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**IMPLEMENTATION OF A PRE-ANESTHESIA TAKE-HOME
EVALUATION (PATHE) AS A MEANS OF PROCESS
IMPROVEMENT: A BEST PRACTICE RECOMMENDATION**

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IMPLEMENTATION OF A PRE-ANESTHESIA TAKE-HOME EVALUATION
(PATHE) AS A MEANS OF PROCESS IMPROVEMENT:
A BEST PRACTICE RECOMMENDATION

by

Hunter Brown, Russell Gray, Trey Galloway

A Doctoral Project
Submitted to the Graduate School,
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and the School of Leadership and Advanced Nursing Practice
at The University of Southern Mississippi
in Partial Fulfillment of the Requirements
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Approved by:

Dr. Nina McLain, Committee Chair
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ABSTRACT

The pre-anesthesia evaluation (PAE) is a vital component to anesthesia providers when choosing an appropriate anesthetic plan for patients requiring surgery. The PAE, pre-anesthesia risk-factor assessment, and provision of pre-anesthesia instructions are standards of care implemented in order to assess the patient's likely outcome of surgery and anesthesia as well as stratify any known risk factors to optimize surgical/anesthetic outcomes. Any disruption in this process could potentially lead to decreased patient/provider satisfaction, reduced patient compliance with pre-anesthetic instructions, reduced patient safety, and unnecessary financial burden.

After the completion of a literature review, the need for a best practice recommendation was identified and a document was created containing a Pre-Anesthetic Take-Home Evaluation (PATHE). PATHE specifically aims to improve the pre-anesthesia assessment process through increased patient reporting of pertinent health history, stratification of pertinent risk factors, and pre-anesthesia education.

The PATHE document was provided to seven practicing certified registered nurse anesthetists (CRNAs) and 22 student registered nurse anesthetists (SRNAs) currently in clinical. Of the respondents, 100% agreed that the document was thorough, well organized, and free from grammatical and formatting errors. Twenty-eight respondents (96.55%) agreed that the document would be easy for adults (age > 18 years) of all cognitive levels to comprehend; however, one respondent (3.45%) disagreed. Additionally, 100% of respondents agreed that the document provides a clear representation of all major aspects of anesthesia care, addresses most commonly encountered questions from patients, provides an accurate depiction of all topics

addressed, addresses most commonly encountered risks associated with anesthesia, solicits the minimal amount of information required to develop a safe and effective plan for anesthesia care, provides a clear and accurate list of risks, and provides recommendations for risk stratification that are supported by current evidence. Lastly, one constructive comment left by a respondent stated that the document was too long, which could potentially deter patient compliance.

With consideration of the literature review and survey results, the authors have concluded that patients, healthcare providers, nurses, and healthcare facilities all stand to benefit from the implementation of PATHE into their current evidence-based practice.

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LIST OF ABBREVIATIONS

<i>AACN</i>	American Association of Colleges of Nursing
<i>AANA</i>	American Association of Nurse Anesthetists
<i>APN</i>	Advanced Practice Nurse
<i>CRNA</i>	Certified Registered Nurse Anesthetist
<i>DNP</i>	Doctor of Nursing Practice
<i>FAQ</i>	Frequently Asked Questions
<i>HPA</i>	Hypothalamic Pituitary Adrenal
<i>IRB</i>	Institutional Review Board
<i>NAP</i>	Nurse Anesthesia Program
<i>NSM</i>	Neuman Systems Model
<i>PAE</i>	Pre-Anesthesia Evaluation
<i>PAI</i>	Pre-Anesthetic Instructions
<i>PATHE</i>	Pre-Anesthesia Take Home Evaluation
<i>PONV</i>	Postoperative Nausea and Vomiting
<i>PSAC</i>	Patient Satisfaction with Anesthesia Care
<i>SNS</i>	Sympathetic Nervous System
<i>SRNA</i>	Student Registered Nurse Anesthetist
<i>SSC</i>	Surgical Safety Checklist
<i>USM</i>	The University of Southern Mississippi
<i>WHO</i>	World Health Organization
<i>WMC</i>	Working Memory Capacity

CHAPTER I - INTRODUCTION

Patient safety remains among the fundamental priorities of patient-centered care today. National, regional, and global healthcare organizations have developed numerous patient safety standards to prevent unnecessary harm occurring to patients. The pre-anesthetic assessment is an essential component in the care anesthesia professionals provide to patients preparing for surgery. The goal of a pre-anesthesia evaluation (PAE) is to determine details of the patient's health history that may elevate the risk for perioperative complications, optimize the patient from medical and psychological standpoints, promote system efficiency, and lower the cost of care (Barash et al., 2017). Most PAEs take place the morning of surgery, which can potentially inhibit the preoperative process should any inaccuracies occur.

As an alternative to the traditional pre-anesthetic assessment, the Pre-Anesthesia Take-Home Evaluation (PATHE) aims to improve the pre-anesthetic/operative process. The potential benefits of PATHE are maximization of patient safety through increased reporting of pertinent health history, stratification of pertinent risk factors, and enhanced patient education. PATHE is aimed at optimizing the traditional pre-anesthesia process to benefit patients and anesthesia providers alike by increasing patient safety, compliance, and satisfaction while decreasing patient anxiety and costs.

Problem Description and Significance

During the perioperative period, the optimization of patient health prior to a procedure is an important function of anesthesia. Pre-anesthesia evaluation, pre-anesthesia risk-factor assessment, and provision of pre-anesthesia instructions are standards of care implemented in order to assess the patient's likely outcome of surgery

and anesthesia as well as stratify any known risk factors to optimize surgical/anesthetic outcomes. Any disruption in this process could potentially lead to decreased patient/provider satisfaction, reduced patient compliance with pre-anesthetic instructions, reduced patient safety, and unnecessary financial burden.

The ill-favored news of poor health and, even worse, the need for a procedure requiring anesthesia is commonplace. These procedures can be sources of anxiety. Arrival at the healthcare facility on the morning of the scheduled procedure can result in stress, fear, and anxiety. This reality has the potential to penetrate deep into the perioperative process beginning from when a patient learned of his or her new diagnosis. Anxiety can cause an inability to recall information. At every turn, the perioperative process requires the patient to readily recall a vast quantity of detailed information that later becomes the foundation for the care in which they will receive. Omission of the smallest detail, which may seem insignificant to the patient, can lead to consequences, such as improper treatment and devastating patient outcomes. Similar to a patient's inability to recall information, complacency is commonplace in healthcare settings. Although the trait is undesirable, healthcare providers are not immune to complacency nor its potential for long-lasting effects. Too often, providers find themselves in pressured situations involving limited amounts of time or have developed routines for pre-anesthetic patient evaluations that result in inadequate evaluation or an incomplete review of health history. Both situations pose a significant threat to the safety of the patient.

Pre-Anesthetic Instructions (PAI) are commonly given to patients when preparations are being made for a planned procedure. Instructions given to patients include elements that are critical to positive anesthetic outcomes such as how to take

prescription and over-the-counter medications, as well as dietary restrictions. Recall of detailed information following the visit and/or comprehension of instructions provided can pose a challenge for patients and is likely to result in nonadherence. Obstacles introduced through nonadherence with instructions, whether intentional or unintentional, pose a serious threat to patient safety.

The American Association of Nurse Anesthetists (AANA, 2019) outlines the minimum standards of care that Certified Registered Nurse Anesthetists (CRNA) must ensure are met during every patient encounter. AANA Standard Two highlights the importance of pre-anesthesia patient assessment and evaluation. As a standard of care, the anesthetist must accurately document the following items: “evaluation of general health, allergies, medication history, preexisting conditions, anesthesia history, and any relevant diagnostic tests” (AANA, 2019, p. 1) AANA Standard Three discusses planning for anesthesia care and is critical in the prevention of perioperative complications as it provides an opportunity to develop a patient-specific plan for anesthesia care. The fourth AANA standard of care addresses the ethical and legal principle of informed consent. Obtaining informed consent from a patient is a process that is balanced between a thorough explanation of the care to be delivered and the risks/benefits involved in the delivery of said care. As a reflection of these standards, this project is designed to address issues pertaining to documentation and verification of the pre-anesthetic evaluation, perioperative risks related to anesthesia care, and perioperative education related to anesthesia care, all of which are critical to patient safety.

Background

Patient safety has become a complex and evolving area in health care that aims at improving the quality of care delivered to patients. Primarily, a focus on patient safety aims at reducing and preventing risks, errors, and harms that occur to individuals during the delivery of care (World Health Organization [WHO], 2019). Preventable adverse events are common in many healthcare settings; however, the occurrence of adverse events and complications rank among the ten leading causes of mortality and morbidity across the globe. As outlined by the World Health Organization (WHO) in 2019, one in every ten patients in high-income countries is likely to experience an adverse event during the provision of care. Complications associated with surgical operations are a crucial area that warrants scholarly attention. Abbott et al. (2018) indicate that more than 310 million surgeries are conducted annually across the globe and add that more than 75 million patients experience complications that result in approximately 2 million deaths per year. Currently, clinicians and global health organizations, such as WHO, have developed several safeguards that ensure compliance to safety standards. Noncompliance could result in permanent injury, morbidity, increased length of stay, and/or mortality. As such, ensuring patient safety is among the highest priorities established in healthcare systems worldwide.

The increasing complexity of health care systems and treatment modalities incites extreme vulnerability onto patients. According to WHO (2019), continuous improvement is the cornerstone of ensuring patient safety. As such, ensuring patient safety requires clear strategies, policies, and leadership to drive ongoing safety improvements. These measures affirm the observation that positive patient experiences are contingent upon the

effectiveness of the clinicians or the health care system in ensuring patient safety (Doyle et al., 2013). Clinicians should take caution in their actions to avoid causing unnecessary harm to patients. While the surgical procedure plays a role in the emergence of complications, anesthesia has a substantial role to play.

In the perioperative environment, the optimization of patient safety is of the highest priority. Complications associated with anesthesia can be considered a global public health concern. Research performed by Karaaslan et al. (2014) indicates a 5.5% cumulative rate of perioperative anesthesia-related complications. Zheng et al. (2020) add that up to 80% of surgical patients experience postoperative nausea and vomiting (PONV). Aside from life-threatening pulmonary complications such as hypoventilation, pulmonary atelectasis, pulmonary aspiration, bronchospasm, laryngospasm, and pulmonary edema, some patients could also suffer from circulatory and neurologic complications after the administration of general anesthesia (Robinson & Davidson, 2014). Such complications increase the overall burden of illness that has been increasing globally over the years. Sufficient patient safety measures should be taken to prevent complications. However, insufficient pre-anesthesia evaluation may compromise some important aspects of patient care and result in deleterious outcomes. As noted by Saxena et al. (2020), most of the anesthesia-related incidents come from atypical and temporary lapses in the vigilance of competent anesthetists. In other words, human error is linked to most anesthesia-related complications. Inadequate pre-anesthesia assessment may prevent the care team from acknowledging the risk factors that could lead to complications (Haugen et al., 2016).

Anesthesia care is associated with complex stress responses proportional to the total operating time, the magnitude of the injury, blood loss, and pain, which could present many challenges during the perioperative period. A comprehensive Pre-Anesthesia Evaluation (PAE) involves more than the physical examination of patients; it aims at identifying the risk factors that may lead to the emergence of complications after the administration of anesthesia (Hausman et al., 2015). Failure to conduct a thorough PAE has been linked to an increased risk for complications. For instance, numerous studies have shown that the failure to perform a thorough PAE could increase patient anxiety, miscommunication, and unnecessary spending. Additionally, use of PAE could lead to increased rates of surgery cancellations and non-compliance to preoperative instructions (Saxena et al., 2020). Ultimately, the pre-anesthesia assessment aims at reducing perioperative morbidity and mortality.

Available Knowledge

Pre-Anesthesia Evaluation

A patient is not always a reliable source when obtaining medical history for pre-operative purposes. The retrieval of patient information has the potential to be a simple, yet vital, aspect of the PAE. Any error or disruption in this process of retrieving information can result in adverse effects that can lead to harm or injury to the patient. In the pre-operative environment, anesthesia providers look to the patient and or family members for accurate history, allergies, and a full list of prescribed medications. Factors that may contribute to inadequate reporting of these necessities might be due to poor recall of information, disorganization, personal beliefs, and a lack of health literacy.

Many factors play a role in the development of poor recall of information. According to Redelmeier et al. (2001) and Loftus (1997), the patient can distort true memories of their history with embellishments in the retelling of the event. Patients may also unconsciously lead a provider to assume they appear overly healthy and leave out pertinent medical history. As time progresses, memories of events may become distorted by the embellished re-telling of specific events. Common examples of such would be exaggerated experiences with nausea and vomiting, pain, or allergic reactions.

Another factor of poor recall involves the inhibition of memory, which involves the suppression of weaker memories by stronger ones (Redelmeier et al., 2001; Tulvig & Hastie, 1972). Memories or experiences that stand out to a patient are easy to recall versus a recollection of an occurrence that the patient may question the details of. In the event of seeking out weaker memories, cues or distractions may change a patient's focus and inhibit accurate memory recall. For example, examiners before anesthesia is administered, such as nurses or surgeons, may offer cues to the patient that could distort or inhibit their memory. Offering these cues could lead to automatic responses by the patient to questions that are asked multiple times without the patient truly hearing or understanding the questions being asked.

Surprisingly, environmental settings can play a large role in the recall of information. According to Redelmeier et al. (2001), people do not recall information as well in dissimilar settings as they do in similar settings. For example, in a study by Godden and Baddeley (1975), scuba divers were asked to memorize a list of words either underwater or on land and then recall the list in either setting. The study found that those who memorized and recalled the list in dissimilar settings were less likely to correctly list

the words than those in similar settings. This shows that patients may forget to relay pertinent information to a nurse or physician at a clinic or the patient may forget the information that the physician instructed them with once they arrive home. Patients can become distracted or overwhelmed by their surroundings and forget to relay needed information or ask questions specific to their circumstances. Furthermore, a patient's complaints, worries, questions, ideas, perception of the situation, and even physical status may change when exposed to an unfamiliar setting. As a result, pertinent information may not be received by both patient and provider and could have consequences in the future. Therefore, it may be necessary for patients to be in comfortable settings, such as their homes, in order to accurately recall information.

