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### The Clinically Aligned Pain Assessment Tool (CAPA) Evidenced-Based Change Project- Benchmark Study

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#### Recommended Citation

Vitullo, Mary, "The Clinically Aligned Pain Assessment Tool (CAPA) Evidenced-Based Change Project-Benchmark Study" (2020). *MSN Capstone Projects*. Paper 70.

<http://hdl.handle.net/10950/2766>

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The Clinically Aligned Pain Assessment Tool (CAPA) Evidenced-Based Change Project-

Benchmark Study

A Paper Submitted in Partial Fulfillment of the Requirements

For NURS 5382: Capstone

In the School of Nursing

The University of Texas at Tyler

by

Mary Vitullo BA, BSN, RN-BC

December 7, 2020

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### **Acknowledgments**

I would like to thank all the faculty at the University of Texas at Tyler for all the support of this project. I would also like to thank the Baylor, Scott, and White Heart and Vascular Hospital Dallas for all the resources for this project. I specifically would like to thank Nancy Vish, the Chief Nursing Officer at Baylor, Scott, and White Heart and Vascular Hospital Dallas for all the support of the project. Finally, I would like to thank my family and friends, especially my boyfriend John, for supporting me during this project.

### **Executive Summary**

Pain is one of the main reasons people seek medical treatment in the United States (National Institutes of Health, 2017). Frequently, pain is inappropriately managed leading to negative patient outcomes that lead to prolonged discharge time that increases hospital costs (Trzeciak et al., 2018). This is due to improper assessment of pain which leads to challenges in pain management interventions, ultimately decreasing patient safety and satisfaction. By nature, pain reporting by patients is subjective. Various scales are utilized in the hospital setting, but these assessment scales only reflect pain intensity and are unidimensional, as opposed to pain experience and multidimensional (Schiavento & Craig, 2010). The CAPA pain tool will ultimately not cost a significant expense to the organization. The costs will be contributed to the amount to build the tool and to pay the nurses to attend the training. This tool will create a competitive advantage for the hospital in the marketplace because it will allow for a novel comprehensive pain assessment to be implemented that has been shown to increase patient satisfaction and patient outcomes.

### The Clinically Aligned Pain Assessment Tool (CAPA) Evidenced-Based Change Project

In this project the CAPA pain tool (Appendix A) will be compared to the Numeric Rating Scale (NRS) to examine its efficacy in improving patient satisfaction with their pain assessment. This is an important topic on patient satisfaction surveys. The PICOT question is in patients with post-operative pain (P) how does the Clinically Aligned Pain Assessment tool (CAPA) (I) versus the Numeric Rating Scale (NRS) (I) impact patient satisfaction (O) over 8 weeks (T)? Use of a comprehensive pain assessment like CAPA has the potential to improve patient satisfaction.

### **Rationale for the Project**

Inaccurate pain assessment is a significant problem across the nation today causing increases in length of hospital stay and costs. According to Shafi et al. (2018), unsafe opioid administration due to lack of appropriate pain assessment increases hospital length of stay by 1.6 days, costing hospitals an additional \$8,225 per stay. Furthermore, it has been shown that dosing pain management medications such as opioids is problematic because pain assessment is self-reported and subjective (Pasero, Quinlan-Colwell, Rae, D., Broglio, & Drew, 2016). This can cause an overdose of pain medication because pain is what the patient says it is. With the Joint Commission pushing pain as the 5<sup>th</sup> vital sign, there has been an increase in opioid use that has caused an addiction epidemic and has led to prolonged hospital stays (Pasero et al., 2016). Furthermore, according to Brant, Mohr, Coombs, Finn, & Wilmarth, (2017), comprehensive pain assessment is related to patient fulfillment of their care suggesting that a more comprehensive assessment may increase patient satisfaction. Additionally, patient assessment is now involved with patient satisfaction scores through the Healthcare Consumer Assessment of Healthcare Providers and Systems (HCHAPS) surveys. This determines hospital reimbursement which affects the financial bottom line of the hospital (Schroeder et al., 2016). Patient assessment of

their pain helps determine the reimbursement of the hospital, patient satisfaction, and promotes safer medication administration leading to reduced hospital costs from prolonged hospital stay. Interventions need to be implemented to maintain the contentment and customization of the patient's pain control while also promoting patient safety.

### **Literature Synthesis.**

Pain is subjective and often the Numeric Rating Scale is used to evaluate pain. The NRS scale measures pain intensity without measuring the idiosyncratic nuances of pain (Twining & Padua, 2019). It measures pain on a scale of 0-10 with zero equaling no pain and 10 being the worst pain possible (Topham & Drew, 2017). It was determined that the NRS is not always the best pain assessment for post-operative pain due to its lack of holistic questions (Van Boekel et al., 2017).

