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# Preoperative Education for Cardiac Surgical Patients Benchmark Study

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Preoperative Education for Cardiac Surgical Patients Benchmark Study

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In Partial Fulfillment of NURS 5382

Dr. Colleen Marzilli

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## **Executive Summary**

Heart surgery is a term that scares a lot of people and rightfully so, as the heart is one of, if not the, most vital organ in the human body. So naturally, one can imagine the amount of fear and anxiety that patients feel when they are told they need heart surgery. This fear and anxiety is not unwarranted, either. Heart surgery, in most cases, is a major and highly complex operation with a lot of potential complications and negatives. Despite this, the majority of the time the benefits do outweigh the risks and patients elect to go forward with their surgery. In addition to the stress of having a major operation, it is not uncommon for these patients to not be fully informed about the procedure they are about to undergo, leading to even more anxiety and nervousness (Gadler et al., 2016).

Current preoperative education practices and regimens have proven to be ineffective in many cases as well (Agnew and Jorgensen, 2012). Therefore, material is needed that can provide effective, higher quality preoperative education. This is why it is recommended that a concise, comprehensive education regimen be implemented to improve the postoperative outcomes of cardiac surgical patients.

### **1. Rationale for the Project**

Pre-surgical education continues to be an integral part of the perioperative process for patients and is extremely important for obtaining informed consent. It is a law that surgeons must review the procedure with the patient before surgery and answer any questions they may have before the patient can give consent. Despite all of this, studies have still found a lack of knowledge and understanding in patients about to undergo a procedure. Agnew and Jorgensen (2012), in their article on informed consent, states “our study highlights that although patients

spoke with their physicians and nurses, there was still a lack of basic information and of understanding” (p. 769). Similarly, Gadler et al. (2016) identifies two clinical problems with pre-operative education: “First, patients fail to adequately retain the information provided in the pre-operative educational discussion. Secondly, lack of retention of the pre-operative information leads to patient anxiety related to the surgical course” (p. 298).

Not only are patients suffering from a lack of pre-operative education, the nurses are also suffering from a lack of knowledge surrounding pre-operative education. Alshvang (2018) found that cardiac nurses who were going to be caring for patients undergoing open heart surgeries were unaware that pre-operative education can make significant differences in patient outcomes. There is clearly a deficit in education and the retention of that education in the cardiac pre-operative setting, and if more change is not implemented, patient outcomes might continue to suffer.

## **1.1 Project Goals**

The goal of this Benchmark Study was to shine a light on the fact that many patients undergoing cardiac surgery are vastly underprepared for the major operation they are about to have. Furthermore, research shows that high quality preoperative education can have a positive impact on postoperative outcomes (Pazar and Iyigun, 2020). This is why high-quality education is so vitally important to cardiac surgical patients in the preoperative setting, as it could be the difference between a smooth recovery and a much rockier one.

A secondary goal of this project was to introduce a complete and thorough pre-operative teaching regimen for cardiac patients in hopes of also improving postoperative outcomes.

Although this education regimen never came to fruition, it is the hope of the researchers that it one day might be implemented in practice.

## **2. Literature Discussion to Support Project**

There were six articles that were chosen as supporting evidence for this benchmark project. In five of the six articles, the intervention group showed improvement in at least one of the metrics used in the studies in comparison to the control group, with the most common metric being anxiety. Pazar and Iyigun (2020) showed that cardiac patients who received pre-operative education had "higher comfort and haemodynamic stability levels, as well as lower anxiety levels when they were under mechanical ventilation..." (p. 6). Braz Benevides et al. (2020) even concluded that cardiac surgical patients with reduced anxiety pre-operatively from education have a less likely chance of having complications during and after surgery and were thus able to be discharged faster, which results in less cost to the patient and hospital. While anxiety was the most common outcome used by the researchers, other outcomes such as delirium, pain, and length of stay were also measured. Xue et al. (2020) found that pre-operative education was very effective in reducing delirium post-operatively, as it was 14% lower in the experimental group. Both Filomeno et al. (2020) and Ramseh et al. (2017) measured pain and length of stay as outcomes. Filomeno et al. (2020) reported that pre-operative education positively influenced pain outcomes but did not help with length of stay, while Ramseh et al. (2017) could not conclusively say whether it helped reduce pain or length of stay. It is significant to note that pre-operative education has no positive impact on length of stay, which is surprising given its positive impact on most other outcomes. Finally, when performing an informed consent with cardiac patients, adding simple and effective teaching can greatly improve the quality of the education. "This

review highlights that although patients remember less than half the information provided during an informed consent, a variety of simple interventions can significantly improve patient's recall and understanding of the risks involved" (Villanueva et al., 2018, p. 2052).