The misperception of time also plays a role in information recall. The *telescoping effect* is an overestimation of the occurrence of events and exaggeration of how recent the events occurred (Loftus & Marburger, 1983; Redelmeier et al., 2001). For example, Loftus and Marburger (1983) found that the subjects of their study were more likely to report the occurrence of an event using a time interval, such as a 6-month period, rather than a landmark event. Additionally, many of the events reported were found to have occurred outside the given time interval. This shows that patients have an easier job remembering times in relation to events and actions rather than remembering specific ranges in time. In reviewing a patient's medical history, it may be difficult for the interviewer to understand the timeframe in which the previous events occurred. Therefore, using specific landmark events such as birthdays, holidays, or other events may prove to be more beneficial at retrieving information.

According to Redelmeier et al. (2001), it is commonly seen that the technical details of memory fade faster than the personal feelings associated with it. Therefore, patients might forget every detail of their health history. For example, one study found that on the day of high school graduation, subjects knew the names of 100% of their classmates. After seven years, 75% of the graduating class's names were remembered, and then 57% of names after an additional seven years (Bradburn et al., 1987). With this in mind, providers may question whether a patient has truly remembered the details of their history. Clinics and hospital settings may want to encourage protective strategies to prevent failures in memory. Such strategies can include diaries or recording devices for the patient to use during visits with providers to assist in keeping the patient informed of what to expect regarding their health care (Redelmeier et al., 2001). Redelmeier et al. (2001) also discuss one strategy is to inform patients of possible questions prior to the interview. Furthermore, without evidence to support recall, inaccurate recall may be worsened in those who are confident in their memory. To avoid memory failures in the perioperative setting written key points show that written key points given to patients by providers during evaluations may prove to enhance a patient's ability to recall information.

The manner in which questions are presented to a patient can have an effect on the accuracy of a patient's answer. The order of two questions that can influence different responses is known as *sequencing effect* (Redelmeier et al., 2001). In Strack et al.'s (1988) study, college students were asked about their happiness and their frequency of dating. Each half of students involved in the study were asked both questions in a different order. It was found that no correlation existed among the responses when

happiness was asked prior to students' dating frequencies. However, when students were asked first about their dating frequencies, the responses showed a high correlation. This shows that the order of a set of questions may yield different responses. Therefore, providers should be mindful of their order of questions, "so that preceding questions might stimulate selective memories that colour subsequent responses" (Redelmeier et al., 2001, p. 811). In addition, automatic shortcuts can occur as people tend to answer questions using memory shortcuts when faced with complex mental tasks (Redelmeier et al., 2001). In other words, people may choose the easiest path to answer a question without having to critically think. This may also be suggestive of why healthcare professionals are taught to ask open-ended questions when interviewing patients. Thus, properly organized questions may help health care professionals in obtaining insightful responses from patients during evaluations that, in turn, will lead to the development of an appropriate patient-specific plan of care (Redelmeier et al., 2001).

When it comes to self-presentation, patients may distort or embellish information to impress others or avoid feeling foolish (Redelmeier et al., 2001). Evidence of this was shown in Strack et al.'s (1990) study, which revealed how subjects were more likely to report a positive self-presentation in face-to-face interviews than in written surveys. Additionally, this distortion of information may be further exacerbated when the interviewers are authority figures or the opposite sex. Furthermore, *cognitive dissonance*, theorized by Festinger (1957), is the phenomenon of changes in attitude once a behavioral commitment has occurred. For example, if an individual has the choice to keep one of two gifts that are of similar value and appreciation, then the personal value will most likely increase in the gift that is chosen. According to Festinger (1957), this

personal bias may be so great that people often feel the need to justify their own choices to themselves and others. In a study by Festinger and Carlsmith (1959), two groups were instructed to perform the same task of turning a doorknob for one hour. One group was paid 20 dollars while the other group was paid one dollar. Although one may anticipate that the higher paid group would find more enjoyment in such a simple task, the study found, surprisingly, higher reports of enjoyment in the task among the group who was paid less. The authors believe the results were due to the one-dollar group using self-justification, or rationalizing their enjoyment, thus supporting the theory of cognitive dissonance. In a similar sense, a patient may claim to have an improvement in health with an unpleasant surgery, treatment, or medication when there was no beneficial response. Therefore, it is important for providers to perform thorough interviews in order to identify the persistence of disease despite a patient's history of treatment or statement of improvement.

Cognitive bias also exists with the persistence of beliefs caused by personal experiences involved with coincidence or chance that influence these beliefs despite contradictory data (Redelmeier et al., 2001). One key example of this bias is demonstrated in Redelmeier and Tversky's (1996) study outlining the lack of relationship between arthritis pain and weather changes, despite the popular belief. There's a possibility that many patients might claim that previous health experiences are due to disease, or the failure of a provider, rather than coincidence. For example, patients might claim to be allergic to certain medications when the actual reaction experienced is likely an expected side effect. Additionally, after regional anesthesia, the feeling of pressure during surgery may leave some patients believing that the block did not work which

might lead to dissatisfaction with their care. Another example might be from patients who claim they were awake during procedures when, in reality, they were just regaining consciousness during the emergence of anesthesia. Experiences like these might ultimately lead to patient dissatisfaction as well as disinformation in future evaluations.

Another form of cognitive bias is the *halo effect*, which is the appreciation of a single attribute that can often positively influence other attributes without explanation (Redelmeier et al., 2001). This can create a bias towards the patient, provider, or treatment. Such an effect can lead to the patient exaggerating the description of treatments or care received from health care providers. It can also lead to an inflated hope, followed by disappointment if expectations are not met. The *horn effect*, opposite of the *halo effect*, may produce dislike for a specific treatment or even a provider that can often negatively influence the overall experience for the patient (Pohl, 2016). In other words, this bias may negatively influence certain aspects of an experience that he or she would enjoy in neutral circumstances. This form of bias, depending on previous experiences, can cause the patient to distrust the provider or the suggested treatment options without an appropriate reason. Additionally, the patient may also view the provider as incompetent and look elsewhere for medical care. Therefore, it is imperative for interviewers to understand that patients' "explanations may be unreliable even when their judgment appears credible" (Redelmeier et al., 2001, p. 812).

Health literacy has also been shown to influence a patient's ability to make decisions regarding health care (De Oliveira et al., 2018). Poor health literacy has been shown to be a major factor that results in decisional conflict. Health literacy may also influence a patient's ability to comprehend medical terminology during pre-operative

processes, such as a medical evaluation, which may lead to an insufficient history report or consent to treatment that is not fully understood. It is possible that the improvement of pre-operative communication between providers and patients may aid in eliminating potential decision conflicts and comprehension errors. De Oliveira et al. (2018) suggest using decision aids in the pre-anesthesia evaluation several days before surgery to allow an appropriate amount of time for patients to reflect on their options, make inquiries, and discuss the details and expectations of the procedure. Poor health literacy might also be reflected in a patient's difficulty or inability to appropriately describe their health history or disease, which might lead to errors in their PAE.

Although infrequent, dissatisfaction with PAE among anesthesia providers does exist. Due to the occurrence of missed information during the PAE, a study performed by Manji et al. (2017) rated 17,522 cases with a pre-operative assessment. The study determined that 3,828 (21.8%) cases were rated "exemplary," 13,454 (76.8%) were "satisfactory," and 240 (1.4%) were "unsatisfactory." Reasons for "unsatisfactory" ratings were mostly due to "missing information," followed by "inadequate assessment" and "incomplete/missing assessment." Sixty-seven charts were reviewed that contained *constructive* free-text comments. Among the 67 charts, 52 received "unsatisfactory" ratings, 14 were "satisfactory," and one was "exemplary." Thirty-five "unsatisfactory" charts included remarks about inadequate documentation; 11 included inadequate consent and counseling; 10 had missing or inadequately followed lab results; seven were considered an inappropriate method of evaluation, and seven were said to have inadequate pre-operative management of medications. A midpoint survey of general feedback regarding the pre-procedural processes and evaluations was given to 125

anesthesia providers. Among the providers, 11.5% reported that the pre-procedural processes and evaluations were “unsatisfactory,” however, the article states this is consistent with cognitive psychology research that shows an increased or exaggerated recall of negative events compared with neutral events (Manji et al., 2017). In conclusion, the study shows that most providers reported that pre-operative processes were considered “satisfactory.” The article does not acknowledge that improvements can be made to the pre-operative process even when providers were considered satisfied with current processes. It is worthy to note that the knowledge of the study on pre-operative assessments might have led the providers to work more efficiently to achieve better results for the study.

Patient Satisfaction with Anesthesia Care (PSAC) model highlights factors that influence patient satisfaction, such as patient experience, perceived performance, provider interaction, anesthesia service quality, patient pre-operative emotions, and other inputs (prior experiences, co-morbid conditions, type of surgery, length of surgery, and literacy needs) (Falco et al., 2017). According to Falco et al. (2017), patient expectations are not always met by the outcome of their surgery which is exemplified with the disconfirmation theory. The disconfirmation theory is a belief that there is a relationship between patient expectations and perceived performance, which influences patient satisfaction (Oliver, 1993). Therefore, when the experience is not what the perceived outcome was, the patient is left feeling dissatisfied. Additionally, patients that have the perception that a higher quality of service was provided when it was, in fact, absent, may experience more satisfaction with the quality of their care (Newsome & Wright, 1999). For example, in a study by Fleisher et al. (1999), two groups of patients attended an

anesthesia visit pre-operatively. One group was given a written anesthetic report during the visit and the other group was not given a written report. Although both groups received the same anesthesia care, the patients who were given the written report were more satisfied with the quality of care. This shows that perception of care and personal interaction with each patient is important in influencing patient satisfaction. Therefore, patients may rate their overall satisfaction based simply on how much they enjoy interacting with their provider. According to Falco et al. (2017), many studies “found that providing patients with information, conducting a thorough risk-to-benefit assessment, and including patients in pre-operative decision-making enhanced patient satisfaction” (p. 288). It can be agreed that most, if not all, patients desire positive experiences with their providers. Therefore, a compassionate provider who is attentive provides patient-specific care, covers all patient questions, and produces information entailing anesthesia is better able to emotionally connect with the patient (Falco et al., 2017). This, in turn, is the behavior a patient is looking for which will lead to satisfaction with their care.

According to Blomberg (2014), prior to anesthesia, encounters with patients should aim at relieving anxiety, empowering their sense of control, and improving safety. Communication that is required for the PAE is not only used for ensuring quality care but is also used to develop bonds that may promote trust in providers (Blomberg, 2014). Furthermore, in the situation of not conducting in-depth pre-operative discussions due to time restraints, information can be overlooked and mistakes can be made during care. Therefore, complications can arise in surgery from such occurrences and leave the patient dissatisfied with their outcome. This shows that it is imperative to give the patient all the

necessary time required pre-operatively to form a relationship with their anesthesia provider and create a strong plan of care.

Emotions that are commonly experienced by patients pre-operatively include fear and anxiety, which play a part in patient satisfaction. High anxiety has been reported by patients who received an overload of information or were not given enough information (Fraczyk & Godfrey, 2010). Additionally, negative surgical experiences from the past can also influence higher anxiety levels (Webster et al., 2011). Many patients may also critique their care quality based on these emotions felt during the perioperative process (McIlraith, 2015). Anesthesia providers can help a patient's anxiety through reassurance with clear communication, active listening, and balancing sufficient anesthetic information (Falco et al., 2017). Furthermore, addressing any co-morbid conditions and the length and type of surgery expected can act as a determinant for shaping the patient's expectations. Last, a clear understanding of what to expect before, during, and after a procedure will lead to higher patient satisfaction (Falco et al., 2017).

Pre-Anesthesia Risk Factor Assessment

The search for useful literature led to the finding of ten studies that could help in determining the effectiveness of a Pre-Anesthesia Risk Factor Assessment. The articles were reviewed to identify the common points that could guide a thorough evaluation. Three main points came out from the articles: perioperative anesthesia-related complications, risk-assessment and tools for anesthesia-related complications, and interventions for anesthesia-related complications.

Perioperative Anesthesia-Related Complications. Overall, studies associated with this point show the importance of considering anesthesia-related complications as a crucial public health issue across the globe. As Saxena et al. (2020) show, patient safety is a fundamental base of modern medicine. As a public health concern, they acknowledge that most anesthesia-related complications come from atypical and temporary lapses in the vigilance of competent anesthetists. Pre-anesthesia assessment and evaluation play an important role in increasing patient safety. According to the AANA Standard Two (2019), the performance and documentation of evaluation focus on areas such as medication history, allergies, general health, preexisting conditions, and anesthesia history. On this note, Ryan et al. (2019) suggest that an effective focus on patient safety can help clinicians with addressing modifiable risk factors preoperatively. In a retrospective study, Karaaslan et al. (2014) found a cumulative 5.5% rate of perioperative anesthesia-related complications. Although they acknowledge that many complications are minor, they also observe that these could lead to significant discomfort. Long-term complications are associated with high morbidity and mortality rates up to 17% (Karaaslan et al., 2014). However, it should be acknowledged that the number of studies reporting specific anesthesia-related complications remains few and far between. In many cases, Karaaslan et al. referred to complications without specifying the ones that were addressed in the checklists.

In their retrospective study, Ryan et al. (2019) used a sample of 2,308 total knee arthroplasty (TKA) patients to assess the effectiveness of an eleven-item preoperative checklist. At the same time, the authors set out to identify preoperative risks that could be addressed to improve postoperative care outcomes. The authors reviewed TKA patients

from 2014 to 2018, including 1,564 from a Care for Joint Replacement (CJR) center and 744 from a non-CJR center. The findings from the study revealed that the patients assessed using the checklist have a shorter length of stay, as well as reduced anesthesia complications. While the authors identified some of the risk factors that lead to postoperative complications, the study did not collect data and account for the specific risk factors the checklist targeted. Nevertheless, the article has significance in understanding the usefulness of using pre-anesthesia checklists to prevent complications. It gives knowledge regarding the implications of using checklists to enhance patient safety by reducing the occurrence of perioperative and postoperative complications.

