PRACTICUM REPORT

Normal Labor and Childbirth: Developing Self-Learning Modules for Newly Hired Case Room RNs

by
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Abstract

Orientation education in the nursing profession is crucial. Newly hired Registered Nurses (RNs) must obtain the knowledge and skills necessary to provide competent and evidence-based nursing care. In the case room of St. John's, NL, many gaps were evident within the orientation process. After performing consultations and a literature review, it was determined that self-learning modules pertaining to normal childbirth and nursing support would be beneficial for newly hired case room RNs. *Knowles' Principles of Adult Learning* and *Benner's Stages of Clinical Competence* guided the process for completing these modules. A series of four modules were created, which include anatomy and physiology of normal pregnancy and childbirth, along with nursing care and non-pharmacological support during each stage of labor. These modules will be piloted in the case room during orientation scheduled for this May to determine their appropriateness and usefulness for newly hired case room RNs and the unit as a whole. By reading these modules, they should be better equipped to further their learning during the orientation period. In addition, they will hopefully be able to provide evidence-based care and support to laboring women, which could lead to better outcomes for mothers, babies, and the organization as a whole.

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Table of Contents

Introduction

Education is essential in the nursing profession, especially during the orientation period. Obstetrics is a highly specialized area of health care (Elgart & Gaffney, 2009). Newly graduated RNs or even seasoned RNs may lack the knowledge and skills necessary to begin working in obstetrics (Godden, 2013; Pennbrant, Nilsson, Ohlen, & Rudman, 2013). According to the Association of Registered Nurses of Newfoundland and Labrador (ARNNL) (2003), orientation education for newly hired RNs is crucial because it ensures these RNs have the knowledge and skills necessary to provide safe and competent care within a new specialty. In the case room of St. John's, NL, there were many gaps identified in the orientation process. For this practicum, self-learning modules were created for newly hired case room RNs pertaining to normal childbirth and nursing support.

Background

The case room in the Janeway hospital of St. John's, NL is part of the Eastern Health healthcare organization of the province. This labor and delivery unit consists of three triage beds, eight birthing rooms, two pre-operative beds, two operating rooms, and two recovery beds. It houses the highest number of births in the province, with an average birth rate of 200 per month. Furthermore, it is the tertiary center for Newfoundland and Labrador where most of the high-risk pregnancies and births are transferred from other areas of the province.

Through working in the case room, it was clear that many gaps existed within the orientation process. The clinical educator in the case room was informally consulted to determine the educational needs. She agreed that gaps existed in the orientation process and improving orientation education was a major need in the case room. More specifically, there were no

written education materials available for newly hired RNs pertaining to normal childbirth and nursing support.

Rationale

Why is education surrounding this topic important? Learning about the basics of normal childbirth will set the stage for further learning in the orientation period. In addition, learning how to provide evidence-based, standardized care during each stage of normal labor is fundamental because it has been associated with better mental and physical outcomes for laboring women (Iliadou, 2012). Furthermore, adequate labor support has been associated with a decrease in the duration of labor and the need for analgesia, and an increase in the likelihood of having a spontaneous vaginal delivery and maternal satisfaction with the childbirth experience (Hodnett, Gates, Hofmeyr, & Sakala, 2009).

Decreasing the rates of cesarean sections and epidural use (Hodnett et al., 2009) are of particular importance. For example, having a cesarean section is associated with an increased risk of infection (Belfort et al., 2010), post-partum hemorrhage (Al-Zirqi, Vangen, Forsen,& Stray-Pedersen, 2008), and poor post-delivery pain management with more narcotics use (Hardy-Faribanks, Lauria, Mackenzie, & Mccarthy, 2013). In addition, newborns that are born via cesarean section have a greater risk of respiratory distress, hospital admission (Kamath, Todd, Glazner, Lezotte, & Lynch, 2009), and type 1 diabetes in childhood (Phillips, Gill, Sikdar, Penney, & Newhook, 2012). The use of an epidural in labor is associated with an increased risk of operative vaginal delivery, hypotension, fever, urinary retention, oxytocin use, and a longer second stage of labor (Anim-Somuah, Smyth, & Jones, 2011).