### **3. Project Stakeholders**

Developing and implementing a change project is almost impossible to do alone. It takes a multidisciplinary team ranging from hospital administrators all the way down to the RN. Stakeholders for this benchmark study include: hospital administrators (mainly, the CNO), the hospital research committee (comprised of 5 masters prepared nurses or higher, including the CNO), the cardiovascular surgeons, the anesthesiologists, the nurse managers and clinical educators for ACU (preop), OR, and ICU, the staff RN's in ACU, OR, and ICU, and finally the respiratory therapists for the ICU. A team, representing members from all stakeholder groups, would be formed to develop the education material to be presented to patients. This team would also evaluate the project at certain intervals to make any necessary changes. At the end, feedback would be received from all members of the team. It is important that all stakeholders play an active role during each phase of the project in order for implementation to be successful.

### **4. Proposed Outcomes**

While reviewing the literature, there were a variety of variables that were used to determine many different outcomes. Most of them revolved around postoperative quantitative data while few used questionnaires and surveys to assess how the patient's education was perceived. This study (if approved in the future), will collect both qualitative and quantitative data which would then be used to evaluate outcomes. Qualitative data will be taken from both patients and

researchers in the form of verbal evaluations and questionnaires. Quantitative data will be used to evaluate common cardiac surgery postoperative outcomes. Outcomes will be as followed: 1. Improve postoperative anxiety, 2. Shorten time to extubation, 3. Reduce length of ICU stay, 4. Improve patient perception of education and preparedness, 5. Receive favorable feedback from researchers.

## **5. Implementation**

Before the patient went into surgery, they would be presented with the education material that the research team had developed. It would be given by a combination of team members including the surgeons, anesthesiologists, ACU RN's, and OR RN's. The goal of this intervention is to enhance the quality of education patients receive before cardiac surgery to improve their outcomes postoperatively.

Quantitative data would first be collected in real time, while the patients are recovering in the ICU. Vital signs and the times, that predetermined checkpoints are achieved, would be recorded by the ICU nurses and collected by the researcher for later statistical analysis. Patients, when and if they were able, would then complete a verbal evaluation to assess their perception of the effectiveness of the education and whether or not it was beneficial for them.

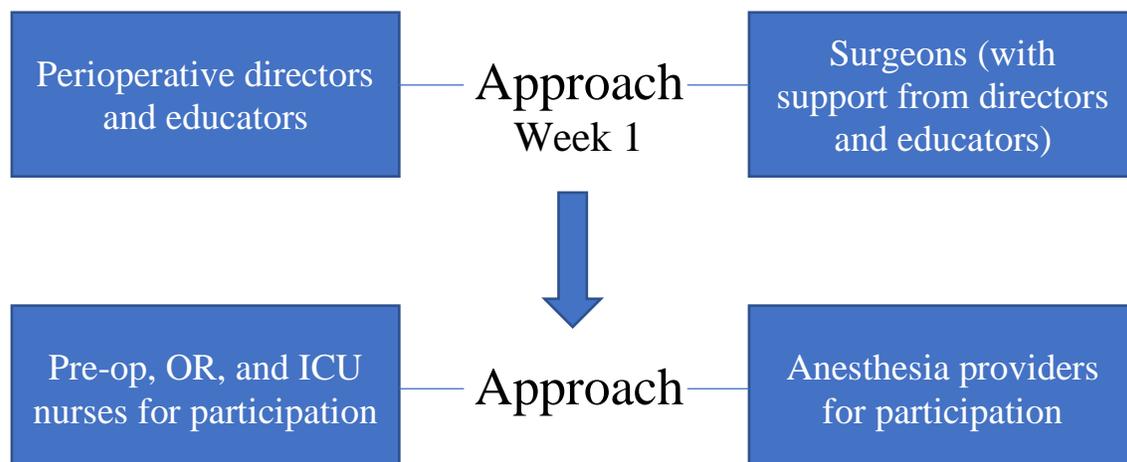
Lastly, each member of the team would evaluate the project as a whole using an evaluation form, once the project is completed (Appendix A). Certain categories pertaining to specific aspects of the project on a 1-5 scale of effectiveness would be utilized. The categories would be critical points of the project including strength and completeness of the education material, patient preparedness and retention of information, among others. Each team member would then

