditional unit.

# Discussion of Results

- No consistent guidelines are currently available for how to implement, retain, recruit, qualify and train nurse practitioners for implementation into the EMS systems.
- Community paramedicine is not clearly defined or structured uniformly with nurse practitioners.
- Lack of uniformity in methodology to identify medically unnecessary or inappropriate EMS transports.
- Inefficient payor source and gaps  in other healthcare specialist reimbursement.

# Significance of the results to the nursing profession and relation to AACN DNP Essentials

- Nursing science expands the discipline of nursing and the use of nursing theory in the application of new clinical approaches that helps to improve patient outcomes (Chism, 2016). This is reflective of DNP Essential I for curriculum standards of DNP preparation.
- DNP prepared nurses are equipped to assess and identify improvement processes of an organization; the DNP professional is a leader in developing and managing the ethical, safe and quality care approach for communities and vulnerable populations (Chism, 2016). This is reflective of DNP Essential II for curriculum standards of DNP preparation.
- DNP prepared NPs are experts in working with collaborative teams to further clinical scholarship that advances nursing practice to populations in diverse arenas through the translation and dissemination of research and quality improvement science (Chism, 2016). This is reflective of DNP Essential III for curriculum standards of DNP preparation.

# AACN DNP Essentials

- NP integration into the 911 EMS system challenges the NP to acquire knowledge of health information technology related to the EMS systems and then requisition this knowledge to enhance the accuracy and communication sharing of the health consumer's information to improve the health outcomes of the community and populations they serve. This is reflective of DNP Essential IV for curriculum standards of DNP preparation.
- DNP leadership is needed at the local, state, federal and international level to ensure a robust platform exist for nurses to opine on healthcare financing, health care policy and to advocate for ethical, equitable and social justice policies (Chism, 2016). This is reflective of DNP Essential V for curriculum standards of DNP preparation.


- NPs working collaboratively with EMS providers to improve the health of communities and populations while promoting health and wellness initiatives that focus on prevention and stabilization and management of chronic care conditions in heterogenous environments is reflective of DNP Essential VI and VII for curriculum standards of DNP preparation.
- Advanced nursing practice that encompasses critical thinking, advanced clinical decision making, and the implementation and evaluation of evidenced -based care to improve patient outcomes is what distinguishes the DNP professional (Chism, 2016). This is reflective of DNP Essential VIII for curriculum standards of DNP preparation.

# Recommendation for future Research and Summary

- Matching the response level to the urgency along with targeted personnel has been shown to save money and improve resources and improve outcomes (Burgett, 2014).
- NPs integration within the EMS system are efficacious in the management of chronic diseases and are significant to care coordination.
- Important issues regarding training, care coordination, evidence-based practice, and outcomes need to be further researched and integrated care models standardized and designed.
- Summary:
- Inclusion of nurse practitioners within the EMS system and community paramedicine programs can reduce the overburdened EDs and overall healthcare systems and decrease 30-day hospital readmission rates (Pezzone et al., 2016).
- Integrated health care and community paramedicine with the inclusion of nurse practitioners can offer a significant benefit to individual patients, communities, and hospitals.

# References


- Chism, L. A. (2016). *The doctor of nursing practice: A guidebook for role development and professional issues* (Third Edition ed.). Burlington, MA: Jones & Bartlett
- Burgett, B. (2014, December). End over-dispatching: Add specialists to curb cost and manage resources. *Fire Engineering*, 26-29.
- Fitch, J. J., Knight, S., & Griffiths, K. (2015). EMS In 2015: Demonstrating Value in a Changing Healthcare System. Retrieved 9/8/2016, from http://efficientgov.com/blog/2015/12/24/ems-in-2015-demonstrating-value-in-a-changing-healthcare-system/
- EMS (2013): A Draft White Paper from the National Highway Traffic Safety (DOT), Office of the Assistant Secretary for Preparedness and Response (HHS), and Health Resources and Services Administration (HHS). (2013). Retrieved August 30, 2016, from ems.gov

# References


- Medford, L. C., & Alligood, M. R. (2011, Fall/Winter). Testing a theory of health promotion for preterm infants on Levine's Conservation Model of Nursing. *The Journal of Theory Construction and Testing, Volume 15 Number 2*, 41-47. https://doi.org/http://ezproxy.acu.edu:4655/eds/pdfviewer/pdfviewer?vid=46&sid=b9d8175c-d9d8-41fc-9438-4dd6165e0e97%40sessionmgr4009
- Melnyk, B. M., & Fineout-Overholt, E. (2015). *Evidence-based practice in nursing & healthcare: A guide to best practice* (3rd ed.).