Since the rates of cesarean sections and epidural use are extremely high in the case room (Canadian Institute for Health Information, 2012; Newfoundland and Labrador Centre for Health

Information, 2011) and these are associated with increased health care costs (Allen, O'Connell, Farrell, & Baskett, 2005; Tracy & Tracy, 2003), decreasing these rates could generate better health outcomes for mother and baby and improve health care costs. Therefore, learning about normal labor and childbirth and the associated nursing support, could generate major benefits for patients and the organization as a whole.

Objectives

The objectives for the practicum project included:

1. Complete and summarize consultations with designated individuals within the case room, such as the clinical educator, manager, novice and experienced case room RNs, an obstetrical resident, and an obstetrician.
2. Complete an extensive review of literature, including orientation education materials pertaining to normal childbirth and nursing support from other healthcare authorities in the province and country.
3. Create self-learning resource modules for newly hired case room RNs pertaining to normal childbirth and nursing support based on the consultations and literature review.
4. Present the practicum to the Memorial University of Newfoundland School of Nursing.
5. Demonstrate Advanced Practice Nursing competencies.

Consultations

After informally consulting the clinical educator and determining a general focus for my practicum project, it was important to formally consult various case room personnel (see Appendix A). From this, I could determine what current orientation included, if there were gaps in the process, and specific directions for the self-learning modules. First, I learned that current case room orientation includes one week of classroom orientation with the clinical educator, four

weeks paired with an experienced case room RN (preceptorship), one week scrubbing in the operating room, and the MoreOB program, which is an online educational program focusing on high-risk labor and delivery (Salus Global Corporation, 2012).

The consultations revealed a negative opinion of case room orientation. Basically, it is incomplete, disorganized, and uninteresting. Certain topics are not reviewed in enough detail, especially those pertaining to normal labor and childbirth. In addition, although written materials are available for high-risk labor and delivery through the MoreOB program, none exist for the normal or low-risk. Case room orientation is also very disorganized where preceptorship sometimes begins before the essential classroom orientation and newly hired RNs do not have a designated preceptor during preceptorship. Lastly, case room orientation is uninteresting because no innovative teaching techniques are used.

A direction for the self-learning modules was also gleaned. Case room personnel suggested that certain topics pertaining to normal childbirth and nursing support would be beneficial, including basic anatomy and physiology of childbirth, internal exams (PV exams), Leopold's maneuvers, patient-centered care, continuous nursing support, epidurals, fetal monitoring, policies, documentation, and unit routines.

Literature Review

Next, a thorough literature search was performed (see Appendix B). The MUN libraries, the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, and The Cochrane Library were searched. Organizations were contacted across the province and country to review their orientation education materials. From this search, information pertaining to undergraduate, continuing, and orientation nursing education, along with normal childbirth and self-learning was obtained and reviewed.

Nursing Education

First, nursing education was reviewed in general and in obstetrics. When completing *undergraduate nursing education*, it is important for students to gain the necessary knowledge and skills to competently care for patients in a variety of settings (Sullivan, Hirst, & Cronenwett, 2009). During this undergraduate nursing education, students must complete courses in maternity and women's health. It is actually an entry-level competency for newly graduated RNs to care for childbearing and laboring women (ARNNL, 2013). However, obstetrics is a very specialized area of health care (Elgart & Gaffney, 2009), thus educational programs have been implemented during undergraduate nursing education to enhance obstetrical knowledge and skills. These programs generated positive results, such as increased knowledge and confidence (Kipnis, 2013; Sittner, Hertzog, & Fleck, 2013).