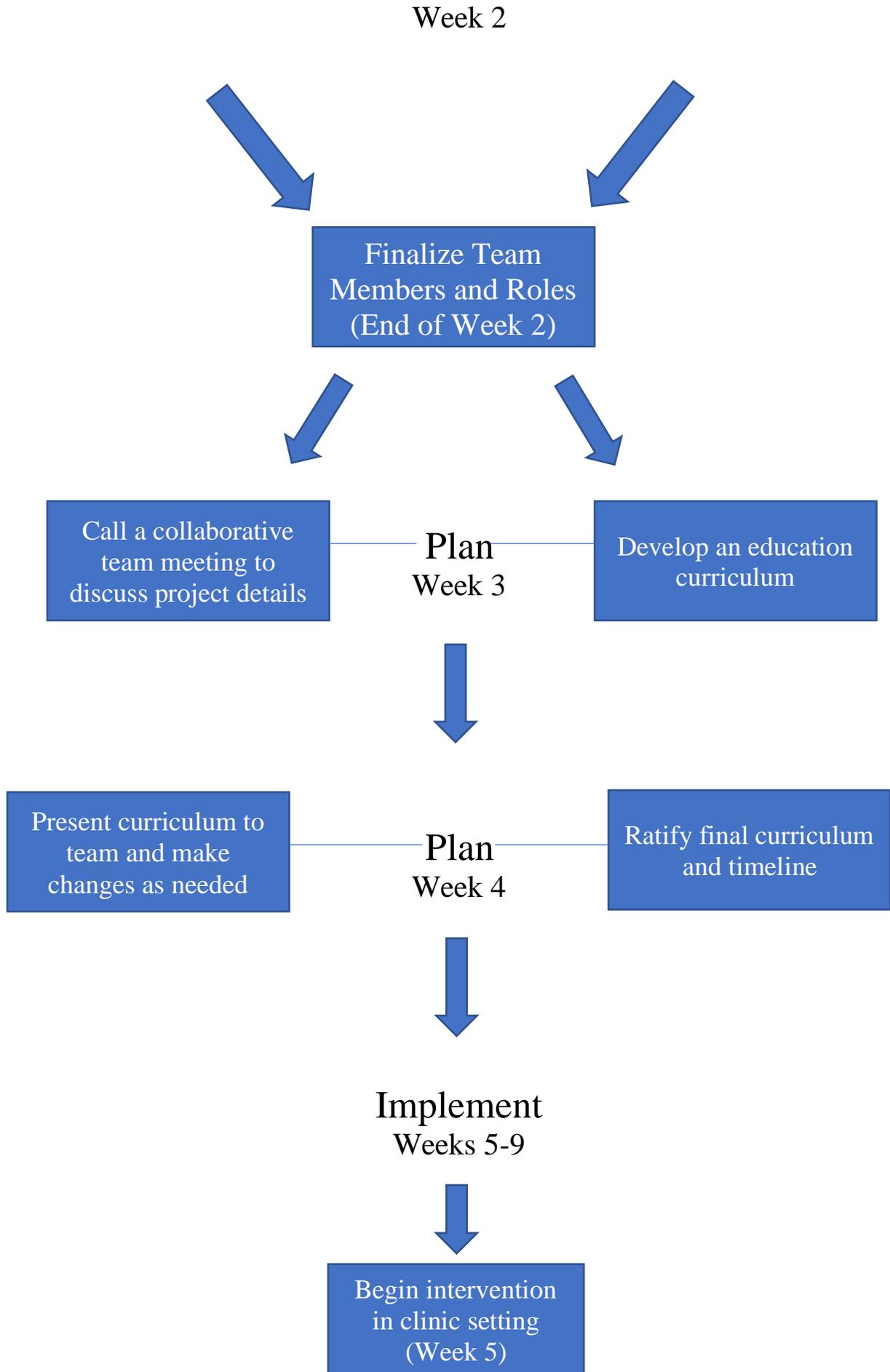
complete an evaluation form pertaining to their specific area and role (Appendix B). Open ended questions would also be included on both forms to allow for more in-depth feedback.

