LABOR EPIDURAL EDUCATION IN THE ANTEPARTUM PERIOD: AN INTERACTIVE COMPUTER-BASED EDUCATION MODULE

A DOCTORAL PROJECT
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ABSTRACT

In the United States, the most common reason for hospital admission is childbirth. Labor epidurals, a form of regional anesthesia, are considered the most effective method of pain relief for laboring women. A trained anesthetist or anesthesiologist must perform the procedure. Prior to any medical procedure, the provider has the obligation to inform the patient of the risks of, benefits of, and alternatives to the procedure. Obtaining consent in the laboring parturient presents several unique challenges. The inability to communicate the required elements of consent to the pregnant woman, with limited English proficiency, presents another challenge for the obstetric anesthesia provider. The literature was reviewed to support the need for antenatal epidural education. Topics searched included the influences of language preference, ethnicity and race on the treatment of pain, and factors influencing the labor epidural consent process and content. The efficacy of multimedia patient education programs was also explored to support the decision to use this format for educating the parturient. The purpose of this project was to create a labor epidural education module in both English and Spanish, which will be available in the antepartum period to improve the consent process. A pilot study to evaluate and compare satisfaction levels with the multimedia platform should be performed prior to widespread implementation among limited English proficiency patients and English language proficient patients. After institutional implementation, a study comparing the time from epidural request to epidural placement between those who
completed the education module in the antepartum period and those who did not should follow.
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BACKGROUND

In the United States, the most common reason for hospital admission is childbirth. Neuraxial labor analgesia is one of the most effective forms of pain relief and the choice for more than 2 million women each year (Eltzschig, Lieberman, & Camann, 2003). Because of its superior pain relief and reduced side effects, epidurals are the most recommended method for treating the pain of labor (Atherton, Feeg, & El-Adham, 2004). Labor epidurals, a form of regional anesthesia, provide segmental pain relief for women during labor and, if necessary, can be used to provide complete sensory and motor block for surgical delivery. Anesthesia providers are legally obligated to obtain informed consent from the patient prior to the placement of a labor epidural. Failure to obtain valid consent before medical treatment is unethical and illegal. In the United States, procedures performed without valid consent may result in the filing of criminal charges. For consent to be valid, the risks of, benefits of, and alternatives to the procedure must be disclosed to the patient or the patient’s legal representative in a manner in which the patient can understand by a health care professional; failure to do so compromises patient autonomy (Fetters, Yoshioka, Greenberg, Gorenflo, & Yeo, 2007; Schenker, Fernandez, Sudore, & Schillinger, 2011).

Consenting to the placement of a continuous labor epidural may be complicated by the patient’s ability to process information during painful contractions, the presence of family members in the labor suite, lack of sleep, and the parturient’s limited time to contemplate the information prior to the need for the procedure. Despite these obstacles, it is the responsibility of the anesthesia provider performing the procedure to ensure the
information is presented in a manner that the parturient can comprehend (Green & MacKenzie, 2007).

According to the 2012 Census, one in every six persons residing in the United States, a total of 53.3 million people, is of Hispanic origin and by the year 2024 that number is expected to double. In Los Angeles County, 48.1% of the population is of Hispanic or Latino origin (U.S. Census Bureau, 2013). Shin and Kominski (2010) conducted a study to describe U.S. language use and found that 20% of the population, or 55.4 million people, in the United States speak a language other than English in the home. Of those 55.4 million people, 62% spoke Spanish (Shin & Kominski, 2010). This report indicated that 8.1% of those who spoke Spanish in the home spoke no English and 16.3% had limited English proficiency. The existence of language barriers between providers and patients continues to be problematic for the health care system (Karliner, Jacobs, Chen, & Mutha, 2007; Lee, Batal, Maselli, & Kutner, 2002). The National Culturally and Linguistically Appropriate Services (CLAS) Standards in Health and Health Care requires that institutions provide language assistance to all persons with limited English proficiency at no cost to the individual patient in an effort to ensure timely access to all medical services (U.S. Department of Health and Human Services Office of Minority Health, 2013).

Challenges to obtaining valid informed consent, even with language concordant providers, exist (Braddock, Edwards, Hasenberg, Laidley, & Levinson, 1999; Green & MacKenzie, 2007). The possible impediments to the consent process may include differences between the provider’s and the patient’s knowledge level, values, and/or beliefs. It is essential that providers continue to explore innovative alternatives for
improving the consent process for both the English language proficient (ELP) and the limited English proficient (LEP) patient (Fetters et al., 2007).

**Problem Statement**

Panorama City, a district within Los Angeles County, has a population that is 85% Latino (Healthy City, 2008). Kaiser Permanente, Panorama City (KPPC), is the only hospital within the city limits. Anesthesia providers assigned to the obstetric service of KPPC frequently encounter LEP parturients. Due to the unpredictability of the onset of labor, expectant mothers may present at any time, day or night. The availability of a language concordant provider cannot be guaranteed. Staffing requirements may limit the availability of a language concordant obstetric nurse who is also certified as a qualified interpreter, which leaves the anesthesia provider the language line, a telephone interpretation service, as the only acceptable alternative for providing same language services to the laboring woman for epidural consent. The language line is cumbersome and can prolong the consenting process, delaying the start of the epidural procedure and ultimately delaying the onset of pain relief for the laboring mother. This scenario results in a health care disparity for the LEP patient population. On occasion, the anesthetist may receive simultaneous requests for epidural placement, yet only one procedure can be performed at a time. Assuming that the patients present in the same stage of labor, with a similar obstetric history, the choice on order of procedure may not be based on clinical presentation or necessity. In this situation, where providers may choose to perform the procedure for the patient without a communication barrier, simply because the process of consent is easier, there is the potential to create a disparity based on ethnicity and/or English language proficiency. There is a need for a more effective method of consenting
to labor epidural placement in both the LEP and ELP patient populations that considers both language and understanding during a time of pain and stress for women.

**Purpose Statement**

The goal of this project was to design a patient education computer module, available in both English and Spanish, explaining the risks of, benefits of, and alternatives to the labor epidural, which may be accessed by pregnant women either online in the antepartum period or when they present to the hospital in labor, prior to epidural placement.

The cause of the persistent racial and ethnic disparities in the use of epidural analgesia for labor warrants further investigation, but the need for a linguistically appropriate consent process is without dispute. Considering the obstacles present in the laboring patient population, the need for advanced consent exists and has previously been discussed in the literature (Jackson, Henry, Avery, Van Den Kerkhof, & Milne, 2000; Mann & Albers, 1997; Paech & Gurrin, 1999). The use of an antepartum Spanish language epidural consent program is not found in the literature and is the impetus for this project.

The project objectives were to (a) reduce disparities in the timely access to neuraxial labor analgesia in the LEP patient population, (b) standardize the institutional consent process, (c) reduce the barriers to consent present in the actively laboring woman, and (d) increase the amount of time for an expectant mother to process the risks of, benefits of, and alternatives to neuraxial labor analgesia.
Supporting Framework

In order to satisfy the requirements of valid consent, the patient must understand the risks of, benefits of, and alternatives to the procedure for which consent is being obtained. This increase in understanding or change in knowledge level is a cognitive activity (Mayer & DaPra, 2012). According to Mayer (2008), meaningful learning occurs when relevant incoming material has been mentally organized, processed, and integrated with the learner’s prior knowledge. Learning outcomes can be assessed by measuring the learner’s ability to recall or by evaluating transfer test performance (Mayer & DaPra, 2012). Ease of use, enhanced recall, replication in multiple languages, incorporation of pictures and graphics to supplement the text and meet the needs of low literacy learners, availability for repeated viewing, and reduced education costs (because of repeated use and decreased need for face-to-face provider-delivered education) are some of the advantages of interactive computer-based education programs (Fox, 2009; Keulers, Welters, Spauwen, & Houpt, 2007).

Multimedia learning programs are educational tools that contain words, either spoken or written, and visual aids (e.g., pictures, animation, or video) designed to enhance and foster learning (Mayer, 2008). The development of an interactive labor epidural education program for use in the antepartum period was based on the cognitive theory of multimedia learning developed by Richard E. Mayer. Mayer’s cognitive theory of multimedia learning theory was developed using research-based theories on how people learn and evidence-based principles supporting the method of instructional formatting (Mayer, 2008). The development and utilization of interactive computer-
based education must take into consideration the literacy level, preferred language, and cognitive capabilities of the target patient population (Fox, 2009).

The labor epidural education lesson incorporates five major research-based principles: the coherence principle, which calls for the minimization of unnecessary words and/or pictures; the modality principle, supporting the use of narration as the primary source of text; the signaling principle, which states that the highlighting of key words improves learning; the personalization principle, which says people learn better from a multimedia lesson that utilizes a conversational style of communication; and the segmenting principle, which states that people learn better when material is designed to be advanced at the learner’s pace (Mayer & Johnson, 2008).

Understanding how the human mind acquires knowledge and structuring the media presentation to address those very specific mechanisms of learning are the cornerstones of Mayer’s cognitive theory of multimedia learning. The field of psychology has made advances in the science of learning by identifying mechanisms of learning: dual channels—the existence of different channels for the processing of visual and verbal media, limited capacity—the concept that there are limitations to the amount of information that can be processed in a given time period, and active processing—the learner must actively engage in cognitive processing (Mayer, 2008).

The application of the science of learning, as a means to facilitate learning, is the science of instruction, which involves the instructor’s manipulation of the environment and presentation of the material in an effort to achieve optimal cognitive processing (Mayer, 2008). Key elements in the science of learning are (a) the reduction of extraneous processing, that which does not support the educational goal; (b) the
management of essential processing, that which is required to mentally represent the material; and (c) the fostering of generative processing, which involves the organization of material and its integration with prior knowledge (Mayer, 2008). The elements of both the science of learning and the science of instruction provide the foundation for Mayer’s principles of multimedia instruction.