Continuing nursing education was also reviewed. According to the Canadian Nurses Association (CNA) (2007, 2008b), it is the ethical responsibility of RNs to commit to life-long learning and acquire the necessary knowledge and skills to provide evidence-based care. This is exemplified in the ARNNL's Continuing Competency Program (CCP). Continuing education programs have also been implemented in obstetrics. For example, the CNA (2010) offers a certification program in perinatal nursing. The MoreOB program has been implemented in Eastern Health, with very positive results (Eastern Health, 2014). Other programs have been implemented across the world, which have improved perceptions of unit safety and protocol compliance, with high levels of staff satisfaction (Brimdyr, Widstrom, Cadwell, Svensson, & Turner-Maffei, 2012; Burke, Grobman, & Miller, 2013).

Finally, *orientation nursing education* was reviewed, which is a very unique form of nursing education. Newly hired and newly graduated RNs have tremendous educational needs to

transition from nursing school to the actual work environment (Pennbrant et al., 2013). Seasoned RNs may have experience in one particular specialty but lack the knowledge and skills necessary to begin working in another specialty, such as obstetrics. Therefore, their educational needs may be similar to a newly graduated RN (Godden, 2013). The ARNNL (2003) noted the importance of providing effective orientation education in all specialties and actually published specific guidelines.

To determine what other organizations were using for orientation education in obstetrics, various individuals were contacted across the province and country via e-mail. Although many organizations could not provide their actual materials due to membership limitations, the materials from Eastern Health (case room) and Nova Scotia were obtained. The case room's orientation education materials pertaining to normal childbirth and nursing support were reviewed, which included PowerPoint presentations. Although many important topics were included, these PowerPoint presentations were difficult to assess without a presenter. In addition, no references were provided, which questioned the reliability of the information. The orientation education materials from the Reproductive Care Program of Nova Scotia (2013) were also reviewed. They used PowerPoint presentation with voiceover narration on each slide. The information within the presentation was pertinent and comprehensive. Appropriate references were provided throughout each presentation but there was no clear format for referencing.

Normal Childbirth

Since the practicum focus included normal childbirth, this needed to be defined. The Society of Obstetricians and Gynaecolgists of Canada (SOGC) et al. (2008) defined normal childbirth as those births that occur between 37-42 weeks gestation, in the vertex presentation, with no complications. Certain intervention can occur, such as pharmacological pain

management strategies and artificial rupture of membranes. This definition was used for the practicum project, excluding all interventions except for active management of the second stage of labor with oxytocin.

Self-Learning

It was also determined that self-learning would be the educational method for the practicum project because of a previous positive experience with self-learning materials and a lack of these materials in the case room pertaining to normal childbirth and nursing support. First, it was important to determine if self-learning would be useful and appropriate for the practicum project. Fortunately, educational programs using self-learning materials were found to be very beneficial in other specialties for increasing knowledge, competence, protocol compliance, and user satisfaction (Cilbulka, 2011; Daly, Kermode, & Reilly, 2009; Forfa, 2013; Riley-Doucet, 2008). Self-learning programs were also found to be convenient and cost-effective (Berger, Topp, Davis, Jones, & Stewart, 2009; Riley-Doucet, 2008).

Theoretical Framework

Two theoretical frameworks were chosen for the practicum project: Knowles' Principles of Adult Learning and Benner's Stages of Clinical Competence (see Appendix B). Within *Knowles' (1975) Principles of Adult Learning*, the author believed that adults have unique educational needs and benefit from self-learning. Self-learning is rooted in andragogy, which is essentially the art and science of using yourself as a source of direction and information, thus independently assessing needs and learning what is deemed appropriate. Knowles, Holton, and Swanson (2005) identified six assumptions of adult learners that are applicable for newly hired case room RNs and this practicum project. First, these RNs are adults thus are *motivated* to use themselves as a tool for education, instead of being "taught". In addition, they have *prior life*

experiences, especially from nursing school or other nursing positions that they can relate to the information in each module. RNs will hopefully see the *practicality and relevancy* of this orientation education, as it is directly related to their current situation or developmental task. Finally, the learning abilities and competence of RNs will be *respected* by providing them with the opportunity to learn the information independently.