Furthermore, use of this unidimensional assessment has caused frequent use of opioids and accidental overdoses (Scher, Meador, Van Cleave, & Reid, 2018). Pain being identified as the 5<sup>th</sup> vital sign has also contributed to this issue with pain assessments becoming more frequent, but not always accurate (Baker, 2017). Often, nurses will adjust pain scores to overcome policy barriers and prevent unsafe opioid administration (Von Baeyer & Pasero, 2017). There is a need to develop more accurate multidimensional pain assessments that are more comprehensive to reduce opioid use and maintain patient care gratification.

Patient gratification is often driven by the patient's level of pain control (Craig, Otani, & Herrmann, 2015). The way a nurse assesses a patient's pain can be a determining factor on how well they patients perceived their pain control during their hospital stay. Furthermore, nursing care impacts patient pain control via HCHAPS and patient's intent to recommend the hospital (Craig, et al., 2015). The CAPA pain tool has been identified as a valid tool for multidimensional

pain assessment through content validity (Topham & Drew, 2017). There is no score with CAPA at this time, thus other validity and reliability measures cannot be assessed. The CAPA tool measures five dimensions of pain including: comfort, change in pain, pain control, functioning, and sleep (Gordon, 2015). The patients describe their pain and the nurse determines which description they fall into. For example, for the nurse will ask the patient about how comfortable they are and they patients will respond “intolerable, tolerable with discomfort, comfortably manageable, or negligible pain” (Figure 1). The tool encourages a dialogue with patients and allows them to explain their pain as opposed to rating it on an intensity scale like the NRS (Petti, Scher, Meador, Van Cleave, & Reid, 2018).

The CAPA pain tool is a tool that needs to be considered for the promotion of positive patient satisfaction scores and patient safety. It was found that patient HCHAPS scores increased from the 18<sup>th</sup> to the 95<sup>th</sup> percentile when CAPA was implemented at a hospital and were sustained for a year after implementation of CAPA (Topham & Drew, 2017). 80% of patients at hospital said nursing communication was better and 66% preferred the CAPA tool versus the NRS for pain assessment following implementation of CAPA (Topham & Drew, 2017). For patients, they like that CAPA is more holistic and that it made them feel their needs were better addressed than the NRS (Twining & Padua, 2019, Garg, Pathak, Churyukanov, Uppin, & Slobodin, 2020). Nurses felt that CAPA allowed them to comprehensively address their patient’s pain and provide safer interventions than the NRS (Twining & Padua, 2019). The CAPA has the potential to be both an accurate and safer way to address patient’s pain.

Furthermore, it was found in a recent study by Vitullo et al. (2020) that the CAPA pain tool was preferred by patients and nurses over the NRS scale. The researchers used the CAPA tool to assess patient pain in addition to the NRS scale. They then gave a satisfaction survey to

the nurse and patients whose Cronbach's alpha were 0.9462 and 0.9483 respectively.

Additionally a study by Solomon (2016) demonstrated that the CAPA tool can be used in addition to the NRS for pain assessment and it can improve patient satisfaction. These studies demonstrate that CAPA can influence patient approval of their pain control and can be used with the NRS to assess pain.

### **Project Stakeholders**

The stakeholders impacted by this proposed change, the gatekeepers, and those that will require permission to proceed are the Quality Improvement Director, Brandi Crow, the Informatics Director, Mark Ocampo, the Chief Nursing Officer, Dr. Vish, the Chief Medical Officer, Dr. Wheelan, the physicians, Vascular Surgeon Dr. Pearl, and the Nurse Managers and Directors on the units. Other stakeholders include nurses, patients, and their families.

### **Implementation Plan**

For implementation, this change would have been carried out as a collaborative approach to pain management with advanced-level clinicians (Melnyk & Fineout-Overholt, 2019). This helped with the identification of project development opportunities. In the evidenced-based practice model there has already been an appraisal of evidence and there is sufficient evidence for change (Melnyk & Fineout-Overholt, 2019). The implementation plan is as follows. The week of 9/1/2020 Mary Vitullo would have met with the Vascular Surgeon and the Chief Nursing Officer (CNO) to plan out the implementation process and to get approval to proceed. A plan would have been developed and presented to the nurse leaders on 9/2/2020. After the approval was made, there would have been a meeting with the Informatics Director on 9/2/2020 to have CAPA built into the charting system. Then we would have educated nurses the week of 9/7/2020 and begin implementing change on 9/14/2020 until 10/26/2020, an 8 week intervention

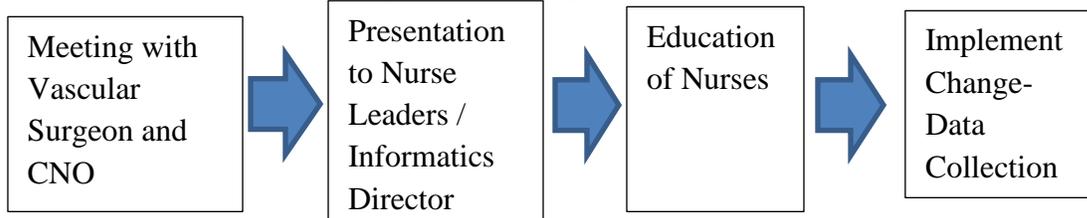
(Table 1, Figure 1). Data would have been analyzed the week of 10/26/2020. These steps will be implemented at the hospital after the meetings and approvals occur.