According to Mayer (2008), there are five principles aimed at the reduction of extraneous processing, three principles for managing essential processing, and two principles for fostering generative processing. The five principles aimed at the reduction of extraneous processing are: (a) the coherence principle—multimedia lessons should not contain inessential material; (b) the signaling principle—the highlighting of relevant words improves learning; (c) the redundancy principle—people learn better when there is animation with narration and the onscreen text is proximal to the graphic it describes, is succinct, and highlights the accompanying action described in the narration; (d) the spatial contiguity principle—people learn better when there is no separation between corresponding words and pictures; and (e) the temporal contiguity principle—people learn better when there is simultaneous presentation as compared to successive presentation of animation and narration (Mayer, 2008; Mayer, Griffith, Jurkowitz, & Rothman, 2008; Mayer & Johnson, 2008). The three principles for managing essential processing are: (a) the segmenting principle—people learn better when material is designed to be advanced at the learner’s pace (segments with a continue or go to the next page button), (b) the pretraining principle—people learn better when they have previous exposure to new vocabulary and concepts essential to the material depicted in the narrated animation, and (c) the modality principle—people learn better with narrated
animation than with animation and written text (Mayer, 2008). The two principles for fostering generative processing are: (a) the multimedia principle—people learn better when a presentation contains both words and pictures as compared to a presentation with words alone and (b) the personalization principle—people learn better from a multimedia lesson that utilizes a conversational style of communication as opposed to a formal style because it fosters a sense of social partnership with the narrator and serves to fully engage the listener (Mayer, 2008; Mayer & DaPra, 2012).

Evaluating the effectiveness of an educational program requires the establishing of clearly identified learning outcome measures. Retention tests, which measure recall, and transfer tests, which measure understanding, are classic examples of methods that measure learning outcomes (Mayer, 2008; Mayer & DaPra, 2012; Mayer et al., 2008; Mayer & Johnson, 2008). Several researchers (Keulers & Spauwen, 2003; Keulers et al., 2007; Ryhänen, Siekkinen, Rankinen, Korvenranta, & Leino-Kilpi, 2010) have found evidence to support that knowledge levels are increased with computer-based patient education as compared to face-to-face provider-directed education.

Figure 1 illustrates the key concepts of the cognitive theory of multimedia learning. The boxes represent how memory is stored and the arrows depict the cognitive processes. The labor education tool was designed incorporating the principles of Mayer’s cognitive theory of multimedia learning. The instructional program contains text and narration. Narration will stimulate the auditory sensory memory and the associated text will stimulate the visual sensory memory. The theory posits that the learner may select some auditory stimuli to process further in the verbal channel and simultaneously select images for further processing in the pictorial channel. This processed information may

further be organized as shown in the right side of the box labeled Working Memory. The knowledge stored in long-term memory may then be integrated with the present verbal and pictorial material stored in the working memory.
REVIEW OF LITERATURE

Overview

Review of the literature focused on three topics central to the development of a labor epidural education module. The first addressed the current research on LEP and race as factors that influence the treatment of pain (Appendix B) and the second explored factors influencing the labor epidural consent process and standards of practice for content inclusion (Appendix C). The use and efficacy of interactive computer-based patient education programs was also explored to support the decision for this project’s education format (Appendix D).

Ethnic and Racial Disparities in the Treatment of Pain

The existence of racial and ethnic disparities in the use of neuraxial labor analgesia is well supported in the literature (Atherton et al., 2004; Caballero, Butwick, Carvalho, & Riley, 2013; Fetters et al., 2007; Glance et al., 2007; Orejuela et al., 2012; Rust et al., 2004; Toledo & Caballero, 2013; Toledo, Sun, et al., 2012; Toledo, Wong, Grobman, Feinglass, & Hasnain-Wynia, 2012). The greatest disparity exists within the Hispanic population (Atherton et al., 2004; Glance et al., 2007; Harkins, Carvalho, Evers, Mehta, & Riley, 2010; Rust et al., 2004; Toledo, Wong, et al., 2012). The origins of this disparity are not completely understood; however, the decision to use or not use epidural anesthesia for labor pain relief should be an informed choice and not the result of misperceptions of the risks of and benefits of neuraxial analgesia (Toledo & Caballero, 2013; Toledo, Sun, et al., 2012). Cultural beliefs regarding pain and the birthing experience, knowledge-level factors, systems-level factors, and language concordance
may all influence the racial and ethnic differences in the neuraxial labor analgesia use rates of Hispanic women.

Rust et al. (2004) found that race/ethnicity was a predictor of the use of epidural anesthesia in a study population of Medicaid-insured women. After controlling for age, availability of anesthesia providers, and residence (rural or urban), the authors found that 59.6% of White non-Hispanic women utilized neuraxial analgesia for labor pain relief as compared to Hispanic women, who had the lowest rate of labor epidural use, with only 35.3% choosing this pain relief option. The authors did not evaluate cultural values and pain perception and their potential influences on labor pain management use. The persistence of a disparity in a population for which reimbursement is not an issue is noteworthy because epidural use rates have no fiscal incentive for providers in the KPPC organization.

Caballero et al. (2013) found that Spanish language preference was independently associated with a reduced likelihood of neuraxial labor analgesia use. Approximately 16% of the 55.4 million people living in the United States, whose primary language is Spanish, have limited English proficiency (Shin & Kominski, 2010). LEP patients may have difficulty communicating their need for pain relief and difficulty understanding their pain management options (Caballero et al., 2013; Fetters et al., 2007; Jimenez, Moreno, Leng, Buchwald, & Morales, 2012). In a study population of all Hispanic nulliparous women, researchers found that the rate of epidural use was lower for LEP women as compared to ELP women, even after controlling for marital status, income level, insurance type, and age (Toledo, Wong, et al., 2012). Availability of qualified interpreters for LEP patients has demonstrated increases in self-reported pain control and
access to pain treatment in the obstetric hospitalized patient population (Jimenez et al., 2012). The unpredictability of labor onset and its relationship to the need for and availability of interpreting services present a challenge for the obstetric anesthesia provider.

Fetters et al. (2007) discussed the absence of bilingual advanced consent for the expectant mother in the literature as an impetus for their project. Their target population was Japanese parturients with limited English proficiency. They cited the unpredictable nature of the onset of labor, the limited availability of interpreters, and the sometimes urgent need for pain relief as factors contributing to the necessity for an advanced consent process for women who have a reasonable need for a procedure (Fetters et al., 2007). They reported that both the obstetric team and the patients found that advanced consent helped reduce language barriers, while also helping to psychologically prepare women for the epidural procedure. Although some women expressed a feeling of anxiety about the potential complications, their anxiety level did not change their decision to have an epidural. The authors cautioned that antepartum discussions should be conducted in a way to ensure the patient does not feel pressured to give consent.

Orejuela et al. (2012), who conducted a study to explore the barriers to adequate pain relief in laboring Latino women, found evidence to support that pain management expectations in this patient population do not differ from the expectations of nonminority patients. However, they did find an association between level of education and request for pain relief in labor. They posited that an increased understanding of the true risks and benefits associated with the procedure reduces the fear of epidurals. These authors
recognized the need for a culturally competent labor analgesia education tool and made the development of that tool an objective of their study.

**Factors Influencing Labor Epidural Consent Process and Content**

Legally and ethically, obtaining informed consent for labor epidural analgesia requires that a person knowledgeable about the procedure must inform the consenting patient of the risks of, benefits of, and alternatives to the procedure in a manner that the patient can understand. The choice to proceed with the intervention must be voluntary (Hoehner, 2003; Smedstad & Beilby, 2000). Ideally, consent information should be easily understood and patients should be given adequate time to process the information. However, the obstetric anesthesia provider is often not involved in the patient’s care until after the onset of labor (Affleck et al., 1998). The presence of pain, anxiety, exhaustion, activity in the labor suite, and the use of opioid analgesics are some of the obstacles inherent in consenting the laboring mother (White, Gorton, Wee, & Mandal, 2003). Regardless of the impediments to consent, it is the responsibility of the anesthesia provider to obtain consent in accordance with the standards required for a surgical procedure (Black & Cyna, 2006).

The ability of laboring women to recall and understand information given to them regarding the risks of anesthesia is supported in the literature (Affleck et al., 1998; Gerancher, Grice, Dewan, & Eisenach, 2000; Jackson et al., 2000). Affleck et al. (1998) found that the rate of recall of parturients with high pain scores was not significantly different as compared to parturients with low or moderate pain scores. Jackson et al. (2000) published the results of a survey conducted with participants in active labor, which also supported these findings. Retention and recall of facts, which are the
foundation for understanding, are often used to evaluate knowledge (Mayer & Johnson, 2008) even though the “recall of facts during consent may not equate to comprehension” (Broaddus & Chandrasekhar, 2011, p. 912). The ability of women to comprehend risks associated with epidural placement was not affected by labor pain, anxiety, opioid premedication, duration of labor, age, or education (Jackson et al., 2000). The majority of women in this study indicated that they wanted all risks disclosed; however, approximately half (52%) were not interested in the individual incidence rates. The expectation that women could quantify the influence of pain on their comprehension of risks, while actively in pain, is a potential limitation of this study. Despite the evidence supporting the ability to recall risks, many authors support providing education before labor starts in an effort to minimize the effect of pain and distress on the consent process (Bethune et al., 2004; Broaddus & Chandrasekhar, 2011; Fetters et al., 2007; Hoehner, 2003; Paech & Gurrin, 1999; Saunders, Stein, & Dilger, 2006; Swan & Borshoff, 1994; White et al., 2003).

Gerancher et al. (2000) constructed a survey designed to evaluate the ability of women to recall risks discussed in a preanesthesia consultation. Women were randomly assigned to one of two groups, those who received information verbally and those who received both verbal and written information. The authors reported a statistically significant improvement of recall in the intervention group. Surveys were conducted 5-7 months post the anesthetic interview. The authors did not construct a pretest to evaluate level of preexisting knowledge and no demographic data collection was reported. Greater than 90% (76 of 82) of the respondents felt the addition of written information
would have helped them remember the anesthetic risks of and alternatives to the procedure.

The existence of a language barrier further complicates an already challenging consent process. The federal government requires that health care institutions provide their LEP populations access to interpreting services and easy-to-understand print and multimedia materials (U.S. Department of Health and Human Services Office of Minority Health, 2013). Hunt and de Voogd (2007) examined the consent process of an LEP patient population and found that, in the absence of trained interpreters, the quality and quantity of information provided was inadequate. Hunt and de Voogd recommended the translation of informed consent materials into Spanish as a means of improving understanding and reducing communication barriers.