Benner's (1984) Stages of Clinical Competence was also used to guide the practicum project whereby RNs' level of proficiency develops from *novice, advanced beginner, competent, proficient,* and *expert* through time and experience. Newly hired case room RNs, whether they are newly graduated or have experience in another specialty, will likely start in the novice stage due to their lack of knowledge and skills. Although the self-learning modules will not likely advance these RNs to another stage, it will build a crucial foundation for learning. This will create an easier and smoother transition through the stages.

Methods

A series of four self-learning modules were created pertaining to normal childbirth and nursing support. By extensively reviewing obstetrical textbooks and pertinent research, each module included labor and delivery basics, unit routines, and evidence-based care and support. Images were included throughout each module to enhance learning. Although two images were obtained from other sources and permission was granted for use, all other images were taken in the case room with help from other case room RNs. One image of a woman's placenta was taken in the case room with written consent from the woman. The consent process followed Eastern Health guidelines. This section will include a brief description of each module and a summary of evaluation and implementation of the modules.

Module 1-Anatomy and Physiology of Normal Pregnancy and Childbirth

The first module includes an overview of anatomy and terminology of the female body and pregnancy, anatomy and physiology of normal labor, the stages of labor, and specific labor assessments (see Appendix C). Within anatomy and physiology of normal labor, the five ***P***'s of labor are reviewed, including passenger, passageway, powers, positions, and psyche (Lowdermilk, 2012). The *passenger* includes the fetus thus fetal presentation, lie, position, attitude, and station are reviewed. The *passageway* is discussed, which comprises the maternal pelvis and soft tissues. A detailed description of the *powers* is provided, namely the primary powers (contractions) and secondary powers (pushing). Finally, *positions* and *psyche* are defined briefly because these are discussed in more detail within other modules. Each stage of labor is defined, including the first (latent and active phases), second (latent and active phases), third, and fourth stages. The specific assessments include evaluating uterine contractions, Leopold's maneuvers, PV exams, and sterile speculum exams.

Module 2-Nursing Care and Support for the First Stage of Labor

In the second module, the first stage of labor is reviewed in more detail with a specific focus on continuous labor support and nursing care (see Appendix D). The first stage of labor lasts from the beginning or regular uterine contractions to 10cm or full cervical dilation. It can be divided into two phases: the latent and active phases (Lowdermilk, 2012). The importance of ensuring a woman is in active labor is emphasized in this module because an early admission leads to unnecessary interventions (McDonald, 2010). The admission process and specific unit routine are discussed in detail, which includes setting up the birthing room, beginning the patient chart, obtaining blood work, monitoring the fetal heart rate and contractions, and establishing intravenous access. Next, the importance of providing one-to-one nursing support during labor is

emphasized. This support is divided into categories: emotional, informational, and physical support, along with advocacy (Hodnett et al., 2009).

During the first stage of labor, women experience many emotions, they may feel excited or have high levels of stress, anxiety, and fear. This can increase pain and impede the birth process (Davidson, London, & Ladewig, 2012). By providing adequate *emotional support*, the RN can hopefully decrease anxiety, increase confidence, and empower her to endure labor and give birth (Davidson et al., 2012; Hodnett et al., 2009; Perez, 2002). The RN must also provide *informational support* by giving clear, adequate information on admission about what to expect during labor and updating this information as the labor progresses. This should decrease fear of the unknown and help build a trusting positive relationship with the woman and family (Davidson et al., 2012).