**Timetable/Flowchart**

**Table 1.** *Table of the timeline of events for the project.*

<b>1.Meeting with Vascular Surgeon and CNO for Project Approval</b>	<b>9/1/2020</b>
<b>2. Presentation to Nurse Leaders and Meeting with Informatics Director</b>	<b>9/2/2020</b>
<b>3. Education of Nurses</b>	<b>9/7/2020-9/14/2020</b>
<b>4. Implement Change- Data collection</b>	<b>9/14/2020-10/26/2020</b>

**Figure 1.** *Flowchart of timeline of events of the project.*



**Data Collection Methods**

The data would have been collected would have used a valid tool that was used in the Vitullo et al. (2020) study. As stated above, the satisfaction survey given to the nurse and patients had a Cronbachs alpha score of 0.9462 and 0.9483 respectively. The tool measures patient satisfaction with the CAPA tool compared to the NRS. We will use these satisfaction scores to determine if patients were more satisfied with the CAPA tool or the NRS. We also will examine HCAHPS scores to see if patient satisfaction increased. Organizational change will be

determined by examining the HCHAPS scores. If the project is successful we will see more comprehensive pain assessments, better pain control of patients, and customized patient care.

### **Cost/Benefit Discussion**

There are costs associated with the resources to implement the project. The resource needed is a 30-minute training session for each nurse on how to use the CAPA. The cost that will be required is paying nurses for the 30-minute training session and allowing the project manager time out of bedside to carry-out the change. This cost will vary because of nurses making different hourly rates. On average, nurses make anywhere from \$26-\$40 an hour, thus it will cost \$13-\$20 per nurse for that 30-minute session. There are approximately 25 nurses who will need to be trained, therefore the cost at maximum would be \$500 for the training. The project manager is counted in that number of nurses. Every nurse would need to be trained as well as they are hired on. There are not any risks over time. Over the course of a year there are about 20 nurses hired and they would all need to be trained. However, the cost is minimal for the benefit of improving patient experience and outcomes. This intervention will save lives as it will likely reduce the amount of pain medicine needed.

### **Discussion of Results**

This project was unable to be implemented because of the amount of time it would have taken to get the needed approvals. COVID is causing leadership meetings to be postponed or delayed. Once the project is implemented it is expected that the use of the CAPA tool will increase HCHAPS and leave patients more satisfied with their care. The current practice of using just NRS to assess pain is not sufficient for patients with complicated pain afflictions. CAPA requires a more comprehensive pain assessment which allows for the facilitation of patient-centered pain management interventions and thus, more effective treatment for patients. The

customized care will increase patient satisfaction by getting pain treatments that are tailored to their specific needs.

### **Conclusions/Recommendations**

The CAPA pain tool presents a unique opportunity to implement a multidimensional pain assessment tool for post-surgical patients. It has been shown that the CAPA has improved patient satisfaction scores and has the potential to impact the organizations financial bottom line in a positive way. Evidence has shown that patients prefer the CAPA pain tool to the NRS. It is recommended that the CAPA tool be implemented into practice because of its' potential to improve patient satisfaction, facilitate nursing assessment and support customized patient pain interventions. The nurses will benefit from this implementation as well because it provides an opportunity for their professional development and improved assessment skill.

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## Appendix A

Table 1. This is a table showing the CAPA Pain tool. Used with permission.

**Clinically Aligned Pain Assessment Tool**

<b>CLINICALLY ALIGNED PAIN ASSESSMENT<sup>®</sup> (CAPA) QUESTIONS</b>	
<b>Question</b>	<b>Responses</b>
Comfort	<ul style="list-style-type: none"> <li>• Intolerable</li> <li>• Tolerable with discomfort</li> <li>• Comfortably manageable</li> <li>• Negligible pain</li> </ul>
Change in Pain	<ul style="list-style-type: none"> <li>• Getting worse</li> <li>• About the same</li> <li>• Getting better</li> </ul>
Pain Control	<ul style="list-style-type: none"> <li>• Inadequate pain control</li> <li>• Effective, just about right</li> <li>• Would like to reduce medication [why?]</li> </ul>
Functioning – for the usual things you need to do	<ul style="list-style-type: none"> <li>• Can't do anything because of pain</li> <li>• Pain keeps me from doing most of what I need to do</li> <li>• Can do most things, but pain gets in the way of some</li> <li>• Can do everything I need to do</li> </ul>
Sleep – is the pain waking you up? Yes? No?	<ul style="list-style-type: none"> <li>• Awake with pain most of the night</li> <li>• Awake with occasional pain</li> <li>• Normal sleep</li> </ul>
Used with permission from: Gary Donaldson, Dept. of Anesthesiology, University of Utah Hospital	

## Appendix B

**PICOT Question:**

In post-operative patients (P) how does the Clinically Aligned Pain Assessment tool (CAPA) (I) versus the Numeric Rating Scale (NRS) (I) impact patient satisfaction (O) over 8 weeks (T)?