Without a standardized consent form, the decision to include or exclude individual risks in the preanesthetic interview is at the discretion of each individual provider. An anesthesia provider is not obligated to disclose every possible complication. The standard is that a practitioner will disclose “what a capable and reasonable medical practitioner in the same field would reveal to a patient under the same or similar circumstances” (Hoehner, 2003, p. 595). Furthermore, what information an individual parturient wants disclosed may vary from person to person. These factors present challenges to creating an advanced consent education program. However, there is evidence in the literature to suggest some consensus regarding the elements clinicians and patients felt were important to include in the disclosure of risks (Broaddus & Chandrasekhar, 2011).
In a survey of obstetric anesthesia providers in Australia and New Zealand, Black and Cyna (2006) found that postdural puncture headache, block failure, permanent and temporary neurological damage, temporary leg weakness, hypotension, and infection were the most frequently disclosed risks. Provider disclosure rates of individual risks varied depending on the setting. In the antenatal clinic, the percentage of survey respondents reporting disclosure of each of the individual risks was greater than the disclosure rates recorded for consenting in the labor setting. In the antenatal clinic, 10 risks for epidural anesthesia were discussed compared to eight risks in the labor room. This is a cause for concern as it indicates inadequate information for consent during labor and supports the need for antenatal education.

In a survey of 60 laboring women, Jackson et al. (2000) explored what women wanted to know prior to consenting to epidural placement. Interviews were conducted immediately following the request for epidural. All respondents wanted a complete list of potential complications and felt this information would not dissuade them from consenting to the procedure. More than half were not interested in knowing the incidence of the individual complications. Headache and confinement to bed were considered less important, but seizure, death, paralysis, and effects on the baby were considered more important. Bethune et al. (2004) also found that a percentage of women wanted to know every possible complication without regard to rarity, noting that the cutoff of a 1% complication rate for disclosure did not satisfy the majority of women.

**Computer-Based Education and Informed Consent**

The primary goal of patient education is to empower patients to make informed health care decisions (Ryhänen, Rankinen, Tulus, Korvenranta, & Leino-Kilpi, 2012).
Valid informed consent requires the risks of, benefits of, and alternatives to a medical procedure be disclosed in a manner that the patient can understand (Fetters et al., 2007; Schenker et al., 2011). The challenge for health care providers and educators is to find ways to improve information delivery in a cost-effective manner. Pamphlets, handouts, and videos are options for disseminating and standardizing information. However, these are consumable formats and the costs associated with updating and reissuing material can be significant. There is evidence to support the use of multimedia presentations as a means to improve the patient education and consent processes while reducing the costs associated with providing standardized quality information (Farrell et al., 2014; Goldberger, Kruse, Kadish, Passman, & Bergner, 2011).

Bollschweiler et al. (2008) conducted a study to determine if the use of a multimedia-based information program could improve the standard informed consent process. All subjects went through the standard consent process, but the intervention group had access to the multimedia-based information program. The investigators evaluated patients’ perceptions of their understanding of material as well as their satisfaction with the consent format. Although no objective evaluation of patient understanding was conducted, the perception of understanding improved with the intervention. The findings suggest that the consent process can be improved with the addition of the multimedia-based information program. The greatest increase in perceived understanding was found in patients with less formal education.

Keulers et al. (2007) were interested in comparing knowledge levels and satisfaction scores of patients who used computer-based education versus provider-based education. The content delivered was held constant and only the mode of delivery
changed. There was a statistically significant improvement in knowledge-level scores in the intervention group. Satisfaction scores were slightly higher in the control group, but the difference was not statistically significant. These findings suggest that computer-based education may improve knowledge without adversely affecting patient satisfaction.

Subsequent to the literature review for this project, Farrell et al. (2014) performed a systematic review and meta-analysis of the literature on audio-visual information aids for informed consent. Included in the meta-analysis were 29 randomized controlled trials, all of which compared audio-visual interventions to the standard informed consent process. The outcomes of interest were defined as (a) patient recall, (b) patient satisfaction, and (c) anxiety. The authors further explored the impact of adjusting for reading age on the standard informed consent process. They found that audio-visual interventions did not have a statistically significant effect on either satisfaction or anxiety, but the use of audio-visual interventions in the informed consent process improved patient recall. Reading age adjustments also improved short-term patient recall.
METHODS

Literature Search Parameters

A search of the literature was conducted to understand the need, approach, and content for this antepartum labor epidural education project. Databases searched were CINAHL, PubMed, PsycINFO, ScienceDirect, and Academic Search Premier. Racial and ethnic disparities in the utilization and provision of labor analgesia and LEP as a factor influencing epidural use were concepts explored in the literature search (Appendix B). Keywords searched were disparities, utilization, race, ethnicity, labor epidural, neuraxial analgesia, Hispanic population, and limited English proficiency. The search was limited to articles published between 2004 and 2013. Factors affecting the process of consent for labor analgesia were also investigated. Keywords searched were labor epidural, informed consent, and epidural anesthesia. Originally, the search on this topic was also limited to the same 10-year time frame. However, after selecting articles pertinent to this topic, their individual references were explored and resulted in the inclusion of additional articles found in Appendix C. Lastly, a search was conducted on the use of interactive computer-based education programs (Appendix D). Keywords searched were patient education, interactive computer-based education, multimedia, and informed consent.

Educational Content Development and Expert Review

The law requires that providers articulate the risks that a reasonable person would expect to be told (Hoehner, 2003). Each provider is allowed to interpret this directive. Among providers, opinions vary regarding what should and should not be included in the consent process (Middle & Wee, 2009). Development of the education tool began by
selecting a committee of content experts to establish a consensus regarding the scope of material to be presented to the parturient. These experts included two full-time anesthesiologists and five certified registered nurse anesthetists. These providers were selected because collectively they provide greater than 80% of all obstetric anesthesia in the KPPC organization. Providers within the KPPC organization were asked which specific elements of consent they consider standard in their disclosure. The synthesis of the literature review and input from the anesthesia committee members provided guidance for inclusion of risks into the epidural education curriculum.

After development of the draft of the educational module, content experts were again asked to review the information and offer input on appropriate changes. This process was repeated until the committee approved the content. Following content approval, a language concordant provider who had completed the organization’s medical interpretation exam executed a sentence-by-sentence interpretation of the English narration, which was recorded. A different language concordant provider with equivalent medical interpretation qualifications then listened to the recorded Spanish narration and provided sentence-by-sentence interpretation in English to ensure accuracy of the script. The English slide content was translated into Spanish and then back translated to assure accuracy of the presentation.

**Technical Presentation Development**

The presentation was created using the Microsoft Office PowerPoint program, incorporating the principles of Richard E. Mayer’s theory of cognitive multimedia learning. The slides were designed and written using committee-approved language and
content. The language and graphical appearance of each slide was minimized, highlighting only key words, in adherence with the *coherence* and *signaling principles*.

The interactive *arrows* are very difficult to reproduce as fully functional and interactive from operating system to operating system. The most popular operating systems are Microsoft Windows and Apple’s OSX. There are substantial, real, and practical incompatibilities in operating system environments between platforms. Also, there was a desire for this to be accessible from mobile technology, which presented further complications, as none of these technologies offer the same hosting environments for such interactive functionality. For instance, the two most popular mobile platforms are Apple’s IOS and Google’s Android system. The triggers were embedded into the presentation utilizing the tools within the PowerPoint program. Accessibility from multiple points of access then required the presentation to be converted to Flash.

Flash, a popular authoring software developed by Macromedia, is used to create vector graphics-based animation programs with full-screen navigation interfaces, graphic illustrations, and simple interactivity in an antialiased, resizable file format that is small enough to stream across a normal modem connection. The software is ubiquitous on the Web, both because of its speed (vector-based animations, which can adapt to different display sizes and resolutions, play as they download) and for the smooth way it renders graphics. Flash files, unlike animated but rasterized GIF and JPEG files, are compact, efficient, and designed for optimized delivery.

This was accomplished using a program called ISpring. The converted Flash presentation was further embedded within a website page using a Google Embed gadget for Google Sites. Google Site hosts this site with limitation, meaning that it is only
accessible by those with the link. The raw programming code, which was embedded to show the video, had to be edited in order for the video to display properly. This was done by a professional software engineer. The access from multiple points would also require that the user access via a Flash-enabled Internet browser. Most standard desktop Internet browsers are sufficient for the task; however, the mobile device would require a Flash-enabled Internet browser installation such as Photon.

**Health Literacy and Readability**

The slide-printed text and narrated script were then checked and evaluated using the Flesh-Kincaid readability function of Microsoft Word. The grade level was rated an average of 5.3, with the maximum being no higher than a 6.2. The National Institutes of Health recommends that patient education material be written between a fourth-grade and sixth-grade level (Hansberry et al., 2013). It is necessary to note that the inclusion of words such as *epidural* and *anesthesiologist* resulted in the greatest impact on the readability level. Removal of these words brought the presentation to within the recommended levels. As inclusion of these words is germane to the educational material being provided, the decision was made to measure readability with and without these words to assess true readability. Simple definitions were substituted when possible.
PROJECT DESCRIPTION

This project focused on the development of an educational tool. The population for which this educational tool was designed was expectant mothers, some of whom have limited English proficiency. Content experts and language concordant providers reviewed the material to ensure that there were no discrepancies in the quality of content provided to the LEP population.

Details on individual slide content, both English and Spanish, are included in Appendices E and F. Assembly of the presentation resulted in the greater weight of information being delivered within the narration, which was presented in a conversational tone, in adherence to both the modality and personalization principles.

After approval of project content, contact was made with a consultant regarding functional detail and applied implementation of an interactive educational presentation. The method of delivering this presentation in the mixed-platform environments of today’s information technology atmosphere presented the practical challenge of availability to patients within their personal settings regardless of their platform of access. Triggers and animations, in the form of the selection and advancement icons, arrows in this case, were implemented in adherence to the segmenting principle.
DISCUSSION

Obstetric anesthesia is provided by a core group of providers. Because of the KPPC anesthesia department’s policy allowing for self-scheduling, not all providers choose to rotate through the obstetric department. There are five certified registered nurse anesthetists who provide approximately 80% of the obstetric coverage. The certified registered nurse anesthetist covering obstetrics is responsible for obtaining a medical history and providing the consent information as well as performing the epidural. Consent practices vary amongst the providers within this group.