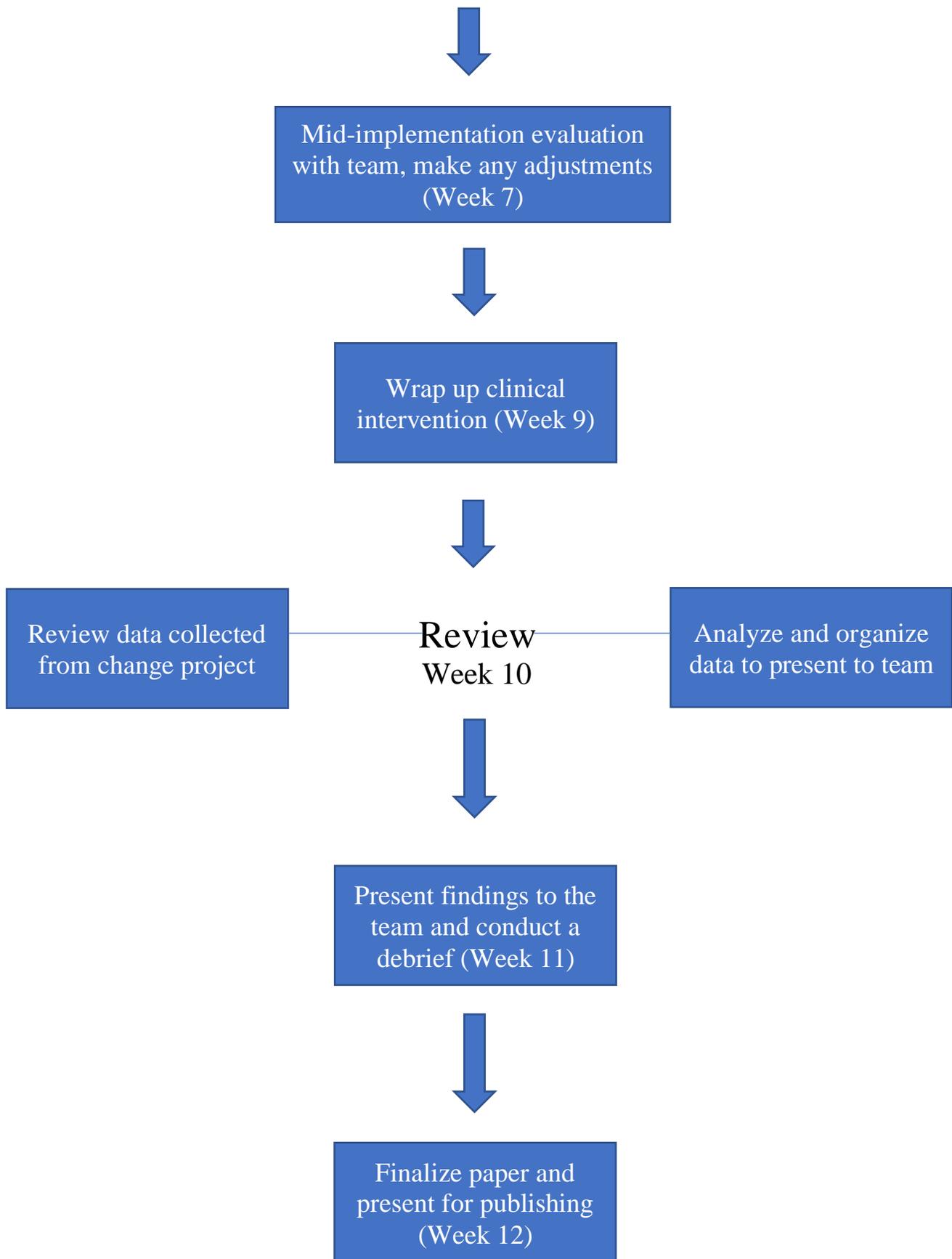
### 6. Timetable/Flowchart

In the semesters leading up to this one, a PICOT question was developed and further refined for this benchmark study. Originally, the PICOT question focused on extubation after cardiac surgery but was later broadened to an array of postoperative outcomes due to a lack of supporting research. Last semester, after unforeseen circumstances, the primary researcher relocated to a new town and was hired to a new job where implementing the project just wasn't going to be possible. After conversing with course faculty and with peers in May, it was decided to shift the project to an Evidence-Based Benchmark Study on improving preoperative education for cardiac surgical patients. It is the hope of the researchers that this project can one day be implemented in practice. The following flowchart is a reflection of what the process would have looked like had the project not been shifted to a benchmark study.