**PICOT Question Type** (Circle): **Intervention** Etiology Diagnosis or Diagnostic Test Prognosis/Prediction Meaning

**References**

Baker, D. W. (2017). History of The Joint Commission's pain standards: lessons for today's prescription opioid epidemic. *Jama*, *317*(11), 1117-1118.

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Garg, A., Pathak, H., Churyukanov, M. V., Uppin, R. B., & Slobodin, T. M. (2020). Low back pain: critical assessment of various scales. *European Spine Journal*, 1-16.

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- Von Baeyer, C.L., & Pasero, C. (2017). What nurses' work-arounds tell us about pain assessment. *International Journal of Nursing Studies 67*, A1-A2.



Citation: (i.e., author(s), date of publication, & title)	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied and Their Definitions	Measurement of Major Variables	Data Analysis	Study Findings	Strength of the Evidence (i.e., level of evidence + quality [study strengths and weaknesses])
Author, Year, Title	Theoretical basis for study  Qualitative Tradition		Number, Characteristics of the sample (not Inclusion/exclusion criteria), Attrition rate & why?	Independent variables (e.g., IV1 = IV2 =)  Dependent variables (e.g., DV = )	What scales were used to measure the outcome variables (e.g., name of scale, author, reliability info [e.g., Cronbach alphas])	What methods were used to answer the clinical question (i.e., all stats do not need to be put into the table)	Statistical findings (i.e., for every statistical test you have in the data analysis column, you should have a finding) or qualitative findings (themes and subthemes)	<ul style="list-style-type: none"> <li>Strengths and limitations of the study (Consider the validity of the study and/or flaws In the method not just what Is stated as limitations)</li> <li>Risk of harm if study intervention or findings implemented</li> <li>Feasibility of use in your practice</li> <li>Remember: level of evidence (See Melnyk &amp; Finout-Overholt handout) + quality of evidence = strength of evidence &amp; confidence to act</li> <li>Use the USPSTF grading schema <a href="http://www.ahrq.gov/clinic/3rduspstf/ratings.htm">http://www.ahrq.gov/clinic/3rduspstf/ratings.htm</a></li> </ul>
<b>ARTICLE #1</b> Craig, Otani, & Herrmann (2015). Evaluating the influence of perceived pain control on patient	None	Descriptive or explanatory study Quantitative	Random selection from larger population. Demographics: 32 private non-profit hospitals in a larger health system. A majority	IV= the four attributes for each level of pain control  DV= patient satisfaction	HCAHPS-tool is valid per Press Gany.  A survey was mailed out regarding intent to recommend and pain control.	Multiple linear regression  Mean, and Standard Deviation	All IV were positively correlated to dependent variables.  Pain controlled by nurses $p=.000$ . Intent to recommend due to nursing $p=.000$  Patients stated nursing care affected	<p><b><u>For each of the following, bullet or number items:</u></b></p> <ol style="list-style-type: none"> <li>Strengths: Large sample size, randomization, Diverse sample size</li> <li>Limitations: No Cronbach's alpha noted for survey, no effect size noted</li> <li>Risk of harm: none</li> <li>Feasibility: very feasible</li> <li>Level of evidence for the PICOT question type: Level IV</li> <li>Quality of the evidence: Good</li> </ol>