KPPC delivered 2,103 babies in 2012. For the 2013 calendar year, the hospital budgeted for 1,912 deliveries. As of June 30, 2013, the hospital had 974 deliveries, which exceeded the projected deliveries for this time period by 182. In the first 6 months of 2013, more than 650 laboring women received an epidural. Of the 707 vaginal deliveries recorded for the first and second quarter, 84% or 594 of those mothers used a labor epidural for pain management. This is a busy obstetrical unit and providers are often not involved in patient care until immediately before the procedure. The consent process is often started after the patient is in pain and has already made the decision to have an epidural. There is insufficient time for true contemplation of risks and benefits (Schenker & Meisel, 2011).

The use of a standardized peer-reviewed informed consent process may be valuable and improve patient-provider communication (Broaddus & Chandrasekhar, 2011). The ability for repeated viewing makes computer-based patient education a cost-efficient alternative to face-to-face provider-directed education. This education platform has been explored thoroughly in the literature and some studies have demonstrated an
improvement in patient knowledge and understanding (Bollschweiler et al., 2008; Keulers et al., 2007).

The KPPC anesthesia department consists of 20 full-time certified registered nurse anesthetists, five per diem certified registered nurse anesthetists, 10 full-time anesthesiologists, one part-time anesthesiologist, and five per diem anesthesiologists, all of whom have a vested interest in this project. Additionally, the expectant mothers who are Kaiser Permanente members as well as any nonmember women who present to the emergency department in active labor are stakeholders. The obstetric providers, both obstetricians and certified registered nurse midwives, may be affected by this change in practice. The labor and delivery nurses responsible for the individual care of a parturient who requests an epidural for labor analgesia, the Labor and Delivery Department Administrator, and the Maternal Child Nurse Educator all have an interest in any change in practice that impacts their departments.
**RECOMMENDATIONS**

Currently, epidural education is to expectant mothers enrolled in prenatal education classes offered by the KPPC organization. When scheduling permits, an anesthesia provider presents the information on pain management options during labor. If staffing does not allow for the presence of an anesthesia provider, then the prenatal education instructor presents the pain management material. The risks of, benefits of, and alternatives to a continuous labor epidural are presented. The participants are allowed to ask questions of the provider presenting the material. It is recommended that:

1. The use of this labor education tool be piloted at KPPC.

2. Prior to the pilot, additional stakeholder input will be sought from the obstetric providers. After making any changes suggested by the obstetric providers, the presentation should be rewritten in HTML 5, a web-based programming language, for the most effective, reliable, and universally accessible production. In terms of readability and health literacy, usage of a more focused program add-on like the Health Literacy Advisor from the Health Literacy Innovations website for Microsoft Word is recommended by the Medline Plus site through the National Library of Medicine and the National Institutes of Health. However, the final version of this presentation is dependent upon the functional details of Kaiser Permanente’s website. Kaiser Permanente’s information technology department responsible for website management would need to determine if the presentation is compatible in its current format.

3. During the implementation of a pilot project, parturients should be allowed to review the module in lieu of face-to-face education. In addition to the content review questions at the end of the module, mothers should be asked about their satisfaction with
the module. For example, using a Likert scale, some questions might be: “How likely were you to have an epidural prior to the presentation?” “How likely are you now?” and “How satisfied were you with the presentation?”

4. Evaluation of the effectiveness of the module in reducing time to epidural placement from time of request should be conducted. For example, the time from epidural request to procedure start for monolingual Spanish language patients for whom a language line is used for the consent process should be compared to the time from epidural request to procedure start for those who viewed the labor epidural education tool upon arrival to the hospital. The evaluation should also include English language parturients comparing times from epidural request and procedure start of those who received face-to-face education to those who used the epidural education tool.
REFERENCES


APPENDIX A

PERMISSION TO REPRINT FIGURE 1

Subject: Re: CTML Permission to reprint
From: Rich Mayer (rich.mayer@psych.ucsb.edu)
To: ____________________________________________
Date: Saturday, February 22, 2014 9:15 AM

Hi: Thank you for your nice words. You certainly have my permission to reprint the figure for scholarly purposes. Best wishes, Rich Mayer

On Feb 22, 2014, at 7:24 AM, Becky Ashlock wrote:

Dr. Mayer,

My name is Becky Ashlock and I am currently working towards earning my Doctorate in Nursing Practice (DNP). My culminating project, the development of an epidural education module for use in the antepartum period, was created utilizing your CTML principles. I would like permission to use a figure depicting your model within the text of my paper.

I have learned so much reading your work. I appreciate the enormity of your contribution to this field and the implications it has for improving patient education and comprehension.

Thank you for your time and consideration,

Becky Ashlock MSN, CRNA
xxx-xxx-xxxx

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Richard E. Mayer
Department of Psychology
University of California
Santa Barbara, CA 93106-9660
mayer@psych.ucsb.edu
805-893-2472
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### APPENDIX B

## TABLE OF EVIDENCE FOR PROPOSAL

**Limited English Proficiency, Ethnicity, and Race as Factors That Influence Treatment of Pain**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Purpose</th>
<th>Sample /Setting</th>
<th>Key Variables, Design, &amp; Major Outcomes</th>
<th>Conclusions &amp; Limitations</th>
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<tbody>
<tr>
<td>Atherton et al. (2004)</td>
<td>To measure possible racial/ethnic and health insurance coverage differences in labor pain management, specifically epidural use.</td>
<td>Data collected from large national data. Inclusion criteria: women reporting a normal vaginal delivery of a live singleton birth in hospitals during 1999 and 2000. Exclusion criteria: nonlive births, not singletons, or not delivered in hospitals and cases for which interview material could not be matched for race, ethnicity, and insurance information. N = 1,003 cases for analysis.</td>
<td>Key variables: IV = insurance type, race, ethnicity, complications of pregnancy, age. DV = self-reporting of epidural. All variables were binary. Design: Logistic regression model used to estimate the probability of not receiving neuraxial anesthesia for labor pain according to race, insurance type, and ethnicity, while controlling for age and complications of pregnancy.</td>
<td>Major outcomes: Women who received publicly funded insurance were more likely to not receive an epidural for pain control as compared to women with private or no insurance. Race was not a significant risk factor for not receiving an epidural, but ethnicity was strongly associated with not receiving an epidural. Race and ethnicity were observed as significant factors for nonuse of epidural in normal vaginal delivery of singletons. Findings suggest that patients’ insurance type is a factor in predicting labor epidural anesthesia use. Publicly insured mothers are twice as likely to not be offered or denied an epidural procedure for management of labor pain. There is an association between ethnicity and epidural use. Hispanic women were twice as likely not to receive a labor epidural during childbirth as compared to non-Hispanic women. The authors recognized that the influence of culture may impact the decision to have an epidural.</td>
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<tr>
<td>Caballero et al. (2013)</td>
<td>To assess racial/ethnic disparities for neuraxial labor analgesia use and the possible association</td>
<td>Cohort study of subjects who were obstetric patients with vaginal delivery</td>
<td>Key variables: Maternal age at time of delivery, racial/ethnic group, parity, insurer/payer status, preferred spoken language, and neuraxial labor analgesia.</td>
<td>Preferred spoken language mediated the influence of race/ethnicity on neuraxial labor analgesia use. Hispanic</td>
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<tr>
<td>Author/Year</td>
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<td>of spoken language as a mediating factor.</td>
<td>during the 2008 calendar year. $N = 3,129$. University hospital with tertiary obstetric center in northern California.</td>
<td>Design: Retrospective cohort study. Major outcomes: Spanish language and multiparity were independently associated with a reduced likelihood of receiving neuraxial labor analgesia.</td>
<td>ethnicity was associated with a lower rate of neuraxial labor analgesia use but not significant when adjusted for spoken language preference. Language barriers or LEP may be contributing factors in disparities of neuraxial labor analgesia utilization among racial/ethnic groups. Utilization of Spanish interpreter service, the primary language of the health care providers, level of education, income level, obesity, induction of labor, and relevant obstetric factors were not accounted for in the regression model.</td>
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<tr>
<td>Glance et al. (2007)</td>
<td>To address the lack of literature describing associations between race and ethnicity and the use of epidural anesthesia after controlling for socioeconomic and clinical risk factors.</td>
<td>Retrospective cohort study. Data from the New York State Perinatal Database, collected from the Finger Lakes region of New York State between 1998 and 2003. $N = 81,883$.</td>
<td>Key variables: $IV = race$ and insurance status. $DV = epidural$ anesthesia. Design: Retrospective cohort study. Major outcomes: After adjusting for potential confounding variables, Hispanic and Black patients were less likely than non-Hispanic White patients to receive an epidural for labor analgesia. The adjusted odds ratio was 0.85 for White/Hispanics and 0.78 for Blacks compared with non-Hispanic Whites.</td>
<td>Patients with private insurance had the highest rate of epidural use. Black patients with insurance had the same rate of epidural use as White patients without insurance. Presence of insurance did not affect rate of epidural use among Blacks. No information on unsuccessful attempts at epidural placement and if those patients would have</td>
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<td>Jimenez et al. (2012)</td>
<td>To determine whether interpreter use is correlated with quality of pain treatment and patient satisfaction in Latina LEP patients.</td>
<td>Subjects were patients at one of two teaching hospitals. Convenience sampling from larger study. Subjects were hospitalized for obstetric care. N = 185. Only patients requiring pain medication and interpreter services were included. 86% were hospitalized for childbirth.</td>
<td>Key variables: IV = availability of interpreter: not always and always. DV = level of pain control, timeliness of pain treatment, and perceived provider helpfulness to treat pain. Design: Secondary analysis of two cross-sectional surveys. Major outcomes: 27% and 73% reported always and sometimes receiving interpreter services, respectively. Patients who always received interpreter services were more likely to report better pain control (p = 0.02), timely pain treatment (p = 0.02), and increased perceived provider helpfulness to treat pain (p = 0.005).</td>
<td>Use of trained interpreters for LEP patients may result in an increase in self-reported pain control and access to pain treatment. Findings consistent with previous studies. Effective pain management involves more than a response on a pain scale. Use of interpreters may enhance the evaluation of the pain experience in LEP patients. Data were observational and causation cannot be implied. Data collection occurred at discharge. Data collection at the time of clinical experience might influence responses. No record of type of pain and pain treatment received, which may influence patients’ pain experience.</td>
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<td>Orejuela et al. (2012)</td>
<td>To explore the existing attitudes and beliefs regarding epidural analgesia to aid in the development of a</td>
<td>Patients admitted to the University of Texas Health Science Center, Houston, July 1-31,</td>
<td>Key variables: Likert scale questionnaire. Design: Prospective observational study. Major outcomes: Level of education was</td>
<td>Authors theorized that patients with a higher level of education have an increased understanding of the true risks and benefits of the labor</td>
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<td>Author/Year</td>
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<td>Rust et al. (2004)</td>
<td>To measure racial and ethnic differences in the proportion of labor epidural anesthesia use among Medicaid patients.</td>
<td>Medicaid-insured women aged 15 to 44 who delivered vaginally in Georgia. N = 29,833. Medicaid claims data from 1998 State Medicaid Research Files.</td>
<td>Key variables: Age entered as a continuous variable and then categorical, race/ethnicity, urban/rural counties, and epidural use. Design: Retrospective analysis of Medicaid claims data. Major outcomes: Epidural analgesia rates were lower for Black women (49.5%), Hispanic women (35.3%), and Asian women (48.1%) than for White, non-Hispanic women (59.6%). Rural women had lower epidural rates than urban women, 39.2% and 62.1% respectively.</td>
<td>After adjusting for age, urban/rural status, and number of anesthesia providers per capita, race/ethnicity was a significant predictor of epidural use. Patient and provider level factors may have influenced these findings. As maternal age increased, epidural use decreased in all ethnic groups except for Asian women. Medicaid claims data do not allow for extraction of parity, which may influence labor outcomes.</td>
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<td>epidural analgesia. Increasing patients’ understanding will decrease fear associated with neuraxial analgesia use. The impact of the educational tool will be explored in the next phase of the study.</td>
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<td>culturally competent educational intervention.</td>
<td>2009. Inclusion criteria were term singleton pregnancy, cephalic presentation, normal fetal heart rate, and no contraindications to receive epidural anesthesia. N = 50; 32 or 64% identified as Spanish speaking and 16 or 32% identified as speaking both English and Spanish. 80% reported preferred language as Spanish.</td>
<td>related to the request for pain relief in labor. Development of an educational pamphlet addressing the fears and misconceptions regarding epidurals, with associated statistics, explained in simple terms.</td>
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<td>Toledo, Sun, et al. (2012)</td>
<td>To determine if racial or ethnic disparities exist in the proportion of patients who used neuraxial analgesia for labor, initially anticipated using neuraxial analgesia, or made an intrapartum decision to use neuraxial analgesia after controlling for sociodemographic factors.</td>
<td>Convenience sample of laboring women at a large urban academic hospital who met all inclusion criteria. $N = 509$.</td>
<td>Key variables: 21-question survey designed to reveal information about the decision-making process of women regarding labor analgesia use. Survey domains included sociodemographic, clinical, and decision-making measures. Trust in provider was also measured due to its influence on decision making.</td>
<td>Disparities may be related to where a minority patient seeks care. The study setting has an anesthesia care service that sees all parturients after admission regardless of planned mode of analgesia. This practice may influence the overall rate of epidural analgesia and reduce the racial and ethnic differences seen in the literature. Study only evaluated ELP patients and findings may not be generalizable to LEP patients.</td>
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<td>Toledo, Wong, et al. (2012)</td>
<td>To examine factors associated with labor epidural use for pain relief.</td>
<td>EMR data of Hispanic nulliparous women who delivered vaginally. $N = 1,424$.</td>
<td>Key variables: Factors analyzed were age, income, insurance status, marital status, language spoken, and analgesia used. Additional extracted data were type of delivery and anticipated analgesia.</td>
<td>There is a disparity between labor epidural analgesia use and spoken language. Request for epidural was accommodated 96% of the time, indicating results are unlikely associated with a</td>
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<td>Major outcomes: Rate of epidural use was lower for LEP women as compared to ELP women. Multivariate analysis controlling for primary language, marital status, income, insurance status, and age revealed that LEP women were less likely than ELP women to use epidural analgesia. LEP epidural use 66% vs. ELP epidural use 81% ($p &lt; 0.001$).</td>
<td>systems-level issue. Factors possibly contributing to disparity are health literacy, culture, and patient-level factors. Further examination is warranted. Authors’ method of income determination may potentially differ from actual income and therefore association with income and epidural use may be under or over estimated.</td>
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### APPENDIX C