Wang et al.'s study (2019) provides more information regarding anesthesia-related complications. The study set out to explore the significance of a nineteen-item surgical safety checklist (SCC) on postoperative clinical outcomes in a sample of 7,209 gastrointestinal tumor patients who received elective surgery. The authors assessed the tool related to clinical factors such as morbidity, mortality, reoperation, postoperative hospital stays, and unplanned interventions within thirty days. Implementation of the checklist led to a reduction in postoperative hospital length-of-stay and mortality rates. To support the findings, the authors collected data regarding the occurrence of complications. Specifically, the authors observed that the checklist reduced complications such as deep vein thrombosis (DVT) as well as pulmonary embolism and venous thromboembolism (VTE). The findings support the observations that checklists could help in the identification and reduction of some anesthesia-related complications. This aligns with AANA Standard Three in that it could indicate the degree to which the checklist allowed the creation of patient-specific anesthesia plans that address unique

stressors and risk factors. However, the study does not address the strategies associated with the reduction in the occurrence of the complications mentioned.

Saxena et al. (2020) conducted a review investigating the effect of surgical safety checklists on the prevention of perioperative complications and errors. According to the authors, the surgical safety checklist (SCC), developed by WHO, is a tool that is widely accepted as a perioperative safeguard, but implementation is specific to the facility and varies greatly. In this case, Saxena et al. (2020) summarized the current literature to identify the effectiveness of different preoperative anesthesia-specific checklists in improving postoperative outcomes. The authors selected twenty-five articles from an initial sample of ninety. The review revealed that 93% of the studies that assessed the implementation of anesthesia-specific checklists had achieved a reduction in intraoperative complications, human error, as well as improved teamwork and intraoperative quality of care. While the findings are very informative, the authors do not identify specific complications that could potentially be reduced through the use of a safety checklist. At the same time, the authors acknowledge that the limited amount of literature on anesthesia-specific checklists makes it difficult to conclude. Nonetheless, findings from the study support the notion that the use of pre-anesthesia assessment checklists could reduce the occurrence of complications.

The studies reviewed show that a multitude of complications could occur during the perioperative and postoperative periods. However, these studies provide little background information about these complications. In most cases, the authors speak about complications without specifying what they are. Effective implementation of checklists should involve targeted complications that could occur after the administration

of anesthesia. Regardless, these studies provide important points regarding the prevention of complications that occur to perioperative and postoperative patients.

Anesthesia-Related Complications Risk Assessment and Tools. Current evidence shows the continued support for the implementation of risk assessment tools in surgical specialties. Most studies conducted in this area show that the implementation of SSC leads to better perioperative and postoperative outcomes (Abbott et al., 2018; Wæhle et al., 2020). According to Wæhle et al. (2020), the effectiveness of SSCs could be associated with the perceived usefulness, ability to modify the tool, and facilitation of communication outside the tool. Further, the evidence shows that the completion of an SSC has more advantages when compared to partially completed checklists (Chaudhary et al., 2015).

Wæhle et al. (2020) used a case study to investigate the application of WHO-developed SSC by a multidisciplinary perioperative team. The study was done due to the shortage of research regarding the use of SSC among multidisciplinary teams in perioperative care. In the case study, the authors included forty-hour observations in operating rooms and conducted seventeen interviews with the perioperative team members at two hospitals in 2016. Then, they analyzed the data to identify the common occurrences that came from their observations and interviews. The authors came up with three themes: perceived usefulness of SSC, the modifications made to the SSC before implementation, and communication that occurs before surgery among the members of the perioperative team. The findings showed that the assessment tool was critical for risk management when implemented effectively before a surgical procedure. However, the authors also noted that the SSC was not integrated well within the existing risk

management strategies of the hospitals. In most cases, the teams considered the tool as an add-on tool instead of the main tool in their consistent preoperative evaluation process. One would be led to believe, because of the findings, that the tool is often compromised which limits its potential effectiveness in risk management. Even so, the findings from this study show the importance of implementing risk assessment tools before surgical procedures. As the authors note, clinicians require adequate training and education before using these assessment tools. This could lead to better learning about risk communication and safety strategies.

Like other scholars in this topic, Chaudhary et al. (2015) were driven by the belief that the implementation of SSCs could minimize the occurrence of postoperative surgical complications. In addition, the lack of randomized studies assessing the effectiveness of risk assessment tools for anesthesia-related complications provided the basis for the investigation done. This led the authors to conduct a prospective study to test whether the implementation of SSC would lead to positive outcomes. Chaudhary et al. (2015) used a sample of 700 patients undergoing surgeries between February 2012 and April 2013. Of these, 350 patients were assigned to the intervention group in which SSC was implemented. The other 350 patients, the control group, were not exposed to the checklist. A surgery resident filled the twenty-four-item checklist, which involved the collection of information before the administration of anesthesia and skin incision. As expected in their hypothesis, the authors found that the occurrence of bleeding, abdominal, and wound-related complications was lower in the intervention group compared to the control group. At the same time, the authors found a lower occurrence of in-hospital mortality associated with postoperative complications in the intervention

group than in the control group. They also found that the rate of more serious complications declined greatly among patients exposed to the checklist compared to those who were not. The findings would lead one to believe that the utilization of SSC could improve perioperative and postoperative outcomes for patients. These findings support that the appropriate use of the checklist as a standard of care could improve anesthetic and surgical outcomes significantly.

Recent evidence supports the findings from Chaudhary et al. (2015). In this case, Abbott et al. (2018) conducted a systematic review to identify the usefulness of SSCs on patient outcomes. The authors observed that clinicians remain on different sides regarding the effectiveness of the tool, even with the widespread use of the tool in improving the quality of perioperative care. In this review, in-hospital mortality was the primary outcome and the occurrence of postoperative complications was the secondary outcome. The authors analyzed data from the International Surgical Outcomes Study (ISOS) which included 44,841 patients from 497 hospitals across twenty-seven countries. The systematic review included 3,732 records with a total sample of 453,292 patients from eleven eligible studies. The analysis found that checklist usage led to a reduction in in-hospital mortality. However, the study did not find a significant difference in the occurrence of complications. Nevertheless, the systematic review found a significant decrease in the frequency of complications and postoperative mortality. With this knowledge, the findings could indicate that the implementation of SSC leads to better postoperative outcomes. However, the authors also saw that the positive postoperative outcomes could show that the quality of care in the hospitals could be better than other hospitals, even though all implement the checklists. The findings are important in

understanding the degree to which hospitals can influence the quality of care and patient outcomes through the implementation of SSCs. In summary, the authors show that effective use of the assessment tool can reduce the occurrence of complications and in-hospital mortality. The findings also support earlier findings by Wæhle et al. (2020) regarding the usefulness of SSCs in surgical procedures.

In summary, studies in this area have focused primarily on the implementation of the surgical safety checklist developed by WHO. It is important to see that all of these studies have shown that the implementation of this checklist leads to positive anesthetic and surgical outcomes. However, there remains a shortage of research on the modifications or edits that different facilities make to the checklists to suit the needs of the patients and the different care settings. Additionally, it shows that most scholars have not considered the likelihood of other tools that could be incorporated as part of evidence-based practice in pre-anesthesia risk assessment. Regardless, the evidence shows that the WHO risk assessment tool is effective in reducing the occurrence of anesthesia-related complications and in-hospital mortality.

Interventions for Anesthesia-Related Complications. As noted earlier, patient safety remains one of the top priorities in today's health care systems. As a result, many health care organizations strive to improve the quality and safety of patient care. Because of the improvement in quality and safety, many organizations have started to use self-assessment checklists as an intervention to reduce the occurrence of anesthesia-related complications (Harris et al., 2020; Haugen, et al., 2016; Heideveld-Chevalking et al., 2018). Self-checklists have been used in targeting high-risk populations with appropriate interventions, for example, to reduce Postoperative Nausea and Vomiting (PONV)

(Zheng et al., 2020). Studies support the idea that self-assessment checklists could allow the identification of possible complications, as well as smooth the path of implementation of appropriate interventions.

Heideveld-Chevalking et al. (2018) conducted a study to develop and evaluate the validity of a Self-assessment Instrument for Perioperative Patient Safety (SIPPS) which aims at monitoring compliance to safety standards. SIPPS would allow patients to provide important information before surgical procedures to eliminate or decrease the probability of adverse events. The authors tested the instrument in five hospitals based on five outcomes: measurability, the potential for improvement, applicability, feasibility, and discriminatory capacity. The test revealed good applicability and measurability for SIPPS. Heideveld-Chevalking et al. (2018) observed room for improvement in patient safety compliance across the hospitals. Based on these findings, it could be believed that the implementation of self-assessment checklists could lead to a change to new best practices. In turn, self-assessment checklists would cause an improvement in patient safety because of the level of compliance with standards. Such tools could function as a take-home risk factor checklist that patients can complete before undergoing surgical procedures.

More evidence from other studies also shows the usefulness of modifying or developing self-assessment checklists in hospital settings to improve perioperative patient outcomes. In their study, Harris et al. (2016) focused on identifying the risk elements that health care workers considered essential for inclusion in patient-driven SSCs. In this study, Harris et al. (2020) used an approach involving focus group interviews with post-operative patients, physicians, surgeons, nurses, and secretaries across five surgical

specialties. Based on the focus groups, the authors identified several risk elements in preoperative care, including dental status, medication safety, health status, and many others. Postoperative risk elements included medication safety, pain relief, stomach function, and appointments. The findings reveal the importance of including the patient in the risk assessment. In this case, clinicians should provide adequate information to patients to validate their importance as a stakeholder. Additionally, the findings could be included in the development of a take-home SSC because it includes the perspective of different stakeholders involved in the patient's care. Clinicians could then modify WHO-developed SSC based on the risk factor assessment returned from the patient to identify the specific risks that patients face. Haugen et al. (2016) developed a clinical consultation guideline, with a focus on the prevention of anesthesia-related complications using a preflight checklist. The guide was created because of the challenge of adoption by staff and the actual use of the SSC developed by WHO. The authors argue that implementing an SSC must also be accompanied by measures that encourage positivity from staff members relative to the inherent culture of safety within an institution, which could be challenging. (Haugen et al., 2016)

. In developing the guide, the authors relied on information from a large number of studies. In reporting the findings of a randomized trial in two Norwegian hospitals, Haugen et al. (2016) documented the reduction in complications by 7.5% among patients exposed to a Surgical Safety Checklist (SSC). They also report almost similar findings from two studies conducted in academic and community hospitals in the United Kingdom. In these studies, the occurrence of complications was reduced from 16.9% to 11.2% after the implementation of SSC. Regardless, the authors note that sustainability of

checklist compliance remains problematic in many hospitals, despite the positive gains, due to compliance and attitudes towards the checklist.

As such, Haugen et al. (2016) used a randomized trial in orthopedic, neurosurgery, and thoracic units in which all the three parts of SSC were used in 75% of the cases. After five years of monitoring compliance across the Western Regional Norwegian Health Authority Trusts, the authors noted a 56.7% overall compliance in procedures conducted in 2015. The authors also noted a slight improvement in SSC compliance following strong managerial involvement, compliance feedback, and improved accountability after quality improvement efforts in 2015. Following these findings, Haugen et al. (2016) made several recommendations that could improve compliance to SSC. For example, they observed the need to hold managers and leaders accountable for compliance, the need to modify the checklists used by multidisciplinary teams, and the need to document outcomes and evaluate the significance of the checklists after implementation. The findings from this study are critical because they allow for data collection about the development of checklists, as well as the sustainability of compliance with the checklists. The recommendations could provide a basis for the development of a take-home checklist to assess anesthetic risk factors.

In an evidence-based implementation project, Zheng et al. (2020) sought to identify the current practices for the assessment and documentation of PONV risk factors. Additionally, the study sought to develop strategies that would improve the practices. The authors used three phases to implement the project: baseline audit, strategy development, and follow-up. The audit phases occurred in a public hospital in Victoria, Australia in 2016. The other phases were conducted between June and October 2017. In the study, the

authors used the Apfel score, which is a simplified tool to detect the probability of PONV, as the audit criteria because of its high reliability. The authors noted several barriers in the use of risk assessment tools, including perceived lack of necessity, already high workloads among health care workers, and time constraints. Based on these barriers, the study found that only 5.3% of the patients indicated high PONV risk factors preoperatively. In turn, the authors developed a self-checklist to allow patients an opportunity to assess their personal risk levels. After the implementation of the checklist and incorporation of improvement strategies, the study found that 16.8% of the patients reported PONV risk. The findings from this investigation show the need for conducting patient assessments before surgeries. Also, the study shows the usefulness of self-checklists in the identification of the patient's own perceived risk factors. In other words, these findings show that the use of self-checklists could be a critical intervention in reducing the occurrence of anesthesia-related complications.

Overall, the studies conducted in this area show that hospitals require in-house interventions to reduce the occurrence of complications. The SCC is identified as the single most important tool that hospitals should use in reducing anesthesia-related complications. However, the challenges in compliance may lead to ineffective implementation and use. As such, hospitals could develop in-house self-checklists that patients can use as take-home tools for risk assessment. Also, these self-checklists could be critical in enhancing the safety of surgical operations. At the same time, these studies show the importance of the leadership team's involvement and accountability in ensuring compliance with the checklists. In other words, managerial support and modification of

checklists can be considered essential for the ultimate sustainability of the tools in anesthesia settings.

While the literature shows benefits from the implementation of these evidence-based tools, they do not make the success of the tools clear. Also, some mixed findings have come up regarding the effectiveness of the tools in reducing complications or improving intraoperative outcomes. In their study, Wæhle et al. (2020) showed that the effectiveness of SSCs depends on their perceived usefulness, the ability to modify them, and their capacity to create communication outside of the tools. Only one randomized trial was reviewed, identifying the effectiveness of SSCs in reducing the occurrence of anesthesia-related complications (Chaudhary et al., 2015). The analysis by Abbott et al. (2018) did not find statistically significant differences in the occurrence of complications for patients exposed to an SSC and those not exposed to one. The findings from their review show slight improvements in the frequency of complications. However, the study focuses on outcomes such as mortality and morbidity but does not consider external factors that may have influenced the outcomes. Therefore, this shows the importance of additional research and evidence-based implementation projects to test whether pre-anesthetic risk assessment could improve intraoperative outcomes.

While mixed findings are shown, the literature supports the importance of conducting a pre-anesthetic risk assessment. Studies have shown that modification of existing tools could help in improving outcomes. Based on the review, it could be summarized that the modification of the existing tools can help in the implementation of pre-anesthetic take-home risk assessment tools. The review shows that self-checklists can help in the identification of additional risk factors. Therefore, patients could take the self-

checklists home to complete while waiting for surgery. In turn, the self-reported information could be incorporated into care plans before, during, and after the administration of anesthesia to optimize the overall operative outcome. Overall, there is strong evidence that the implementation of a pre-anesthesia risk assessment could improve the safety of patients by addressing the likelihood of anesthesia-related complications specific to the patients' individualized health data.