### Flowchart







## **7. Data Collection Methods**

Considerable research was conducted and the preceding studies were reviewed to evaluate the need for change. For right now, data for this benchmark study cannot be carried out. However, if eventually approved for clinical trial, data will be collected in a variety of ways. All quantitative data recorded by the ICU nurses would be collected following the patient's discharge from ICU. The qualitative verbal evaluation would be collected immediately after the evaluation is presented to the patient. All qualitative data collected from the researchers following the completion of Week 11 would be taken up at the same time by the primary researcher. All data would then be reviewed by the primary researcher and synthesized for publication.

## **8. Cost/Benefits**

The cost of this study would be relatively inexpensive to conduct. The study would take place in the hospital setting where the patients would be undergoing these surgeries regardless of whether or not the study was being conducted. The chief cost of this study would be the hourly wages the hospital would have to pay its employees while they are meeting to develop the education curriculum, while they are reviewing and finalizing the curriculum, the mid-intervention review, and the final debrief.

According to PayScale (2022), the average registered nurse in Texas makes an average of \$39 an hour while the average respiratory therapist makes \$29 an hour. Assuming there will be 3 nurses from each unit attending meetings (manager, educator, and one staff RN), and 1 respiratory therapist, this equals \$380 per hour for the hospital. Now, assuming the meetings are an average of 1.5 hours long, and the fact that there will be 4 planned meetings, this equals an overall cost of \$2,280 to the hospital. Surgeons and anesthesiologists are not factored into the

cost as they are salaried employees. Likewise, the hospital research committee is not factored into the cost because they are specifically paid by the hospital for studies such as this. The cost of supplies is expected to be around \$200 for paper, ink, notepads, and pens/pencils. Therefore, \$2,480 is a relatively small price for a hospital to pay for hosting a research project.

The potential benefits of this project far outweigh the risks and should therefore be considered for practice. As an added benefit, if the intervention is successful, there is potential for the hospital to even make money on this project if the intervention directly leads to less time on the ventilator and in the ICU.

## **9. Discussion of Evaluation**

Due to the nature of a Benchmark Study, there are no actual results to discuss. However, there have been many positive takeaways from this study. It was very encouraging to see that the original project was on track for implementation before the primary researcher relocated. This hopefully indicates that future success can be had in implementing this project at a different facility. Also, there has been a lot of wonderful and positive feedback from faculty about this project and several of them have encouraged the continuation of this project at a later date.

## **Conclusions/Recommendations**

Heart surgery is a major operation with the potential for serious complications, especially after surgery. Studies have shown that preoperative education has a positive effective on postoperative outcomes in cardiac surgical patients (Erturk & Unlu, 2018). There have also been several correlations between improved informed consent and reduced anxiety both pre- and postoperatively. After reviewing the research, the current education being given to patients is clearly lacking. Article after article noticed a distinct lack of quality education, and it is not acceptable. Change in the healthcare setting is a collective responsibility and is necessary when a

need is identified. It is therefore recommended that a high-quality preoperative education regimen be developed to improve the postoperative outcomes of cardiac surgical patients.

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**Appendix A****Evaluation Form: Overall Project**

1. How effective do you feel this project was as a whole?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
2. How effective do you feel the education intervention was in meeting our goals?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
3. How would you rate our planning and preparation for this project?  
1. Poor   2. Fair   3. Good   4. Very Good   5. Excellent
  
4. How would you rate our execution of this project?  
1. Poor   2. Fair   3. Good   4. Very Good   5. Excellent
  
5. Did you feel like this project is necessary for the betterment of your patients?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
6. Did you feel like you were a valuable member of the team?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
7. Please leave any feedback you may have for us below.

**Appendix B****Evaluation Form: Individual Project Section**

1. How do you feel your individual role went during the study?  
1. Poor   2. Fair   3. Good   4. Very Good   5. Excellent
  
2. Did you have all the resources and supplies you needed to do your job?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
3. Did you feel your role was important to the overall project?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
4. Did you have good teamwork or feel supported by other team members during the project?  
1. Not at all   2. Very little   3. Somewhat   4. Mostly   5. Extremely
  
5. What could we have done better during your part of the project?
  
  
6. Please leave any other feedback you may have below.