**TABLE OF EVIDENCE FOR PROPOSAL**

**Factors Influencing Labor Epidural Consent Process and Content**

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<thead>
<tr>
<th>Author/Year</th>
<th>Purpose</th>
<th>Sample /Setting</th>
<th>Key Variables, Design, &amp; Major Outcomes</th>
<th>Conclusions &amp; Limitations</th>
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<tr>
<td>Affleck et al. (1998)</td>
<td>To assess patients’ recall of labor epidural risks from education given during active labor.</td>
<td>ASA I and II parturients in active labor who had requested an epidural for analgesia. N = 101. Labor and delivery unit of tertiary-care teaching hospital.</td>
<td>Key variables: Demographic data included age, parity, and attendance at prenatal class. Pain level was recorded. Anesthesia residents trained by an investigator provided intervention. Design: Survey analysis following intervention.</td>
<td>No difference found in recall rates for patients with high pain scores as compared to those with low and moderate pain scores, suggesting that the presence of pain may not be as significant as previously believed. Similar risk recall ability of laboring patients as compared to nonlaboring patients. Level of education, which may have an effect on ability to recall, was not recorded or discussed.</td>
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<td>Bethune et al. (2004)</td>
<td>To assess postpartum women’s awareness of the complications of neuraxial labor analgesia and the level of risk that warranted discussion. To make a comparison between women in Australia and those in the United Kingdom.</td>
<td>Convenience sampling from women who had received epidural analgesia during labor. Women recruited on the first postnatal day. No exclusion criteria. Consecutive selection based on</td>
<td>Key variables: Response to questionnaire. Questions regarding sources of antenatal information on pain relief in labor, awareness of potential complications to neuraxial analgesia, and level of risk information threshold for consenting to a procedure. Information on age, ethnic origin, and level of education were also recorded. Design: Response to questionnaire.</td>
<td>Awareness of complications ranged from less than 10% to greater than 90%. The cutoff of 1% complication rate as the threshold for disclosure did not satisfy the wishes of the majority of women in the sample population. A minority of women wanted to know every possible complication without regard to</td>
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<tr>
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<td>Black &amp; Cyna (2006)</td>
<td>To identify and compare which risks of regional analgesia obstetric anesthesia providers discuss with women prior to and during labor.</td>
<td>Consultant members of the Australian and New Zealand College of Anesthetists who provide obstetric anesthesia and had a current email address. Survey sent to 542 providers; 342 responses received. Of those, 291 were included in analysis. ( N = 291 ). Survey published on Internet; respondents given an ID number</td>
<td>Key variables: Risks reported in labor and in antenatal clinic. Beliefs about informed consent, type of consent obtained, and documentation of consent. Design: Survey, questionnaire. Major outcomes: Postdural puncture headache, block failure, permanent neurological injury, temporary leg weakness, and hypotension were the five most commonly discussed risks. Mean score of number of risks differed between labor and antenatal setting, 8 and 10 respectively. 70% of respondents indicated that they believe active labor impairs a woman’s ability to give fully informed consent. The majority of respondents (80%) obtained verbal consent and</td>
<td>Verbal consent may be appropriate for women in labor. Using standardized forms could provide documentation of the discussion and prompt recall of the risks. The data were the result of survey responses and not observed practices, which may be different. The authors discussed that some respondents reported risk rates associated with spinal anesthesia for surgery, which are greater than those observed</td>
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</table>