Pre-Anesthesia Instructions and Frequently Asked Questions

Poor recall of information supplied by healthcare providers is a very common issue among patients and many cases are potentially rooted in a complex network of neural and biochemical pathways related to anxiety that stems from fear, stress, and worry. Patient adherence to instructions given by healthcare providers is paramount in achieving positive healthcare outcomes. While there are many reasons that a patient may be nonadherent, or not follow instructions, three common reasons include poor recall of instructions, inadequate provider communication, and poor patient comprehension.

A review of currently available literature suggests that increased levels of anxiety could play a significant role in a patient's inability to recall information. According to Barash et al. (2017), a large majority of patients become apprehensive prior to surgery and have expectations for relief prior to their procedure. As a general rule of thumb, most patients receive sedative-type medications preoperatively with a goal of relieving anxiety and apprehension: "An informative and comforting preoperative visit may replace many milligrams of sedative medication" (Barash et al., 2017, p. 605).

Fear, stress, and worry commonly produce anxiety, which is a trait frequently found in individuals that make up the peri-anesthetic/peri-operative population.

According to Hood et al. (2015), anxiety is a complex state of emotional vulnerability in which individual experiences a perceived loss of control coupled with a heightened perception of threat, which gives rise to dysfunctional cognitive pathways and impedes working memory capacity (WMC). WMC can be described as the amount of information that can be readily recalled during periods of more complex activities or periods of stress. Moran (2016) explained that it is now generally recognized that deficits in cognition are significant sequelae of anxiety and that anxiety is well-known to reduce the capacity of working memory through competition with neural processes related to other relevant tasks of higher priority. A meta-analysis performed by Moran concludes that there was a direct correlation between measured anxiety and measured WMC. The individual or combined effects of receiving news of a necessary procedure, being misinformed, not being informed, and inability to recall information provided all can provoke anxiety. The stressful nature of a visit to the clinic – testing, the anticipation of test results, the anticipation of a new diagnosis or progression of the disease, news of a necessary procedure – can have a significant impact on a patient’s ability to recall a diagnosis, treatment plan, and instructions given by the provider.

Activation of the *fight or flight* response through sympathetic nervous system (SNS) stimulation as a result of fear, threats, and/or stressors results in activation of the hypothalamic-pituitary-adrenal (HPA) axis and causes a subsequent release of cortisol. Cortisol is an endogenous hormone that is well-known to exhibit control over blood glucose levels, metabolism, numerous functions of immunity, fluid, and electrolyte balance, and memory. Hood et al. (2015) indicated the presence of a linear relationship between heightened anxiety and impaired working memory during and following a

period of stress that was mediated by elevated serum cortisol levels. The results of this study confirm that physiological and/or psychological stress results in elevated anxiety levels which impedes working memory and thus a patient's ability to recall information presented by healthcare providers during periods of stress, worry, and fear. A patient's inability to follow healthcare provider instructions can lead to potentially negative healthcare outcomes as well as cancellation of cases.

A study conducted by Sandberg et al. (2012) outlined that the field of cognitive psychology serves as a foundation for understanding why only limited amounts of information, such as that supplied by healthcare providers, can be recalled. Sandberg et al. (2012) explained that the extent of human memory is inherently limited and can easily be overwhelmed by excessive volume. During a routine visit, healthcare providers relay a significant amount of information to patients related to physical exam findings, test results, diagnoses, treatment options, and recommendations, as well as important instructions. Given the limitations of human memory, it is reasonable to conclude that a significant portion of this information will be forgotten. Landier et al. (2018) added that approximately 40 to 80% of the information discussed with a healthcare provider is quickly forgotten and estimates that approximately half of the information memorized is not accurate. Sandberg et al. (2015) suggest that *recall* is a complex, active form of memory retrieval while *recognition* is a simplistic process characterized by the association of a memory with a visual or auditory cue. Sandberg et al. (2012) indicate that healthcare providers consistently overwhelm the short-term memory of patients and illustrate a linear relationship between the amount of information recalled and the amount

of visual support provided; thus, patients could benefit significantly from the addition or enhancement of visual aids to support the recall.

Inadequate provider communication with patients often leads to unanswered questions and unclear treatment modalities. According to a study performed by Scarlett and Young (2016), thorough and holistic patient care is obstructed when information pertinent to their care is excluded, and add that many details surrounding medical treatment are often not explained to patients during a clinic visit. Comprehension, or a lack thereof, is closely related to provider communication and can play a significant role in a patient's willingness to participate in their care and adhere to prescribed medical therapy. Scarlett and Young (2016) provide an estimate of less than 50% of all the information communicated by healthcare providers is actually understood by patients. Formal education levels differ amongst all patients as well as natural cognitive abilities.

Health literacy is a concept that incorporates an individual's cognitive abilities with his or her formal education and provides a foundation for comprehension of his or her health status as well as information supplied by healthcare providers. Ortiz et al. (2015), as well as De Oliveira et al. (2015), estimate that approximately 90 million Americans have poor health literacy. A patient's ability to comprehend complex health information is largely dependent upon the provider tailoring the presentation of the material to the individual based on his or her cognitive abilities. Ineffective communication renders patients unable to fully comprehend the problem or make informed decisions regarding treatment (Sandberg et al., 2008). A study conducted by Ortiz et al. (2015) indicates significant increases in patient comprehension of anesthesia care following the distribution of a written document, which included detailed

information about anesthesia, anesthesia providers, methods of postoperative pain control, and detailed instructions for the day of the scheduled procedure. Data obtained by MacLeod et al. (2017) indicate negative patient care outcomes, increased health-related costs, and suboptimal patient satisfaction scores associated with inadequate health literacy. Landier et al. (2018), Pratt and Searles (2017), and Sandberg et al. (2008) support the idea that oral communication coupled with supportive written documents and diagrams provides the ability to tailor the information to the individual's unique cognitive ability. Specific instructions, written on a level that a patient and his or her family can easily read and have for a future reference, are imperative to prevent confusion on how to prepare for their upcoming anesthetic care.

Ensuring optimal patient satisfaction is, and should be, a top priority in the healthcare industry, just below patient health and safety. One key component in attaining patient satisfaction is understanding that, by nature, every patient is unique in relation to personality, physical traits, disease processes, and cognitive abilities. Healthcare providers must develop an understanding that a unique individual exists behind every diagnosis recorded, a key concept for effective patient education (Scarlett & Young, 2016). The authors add that a full understanding of the problem, available treatment options, and the implications of accepting treatment versus not accepting treatment are essential for patients to make informed decisions about their health care. Allowing, and even encouraging, patients to be involved in their care creates a sense of ownership and control which directly contributes to increased satisfaction. Ortiz et al. (2015) indicate *statistically significant improvement* in patient reports of satisfaction following thorough education on topics related to anesthesia and expectations on the day of their scheduled

procedure. Similar data were also obtained in a study conducted by Fitzgerald and Elder (2008). Data collected by MacLeod et al. (2017) confirms the notion that poor health literacy has a direct relationship with patient satisfaction as well as increased healthcare expenses related to patient nonadherence and adds that evidence exists to support increased patient satisfaction following patient-specific education.

Simple logic dictates that anxiety produces dissatisfaction that is relative to the source of the anxiety. Landier et al. (2018) suggest that anxiety is produced in parents of pediatric surgical patients through a lack of information pertaining to the care of their child. Data collected in a randomized controlled trial indicate improved comprehension, increased parental satisfaction, and decreased parental anxiety through the provision of written educational materials versus verbal communication alone (Angioli et al., 2014; Facca et al., 2014; Landier et al., 2018) contribute the same findings. Verbal communication that is tailored to the cognitive level of the patient coupled with detailed written information as a supplement has the astounding potential to reduce anxiety and thus increase satisfaction.

The cancellation of surgical cases presents a significant financial burden for healthcare facilities. Data obtained by Childers and Maggard-Gibbons (2018) indicated that the average cost for one minute of OR time is approximately \$36.00 - \$37.00 in the state of California while Fitzsimons et al. (2016) report an average of \$62.00 per minute. While not a leading cause of surgical case cancellations, patient nonadherence to provider instructions does add to cancellations (Hovlid et al., 2013; Sandberg et al., 2012). As previously discussed, patients typically understand less than 50% of the information provided to them during a visit to their healthcare provider. This lack of understanding

results in noncompliance with the instructions provided and is estimated to cost in the range of 100-300 billion United States dollars annually (Scarlett & Young, 2016). Poor health literacy is a significant problem in today's society and results in financial hardship as well as potential threats to patient safety. According to MacLeod et al. (2017), health literacy, and thus patient adherence to instructions, can be improved through the utilization of proper patient education strategies, which can have a direct impact on patient satisfaction, patient adherence, and costs associated with health care.

In the realm of health care, ethical and legal obligations exist for healthcare providers to ensure that patients are fully informed of relevant diagnoses as well as an exhaustive review of all potential therapies available with the inclusion of relevant risks and benefits. Provision of this information along with confirmation of patient understanding affords patients the ability to make informed decisions regarding their health care. Straessle et al. (2011) stressed that informed consent should be precluded by the provision of all relevant knowledge pertaining to the planned procedure. Patients inherently possess the right to know and understand the care they are going to receive, and it is the responsibility of the provider to effectively communicate this information. In addition, legal consequences such as *negligent failure to warn*, which arises from the omission of potential risks and availability of alternative treatments from discussion with the patient, and *common law battery*, or unpermitted physical interaction, are implicated. (Informed Consent for Anesthesia Care, 2016, p. 2)

According to Pratt and Searles (2017), adding visual references to verbal communication strengthens communication as a whole and increases the amount of information learned. Research performed by Straessle et al. (2011) reveals that patients

benefit more from being given a written informational document before the pre-anesthesia interview which increases learning as well as patient satisfaction scores. Straessle et al. continue to explain that patients benefit from a written document that avoids confusing medical jargon by stimulating conversation between the patient and the provider, encouraging personal involvement in their care, and giving the patient the ability to discuss their health care with his or her family.

The patient, as well as their family, should arrive for their scheduled procedure with a solid foundation of knowledge relating to personal expectations, healthcare staff expectations, potential outcomes of the indicated procedure, and the peri-anesthetic/operative process. Providing a thorough compilation of information to the patient/family to have as far in advance as possible is necessary to ensure the best possible outcomes. Information provided should be logical, organized, and easy for patients of all cognitive levels to understand. Provision of educational materials in the form of a descriptive written document serves as a guide for the peri-anesthetic/operative process and a roadmap for the day of the procedure. This will help prevent any confusion in patient care between patients and all health professionals involved while also enabling patients to view and understand the major aspects of anesthesia care. Anesthesia is a well-known field but is not so well understood by patients. Supplementation of oral communication with a handout affords anesthesia providers an opportunity to bridge the knowledge gap for patients and enhance patient adherence to instructions, increase patient satisfaction, decrease patient anxiety, increase patient safety, and decrease healthcare spending.

Rationale

Frameworks and Theories

The review will be guided by the rationale that provides a foundation for the proposed intervention and implementation of the PATHE. Specifically, it will be guided by two distinct quality improvement guides, The Meleis' Transitions Theory and the Neuman Systems Model (NSM).

Using Meleis' Transitions Theory allows the provider to gain insight into the overall vulnerabilities that patients may have during the preoperative period. Additionally, this theory may be helpful in identifying the processes of the preoperative period that further exacerbate these patients' vulnerabilities. The transitions were identified as three distinct processes during preanesthetic care. These processes include preanesthetic evaluation, preanesthetic risk assessment, and preanesthetic instructions. With the development of this preanesthetic take-home toolkit, factors that render the patient vulnerable during these processes can be identified to promote best practices for the anesthetist.

The Neuman Systems Model identifies stressors, reactions to the stressors, and the protective interventions used. The model discusses the domains that clinicians should consider in the provision of holistic care (spiritual, developmental, sociocultural, psychological, and physiological) (Bademli & Duman, 2017). The model assumes that each client, whether an individual, group, family, or society, is unique and susceptible to the influence of many factors. As observed by Bademli and Duman (2017), the model allows the use of holistic care because it considers the physical, sociocultural, psychological, spiritual, and developmental factors that influence care. In other words, it

views health as an ongoing change from wellness to illness changed by external, internal, and created environments. Optimal wellness can only exist when the needs of the entire system are addressed. Stressors act as possible warning signs of stress that could throw a kink in the functioning of the system. While many stressors are universal, individuals may experience different stressors that create an imbalance. However, individuals are likely to use their defense mechanisms to respond to stressors.

In the description of the model, the system is depicted in solid and broken circles. The basic structure (central circle) represents the basic survival factors that could be universal or specific to individual patients. The outermost circle represents the lines of defense against stressors (Memmott et al., 2017). A flexible line of defense is positioned outside the normal line of defense, and it acts as a buffer to the conventional lines of defense. Several broken circles surround the structure and show the reactions to stressors. They aim at restoring balance and protecting the structure.

Based on this model, the problem associated with the pre-anesthesia assessment could benefit significantly from the application of the NSM. One of the important things noticed that applies to the problem involves the uniqueness and different characteristics of patients. In the application of the NSM to pre-anesthesia assessment, a CRNA would approach each client with an understanding that different stressors could influence the outcomes. Second, the model shows that each patient has a normal range of responses to stressors. As Bademli and Duman (2017) observed, using this knowledge could help CRNAs in detecting changes or potential complications. Finally, the comprehensive evaluation allows a CRNA to account for the known, unknown, and universal stressors that could affect an individual's health and wellbeing

DNP Essentials

According to the American Association of Colleges of Nursing (AACN, 2006), eight essential criteria are foundational to the many roles of the Advanced Practice Nurse (APN) and must be met prior to award of the Doctor of Nursing Practice (DNP) degree. Completion of this project meets or supersedes, all eight criteria set forth by the AACN (2006) (Appendix A) with emphasis on three specific Essentials including I, II, and VIII.