<p>satisfaction in a hospital setting.</p>		<p>were white and 2/3 were women. 31,106 cases. 11,202 (36% men), 18,856 (60.6%) were women, and 1,048 (3.4%) were unknown. Mean age was 60.45 years. Standard deviation was 19.474 years. White=27,281 (87.7%), African American 2,230 (7.2%), Asian 316 (1.0%), Hawaiian and Pacific Islander 47 (0.2%) and American Indian 378 (1.2%). Educational level was also a factor.</p>		<p>No validity or reliability noted.</p>		<p>their intent to recommend the most.</p> <p>Nursing care made the most impact on pain control, patient satisfaction, and intent to recommend.</p>	<p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>
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			No attrition rate noted.					
<p><b>ARTICLE #2</b>                  Twinning &amp; Padula (2019). Pilot testing the clinically aligned pain assessment (capa) measure.</p>	None	Descriptive Qualitative	<p>Acute care hospital with 243 beds in Providence, RI. It is apart of a major health system. Magnet designated. The study occurred on 13-bed gastrointestinal floor and a 25 bed medical oncology unit. The patients had diagnosis that were also not cancer related like kidney disease and respiratory problems. 10 doctors, 14 nurses for focus groups. The doctors and nurses worked on the units. 16</p>	Phenomena : pain control and perception of pain	<p>Interviews in focus groups: the interviews were conducted by the co-facilitators . They held advanced degrees including Master’s and PhD. They were all trained by a PhD. They were conducted in a private room with minimal distraction . There was an opportunity to answer questions before the interviews started. Two focus groups</p>	Content analysis of the focus groups and interviews.	<p>For the focus groups of physicians: NRS measures intensity but does not describe the pain. Pain is subjective. NRS is very easy to use. For CAPA : helped determine patient functionality and was more detailed. CAPA is holistic and can help better manage pain medications. It also reinforced the need for a comprehensive pain assessment For nurses: CAPA was easy to use and helped them more effectively assess pain. Patients said that the NRS was easy to understand but does not allow for them to appropriately explain their pain like CAPA. They all believed CAPA was the better way to assess pain. The majority their responses to CAPA accurately described their pain experience. They felt their needs</p>	<p><b><u>For each of the following, bullet or number items:</u></b></p> <ol style="list-style-type: none"> <li>Strengths: Focus groups with interviews, study participants fit the criteria for the project, sample composition reflected the questions</li> <li>Limitations: very small sample size, qualitative data only, no data saturation, questions not validated with expert opinion</li> <li>Risk of harm: none</li> <li>Feasibility: very feasible</li> <li>Level of evidence for the PICOT question type: VI</li> <li>Quality of the evidence: Average.</li> </ol> <p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>

			patients. People who were verbal in communication and who were patients on the units where the study occurred. Convenience sampling. No attrition rate noted.		occurred with 14 nurses and 10 physicians for one hour. Patient interviews were solicited by an email then had face to face. 16 patients did interviews. The interview questions were validated by the PhD researcher.		were better taken care of with CAPA.	
<b>ARTICLE #3</b> Topham & Drew (2017). Quality improvement project: replacing the numeric rating scale with a clinically	Verzuh's process for quality improvement	Quantitative/ Quality Improvement Project	Cluster sampling. All units were included except inpatient pediatric and emergency. The research team included: CNS, CNO, data analyst,	Quarterly Press Ganey scores (validated by Press Ganey) and CAPA compliance rates that were reported by nurse managers	None stated	Frequencies	Press Ganey Scores increased in percentage after implementation of CAPA 18 <sup>th</sup> percentile to 95 <sup>th</sup> percentile.. 80% patients said communication was better and 66% liked CAPA more than NRS. Nurses stated that the CAPA did not take much longer than NRS. The RN	1.Strengths: Large sample size, quarterly tracking of scores. 2. Limitations: no attrition rate noted 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: Good <b>USPSTF: Grade: B Level of Certainty: Moderate</b>

aligned pain assessment (CAPA) tool.			EHR experts, communication department, nurse managers, and nurse educators. More than 80 face to face classes were held with nurses on CAPA and it was added to new hire orientation. 21 people responded to the survey after CAPA. No attrition rate noted	No actual variables			stated that CAPA help them find different and effective pain management interventions. A patient reported that CAPA made her feel like the nurse cared about her pain. The nurses were above 90% compliant in using the CAPA instead of NRS. CAPA led to better pain control. Press Gany scores trended upwards but were variable.	
<b>ARTICLE #4</b> (Gordon, 2015) Acute pain assessment tools: let us move beyond simple pain ratings.	None	Literature Review	Cluster Sampling (non-research). All were different types of pain assessment tools. These were tools for children, patients who were cognitively	Themes: pain assessment tools, comprehensive care, pain related to biopsychosocial responses.	None	Thematic Analysis- no data analysis	There is a need for valid and reliable pain assessment tools. It is better with unidimensional and multidimensional combined. Pain assessment is both biopsychosocial and a complex social transaction. There is a need for a more comprehensive approach.	1.Strengths: Extensive review of literature. Several studies noted. Reliable pain tools discussed. Critical appraisal was done. 2. Limitations: No RCT mentioned in reviews. Studies were not level II or I. They should have looked for stronger studies and had a higher sample size of these studies. 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: Good