Major outcomes: More women in Australia reported getting their information from someone on the obstetric/anesthesia team or from clinic than did women from the United Kingdom. More women in the United Kingdom received their information from the media. The level of risk that women deemed significant to require disclosure varied widely. The majority of women in all three settings considered the benefits of epidural analgesia greater than the potential risks. | Rarity. The authors posited that assessment of at what risk level patients want disclosure should be part of the informed consent process. Improving education before labor starts should be considered to minimize the effects of pain and distress during the consent process. Women were questioned after delivery and administration of labor epidural so the results may not be representative of women in the antepartum period. |
<table>
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<tr>
<th>Author/Year</th>
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<tr>
<td>Gerancher et al.</td>
<td>To determine the recall ability of the parturient and if written consent increased discussion recall.</td>
<td>Convenience sample with consecutive enrollment of laboring women. N = 82. Women admitted to the obstetric department of a U.S. academic hospital.</td>
<td>Key variables: IV = verbal consent and verbal plus written consent. DV = recall scores on 7 questions—5 true risks and 2 false risks. Subjective responses on three questions. Design: Survey with respondents selected 1 of every 5 Major outcomes: Differences in mean recall scores were statistically significant. Verbal plus written had a mean score of 90 as compared to the verbal only with a mean score of 80. Recall of risks was high in both groups.</td>
<td>The authors reported that all but six women felt that written consent would help them remember risks and alternative options. The authors cited both presentation and presenter style as factors known to influence recall and posited that differences in recall rates in other studies may be related to this rather than the inherent ability of the laboring mother. No demographic description of study population. No pretest examining preexisting knowledge differences between groups.</td>
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<tr>
<td>Hunt &amp; de Voogd</td>
<td>To examine the informed consent process when trained interpreters are unavailable.</td>
<td>Convenience sampling. Data collected in Texas from 8 prenatal genetics clinics.</td>
<td>Key variables: Presence of informed consent criteria: (a) voluntariness, (b) discussion of alternatives, (c) adequate information, and (d) competence. Contrasting elements present in LEP patients those patients not requiring an interpreter. Design: Descriptive study. Qualitative data</td>
<td>When trained Spanish interpreters were not present, there were questions regarding the quality of content provided for consent information in the LEP patient population. The authors made some suggestions to improve quality</td>
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<td>Purpose</td>
<td>Sample /Setting</td>
<td>Key Variables, Design, &amp; Major Outcomes</td>
<td>Conclusions &amp; Limitations</td>
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<tr>
<td>Jackson et al. (2000)</td>
<td>To explore what a laboring parturient wants to know about epidural analgesia prior to consent and her self-evaluation of comprehension of those risks to evaluate if informed consent is really achieved.</td>
<td>Convenience sampling of women in labor during daytime only. Survey completed by women requesting labor epidural in active labor. N = 60. University hospital in Ontario, Canada.</td>
<td>Key variables: Data collected included age, level of education, epidural analgesia information source, severity of pain, anxiety level, desire for epidural, level of risk considered significant, ability to understand, previous epidural experience, and administration of opioids. Design: Prospective survey. Major outcomes: The ability to comprehend was not affected by labor pain, anxiety, opioid premedication, duration of labor, age, and</td>
<td>Laboring women want to know all the risks but do not want to have the specific incidences disclosed. Once the request for epidural is made, no disclosure of risks will dissuade a woman from receiving an epidural. Anesthesiologists were the least likely to have provided labor analgesia education to a parturient. The authors discussed the idea that only in</td>
</tr>
<tr>
<td>Author/Year</td>
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<tr>
<td>Middle &amp; Wee (2009)</td>
<td>Assessment of labor epidural informed consent practices in the UK.</td>
<td>Survey recipients were lead anesthetists in obstetric units in the UK. N = 157. Four returned questionnaires were excluded because of an absence of epidural services in</td>
<td>Key variables: Survey interests were obtained of written or verbal consent, which risks were routinely discussed and their associated rate of risk, use of an information card, and opinions regarding a standardized information card approved by the Obstetric Anaesthetists’ Association. Design: Survey response.</td>
<td>There is a wide variation of which risks are routinely explained to parturients and differences in the quoted risk rate associated with each individual complication. Risks reported in greater than 50% of respondents included (a) bad headache, (b) not working or patchy block, (c) pain can an individual adequately comprehend the consequence of continuing labor without intervention. The authors proposed that consent should be completed in two parts—when the patient is pain free, the risks should be presented and when the patient is in pain, the benefits should be discussed. Women who have declined based on risks may change their mind when experiencing the pain of active labor. Women were expected to quantify the influence of pain on their comprehension, while in pain, which was a limitation reported by the authors. Results may not be generalizable to current project population.</td>
</tr>
<tr>
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<tr>
<td>Saunders et al. (2006)</td>
<td>To determine practices and opinions of obstetric anesthesiologists regarding informed consent for parturients.</td>
<td>Survey respondents, all of whom were members of the Society of Obstetric Anesthesia and Perinatology in the United States in the year 2002. N = 448.</td>
<td>Major outcomes: Despite the presence of pain and stress in the labor suite, the majority of respondents, both in academic and private practices (76% and 64% respectively) thought women in active labor can meet the standard for giving informed consent.</td>
<td>Departments with obstetric anesthesia team practices were almost twice as likely to participate in childbirth education. 58% of respondents did not participate in prenatal education. 60% of providers gained written informed consent for epidural analgesia. The majority of providers thought it possible to gain valid consent from a woman in active labor but not optimal. The authors suggested antenatal discussion of anesthesia care whenever necessary.</td>
</tr>
</tbody>
</table>

Major outcomes: Only 11 units (7%) routinely obtained written consent. Verbal consent was obtained in the remaining surveyed obstetrical units. Documentation of verbal consent varied, with the majority documented in the anesthetic chart, patient notes, or a specific epidural chart. 2% of respondents indicated that there was no documentation of verbal consent. 78% of respondents were in favor of standardized consent card.

hpotension, (d) permanent nerve damage, (e) temporary nerve damage, (f) motor block, (g) decreased ability to push and increased risk for instrumental delivery, and (h) backache. Some units provided an exact incidence rate and some qualified risks as ranging from very common to very, very rare.

Some risks disclosed (backache, prolongation of labor) are not fully supported in the literature and continue to be debated amongst practitioners.
<table>
<thead>
<tr>
<th>Author/Year</th>
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</tr>
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</table>

Response bias. Only anesthesiologists were surveyed. No individual characteristics of providers responding collected. None of the respondents were CRNAs.

*Note.* ASA = American Society of Anesthesiologists, LEP = limited English proficiency, ELP = English language proficient, CLAS = Culturally and Linguistically Appropriate Services, CRNA = certified registered nurse anesthetist.
## APPENDIX D

### TABLE OF EVIDENCE FOR PROPOSAL

**Computer-Based Education and Informed Consent**

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Purpose</th>
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</thead>
<tbody>
<tr>
<td>Bollschweiler et al. (2008)</td>
<td>To investigate the potential for an MM-IP to improve the standard informed consent process.</td>
<td>Patients undergoing laparoscopic cholecystectomy, treated at 1 of 4 centers between April 1, 2006, and June 30, 2006. Patients in need of emergent surgery or open cholecystectomy were excluded. N = 76.</td>
<td>Key variables: IV = standard informed consent and standard informed consent with access to MM-IP. DV = perceived understanding, satisfaction with the consent process, and anxiety level. Design: Prospective study. Patients were randomly assigned to the MM-IP group. Major outcomes: 82% of all respondents were satisfied with the standard informed consent process. Perceived understanding significantly improved in the MM-IP group. Preoperative anxiety was not affected. No significant age or gender differences between groups.</td>
<td>Use of MM-IP significantly improved patients’ perceived understanding of treatment. Patients with less formal education (elementary school only) benefited the most from the MM-IP. The impact on patients with less formal education is of particular interest to the epidural education project.</td>
</tr>
<tr>
<td>Farrell et al. (2014)</td>
<td>To systematically review the effects of AV interventions on the informed consent process and to consider the impact of reading age adjustment.</td>
<td>29 RCTs selected from 11,813 abstracts.</td>
<td>Key variables: Interventions included videos (n = 17), computer programs (n = 5), electronic presentations (n = 3), compact discs (n = 3), and websites (n = 2). Design: Systematic review and meta-analysis. Major outcomes: Immediate recall was improved. Satisfaction and anxiety were not</td>
<td>Recommendations for practice include the use of AV interventions to improve recall of the informed consent process. The review did not evaluate the effectiveness of a particular modality.</td>
</tr>
<tr>
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<td>Fox (2009)</td>
<td>To evaluate studies that examined the impact of ICBE programs on patient education.</td>
<td>Medline and CINAHL databases. RCTs meeting inclusion criteria. N = 25.</td>
<td>Key variables: Knowledge gains, clinical benefits, and economic benefits. Design: Systematic review of literature. Major outcomes: 22 of 25 studies supported the effectiveness of ICBE programs to improve knowledge. 7 studies demonstrated that ICBEs were as effective or more effective as education provided by a health care professional.</td>
<td>When ICBEs are properly designed, the positive impact on patient education outcomes is observed. Fiscally sound alternative to provider-directed education. Repeated viewing option contributed to learning. Voice-over and text written to low literacy levels increased the potential for comprehension.</td>
</tr>
<tr>
<td>Keulers et al. (2007)</td>
<td>To evaluate the use of computers as the primary or sole means of patient education.</td>
<td>Clinic patients with CTS. N = 113. Plastic surgery office in a large training hospital in The Netherlands.</td>
<td>Key variables: IV = method of education; control group received education by doctor using standard checklist and intervention group received same content via ICBE. DV = knowledge level and satisfaction scores. Design: Prospective randomized and stratified controlled trial. Major outcomes: Mean knowledge score was greater in ICBE group as compared to doctor group. The increased knowledge score of ICBE group persisted after correction for age, gender, and frequency of computer use. Mean satisfaction scores were slightly greater in the doctor group as compared to the ICBE group, but after correcting for age, gender, and use of same provider with good communication skills and a checklist helped to control for factors in the nonintervention group that might have influenced scores.</td>
<td>Use of an ICBE can allow for greater provider time to be focused on discussion and questions. ICBE use can save time and money without sacrificing patient satisfaction. Results persisted after correcting for age, gender, frequency of computer use, previous CTS operation, previous CTS education, and education level. Use of same provider with good communication skills and a checklist helped to control for factors in the nonintervention group that might have influenced scores.</td>
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<td>Ryhänen et al. (2010)</td>
<td>To explore ICBE in the field of breast cancer and analyze effectiveness of the existing programs.</td>
<td>Systematic review of literature. 14 articles included, representing 2,374 subjects.</td>
<td>frequency of computer use, the difference was not statistically significant.</td>
<td>The results demonstrate that improvements in knowledge may be realized in groups with previous exposure to the material presented. This suggests that benefits may be seen in computer epidural education for women who have previously had an epidural. Limitations: Limited number of studies evaluated. Results suggest ICBE programs can positively impact knowledge level in the study population.</td>
</tr>
<tr>
<td>Schenker et al. (2011)</td>
<td>To systematically review communication interventions to improve patient comprehension in informed consent.</td>
<td>RCTs and CTs without randomization comparing comprehension in consent that used a quantitative, objective measure of</td>
<td>Key variables: Interventions included AV presentations, extended informed consent discussions, written information, and test/feedback techniques. Understanding of procedural risks, alternatives, and outcomes as well as knowledge about the procedure were outcomes found in the literature.</td>
<td>Only 6 of the studies evaluated comprehension of all four elements of consent. In many studies, the subjects were not adequately described. Only 18 studies were considered good; the remaining 26 were rated as fair (10) and poor (16).</td>
</tr>
</tbody>
</table>

AV = audiotape/video; ICBE = Internet computer-based education; RCT = randomized controlled trial; CT = clinical trial; CT = clinical trial.
<table>
<thead>
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</table>

*Note.* ICBE = interactive computer-based education; MM-IP = multimedia-based information program; AV = audio-visual; RCT = randomized control trial; CTS = carpal tunnel syndrome; CT = controlled trial.
SLIDES

Slide 1

Epidural: Your Choice
Information To Help You Make An Informed Choice About An Epidural Procedure.