Specific Aims

This project sets out to establish a best-practice recommendation pertaining to the implementation of a PATHE involving pertinent health history and potential risks as well as perioperative anesthesia-related instructions and answers to frequently asked questions. The authors of this project anticipate that an increase in compliance with pre-operative instructions and guidelines by patients will take place and allow effective care to be provided by anesthesia professionals. Many factors play a role in the development of issues that can lead to surgical cancellations, intra-operative or postoperative complications, and poor patient/provider satisfaction outcomes. Options for process optimization in the pre-anesthetic evaluation can aid in the improvement of the above issues. PATHE can contribute to this process by creating a homogeneous and consistent flow of the evaluation process. Distribution of the PATHE to patients should lead to an increase in patients presenting with all necessary data, thus optimizing the provider's ability to formulate an effective plan of care. Additionally, this should promote a decrease in the rate of surgical cancellations and increase positive patient outcomes.

Summary

Patient safety has become a fundamental component and priority in patient-centered care. Clinicians acknowledge the importance of optimizing perioperative and postoperative outcomes. The literature review identified many anesthesia-related complications that pose a challenge to patient safety. During the perioperative period, the optimization of patient health prior to a procedure is an important function of anesthesia. Pre-anesthesia evaluation, pre-anesthesia risk-factor assessment, and provision of pre-anesthesia instructions are standards of care implemented in order to assess the patient's likely outcome of surgery and anesthesia as well as stratify any known risk factors to optimize surgical/anesthetic outcomes. Any disruption in this process could potentially lead to decreased patient/provider satisfaction, reduced patient compliance with pre-anesthetic instructions, reduced patient safety, and unnecessary financial burden. The process and expectations of creating this evaluation tool are described further in Chapter II.

CHAPTER II - METHODOLOGY

Currently, available literature establishes evidence of a need for quality improvement in the pre-anesthetic evaluation process. This project set out to establish a best-practice recommendation pertaining to the implementation of a PATHE involving pertinent health history and potential risks as well as perioperative anesthesia-related instructions and answers to frequently asked questions. Acceptance of this best-practice recommendation by healthcare facilities has the enormous potential to increase the quality of care patients receive by decreasing patient anxiety and increasing patient compliance with instructions as well as patient satisfaction.

Context

Execution of this project utilized anesthesia providers and SRNAs in a facility classified as a level II trauma center in southern Mississippi. The 545-bed facility is considered the flagship hospital of a local health system that serves the surrounding nineteen counties. Available surgical services include general, cardiothoracic, neurological, vascular, orthopedic, trauma, endoscopic, oral/maxillofacial, and obstetrical/gynecological. Anesthesia services are provided by a local private anesthesia group that includes physicians and CRNAs that function in a medically supervised capacity. The selected facility serves as a clinical affiliate of The University of Southern Mississippi.

As a result of the completion of a clinical rotation through this facility, the authors of this project gained knowledge regarding the current pre-anesthetic evaluation process. This process typically begins with a day-before chart review by a physician anesthesiologist and/or Student Registered Nurse Anesthetist (SRNA) and a phone call

from a member of the preoperative staff as a reminder to adhere to pre-operative instructions provided by the surgeon. On the morning of the scheduled procedure, the preoperative nurse conducts a review of pertinent health history, performs a medication reconciliation, and updates the patient's medical record. Pre-anesthesia patient evaluation takes place just before the scheduled procedure by a qualified anesthesia provider. Shortcomings of this process include, but are not limited to, the potential for the accidental omission of pertinent health information by the patient, inadequate patient education, and unnecessary health-related costs that could all lead to decreased patient satisfaction and increased patient safety risks.

Design

An extensive review of available literature pertaining to the perioperative anesthesia process was conducted. The literature search focused on peer-reviewed scholarly databases and sources. Specifically, the search focused on databases such as Digital Commons, ProQuest, EBSCO Host, Digital Public Library of America, Data USA, PubMed, Cochrane Library, and Google Scholar. Some of the keywords used in the search included anesthesia complications, preoperative safety checklist, take-home anesthesia evaluation, improves intraoperative care outcomes, improved anesthesia outcomes, anxiety, memory, visual aids, financial burden, surgical case cancellations, compliance with instructions, and adherence to instructions. Across the databases, the initial inclusion criteria entailed articles published in English and less than ten years old. An additional search was performed by altering the inclusion criteria to include literature older than ten years in an attempt to discover pertinent foundational studies.

Completion of this project began with approval from the Institutional Review Board (IRB, Protocol # 21-112) at The University of Southern Mississippi. Following IRB approval, the PATHE documents were constructed based on the most current available evidence and submitted to the DNP committee for approval. A volunteer panel of experts were assembled including current anesthesia providers and faculty of the USM Nurse Anesthesia Program (NAP). PATHE was provided to each member of the panel for review. Following a review of the documents by the panel, a survey was administered to determine the document's ability to provide sufficient information to formulate an effective anesthetic plan of care. Quantitative data obtained from the survey was analyzed, tabled, and destroyed per IRB guidelines. The data obtained from survey participants was compiled and items were modified, added, or deleted as deemed appropriate by the project authors. Once all necessary modifications were made, the project was submitted to the DNP committee for approval of changes made. An executive summary containing pertinent findings was drafted and submitted to the DNP committee.

Intervention, Measures, and Analysis

Project interventions include the creation of the PATHE documents as a current best-practice recommendation. Ideally, the documents was provided to the patient or caregiver, either by the surgeon or anesthesia provider, upon initial discovery of the need for anesthesia services. The PATHE was provided the patient with the opportunity to disclose pertinent health information (health history, medications, allergies, etc.) in the comfort of their home without the added pressure, stress, and anxiety that is typically experienced by patients when providing an exhaustive review from memory in the time-pressured healthcare atmosphere. The document can be presented to the anesthesia

provider prior to the procedure instead of memory. The pre-anesthesia instruction/frequently asked questions document provided not only instructions but rationales for each instruction given as well as answers to frequently asked questions related to anesthesia and the care the patient will receive. The pre-anesthesia risk factor assessment also contributed to the patient's health literacy while reinforcing the need for the stratification of modifiable risk factors. This document also allows the anesthesia provider to have insight as to the possible risks that each patient faces and allows for modification of the anesthetic plan as necessary.

Evaluation of the project will consist of a survey (Appendix B) administered to a panel of experts that consists of numerous anesthesia providers, primarily Certified Registered Nurse Anesthetists (CRNA), on a strictly voluntary basis. The survey was administered via email only and no face-to-face interaction will occur with participants in relation to the survey. Participants were asked to answer questions related to document quality, comprehensiveness, and comprehensibility as well as their ability to establish a safe and effective plan of anesthesia care, based on the information provided by the patient. Providers were asked to supply their input and recommendations as applicable. The data obtained from survey participants was compiled and items were modified, added, or deleted as deemed appropriate by the authors. Based on the literature review and input from the panel of experts, a best-practice recommendation for the pre-anesthesia process was drafted.

Ethical Considerations

This doctoral project was constructed following a thorough evaluation of all potential ethical dilemmas. Potential ethical concerns related to the project include the

inability to generalize the cognitive abilities and literacy of all patients in relation to completing the PATHE. Additionally, adherence to this best practice recommendation by both anesthesia providers and patients is essential to ensure the delivery of consistent care to all patients. If adopted, parties accept the responsibility that negligent care may result from nonadherence.

Summary

As previously stated, this project is intended to enhance the pre-anesthesia process and, as a result, improve the outcomes of care. Derived from the most currently available literature as well as input from a panel of experts in the field of anesthesia, the PATHE was developed to aid in the eradication of shortcomings noted in the preanesthetic process. After evaluation of survey data, modifications will be made accordingly, and an executive summary of the best practice recommendation was submitted for the DNP committee review.

CHAPTER III - RESULTS

Introduction

During the perioperative period, the optimization of patient health prior to a procedure is an important function of anesthesia. Pre-anesthesia evaluation, pre-anesthesia risk-factor assessment, and provision of pre-anesthesia instructions are standards of care implemented in order to assess the patient’s likely outcome of surgery and anesthesia as well as stratify any known risk factors to optimize surgical/anesthetic outcomes. Any disruption in this process could potentially lead to decreased patient/provider satisfaction, reduced patient compliance with pre-anesthetic instructions, reduced patient safety, and unnecessary financial burden.

Table 1

Survey Questions and Results

QUESTION	YES	%	NO	%	TOTAL
1. Do you consent to participate in the evaluation of the Pre-Anesthesia Take Home Evaluation (PATHE)?	29	100	0	0	29
2. Are you a CRNA?	7	24.14	22	75.86	29
3. Are you a SRNA?	22	75.86	7	24.14	29
4. In your opinion, is the document thorough?	29	100	0	0	29
5. In your opinion, is the document well organized?	29	100	0	0	29
6. In your opinion, is the document free from grammatical and formatting errors?	29	100	0	0	29
7. In your opinion, is the document easy for adults (Age > 18 yr.) of all cognitive levels to comprehend?	28	96.55	1	3.45	29
8. In your opinion, does the document provide a clear representation of all major aspects of anesthesia care?	29	100	0	0	29
9. In your opinion, does the document address most commonly encountered questions from patients?	29	100	0	0	29
10. In your opinion, does the document address most commonly encountered risks associated with anesthesia?	28	96.55	1	3.45	29
11. In your opinion, does the document solicit the minimal amount of information required to develop a safe and effective plan for anesthesia care?	29	100	0	0	29
12. In your opinion, does the document provide only recommendations for risk stratification that are supported by current evidence?	29	100	0	0	29
ADDITIONAL COMMENTS					
1. "The survey is too long. I think it would be better to ask the minimum amount of questions based on the body systems. The anesthesia provider would use that info to further investigate the systems as needed during the preop period on the day of surgery. The length of this survey would be a deterrent to compliance."					
2. "It is great device! May I am definitely utilize NUR803 assessment class in Fall. Great Job!!"					

Intervention

Utilizing the methodology previously proposed, a systematic review of the current literature was performed to identify available knowledge associated with the preoperative evaluation process. Following a thorough review of currently available literature, a document was constructed to serve as a best-practice recommendation for patient evaluation during the preoperative process. The authors collaborated with supervising professors, current anesthesia providers, and fellow SRNAs to determine the usefulness and quality of the project. Following approval from the DNP project chair and the USM IRB, an invitation to complete a survey was sent to a mailing list consisting of currently practicing CRNAs and SRNAs. All questions included in the survey are located in Appendix B.

After the allotted time period, the data collected from the survey were tabled and analyzed. Survey data collected can be located in Appendix B. Of the survey recipients, data were collected from 29 respondents including seven currently practicing CRNAs and 22 SRNAs currently completing the clinical portion of the Nurse Anesthesia Program (NAP). Respondents were asked questions pertaining to the thoroughness of the document, organization, grammar, and formatting, comprehensibility for adults greater than age 18 years. Of the respondents, 100% agreed that the document was thorough, well organized, and free from grammatical and formatting errors. Twenty-eight respondents (96.55%) agreed that the document would be easy for adults (age > 18 years) of all cognitive levels to comprehend; however, one respondent (3.45%) disagreed. Additionally, 100% of respondents agreed that the document provides a clear representation of all major aspects of anesthesia care, addresses most commonly

encountered questions from patients, provides an accurate depiction of all topics addressed, addresses most commonly encountered risks associated with anesthesia, solicits the minimal amount of information required to develop a safe and effective plan for anesthesia care, provides a clear and accurate list of risks, and provides recommendations for risk stratification that are supported by current evidence. Lastly, the survey participants were asked to provide additional recommendations or comments pertaining to the PATHE document. Two comments were provided by respondents and can be located in Appendix B. One respondent suggested that the document was too long while another provided positive feedback.

Data obtained from survey respondents were tabled and analyzed by the authors. The authors unanimously agreed to not make any further changes to the document. The final draft was reviewed and submitted to the committee chair and member. The project and data collected from the survey were presented at the School of Leadership and Advanced Nursing Practice DNP Scholarship Day on October 1, 2021. No further changes were made to the project.

Summary

Following the review of current literature, a document was drafted to serve as a best practice recommendation for patient evaluation during the preoperative process. After collaboration with supervising professors and current anesthesia providers, approval was granted by the committee chair and USM IRB. The survey located in Appendix B was constructed and sent to a mailing list consisting of CRNAs and SRNAs. Participants of the survey consisted of seven CRNAs and 22 SRNAs. The data collected from the survey revealed that 28 of the 29 survey recipients (96.55%) believed that the

document was easy to comprehend for adults over eighteen and that the document addressed the most commonly encountered risks associated with anesthesia. All survey recipients believe that the document provided the minimal amount of information required to provide a safe and effective anesthesia plan of care. The remaining questions regarding the document were agreed on by all survey recipients, which can be located in Appendix B. In addition, one constructive comment left by a participant stated that the document was too long and may be a deterrent to compliance. Lastly, no changes were made to the document following the results of the survey.

CHAPTER IV – DISCUSSION

Summary

Following a review of currently available literature and general observation of current anesthesia practices, the authors have identified a gap in knowledge concerning pre-anesthesia evaluation best-practice. PATHE specifically aims to improve the pre-anesthesia assessment process through increased patient reporting of pertinent health history, stratification of pertinent risk factors, and pre-anesthesia education. Further, PATHE has the potential to optimize patient safety, compliance, and satisfaction while also decreasing patient anxiety and healthcare costs.

Interpretation

During the literature review process, specific guidelines for pre-anesthesia evaluation and education, reflecting currently available research, were not found. The authors compiled the current literature and developed PATHE to accompany a best-practice recommendation for pre-anesthesia evaluation and education. The proposed best-practice recommendation, including PATHE, was developed in an attempt to bridge the gap in knowledge surrounding pre-anesthesia evaluation and education. PATHE was provided to SRNAs and CRNAs in current practice for review and feedback that was solicited in the form of a survey. Positive feedback obtained from the administration of the survey reflects a general acceptance of current literature and evidence-based best practice recommendations. Implementation of PATHE as a best practice recommendation has the potential to augment the overall patient experience with anesthesia care.