			impaired, and CAPA. No attrition rate noted.					<b>USPSTF: Grade: B Level of Certainty: Moderate</b>
<b>ARTICLE #5</b> Scher, Meador, Van Cleave, & Reid (2018). Moving beyond pain as the fifth vital sign and patient satisfaction scores to improve pain care in the 21st century.	None	Literature Review	Cluster sampling (non-research). They looked various pain assessment tools. Pain assessment and its relation to the opioid crisis. Unidimensional and multidimensional pain assessments were examined. No attrition rate noted.	Themes: pain assessment, opioid epidemic, pain as the 5 <sup>th</sup> vital sign.	None	Thematic Analysis no data analysis	Accurate pain assessment is needed for pain control. Multidimensional pain assessment is better for patients with chronic pain. Nurses will play a strong role in implementation. Multidimensional pain assessment is better for goal setting. CAPA has shown to improve patient satisfaction and better for chronic pain. Pain as the 5 <sup>th</sup> vital sign has contributed to the opioid epidemic.	<b><u>For each of the following, bullet or number items:</u></b>  1. Strengths: Several sources used. Clear description of problem with identified solutions. 2. Limitations: No RCT examined. No scientific method. 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: Good  <b>USPSTF: Grade: B Level of Certainty: Moderate</b>
<b>ARTICLE # 6 Note: This starts NURS 5325 course</b>  Baker (2017) History of The Joint Commission's Pain Standards	None	Literature Review	Cluster sampling (non-research). This article was an historical examination of the opioid epidemic related to The Joint Commission Standards.	Themes: pain assessment, opioid epidemic, pain assessment history	None	Thematic analysis. No data analysis	In 1990 there was a push for pain treatment to become enhanced. There was an increase in the use of bedside analgesics and protocols nurses could use to give pain medication. There was a push for therapeutic opiate use. In 2000 there was a push to organize care for pain	1. Strengths: Clear description of problem with identified solutions. 2. Limitations: No RCT examined. No scientific method. 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: good  <b>USPSTF: Grade: B Level of Certainty: Moderate</b>

<p>Lessons for Today's Prescription Opioid Epidemic</p>			<p>They examined the negative unintended consequence of the standards of pain assessment becoming treated as a visible tool. No attrition rate noted.</p>				<p>or to develop pain standards. It pushed pain treatment based on what the patient said it was on a numeric scale. Initially, this was positive but soon after in 2002 this ended up causing serious adverse patient outcomes. Clinicians became over-zealous in treating pain with opiates. Over-sedation lead to an increase in hospital stays and even deaths. Pain became the 5<sup>th</sup> vital sign.in 2011, there was an increase in the use of pharmacologic and non-pharmacological uses of pain treatment after several adverse events in the early 2000s. Now patients are using methods of setting realistic goals for pain with their health care providers. There is also an identification of high-risk patients and databases to monitor the patients.</p>	
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<p><b>ARTICLE #7</b> Von Baeyer &amp; Pasero, (2017). What nurses' work-arounds tell us about pain assessment.</p>	<p>None</p>	<p>Literature Review</p>	<p>Cluster sampling (non-research). This article explores nurse work-arounds for pain assessment. They explain that nurse work-arounds cause inadequate pain assessment in patients. No attrition rate noted</p>	<p>Themes: pain assessment, workarounds, pain interventions, pain protocols</p>	<p>None</p>	<p>Thematic analysis no data analysis</p>	<p>Nurses find workarounds when pain scales do not make sense. Nurses seemed to be assessing pain incorrectly. One study noted that only 3% of children had pain intensity that was appropriately scored. The nurses also knew that pain above 4 would require intervention so it seemed like they were assessing incorrectly to demonstrate whether or not patients had pain. With the numeric scale, it showed that nurses were able to change the scale to fit the patients pain when the patients self report is above 10. They use this work-around to fit a protocol. This is an issue for opioid pain scales being based off intensity. The nurse are likely to document a lower pain scale as to not overdose the patient with pain medication. Nurses are likely to</p>	<p>1.Strengths: Clear description of problem with identified solutions. One study noted with scientific method                  2. Limitations: No scientific method.                  3. Risk of harm: none                  4. Feasibility: very feasible                  5. Level of evidence for the PICOT question type: Level VII                  6. Quality of the evidence: good</p> <p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>
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							do work around on pain scales they do not agree with to protect their patients. There is a need for more practical pain assessment.	
<p><b>ARTICLE #8</b>                  Van Boekel et al., (2017)                  Moving beyond pain scores: Multidimensional pain assessment is essential for adequate pain management after surgery</p>	None	Cross sectional study Cohort study	Cluster sampling (researched-based). This article explored using a multidimensional pain assessment on post operative patients. Data was collected from a database that was created from 1 January 2008 to 1 August 2008 No attrition rate noted There were 15,394 assessments in 9,082 patients. Patient were ages 18 and older. The assessments	IV=NRS-MEP DV=PO, NO, PONO	NRS is reliable tool per previous research and it is the standard in most hospitals. no reliability tests were done. Sensitivity and specificity of the NRS-MEP was tested.	Frequencies Binary Logistic Regression Area under the curve Significance set at 0.05 Confidence intervals	Frequencies= Patients with low NRS-MEP scores 0-4 was 9%. 23% of NRS-MEP 8-10 considered pain acceptable. 17% of observations with NRS-MEP of 8-10 showed appropriate movements.  Binary logistic regression=PO, NO, or PONO of each of the three post operative days were $p < 0001$ . No significance difference on age or gender.  Area under the curve For PO and PONO curves follow close proportions of NRS less than or equal to 3 or greater than or equal to 8. Area under the curve decreases across the days from 0.81 to	1.Strengths: scientific method, large sample size over many years, appropriate statistics. 2. Limitations: No attrition rate noted 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level IV 6. Quality of the evidence: good  <b>USPSTF: Grade: B Level of Certainty: Moderate</b>