Slide 2

How to Use this Instructional Slide Show:

After Reading The Information On The Slides Click The Blue Arrow To Move To The Next Slide.
Pain During Childbirth Can Be Different…

- From patient to patient...
- From pregnancy to pregnancy...
- Throughout your labor...
- Because of the size or position of your baby...

Pain Management Options During Labor...

- Breathing Techniques
- IV Pain Medications
- Epidurals
Epidural Anesthesia -

• The Best Pain Relief Method
• Available To Nearly Every Woman In Active Labor

Common Questions...

What Can I Expect With Epidural Anesthesia?

• Pain Relief, Usually Within 15-20 Minutes
• A “Warmth” Or “Heaviness” In Your Legs Can Occur
• Much Of Your Pain Will Be Relieved, But Some Mild Contractions Can Continue
• No Childbirth Is Promised To Be A Pain-free Experience
...And Concerns

Will An Epidural Affect My Baby?

- The amount of medicine that passes to the baby is very small
- This medicine does not affect the baby’s health
- A qualified nurse anesthetist or anesthesiologist will perform the procedure

Common Questions & Concerns

How Long Does The Epidural Last?

- The epidural lasts until your baby is born
- Even if you need a “C section”
- It can last longer if you need your tubes tied.
Common Questions & Concerns

- After the medicine is stopped, the feeling will come back over time
- Don’t get up until the nurse says it’s ok

Will It Hurt?

Some women feel
- Pressure in the back
- Soreness in the area
Slide 11

Common Questions & Concerns

Is It Safe For Me?

YES

Next Slide

Slide 12

Common Questions & Concerns

Is It Safe For My Baby?

YES

Next Slide
Common Questions & Concerns

Discuss Any Questions Or Concerns With Your Labor & Delivery Team

Next Slide

Side Effects & Risks

These Are The Most Common Risks:

- Shivering
- Headache
- A Failed Or Partial (Patchy Or One-sided) Block
- Low Blood Pressure

Next Slide
Slide 15

Side Effects & Risks

There Are Some Very Rare Risks:
- Allergic Reaction
- Nerve Damage

And Even More Rare:
- Seizure
- Coma
- Death

Next Slide

Slide 16

For The Safest Experience...

YOU...
- Should Remain Completely Still During The Epidural
- Cannot Have Family In The Room When The Epidural Is First Placed
- Should Follow Your Nurse Or Doctor’s Instructions

Next Slide
For The Safest Experience…

WE...

• Will Discuss Your Choices For Pain Relief With You Before We Start
• Will Answer Any Questions You Have
• Will Wear A Hat, Mask And Gloves To Protect You From Infection

Next Slide

Slide 18

TRUE OR FALSE?

AS SOON AS MY BABY IS BORN, I CAN GET UP AND WALK

INCORRECT. The medicine takes time to wear off. Ask your nurse for help before you get up.

CORRECT. The medicine takes time to wear off. Ask your nurse for help before you get up.

Next Slide
Slide 19

**TRUE OR FALSE?**

**IF I GET AN EPIDURAL I WON'T FEEL ANY PAIN OR CONTRACTIONS**

**TRUE**

INCORRECT. You may continue to feel some contractions or pressure.

**FALSE**

CORRECT. You may continue to feel some contractions or pressure.

**TRUE**

**FALSE**

Next Slide

Slide 20

**TRUE OR FALSE?**

**MY FAMILY CAN STAY IN THE ROOM WHILE THE EPIDURAL IS PLACED**

**TRUE**

INCORRECT. Family and friends must wait in the waiting area until your nurse says it’s OK.

**FALSE**

CORRECT. Family and friends must wait in the waiting area until your nurse says it’s OK.

**TRUE**

**FALSE**

Next Slide
THE EPIDURAL CAN BE PATCHY (ONE-SIDED) OR FAIL

INCORRECT. It can fail, but if it does, the procedure can be repeated.

TRUE
FALSE

Next Slide

IF I HAVE ANY QUESTIONS ABOUT EPIDURALS, I CAN ASK MY ANESTHESIA PROVIDER

INCORRECT. If I have any questions about epidurals, I can ask my anesthesia provider.

TRUE
FALSE

Next Slide
NARRATION

Slide 1:
Epidural: Your Choice.
Information to help you make an informed choice about an epidural procedure.
Move to the next slide by clicking this blue arrow. You can also move ahead by using the spacebar or touching the blue arrow on your smart phone, tablet or other touchscreen device.

Slide 2:
To use this slideshow, simply read the information on the slides, once you’re finished, click the blue arrow to move you to the next slide.

Slide 3:
Pain can be different during childbirth.
It can be different from patient to patient.
It can change from pregnancy to pregnancy.
It can even change throughout your labor.
It can also change because of the size or position of your baby

Slide 4:
There are many different ways to manage your pain during labor.
Childbirth classes teach breathing and concentration techniques to help minimize pain.
Medical pain relief options include:
IV pain medications and epidurals
Slide 5:
Epidural Anesthesia is the best pain relief method and it’s available to nearly every woman in active labor.

Slide 6:
So what can you expect from epidural anesthesia?
Most patients will experience at least some pain relief within 10 to 15 minutes.
Sometimes, a feeling of “warmth” or “heaviness” can occur in your legs.
Much of your pain will be relieved, but some mild contractions can continue.
No childbirth is promised to be a pain-free experience.

Slide 7:
There are a lot of common questions and concerns with epidural anesthesia.
Will an epidural affect my baby?
Epidural anesthesia is generally safe for you and your baby.
The amount of medicine that passes to the baby from the mother is almost too small to be measured.
Studies have shown that epidurals have no health effects on the baby.
A qualified nurse anesthetist or anesthesiologist will perform the procedure.

Slide 8:
Another common question is: How long does the epidural last?
The epidural lasts until your baby is born,
it can be used if you need a “C Section”.
It can be kept in place longer if you need your tubes tied.

Slide 9:
It may take several hours before you are strong enough to walk so,
do not get out of bed without asking the nurse for help.

Slide 10:
….Will it hurt?
Some women feel pressure in the back.
Some women have soreness in the area of the back
where the epidural is placed- this is normal and the pain will go away with time.
Some women experience back pain with childbirth, even if they do not have epidural anesthesia.

Slide 11:
So, you may ask, is it safe for me?
Yes

Slide 12:
Or- Is it safe for my baby?
Yes
Slide 13:
Be sure to discuss any concerns with your Labor & Delivery team

Slide 14:
There can be side effects or risks with epidural anesthesia
Not everyone has side effects
Shivering can occur and can get worse after delivery.
This can happen without anesthesia, as well.
You might get a headache…sometimes a full day after the epidural
A failed block or a
“patchy“ or “one-sided” block
If this happens, your anesthesia provider can repeat the procedure
Low Blood Pressure, can be treated with medication and IV fluids
Low blood pressure can cause nausea and vomiting

Slide 15:
There are some very rare risks with epidural anesthesia: such as
allergic reactions or nerve damage
and even more rarely, seizure, coma or death.

Slide 16:
For The Safest Experience…
YOU…
Should remain completely still during the epidural
You cannot have family in the room when the epidural is first placed
You should follow your nurse or doctor’s instructions

Slide 17:
For The Safest Experience…
WE…
Will discuss your choices for pain relief with you before we start.
We will answer any questions you have.

HYPERLINK TO MODULE

https://sites.google.com/site/epiduralpresentationashlockb/home
APPENDIX F

EPIDURAL EDUCATION MODULE (SPANISH)

SLIDES

Slide 1

La Epidural: Su Decisión

Información Para Ayudarte A Tomar Una Decisión Informada Sobre El Procedimiento De La Anestesia Epidural.

Slide 2

Cómo Usar Esta Presentación Instructiva:

- Después De Leer La Información En La Diapositivas, Haga Clic En La Flecha Azul Para Pasar A La Siguiente Diapositiva.
El Dolor Durante El Parto Puede Cambiar...

- De Paciente A Paciente...
- De Un Embarazo A Otro...
- Durante El Trabajo De Parto...
- Debido Al Tamaño O La Posición De Su Bebé.

Opciones Para Controlar El Dolor Durante El Trabajo De Parto:

- Técnicas De Respiración
- Los Medicamentos Intravenosos
- Epidurales
La Anestesia Epidural:

- El Mejor Método Para Aliviar El Dolor.
- Disponible Para Casi Todas Las Mujeres En Trabajo De Parto.

¿Qué Puedo Esperar Con La Anestesia Epidural?

- El Alivio Del Dolor, Por Lo General 15 A 20 Minutos Después De La Epidural
- Sus Piernas Pueden Sentirse Pesadas O Calientes
- Gran Parte De Su Dolor Se Aliviará, Pero Algunas Contracciones Leves Pueden Continuar
- No Se Puede Prometer Un Parto Sin Dolor.
...Y Preocupaciones

¿Puede La Epidural Afectar A Mi Bebé?

- La Cantidad De Medicamento Que Recibe El Bebé Es Muy Pequeña
- Este Medicamento No Afecta La Salud Del Bebé
- Una Enfermera Anestesista Calificada O Un Anestesiólogo Llevará A Cabo El Procedimiento

Siguiente diapositiva

Preguntas Y Preocupaciones Más Frecuentes...

¿Cuánto Tiempo Dura La Epidural?

- La Epidural Se Prolonga Hasta Que Nazca Su Bebé
- Incluso Si Usted Necesita Una Cesárea
- Puede Durar Más Tiempo Si Le Van A Ligar Las Trompas

Siguiente diapositiva
Preguntas Y Preocupaciones Más Frecuentes

- Después De Parar El Medicamento, Va A Volver A Sentir Sus Piernas Lentamente
- No Se Levante De La Cama Hasta Que La Enfermera Dice

¿Será Doloroso?

Algunas Mujeres Sienten
- Presión En La Espalda
- Dolor En El Área
Preguntas Y Preocupaciones Más Frecuentes

¿Es Seguro Para Mí?

Sí

Siguiente diapositiva

Preguntas Y Preocupaciones Más Frecuentes

¿Es Seguro Para Mi Bebé?