Limitations

Throughout the completion of this project, the authors identified numerous limitations to the project including, but not limited to, a small number of survey respondents, the potential need for alteration, a limited number of data points, and the length of PATHE. Voluntary participation without incentive provides inherent limitations to survey sample size. Likewise, the survey was administered by electronic mail which may be infrequently monitored by recipients of the invitation to participate. Additionally, the pool of SRNAs and CRNAs in current practice is one of relatively small numbers, limiting the availability of potential survey recipients. If adopted by facilities, PATHE may need to be altered to represent current policies and procedures at each facility. Due to time constraints and voluntary participation, the number of data points assessed was limited as to not deter participants. Due to the large amount of patient data that must be collected during pre-anesthesia evaluation, the utilization of PATHE is limited by the length of the document. Future studies aimed at improving PATHE could potentially ameliorate limitations due to length through the creation of a user-friendly electronic version that would limit patient exposure to questions and data pertinent to their care only. Other future studies could involve increasing the survey sample size and/or increasing the number of data points assessed by the survey.

Conclusions

Led by currently available research and data, this project serves as a best-practice recommendation for pre-anesthesia evaluation. Following specific facility-dependent modifications and the added utility of conversion to electronic format, PATHE has the potential to significantly augment patient experiences with anesthesia care. Patients,

healthcare providers, nurses, and healthcare facilities all stand to benefit from implementation of PATHE into their current evidence-based practice.

APPENDIX A – DNP Essentials

	DNP Essential	Achievement
I	Scientific Underpinnings for Practice	The PATHE project was completed after an extensive evidence-based literature review on the implementation of a patient completed pre-anesthetic take-home evaluation. The evidence obtained within the literature review as well as the recommendation provided by the authors was applied from the literature of scientific works.
II	Organizational and Systems Leadership for Quality Improvement and Systems Thinking	The PATHE sets out to improve quality through current practice recommendations utilizing pre-anesthetic processes and patient involvement to a panel of experts to analyze, interpret, and offer insight for application in clinical practice.
III	Clinical Scholarship and Analytical Methods for Evidence-Based Practice	This project utilized a systematic review of the available knowledge to evaluate the current best practices and make targeted recommendations on quality improvement of the pre-anesthetic process to current anesthetic providers.
IV	Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care	This project meets this essential through the creation of a feedback-guided provider survey to assist optimization and implementation of the PATHE documentation.
V	Healthcare Policy for Advocacy in Health Care	The project meets this essential through the identification of inconsistencies in the pre-anesthetic process. The adoption of PATHE in anesthesia care areas could lead to more consistent health history collection and improved quality of care.
VI	Interprofessional Collaboration for Improving Patient and Population Health Outcomes	This essential is met through the collaboration of anesthesia provider's feedback to optimize best practice recommendations for PATHE.
VII	Clinical Prevention and Population Health for Improving the Nation's Health	The essential is met through the recommendation of the implementation of PATHE in all anesthesia care settings to improve patient involvement and compliance with the pre-anesthetic process and improved peri/post-anesthetic outcomes.
VIII	Advanced Nursing Practice	This essential is accomplished by the evaluation of the most current literature, the presentation of the PATHE process and documents, and the team-centered approach with the goal of best practice recommendation.

APPENDIX B – Survey Questions and Collected Data

QUESTION	YES	%	NO	%	TOTAL
1. Do you consent to participate in the evaluation of the Pre-Anesthesia Take Home Evaluation (PATHE)?	29	100	0	0	29
2. Are you a CRNA?	7	24.14	22	75.86	29
3. Are you an SRNA?	22	75.86	7	24.14	29
4. In your opinion, is the document thorough?	29	100	0	0	29
5. In your opinion, is the document well organized?	29	100	0	0	29
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ADDITIONAL COMMENTS					
1. “The survey is too long. I think it would be better to ask the minimum amount of questions based on the body systems. The anesthesia provider would use that info to further investigate the systems as needed during the preop period on the day of surgery. The length of this survey would be a deterrent to compliance.”					
2. “It is a great device! May I definitely utilize NUR803 assessment class in Fall. Great Job!!”					

APPENDIX C – IRB Approval

Office of Research Integrity



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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.
- Face-to-Face data collection may not commence without prior approval from the Vice President for Research's Office.

PROTOCOL NUMBER: IRB-21-112

PROJECT TITLE: Implementation of a Pre-Anesthesia Take-Home Evaluation (PATHE) as a Means of Process Improvement: A Best Practice Recommendation

SCHOOL/PROGRAM: School of LANP, Leadership & Advanced Nursing

RESEARCHER(S): Russell Gray, Nina McClain, Hunter Brown, Trey Galloway

IRB COMMITTEE ACTION: Approved

CATEGORY: Expedited

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: March 25, 2021

Donald Sacco, Ph.D.
Institutional Review Board Chairperson



INSTRUCTIONS

INSTRUCTIONS



Thank you for taking the time to complete the Pre-Anesthetic Take Home Evaluation, or P.A.T.H.E. for short. The goal for this tool is to provide patients with the ability to complete an anesthetic evaluation in the comfort of his or her home at a time that is free from distraction and all data can be collected to the fullest.

We understand that surgery and anesthesia can be overwhelming; and having to answer questions concerning medical history, family history, current medications, and previous surgeries can be a lot on the day of your procedure. P.A.T.H.E. is here to make the process of completing a pre-anesthesia questionnaire simple and stress free.

To complete the P.A.T.H.E. packet, simply complete each page in its entirety and move to the next page. The pages are color coded with arrows to ensure that no pages are missed. Below, you will see an example of the color-coded arrows located on each page.

AFTER THIS PAGE IS COMPLETE CONTINUE TO

THIS PAGE AND COMPLETE NEXT

The color on the left coordinates with the color of the page you are currently on. The color on the right indicates the color of the following page. Continue to each page using the colored arrows to ensure no pages are missed. The final page will be labeled "frequently asked questions" and is for your information only. You will see the following red arrow at the bottom of the last page indicating that you have completed P.A.T.H.E.

YOU HAVE COMPLETED P.A.T.H.E. PACKET. BRING THE PACKET TO HOSPITAL ON DAY OF SURGERY

Bring this P.A.T.H.E. packet with you on the day of your scheduled procedure to be reviewed by your anesthesia provider. Once it has been reviewed, the packet will be returned to you. You may continue to use P.A.T.H.E. in the future and make changes or updates as your health information changes. We appreciate you taking the time to provide this information, which creates a safer anesthesia experience for you on your PATHE to great health.

This tool does not provide medical advice; it is intended for informational and data collection purposes only. This is not a substitute for professional medical advice, diagnosis, or treatment. Never ignore your surgeon or your healthcare providers' advice regarding medical care, surgical preparation, or medical treatment. If you think you may have a medical emergency, immediately contact your healthcare provider, or dial 911.

AFTER THIS PAGE IS COMPLETE CONTINUE TO

THIS PAGE AND COMPLETE NEXT

INSTRUCTIONS

01

DEMOGRAPHICS

DEMOGRAPHICS



YOUR INFORMATION

FULL NAME:			BIRTHDATE:	/ /	AGE:	YEARS
I AM:	<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE	HOW MUCH DO YOU WEIGH?	POUNDS	HOW TALL ARE YOU?	FT	IN
I AM:	<input type="checkbox"/> AFRICAN AMERICAN	<input type="checkbox"/> ASIAN PACIFIC ISLANDER	<input type="checkbox"/> HISPANIC	<input type="checkbox"/> NATIVE AMERICAN	<input type="checkbox"/> WHITE	<input type="checkbox"/> OTHER
ARE YOU MARRIED?	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW MANY CHILDREN DO YOU HAVE?	<input type="checkbox"/> I DO NOT HAVE A CHILD			
WHAT IS YOUR SOCIAL SECURITY NUMBER?			<input type="checkbox"/> I HAVE A TEMPORARY WORK PERMIT			
WHERE DO YOU WORK?			WHAT DO YOU DO THERE?			
<input type="checkbox"/> I DO NOT HAVE A JOB <input type="checkbox"/> I AM DISABLED <input type="checkbox"/> SELF-EMPLOYED <input type="checkbox"/> ACTIVE-DUTY MILITARY <input type="checkbox"/> FULL-TIME STUDENT						

HOW CAN WE CONTACT YOU?

CELL PHONE NUMBER: ()	HOME PHONE NUMBER: ()		
WHAT IS YOUR ADDRESS?			
CITY	STATE	ZIP	COUNTY
WHAT IS YOUR E-MAIL ADDRESS? <input type="checkbox"/> I DO NOT HAVE E-MAIL			

IN CASE OF EMERGENCY

IN CASE OF EMERGENCY, WHO SHOULD WE CALL? (FIRST AND LAST NAME)			
WHAT IS THEIR PHONE NUMBER? ()			
WHAT IS THEIR ADDRESS?			
CITY	STATE	ZIP	COUNTY
DO YOU HAVE A LIVING WILL OR POWER-OF-ATTORNEY? <input type="checkbox"/> YES <input type="checkbox"/> NO (IF YES, PLEASE BRING A COPY)			

YOUR FAMILY

YOU WILL NEED TO BRING A RESPONSIBLE ADULT FAMILY MEMBER WITH YOU ON THE DAY OF YOUR PROCEDURE. PLEASE LIST ANY FAMILY MEMBERS THAT WE HAVE PERMISSION TO SHARE YOUR PERSONAL HEALTH INFORMATION WITH.

NAME (FIRST& LAST)	RELATIONSHIP	PHONE NUMBER

IS THERE ANYTHING ELSE THAT YOU WANT US TO KNOW? (WRITE IN THE SPACE BELOW)

--

AFTER THIS PAGE IS COMPLETE CONTINUE TO

THIS PAGE AND COMPLETE NEXT

DEMOGRAPHICS

02

ALLERGIES/MEDICATIONS/SURGERY

ALLERGIES/MEDICATIONS/SURGERY



ALLERGIES

I DO NOT HAVE ANY ALLERGIES

WHAT ARE YOU ALLERGIC TO?	WHAT TYPE OF REACTION DO YOU HAVE?	ANYTHING ADDITIONAL YOU WOULD LIKE TO ADD?

MEDICATIONS

I DO NOT TAKE ANY MEDICATIONS

NAME OF MEDICATION	DOSE	HOW OFTEN	WHY DO YOU TAKE THIS?

SURGERY

DATE	WHAT SURGERY?	WHAT DOCTOR?	WHAT HOSPITAL?	ANYTHING ADDITIONAL YOU WOULD LIKE TO ADD

ALLERGIES/MEDICATIONS/SURGERY

AFTER THIS PAGE IS COMPLETE CONTINUE TO

THIS PAGE AND COMPLETE NEXT

03

SUMMARY PAGE

SUMMARY PAGE



This is a quick reference page for your anesthesia provider to view to get a simplified overall view of any complications or conditions you may have. Complete with the most current information you have and to the best of your ability. The conditions listed below are some of the most important concerns when considering the plan for your anesthesia.

GENERAL

- DO YOU SMOKE? YES NO
- ARE YOU CURRENTLY PREGNANT? YES NO
- HAVE YOU HAD ANESTHESIA BEFORE? YES NO
- DO YOU GET SICK OR VOMIT AFTER ANESTHESIA? YES NO
- DO YOU HAVE LOOSE OR CHIPPED TEETH? YES NO
- OBESITY? YES NO
- DO YOU OR A FAMILY MEMBER HAVE COMPLICATIONS FROM ANESTHESIA? YES NO

BRAIN & SPINE

HAVE YOU HAD/HAVE?

- STROKE YES NO
- SEIZURE YES NO
- SPINAL CORD INJURY YES NO
- DIFFICULTY MOVING YOUR NECK YES NO
- NEURO MUSCULAR DISEASE YES NO

HEART & VESSELS

HAVE YOU HAD/HAVE?

- RECENT CHEST PAIN YES NO
- HEART ATTACK YES NO
- HEART STENTS YES NO
- PACEMAKER YES NO
- AORTIC VALVE STENOSIS YES NO

LUNGS

HAVE YOU HAD/HAVE/OR USE?

- ASTHMA YES NO
- USE AN INHALER YES NO
- COPD YES NO
- HOME OXYGEN YES NO
- SLEEP APNEA YES NO
- COVID-19 YES NO

GASTROINTESTINAL/LIVER/KIDNEYS

HAVE YOU HAD/HAVE?

- DIABETES YES NO
- ACID REFLUX YES NO
- KIDNEY DISEASE YES NO
- FREQUENT NAUSEA/VOMITING YES NO

SUMMARY PAGE

AFTER THIS PAGE IS COMPLETE CONTINUE TO

THIS PAGE AND COMPLETE NEXT

04

GENERAL 1

GENERAL



DISEASE / INJURY / DISORDER

I DO NOT HAVE ANY DISORDERS OR DISEASES

IF YOU HAVE ANY OF THE BELOW CIRCLE YES OR NO FOR EACH OF THE FOLLOWING AND LIST WHEN THE INJURY OR DISORDER OCCURRED OR STARTED

SKIN CONDITIONS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT CONDITION? _____
SKIN INFECTION	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHERE IS THE INFECTION LOCATED? _____
DO YOU (OR DID YOU) SMOKE?	<input type="checkbox"/> YES <input type="checkbox"/> NO	IF YES: PACKS/DAY _____ NUMBER OF YEARS _____ DATE YOU QUIT _____
DO YOU DRINK ALCOHOL	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT TYPE OF ALCOHOL? _____ HOW MUCH WEEKLY? _____
DO YOU TAKE, OR HAVE YOU TAKEN, RECREATIONAL DRUGS?	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT DRUG? _____
BLEEDING DISORDERS	<input type="checkbox"/> YES <input type="checkbox"/> NO	DISORDER? _____
SICKLE CELL	<input type="checkbox"/> YES <input type="checkbox"/> NO	EVER HOSPITALIZED? <input type="checkbox"/> YES <input type="checkbox"/> NO LAST HOSPITALIZATION? _____
FREQUENT NOSE BLEEDS	<input type="checkbox"/> YES <input type="checkbox"/> NO	LAST TIME OCCURRED? _____
OBSESITY	<input type="checkbox"/> YES <input type="checkbox"/> NO	
PREGNANT	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW MANY WEEKS? _____
BREASTFEEDING	<input type="checkbox"/> YES <input type="checkbox"/> NO	
LAST MENSTRUAL PERIOD?	_____	NOT APPLICABLE <input type="checkbox"/>
HIGH CHOLESTEROL	<input type="checkbox"/> YES <input type="checkbox"/> NO	
HIV/AIDS	<input type="checkbox"/> YES <input type="checkbox"/> NO	
ARTHRITIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	PRIMARY SITE? _____
SCHIZOPHRENIA	<input type="checkbox"/> YES <input type="checkbox"/> NO	
ANXIETY DISORDER	<input type="checkbox"/> YES <input type="checkbox"/> NO	
DEPRESSION	<input type="checkbox"/> YES <input type="checkbox"/> NO	
GLAUCOMA	<input type="checkbox"/> YES <input type="checkbox"/> NO	
SEXUALLY TRANSMITTED DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT DISEASE? _____
LYMPHEDEMA	<input type="checkbox"/> YES <input type="checkbox"/> NO	
THYROID DISORDER	<input type="checkbox"/> YES <input type="checkbox"/> NO	HYPERTHYROID OR HYPOTHYROID? _____
POST TRAUMATIC STRESS DISORDER (PTSD)	<input type="checkbox"/> YES <input type="checkbox"/> NO	
HAVE YOU TAKEN STEROIDS IN THE LAST SIX MONTHS	<input type="checkbox"/> YES <input type="checkbox"/> NO	

DO YOU HAVE ANY OF THE FOLLOWING?