			<p>were 8,258 on day one, 4,522 on day two, and 2,614 on day three. The number of patients diminished after day 3 due to patients being discharged. On post-operative day one 44% were male, aged 53.5 years and BMI 26.6, n=8258. On day 2 51.55% were male, n=4522, aged 56.5, BMI 25.8. On day 3 post-op there were n=2614, male, 55.5% male, 56.8 years of age, BMI=25.7.</p>				<p>0.73. Overprediction of observations for NRS less than or equal to 2 and NRS greater than or equal to 9. If NRS-MEP=7 half of patients accept pain and one-third more appropriately which suggest these proportions increase over time. Day1 proportion= 0.22 (95% CI=0.21-0.24), day 2 0.29 ((5% CI=0.26-0.31), and 0.29 (95% CI=0.26-0.33) for day 3.</p> <p>Overall conclusions= NRS does not reflect multidimensional pain assessment for post-operative pain. Patient with low pain score do are not always ok with pain level and patients with high levels of pain were not always dissatisfied with their pain experience. Patients were able to accept their pain and perform physical activity (NRS-MEP=7).</p>	
<b>ARTICLE #9</b>	None	Literature Review	Cluster sampling (non-	Themes: multidimensional pain	None	Thematic analysis no	80% of post-operative patients have pain and that	1.Strengths: Clear description of problem with identified solutions. Evidenced-based data.

<p>Petti, Scher, Meador, Van Cleave, &amp; Reid, (2018). Can Multidimensional pain assessment tools help improve pain outcomes in the perianesthesia setting?</p>			<p>research). The examined multidimensional pain assessment tools including the CAPA. They looked at whether they could be used for post-operative pain.</p>	<p>assessment, CAPA, pain as the 5<sup>th</sup> vital sign, inadequate pain relief and management</p>		<p>data analysis</p>	<p>can be moderate to severe in intensity.</p> <p>Inadequate pain control linked to prolonged hospital stay and infections.</p> <p>Pain as the 5<sup>th</sup> vital sign has contributed to the opioid epidemic.</p> <p>Reliance on numerical pain ratings in post-operative pain is problematic. Patients have reported that the numerical pain rating does not tell the whole story of their pain.</p> <p>Numeric rating scales are hard to respond to and often require more assessment to determine intervention.</p> <p>Numeric rating scales allow for protocols which call for administering higher doses of pain medication with the higher the number on the scale. This can</p>	<p>2. Limitations: No scientific method, no RCT examined, not researched based.</p> <p>3. Risk of harm: none</p> <p>4. Feasibility: very feasible</p> <p>5. Level of evidence for the PICOT question type: Level VII</p> <p>6. Quality of the evidence: good</p> <p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>
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							<p>increase unnecessary opioid use.</p> <p>Need for a comprehensive pain assessment before surgery to help determine post-op interventions.</p> <p>Joint Commission revised standards to include comprehensive pain assessments.</p> <p>CAPA encourages dialogue instead of numerical ratings. After administration of CAPA patients report being more satisfied with their care.</p> <p>CAPA does not take more time than NRS to assess.</p> <p>CAPA allows nurses to make more informed clinical decisions and make better pain management plans.</p>	
<p><b>Article #10</b>  <b>Note: This starts Capstone</b></p>	None	Literature review	Cluster sampling (non-research)	Themes: CAPA is a multidimensional pain tool.	None	Thematic analysis no data analysis.	<p>CAPA is a reliable tool for back pain: acute and chronic.</p>	<p>1.Strengths: Several pain tools examined. Evidenced-based data.                  2. Limitations: No scientific method, not researched based.                  3. Risk of harm: none</p>