Sí

Siguiente diapositiva
Preguntas Y Preocupaciones Más Frecuentes

Discuta Cualquier Otra Preocupación Con Sus Proveedores Del Departamento De Maternidad

Efectos Secundarios Y Riesgos

Estos Son Los Riesgos Más Comunes:
• Escalofrío
• Dolor De Cabeza
• Un Bloqueo Fallido O Parcial (En Parches O En Un Solo Lado)
• Presión Arterial Baja
Efectos Secundarios Y Riesgos

Riesgos Poco Comunes:
- Reacción Alérgica
- Daño En Los Nervios

Y Aún Menos Comunes:
- Convulsiones
- Estado De Coma
- Muerte

Para Una Experiencia Más Segura...

USTED ...
- Debe Permanecer Completamente Quieta Durante La Epidural
- No Puede Tener A Su Familia En El Cuarto Cuando Le Coloquen La Epidural Por Primera Vez
- Debe Seguir Las Instrucciones De Su Enfermera O Su Médico
Para Una Experiencia Más Segura ...

VAMOS A...

- Discutir Con Usted Las Opciones Para El Alivio Del Dolor Antes De Empezar
- Responder Las Preguntas Que Puede Tener
- Usar Un Gorro, Un Cubrebocas, Y Guantes Para Protegerla De Cualquier Posible Infección

¿VERDADERO O FALSO?

TAN PRONTO COMO NAZCA MI BEBÉ, YO PUEDO LEVANTARME Y CAMINAR

VERDADERO

INCORRECTO. El medicamento tarda tiempo en salir de su sistema. Pídale ayuda a su enfermera antes de levantarse.

FALSO

CORRECTO. El medicamento tarda tiempo en salir de su sistema. Pídale ayuda a su enfermera antes de levantarse.
Slide 19

¿VERDADERO O FALSO?
SI ME COLOCAN LA EPIDURAL NO VOY A SENTIR LAS CONTRACCIONES O NINGÚN DOLOR.

VERDADERO
INCORRECTO.
Usted puede continuar sintiendo algunas contracciones o algo de presión.

FALSO
CORRECTO.
Usted puede continuar sintiendo algunas contracciones o algo de presión.

MI FAMILIA PUEDE PERMANECER EN LA HABITACIÓN MIENTRAS ME COLOCAN LA EPIDURAL

VERDADERO
INCORRECTO.
Los familiares y amigos deben esperar en la sala de espera hasta que su enfermera diga que está bien.

FALSO
CORRECTO.
Los familiares y amigos deben esperar en la sala de espera hasta que su enfermera diga que está bien.
Slide 21

¿VERDADERO O FALSO?

LA EPIDURAL PUEDE SER PARCIAL O FALLAR

VERDADERO

INCORRECTO.
Puede fallar, pero si esto sucede, el procedimiento se puede repetir.

FALSO

CORRECTO.
Puede fallar, pero si esto sucede, el procedimiento se puede repetir.

VERDADERO

FALSO

siguiente diapositiva

siguiente diapositiva

Slide 22

¿VERDADERO O FALSO?

SI TENGO ALGUNA PREGUNTA ACERCA DE LA ANESTESIA EPIDURAL, LE PUEDO PREGUNTAR AL PROVEEDOR DE LA ANESTESIA

VERDADERO

INCORRECTO.
Por Favor, ¡No Dude En Hacer Preguntas!

FALSO

CORRECTO.
Por Favor, ¡No Dude En Hacer Preguntas!

VERDADERO

FALSO

siguiente diapositiva

siguiente diapositiva
NARRATION

Diapositiva 1:
La Epidural: Su decisión
Información para ayudarle a tomar una decisión informada sobre el procedimiento de la epidural.
Pase a la siguiente diapositiva, al hacer clic en la flecha azul. También puede hacerlo al presionar la tecla de espacio o al tocar la flecha azul en su Smartphone, tableta u otro dispositivo de pantalla táctil.

Diapositiva 2:
Para usar esta presentación, simplemente lea la información en las diapositivas; apenas termine déle clic a la flecha azul para pasar a la siguiente diapositiva.

Diapositiva 3:
El dolor durante el parto puede cambiar:
- de paciente a paciente.
- de un embarazo a otro.
- durante el trabajo de parto.
- y también debido al tamaño o la posición de su bebé.

Diapositiva 4:
Hay diversas maneras para controlar su dolor durante el parto.
Las clases prenatales enseñan técnicas de respiración y concentración para ayudar a reducir el dolor.
Las opciones médicas para aliviar el dolor incluyen:
- Medicamentos por vía intravenosa y epidurales.
Diapositiva 5:
La anestesia epidural es el mejor método de alivio para el dolor y está disponible para casi la gran mayoría de las mujeres en trabajo de parto.

Diapositiva 6:
Entonces, ¿qué puedo esperar con la anestesia epidural?
La mayoría de las pacientes sentirán un poco de alivio del dolor de 15 a 20 minutos después de la epidural.
Algunas veces, sus piernas pueden sentirse pesadas o calientes.
Gran parte de su dolor se aliviará, pero algunas contracciones leves pueden continuar.
Ningún trabajo de parto es completamente libre de dolor.

Diapositiva 7:
Hay muchas preguntas y preocupaciones comunes sobre la anestesia epidural.
¿Puede la epidural afectar a mi bebé?
- La anestesia epidural generalmente es segura para usted y su bebé.
- La cantidad de medicamento que recibe el bebé por medio de la madre es una cantidad muy pequeña como para ser medida.
- Los estudios han demostrado que las epidurales no afectan la salud del bebé.
- Una enfermera anestesista calificada o un anestesiólogo llevará a cabo el procedimiento. Este procedimiento requiere de un buen juicio médico, habilidades/conocimientos especiales, precauciones y tratamientos.

Diapositiva 8:
Otra pregunta común es: ¿Cuánto tiempo dura el efecto de la epidural?
- La epidural se prolonga hasta que nazca su bebé.
- Se puede utilizar incluso si usted necesita una cesárea.
- Puede durar más tiempo si necesita que le liguen las trompas.

Diapositiva 9:
Después de suspender el medicamento volverá a sentir sus piernas con el paso del tiempo, no inmediatamente.
Puede tardar varias horas antes de que pueda volver a caminar, debido a esto, no debe levantarse de la cama sin antes pedirle ayuda a una enfermera.

Diapositiva 10:
¿Será doloroso?
Algunas mujeres sienten presión en la espalda.
Algunas mujeres sienten dolor en el área donde les colocaron la epidural - esto es normal y el dolor desaparecerá con el paso del tiempo.
Algunas mujeres padecen dolor de espalda, incluso sin haber recibido la anestesia epidural.

Diapositiva 11:
Es posible que se pregunte, ¿es seguro para mí? Sí.
Diapositiva 12:
O - ¿Es seguro para mi bebé? Sí.

Diapositiva 13:
Asegúrese de hablar sobre cualquier inquietud que pueda tener con el equipo del departamento de maternidad.

Diapositiva 14:
Pueden haber efectos secundarios o riesgos con la anestesia epidural
No todas tienen efectos secundarios.
- Puede tener escalofríos y estos pueden empeorar después del parto. De igual manera, pueden ocurrir sin la anestesia.
- Le puede dar dolor de cabeza; algunas veces todo el día después de la epidural.
- Puede tener un bloqueo fallido o parcial. Si esto sucede, su proveedor de la anestesia puede repetir el procedimiento.
- Puede tener presión arterial baja y puede ser tratada con medicamentos y suero por vía intravenosa.
- La presión arterial baja puede causar náusea y vómito.

Diapositiva 15:
Hay algunos riesgos muy raros con la anestesia epidural, tales como:
- reacciones alérgicas o daño en los nervios
y aún más raros:
- convulsiones, estado de coma o la muerte.

Diapositiva 16:
Para una experiencia más segura...
USTED ...
Debe permanecer completamente quieta durante procedimiento de la epidural.
No puede tener a su familia en el cuarto cuando le coloquen la epidural por primera vez.
Y debe seguir las instrucciones de su enfermera o médico.

Diapositiva 17:
Para una experiencia más segura...
Vamos a…
Hablar con usted sobre sus opciones para el alivio del dolor antes de empezar.
Vamos a responder las preguntas que pueda tener.
Vamos a usar un gorro, un cubrebocas, y guantes para protegerla de cualquier posible infección.

Diapositiva 18:
¿Verdadero o Falso?
Tan pronto como nazca mi bebé, yo puedo levantarme y caminar
ES FALSO.
- El medicamento tarda tiempo en salir de su sistema. Pídale ayuda a su enfermera antes de levantarse
ES FALSO.
- El medicamento tarda tiempo en salir de su sistema. Pídale ayuda a su enfermera antes de levantarse.

Diapositiva 19:
¿Verdadero o Falso?
Si me colocan la epidural no voy a sentir las contracciones ni ningún dolor.
FALSO
Usted puede continuar sintiendo algunas contracciones o presión.
FALSO
Usted puede continuar sintiendo algunas contracciones o presión.

Diapositiva 20:
¿Verdadero o Falso?
Mi familia puede permanecer en la habitación mientras me colocan la epidural.
FALSO
Los familiares y amigos deben esperar en la sala de espera hasta que su enfermera diga que está bien.
FALSO
Los familiares y amigos deben esperar en la sala de espera hasta que su enfermera diga que está bien.

Diapositiva 21:
¿Verdadero o Falso?
La epidural puede ser parcial o fallar
VERDADERO
Puede fallar, pero si esto sucede, el procedimiento se puede repetir.
VERDADERO
Puede fallar, pero si esto sucede, el procedimiento se puede repetir.

Diapositiva 22:
¿Verdadero o Falso?
Si tengo alguna pregunta acerca de la anestesia epidural, le puedo preguntar al proveedor de la anestesia.
VERDADERO
Por favor, ¡no dude en hacer preguntas!
VERDADERO
Por favor, ¡no dude en hacer preguntas!

Diapositiva 23:
La Epidural, es su decisión.
Gracias.
HYPERLINK TO MODULE

https://sites.google.com/site/epiduralpresentationashlockb/home