HAVE A FAKE EYE?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE ANY TEETH LOOSE OR CHIPPED?	<input type="checkbox"/> YES <input type="checkbox"/> NO
ANY MAJOR PHYSICAL OR CONGENITAL DEFECTS?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE DIFFICULTY OPENING YOUR MOUTH?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE CADRACETS?	<input type="checkbox"/> YES <input type="checkbox"/> NO
WEAR REMOVABLE DENTURES?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CONTACT LENSES?	<input type="checkbox"/> YES <input type="checkbox"/> NO
FALSE EYELASHES?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE PORCELAIN CAPS ON YOUR TEETH?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE DIFFICULTY W/MOVEMENT OF YOUR HEAD?	<input type="checkbox"/> YES <input type="checkbox"/> NO

WHAT KINDS OF ANESTHESIA HAVE YOU HAD BEFORE?

GENERAL (COMPLETELY ASLEEP)	<input type="checkbox"/> YES <input type="checkbox"/> NO
SPINAL OR EPIDURAL BLOCK	<input type="checkbox"/> YES <input type="checkbox"/> NO
LOCAL OR NERVE BLOCKS?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE YOU HAD ANY UNUSUAL REACTIONS?	<input type="checkbox"/> YES <input type="checkbox"/> NO
PROBLEMS OR COMPLICATIONS WITH ANESTHESIA?	<input type="checkbox"/> YES <input type="checkbox"/> NO

HAVE YOU

1. HAVE HAD PRIOR GENERAL OR REGIONAL ANESTHESIA? YES NO
2. HAVE A PRIOR HISTORY OF VOMITING AFTER SURGERY OR ANESTHESIA? YES NO
3. HAVE A FAMILY HISTORY OF NAUSEA OR VOMITING AFTER ANESTHESIA IN A PARENT OR SIBLING? YES NO
4. HAVE A HISTORY OF MOTION SICKNESS? YES NO
5. SPEND TIME ROUTINELY AROUND PEOPLE WHO SMOKE? YES NO

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05-1

GENERAL 1

GENERAL



CAN YOU	ANSWER "YES" FOR THINGS YOU CAN DO WITH NO SHORTNESS OF BREATH OR DIFFICULTY
TAKE CARE OF YOURSELF BY DOING THINGS SUCH AS BATHING, EATING, TOILETING, AND DRESSING?	<input type="checkbox"/> YES <input type="checkbox"/> NO
WALK INDOORS, SUCH AS AROUND YOUR HOUSE?	<input type="checkbox"/> YES <input type="checkbox"/> NO
DO LIGHT WORK AROUND THE HOUSE	<input type="checkbox"/> YES <input type="checkbox"/> NO
WALK A BLOCK OR TWO ON FLAT GROUND?	<input type="checkbox"/> YES <input type="checkbox"/> NO
CLIMB A FLIGHT OF STAIRS OR WALK UP A HILL?	<input type="checkbox"/> YES <input type="checkbox"/> NO
RUN A SHORT DISTANCE?	<input type="checkbox"/> YES <input type="checkbox"/> NO
DO MODERATE WORK AROUND THE HOUSE LIKE VACUUMING, SWEEPING FLOORS, CARRYING IN GROCERIES?	<input type="checkbox"/> YES <input type="checkbox"/> NO
DO HEAVY WORK AROUND THE HOUSE LIKE SCRUBBING FLOORS, OR LIFTING OR MOVING HEAVY FURNITURE?	<input type="checkbox"/> YES <input type="checkbox"/> NO
DO YARDWORK SUCH AS RAKING LEAVES, WEEDING, PUSHING A POWER MOWER?	<input type="checkbox"/> YES <input type="checkbox"/> NO
HAVE SEXUAL RELATIONS?	<input type="checkbox"/> YES <input type="checkbox"/> NO
PARTICIPATE IN MODERATE RECREATIONAL ACTIVITIES SUCH AS GOLF, BOWLING, DANCING, DOUBLES TENNIS, THROWING A BASEBALL OR FOOTBALL?	<input type="checkbox"/> YES <input type="checkbox"/> NO
PARTICIPATE IN STRENUOUS SPORTS SUCH AS SWIMMING, SINGLES TENNIS, FOOTBALL, BASKETBALL, SKIING?	<input type="checkbox"/> YES <input type="checkbox"/> NO

ANESTHESIA RISK FACTORS (GENERAL)

- OBESITY
- SMOKING
- DIABETES
- SLEEP APNEA
- ADVANCED AGE
- NAUSEA/VOMITING TENDENCY
- BONE WEAKNESS
- SIGNIFICANT MEDICAL PROBLEMS/HISTORY
- TAKING BLOOD THINNERS
- EATING OR DRINKING ANYTHING WITHIN 8 HOURS OF RECEIVING ANESTHESIA

WRITE ANYTHING BELOW THAT WAS NOT INCLUDED ABOVE THAT YOU WOULD LIKE TO LET US KNOW

GENERAL 2

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05-2



NEUROLOGIC (BRAIN AND SPINE)



DISEASE / INJURY / DISORDER

I DO NOT HAVE ANY BRAIN, SPINE, OR NEUROMUSCULAR DISORDERS OR INJURIES

IF YOU HAVE ANY OF THE BELOW CIRCLE YES OR NO FOR EACH OF THE FOLLOWING AND LIST WHEN THE INJURY OR DISORDER OCCURRED OR STARTED

ALZHEIMER'S DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
ALS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
ANEURYSM	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
BELL'S PALSY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
BRAIN TUMOR	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
EPILEPSY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
GUILLAIN-BARRE SYNDROME	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
MENINGITIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
MIGRAINE HEADACHES	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
MULTIPLE SCLEROSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
MUSCULAR DYSTROPHY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
MYASTHENIA GRAVIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
PARKINSON'S DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SEIZURES	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SPINAL CORD INJURY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SPINAL DISC DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SPINAL FRACTURE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
STROKE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
TRAUMATIC BRAIN INJURY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____

ANESTHESIA RISK FACTORS (BRAIN AND SPINE)

- HIGH OR LOW BLOOD PRESSURE
- EXISTING NEUROLOGICAL COMPLICATIONS SUCH AS PREVIOUS STROKE OR SEIZURE DISORDER
- CLOTTING DISORDERS
- DYSRHYTHMIAS
- VASCULAR DISEASE
- ANY NEUROMUSCULAR DISORDERS

WRITE ANYTHING BELOW THAT WAS NOT INCLUDED ABOVE THAT YOU WOULD LIKE TO LET US KNOW

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HEART/VESSELS



DISEASE / INJURY / DISORDER

I DO NOT HAVE ANY HEART/VASCULAR DISORDERS OR DISEASES

IF YOU HAVE ANY OF THE BELOW CIRCLE YES OR NO FOR EACH OF THE FOLLOWING AND LIST WHEN THE INJURY OR DISORDER OCCURRED OR STARTED

RECENT CHEST PAIN	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN DID THIS OCCUR LAST _____	WHAT RELIEVES IT _____
HEART ATTACK	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
HEART FAILURE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
HEART SURGERY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	WHAT SURGERY _____
HIGH BLOOD PRESSURE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT IS YOUR NORMAL BLOOD PRESSURE _____	
ARRHYTHMIA	<input type="checkbox"/> YES <input type="checkbox"/> NO	EKG <input type="checkbox"/> YES <input type="checkbox"/> NO RHYTHM _____	STILL OCCURRING <input type="checkbox"/> YES <input type="checkbox"/> NO
PERIPHERAL ARTERIAL DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT DEFECT _____	ANY ONGOING ISSUES _____
VALVULAR DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN WAS YOUR LAST ECHOCARDIOGRAM _____	WHICH VALVES _____
HEART DEFECTS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT DEFECT _____	ANY ONGOING ISSUES _____
CARDIOMYOPATHY	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
CORONARY ARTERY DISEASE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
HEART STENTS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	
AORTIC ANEURYSM	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
PACEMAKER/AICD	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN WAS THIS PLACED _____	WHY WAS THIS PLACED _____

ANESTHESIA RISK FACTORS (HEART/VESSELS)

- OBESITY
- ADVANCED AGE
- SMOKING
- DIABETES
- PREVIOUS HEART SURGERY
- EXISTING HEART DISEASE
- LUNG DISEASE
- HIGH BLOOD PRESSURE
- AORTIC VALVE COMPLICATIONS
- PREVIOUS HEART ATTACK

WRITE ANYTHING BELOW THAT WAS NOT INCLUDED ABOVE THAT YOU WOULD LIKE TO LET US KNOW

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07

LUNGS

LUNGS



DISEASE / INJURY / DISORDER

I DO NOT HAVE ANY LUNG DISORDERS OR DISEASES

IF YOU HAVE ANY OF THE BELOW CIRCLE YES OR NO FOR EACH OF THE FOLLOWING AND LIST WHEN THE INJURY OR DISORDER OCCURRED OR STARTED

ASBESTOSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
ASTHMA	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	HAVE YOU EVER BEEN HOSPITALIZED FOR ASTHMA <input type="checkbox"/> YES <input type="checkbox"/> NO
INHALER USE	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW OFTEN _____	
BRONCHITIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	DO YOU HAVE CURRENTLY? <input type="checkbox"/> YES <input type="checkbox"/> NO
CHRONIC COUGH	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	
COPD	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	HAVE YOU EVER BEEN HOSPITALIZED FOR COPD <input type="checkbox"/> YES <input type="checkbox"/> NO
CROUP	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	
COVID-19	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
CYSTIC FIBROSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
DO YOU GET SHORT OF BREATH	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT CAUSES THIS _____	
HOME OXYGEN	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	HOW MANY LITERS _____
DO YOU SMOKE?	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW MANY PACKS PER DAY _____	FOR HOW MANY YEARS _____
PNEUMONIA	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
BLOOD CLOT IN THE LUNGS?	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
PULMONARY HYPERTENSION	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SARCOIDOSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____
SLEEP APNEA	<input type="checkbox"/> YES <input type="checkbox"/> NO	DO YOU USE A CPAP AT NIGHT	<input type="checkbox"/> YES <input type="checkbox"/> NO
TUBERCULOSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____	ANY ONGOING ISSUES _____

ANESTHESIA RISK FACTORS (LUNGS)

- EXISTING LUNG DISEASE
- CHEST MASSES OR LUNG CANCER
- SMOKING
- KIDNEY DISEASE THAT LEADS TO VOLUME OVERLOAD
- OBESITY
- ASTHMA
- CURRENT RESPIRATORY INFECTION
- ANY DISORDER THAT CAUSES SWALLOWING DIFFICULTY

WRITE ANYTHING BELOW THAT WAS NOT INCLUDED ABOVE THAT YOU WOULD LIKE TO LET US KNOW

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08

LUNGS

GASTROINTESTINAL

GASTROINTESTINAL/ LIVER/KIDNEYS



DISEASE / INJURY / DISORDER

I DO NOT HAVE ANY GASTROINTESTINAL, LIVER, OR KIDNEY DISORDERS OR DISEASES

IF YOU HAVE ANY OF THE BELOW CIRCLE YES OR NO FOR EACH OF THE FOLLOWING AND LIST WHEN THE INJURY OR DISORDER OCCURRED OR STARTED

ACID REFLUX/HEARTBURN/GERD	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW OFTEN DOES THIS OCCUR _____ DOES YOUR MEDICATION CONTROL IT <input type="checkbox"/> YES <input type="checkbox"/> NO
FREQUENT NAUSEA/VOMITING	<input type="checkbox"/> YES <input type="checkbox"/> NO	HOW OFTEN DOES THIS OCCUR _____ WHAT CAUSED THIS _____
UNINTENTIONAL WEIGHT LOSS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN DID THIS START _____ HOW MUCH WEIGHT LOSS _____ WHAT CAUSED THIS _____
DIFFICULTY SWALLOWING	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN DID THIS START _____ WHAT CAUSED THIS _____
DIABETES	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHAT TYPE ARE YOU <input type="checkbox"/> TYPE 1 <input type="checkbox"/> TYPE 2 NORMAL BLOOD SUGAR _____ LAST A1C _____
ANY OTHER GASTROINTESTINAL PROBLEMS	<input type="checkbox"/> YES <input type="checkbox"/> NO	LIST _____
GASTROINTESTINAL CANCER	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN DIAGNOSED _____ WHAT SYMPTOMS DO YOU HAVE FROM THIS _____
LIVER DISEASE (HEPATITIS/CIRRHOSIS, ETC)	<input type="checkbox"/> YES <input type="checkbox"/> NO	LIST ANY DISEASES _____
KIDNEY STONES	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN _____ HOW WERE THEY REMOVED _____
FREQUENT URINARY TRACT INFECTION	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN WAS YOUR LAST _____ WHAT CAUSED THIS _____
CHRONIC KIDNEY DISEASE/RENAL FAILURE	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN DIAGNOSED _____ WHAT STAGE (IF KNOWN) _____
DIALYSIS	<input type="checkbox"/> YES <input type="checkbox"/> NO	WHEN WAS THE LAST TIME _____ HOW FREQUENTLY DO YOU GET DIALYZED _____
ANY OTHER KIDNEY/URINARY PROBLEMS	<input type="checkbox"/> YES <input type="checkbox"/> NO	LIST ANY DISEASES/PROBLEMS _____

ANESTHESIA RISK FACTORS (GASTROINTESTINAL)

- CURRENT HIV/AIDS
- CURRENT HEPATITIS/CIRRHOSIS
- GASTROINTESTINAL TRACT BLOCKAGE OR SLOWED MOVEMENT
- LOW BLOOD PRESSURE
- TRAUMA OR SIGNIFICANT BLOOD LOSS
- DECREASED LIVER FUNCTION
- DECREASED KIDNEY FUNCTION
- DEHYDRATION
- PREVIOUS WEIGHT LOSS SURGERY

WRITE ANYTHING BELOW THAT WAS NOT INCLUDED ABOVE THAT YOU WOULD LIKE TO LET US KNOW

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09

GASTROINTESTINAL

FREQUENTLY ASKED QUESTIONS

FREQUENTLY ASKED QUESTIONS



WHAT IS ANESTHESIA AND WHO IS RESPONSIBLE FOR MY ANESTHESIA CARE?