<p>Garg, Pathak, Churyukanov, Uppin, &amp; Slobodin, (2020). Low back pain: critical assessment of various scales.</p>		<p>Articles from January 1980 to February 2019 were accessed on various pain scales. They used “pain assessment scales”, “chronic back pain”, “low back pain”, psychometric properties”, “patient reported outcomes measures”, “dementia”, and “neuropathic pain” to search. Results yielded 4,945 articles on pain tools. They looked at using various pain scales for low back pain.</p>	<p>CAPA is a comprehensive pain assessment</p>			<p>CAPA is a reliable pain tool.  CAPA improves patient and nurse satisfaction. Patients are responsive to the CAPA tool.</p>	<p>4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: good  <b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>
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<p><b>Article #11</b> Solomon (2016). Pain assessment: Can a number meaningfully describe the pain experience?</p>	<p>None</p>	<p>Literature review</p>	<p>Cluster Sampling non-research. They looked at the CAPA pain tool and compared it to the NRS. They also examined the challenges of pain assessment and why multidimensional pain assessments are needed.</p>	<p>Themes: Pain as the 5<sup>th</sup> vital sign, Multidimensional pain assessment tool, Pain is more than just a number, Pain assessment is complex</p>	<p>None</p>	<p>Thematic analysis no data analysis</p>	<p>CAPA pain tool should be used in addition to the NRS.</p> <p>CAPA is a reliable multidimensional pain assessment.</p> <p>NRS does not capture pain experience but CAPA does.</p> <p>NRS gives limited information on the nature of the patient’s pain.</p> <p>Using CAPA and NRS together will improve patient satisfaction.</p>	<p>1.Strengths: CAPA was compared to NRS. Evidenced-based data. 2. Limitations: No scientific method, not researched based. 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level VII 6. Quality of the evidence: good</p> <p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>
<p><b>Article #12</b> Vitulo et al. (2020). Surgical patients' and registered nurses' satisfaction and perception of using the Clinically Aligned Pain Assessment (CAPA©) Tool for</p>	<p>None</p>	<p>Quantitative cohort study</p>	<p>Cluster sampling (research based) 63 nurses 95 patients 158 total participants Nurses worked on inpatient and outpatient units. Patients were both day surgery and inpatient surgery.</p>	<p>IV= CAPA+ NRS DV=questions on Survey</p>	<p>Patient satisfaction Survey Cronbach alpha 0.9483.</p> <p>Nurse satisfaction survey Cronbach alpha: 0.9462</p> <p>Survey was a likert scale ranging from</p>	<p>Non-parametric statistical tests of difference (Fisher test and Wilcoxon Ran sums test) Descriptive statistics (mean, standard deviation)</p>	<p>Nurse satisfaction: and the median scores for each question were shown. All questions have median scores of 5, corresponding to response “Agree”. The Cronbach’s alpha of the survey was 0.9462. Mean, standard deviation (SD), median, 25% of responses (p25), and 75% (p 75).</p> <p>Patients: Mean, standard deviation</p>	<p><b><u>For each of the following, bullet or number items:</u></b></p> <p>1.Strengths: Large sample size, Diverse sample size, CAPA compared to NRS 2. Limitations: some patients did not have pain, some nurses only worked with one CAPA patient. 3. Risk of harm: none 4. Feasibility: very feasible 5. Level of evidence for the PICOT question type: Level IV 6. Quality of the evidence: Good</p> <p><b>USPSTF: Grade: B Level of Certainty: Moderate</b></p>

<p>pain assessment</p>			<p>Inclusion criteria: nurses= 18-64, full-time or part-time status, must work on one of the units where study is being conducted, willing and able to give informed consent, declines to participate. Patients= must be able to communicate in English, ages 18-95, must be being treated on one of the participating units, willing and able to give informed consent, declines to participate, is immobile.</p> <p>No attrition rate due to</p>		<p>strongly disagree to strongly agree</p>		<p>(SD), median, 25% of responses (p25), and 75% (p 75) of responses are shown above. The distribution of patient's responses to the satisfaction questions are summarized. All questions have median scores of 5, corresponding to response "Agree". The Cronbach's alpha of the survey was 0.9483.</p> <p>Patients and Nurses: There is no significant difference between patient's and nurse's responses to seven out of the eight questions. The exception was for question two. For question two, patients were more likely to respond "agree and strongly agree" (76%) compared to nurses (68%). The distribution of the scores (median, IQR) for question two were 5(5-6) and 5(4-5) for patients and nurses, respectively. Favorab</p>	
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			no one being dropped.				le for CAPA tool, not a significant difference on question 2 because nurses and patient's both indicated they were in agreement (agree vs. strongly agree is still favorable for CAPA)	
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Legend: IV=independent variable, DV= Dependent variable, CNS= Clinical Nurse Specialist, PhD=Doctor of Philosophy, CNO=Chief Nursing Officer, HER=Electronic Health Record, CAPA=Clinically Aligned Pain Assessment Tool, NRS-MEP=numeric rating scale for movement-evoked pain, PO=the patients opinion on whether or not pain is acceptable/nurses observation on patient ability to make appropriate movements. NO= good or bad performance, PONO=present or not  
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