In general, the practice of anesthesia involves the removal of sensation and/or the prevention of awareness during painful procedures. Your anesthesia care may be provided by a Nurse Anesthetist, Anesthesiologist, or a combination of both. Anesthesia may be provided in one, or a combination of, the following four ways.

1. General- You will be completely asleep to prevent pain, awareness, and movement during the procedure. Once you are asleep, a machine will be used to assist your breathing or breathe for you.
2. Sedation- You will be given relaxing medications to limit pain and awareness.
3. Regional – Injection of numbing medication into various places in the body to prevent pain and movement of a large portion of the body. This includes spinal and epidural injections and may offer pain control after your procedure. Regional anesthesia is commonly given with sedation.
4. Local – Injection of numbing medications to prevent or relieve pain for small areas of the body

WILL I BE AWAKE OR FEEL PAIN DURING MY PROCEDURE?

Your level of awareness depends on the type of anesthesia you receive. There are many options available to decrease your level of awareness and control pain. Some procedures do require specific types of anesthesia, and certain health conditions may limit your options. Be sure to discuss your options with your anesthesia provider.

WHY CAN'T I EAT, DRINK, OR SMOKE BEFORE MY PROCEDURE?

Eating, drinking, smoking, chewing gum, and use of smokeless tobacco all increase your risk for vomiting and life-threatening breathing complications during anesthesia. This may require a prolonged hospital stay and/or the need for a breathing tube and could result in death. Avoid these activities after midnight the night before your procedure.

SHOULD I CONTINUE TO TAKE ALL OF MY NORMAL MEDICATIONS?

Not all medications are safe to continue taking before surgery. You should discuss this with your surgeon prior to the day of your procedure. In general, you should continue taking medications related to heart problems, seizure disorders, high blood pressure, thyroid disorders, and breathing disorders. Discuss your daily medications with your surgeon as far in advance as possible. You **MAY** be asked to stop taking, or decrease your dose, of certain medications such as blood thinners and medications for diabetes. Some lab tests may be required.

SHOULD I SEE ANY OF MY ROUTINE HEALTHCARE PROVIDERS PRIOR TO THE DAY OF MY PROCEDURE?

You should discuss the need to see your other healthcare providers with your surgeon prior to the day of your procedure. Your surgeon may ask you to receive clearance from another provider, such as a heart or lung specialist, to ensure you are healthy enough for surgery, and provide more specific instructions. activities after midnight the night before your procedure.

WHERE DO I GO ON THE DAY OF MY PROCEDURE AND WHAT TIME SHOULD I BE THERE?

Prior to the day of your procedure, you should contact your surgeon's office for information about the location, date, and time of your procedure. Be sure to ask what time you should arrive. You may receive a phone call the day before your procedure to confirm your procedure and provide more specific instructions.

SHOULD I CANCEL MY PROCEDURE IF I AM NOT FEELING WELL?

Contact your surgeon's office if you become ill or have new symptoms prior to your procedure.

FREQUENTLY ASKED QUESTIONS

YOU HAVE COMPLETED P.A.T.H.E. PACKET. BRING THE PACKET TO HOSPITAL ON DAY OF SURGERY

10

PROVIDER SUMMARY

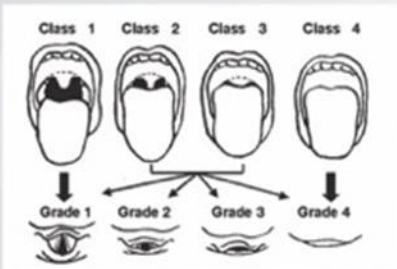
HEIGHT (INDICATE CM OR INCHES)	WEIGHT (INDICATE KG OR LB)	BMI (KG/M2)

ASA SCORE:

PREVIOUS COMPLICATIONS WITH ANESTHESIA:

- AWOKE DURING PROCEDURE
- PONV
- DIFFICULT AIRWAY
- DIFFICULT AIRWAY
- MH
- OTHER: _____

DENTITION: INTACT EDENTULOUS MISSING CAPS LOOSE CHIPPED
 NECK MOBILITY: FULL LIMITED



MOUTH OPENING: ≥3 FINGERS <3 FINGERS
 THYROMENTAL DISTANCE: ≥3 FINGERS <3 FINGERS
 MALLAMPATI: _____
 GLOTTIC VIEW: _____

MASK VENTILATION: EASY DIFFICULT ORAL AIRWAY SIZE: _____
 BLADE/SIZE: _____ ETT/SIZE/DEPTH: _____
 SUPRAGLOTTIC DEVICE/SIZE: _____
 ADDITIONAL COMMENTS:

PROVIDER SUMMARY

MISSION STATEMENT

Patient safety remains among the fundamental priorities of patient-centered care today. As such, national, regional, and global healthcare organizations have developed numerous patient safety standards to prevent unnecessary harm occurring to patients. The pre-anesthetic assessment is an important component in the care anesthesia professionals provide to patients preparing for surgery. The goal of a pre-anesthesia evaluation is to determine details of the patient's health history that may elevate the risk for perioperative complications. As an alternative to the traditional pre-anesthetic assessment tools, the Pre-Anesthesia Take-Home Evaluation (PATHE) is aimed at improvement of the pre-anesthetic / operative process. PATHE is aimed at optimizing the traditional pre-anesthesia process to benefit patients and anesthesia providers by reducing anxiety while increasing patient compliance with pre-anesthetic instructions and patient satisfaction.



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APPENDIX E – Literature Matrix

Authors	Date	Purpose	Comments/Outcomes/Implications
<p>Bahrack, H. P., Bahrack, P. O., & Wittlinger, R. P.</p> <p>“Fifty years of memory for names and faces: A cross-sectional approach”</p>	1975	<p>Use of a cross-sectional approach to introduce an alternative approach to traditional longitudinal studies of memory conducted within laboratories.</p>	<p>The study shows there is a 90% accuracy for up to 15 years when matching and identifying names and faces. There is a 60% decline in free recall of names during 48 years after graduation.</p> <p>This study proved that this cross-sectional approach allowed investigators to handle long acquisition periods and retention periods that are not usually tolerated in laboratory studies. These long periods allow studies to be based off real-life situations. Social context is an essential determinant of recall performance.</p>
<p>Falco, D., Rutledge, D. N., & Elisha, S.</p> <p>“Patient satisfaction with anesthesia care: What do we know?”</p>	2017	<p>Systematic review to determine the linkage of patient satisfaction of anesthetic care (PSAC) with reimbursement, competency evaluations, and litigation; to describe factors that affect PSAC; and to list provider recommendation to improve PSAC.</p>	<p>Modifiable factors that affect PSAC include anxiety, inadequate explanation of anesthesia, postoperative pain and nausea or vomiting, long surgeries or wait times, and anesthesia complications.</p> <p>It is recommended that anesthetists must be able to engage emotionally with patients, provide preoperative information and reasonable expectations, and treat discomfort.</p>
<p>Manji, F., McCarty, K., Kurzweil, V., Mark, E., Rathmell, J. P., & Agarwala, A. V.</p> <p>“Measuring and improving the quality of preprocedural assessments”</p>	2017	<p>To determine if patients’ pre-anesthesia assessments are satisfactory in terms of quality and value for anesthetists that are providing anesthesia for the day of surgery.</p>	<p>A midpoint survey revealed that 11.5% of the anesthesia providers believed that preoperative assessments were unsatisfactory. However, by the end of the study, it was found that 98.6% of assessments were considered either satisfactory or exemplary. The most common reason for an unsatisfactory rating was believed to be missing information.</p>
<p>Redelmeier, D. A., Schull, M. J., Hux, J. E., Tu, J. V., & Ferris, L. E.</p> <p>“Problems for clinical judgement 1. Eliciting an insightful history of present illness”</p>	2001	<p>Systematic review to describe how human reasoning may lead to patients providing unreliable history of illness.</p>	<p>An unreliable history from a patient can be highlighted by error in four main areas: comprehension, recall, evaluation, and expression.</p> <p>Specific errors in comprehension include ambiguous language and tacit misunderstandings. Errors in recall include memory failures and automatic shortcuts to answers. Errors in evaluation are inconsistent expectations and faulty personal beliefs. Errors in expression may be extraneous distractions and ignoble failures.</p>
<p>Redelmeier, D. A., Tu, J. V., Schull, M. J., Ferris, L. E., & Hux, J. E.</p> <p>“Problems for clinical judgement 2. Obtaining a reliable past medical history”</p>	2001	<p>Systematic review to describe how human reasoning may lead patients to provide an unreliable history of past experiences.</p>	<p>Errors in comprehension, recall, evaluation, and expression may lead patients to provide unreliable history of past experiences.</p> <p>Specific errors of comprehension include telescoping effect and sequencing effect. Errors of recall are false memories and inhibition of memory. Evaluation errors include halo effect and persistence of beliefs. Errors in expression are self-presentation and context dependency.</p>

<p>Hood, A.; Pulvers, K.; Spady, T.J.; Kliebenstein, A.; Bachand, J.</p> <p>“Anxiety mediates the effect of acute stress on working memory performance when cortisol levels are high: a moderated mediation analysis”</p>	2015	<p>Evaluation of the relationship between anxiety and memory during periods of stress and their association to elevated cortisol levels through utilization of a moderated mediation model</p>	<p>The presence of anxiety and/or stress has the potential to activate the hypothalamic-pituitary-adrenal axis with subsequent release of cortisol. Elevated serum cortisol levels have a direct relationship with impaired working memory capacity.</p>
<p>Landier, M.; Villemaigne, T.; Le Touze, A.; Morel, B.; Lardy, H.; Binet, A.</p> <p>“The position of a written document in preoperative information for pediatric surgery: A randomized controlled trial on parental anxiety, knowledge, and satisfaction”</p>	2017	<p>A Prospective randomized controlled trial to evaluate the relationship between parental anxiety, knowledge level, and parental satisfaction for parents of pediatric surgical patients.</p>	<p>Thorough patient education with the addition of written supplemental material has the ability to increase parental / patient knowledge and significantly reduce anxiety surrounding the peri-operative period.</p>
<p>MacLeod, S.; Musich, S.; Gulyas, S.; Cheng, Y.; Tkatch, R.; Cempellin, D.; Bhattarai, G.R.; Hawkins, K.; Yeh, C.S.</p> <p>“The impact of inadequate health literacy on patient satisfaction, healthcare utilization, and expenditures among older adults”</p>	2017	<p>A randomized-controlled study to examine the impact of poor health literacy on satisfaction, utilization of healthcare resources, and healthcare expenditures.</p>	<p>Inadequate health literacy is a significant concern in today’s society. Measures should be taken to ensure proper patient education / comprehension to ensure adherence to instructions and thus decrease anxiety and increase satisfaction.</p>
<p>Ortiz, J.; Wang, S.; Elayda, M.A.; Tolpin, D.A.</p> <p>“Preoperative patient</p>	2015	<p>A randomized-controlled study to determine the relationship between patient knowledge levels and</p>	<p>Although no changes were seen in measures of self-reported anxiety, significant improvements were noted in patient satisfaction scores following receipt of an educational handout and improving health literacy.</p>

education: can we improve satisfaction and reduce anxiety?"		reported levels of anxiety related to anesthesia.	
Wang, H., Zheng, T., Chen, D., Niu, Z., Zhou, X., Li, S., Zhou, Y., & Cao, S. "Impacts of the surgical safety checklist on postoperative clinical outcomes in gastrointestinal tumor patients."	2019	To evaluate the impact of a surgical safety checklist (SSC) on postoperative clinical outcomes in gastrointestinal tumor patients	The implementation of the SSC led to a reduction in several complications, including venous thromboembolism (VTE), pulmonary embolism, and deep vein thrombosis. Therefore, SSC was found to be crucial in the identification of anesthesia-related complications
Chaudhary, N., Varma, V., Kapoor, S., Mehta, N., Kumaran, V., & Nundy, S. "Implementation of a surgical safety checklist and postoperative outcomes: A prospective randomized controlled study."	2015	To assess the influence of WHO SSC on postoperative outcomes in a developing country	The implementation of the modified WHO SSC led to reduction in post-operative abdominal ($p=0.01$), wound-related ($p=0.04$), and bleeding ($p=0.03$) complications. Higher grade complications (Clavien-Dindo grades 3 and 4) declined more in the intervention group than in the control group (0.80 and 0.23 vs 0.97 and 0.33). Additionally, the checklist led to a reduction in the mortality rate of within the intervention arm compared to the control arm ($p=0.04$). Subgroup analysis revealed that the patients with a fully completed checklist had lower incidence of complications. Therefore, the study reveals that the implementation of the modified WHO SCC could have substantial effects on the occurrence of complications
Heideveld-Chevalking, A. J., Calsbeek, H., Griffioen, I., Damen, J., Meijerink, W. J., & Wolff, A. P. "Development and validation of a self-assessment instrument for perioperative patient safety (sips)."	2018	To develop and validate a Self-Assessment Instrument for Perioperative Patient Safety (SIPS) monitoring and benchmarking compliance to safety standards	The Delphi round of the test revealed moderate feasibility of the questionnaire (81.6%). In turn, the pilot test revealed good measurability for the tool, with 99.8% of the information being accessible. Additionally, the tool revealed room for improvement of the tool to specific contexts based on perioperative trajectory (76.1%), although the discriminatory capacity had mixed results (91.9-96.7%). The study revealed that a self-assessment tool for the measurement of perioperative patient safety was valid and complied with international standards. Therefore, the tool could be used as a take-home tool for the assessment of patient risk factors before undergoing surgical procedures.

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