The RN must also provide *physical support* and offer non-pharmacological comfort measures. These include breathing techniques; position changes, such as standing, leaning, sitting, hands and knees, side-lying, and recumbent; hot and cold therapy, such as warm blankets and cold cloths; hydrotherapy, namely baths and showers; massage; monitoring intake and output, such as providing ice chips and encouraging voiding; attending to basic hygienic needs, including changing linens and pads; and creating a relaxing environment with dimmed lights and minimal noise. Finally, the RN must *advocate* for the wants and needs of the woman and family. The woman may have a *birth plan*, which is a written document outlining certain requests and expectations. The RN should try to uphold her requests as much as possible and provide education when these cannot be met (Davidson et al., 2012).

Module 3-Nursing Care and Support for the Second Stage of Labor

In the next module, nursing care and support for women in the second stage of labor is discussed in detail (see Appendix E). The second stage of labor lasts from the 10cm or full cervical dilation to birth of the fetus. It can also be divided into latent and active phases, where the latter begins when the woman is actively pushing (Lowdermilk, 2012). This module provides a guideline for when the woman should begin pushing. This includes when the woman experiences an urge to push, when full dilation is confirmed on PV exam, and when the unit is ready for the birth. Nursing care and support during pushing is also reviewed, with the same categories as the second module. The review of *emotional* and *informational support*, along with *advocacy* are similar to the second module. However, the review of *physical support* and non-pharmacological comfort measures offers different information, such as effective coaching for pushing, including directed versus spontaneous pushing; position changes, like recumbent, side lying, and squatting; hot and cold therapy, including warm perineal compresses and cold cloths; perineal massage; visualization; intake and output, such as ice chips and frequent voiding; and, personal hygienic needs, including cleansing the perineum and changing pads. Finally, the specific process and unit routine for delivery is reviewed in detail.

Module 4-Nursing Care and Support for the Third and Fourth Stages of Labor

The fourth and final module is focused on nursing care and support for the third and fourth stages of labor (see Appendix F). The third stage of labor lasts from the birth of the fetus to the birth of the placenta. Then, the fourth stage of labor commences, where the woman recovers from birth. This generally lasts one to two hours (Lowdermilk, 2012). The unit routine during the third and fourth stages of labor is discussed in detail within this module, including performing the initial baby assessment, admitting the baby in the Meditech system, obtaining

cord gases and cord blood samples, assisting with possible suturing of the perineum, cleansing the perineum, performing a postpartum assessment, disposing the placenta and delivery tray, completing a full baby assessment, and assisting with breast or bottle feeding. Again, *emotional*, *informational*, and *physical support*, along with *advocacy* is reviewed. Physical comfort measures include monitoring intake and output, providing hot and cold therapy, and attending to personal hygienic needs.

Evaluation

Each module contains a case study with several short-answer questions. These case studies are linked throughout each module and follow the birth story of a multiparous woman in labor. Answers to the case study questions are provided at the end of each module. By completing the case study questions and then comparing their answers with the provided answers, newly hired case room RNs can self-evaluate their own learning. Self-evaluation has been successfully used in various clinical settings to assess competence (Mettiainen, Luojus, Salminen, & Koivula, 2014) and level of knowledge (Vickers, Wright, & Staines, 2014). Not only is self-evaluation convenient and cost-effective, like self-learning (Berger et al., 2009; Riley-Doucet, 2008), it fits with Knowles' (1975) *Principles of Adult Learning* because these adults are provided with the tools to assess their own learning.

Implementation

These modules will be piloted in May during orientation for newly hired case room RNs. One printed copy of the modules will be placed with other case room resources. In this way, all case room RNs can have the opportunity to review and benefit from the materials. The modules will also be copied on five CDs and given to the clinical educator. She will distribute these CDs to newly hired case room RNs before they begin orientation. By placing the modules on CDs, it

will reduce paper use and eliminate the cost of printing for Eastern Health. After the modules are piloted in May, the clinical educator plans to evaluate their effectiveness based on user feedback and then determine if the modules should be permanently used during orientation.

Advanced Practice Nursing Competencies

The CNA (2008a) described *Advanced nursing practice* as the combination of graduate education and in depth knowledge and skills in a particular specialty. These individuals demonstrate clinical, research, leadership, consultation, and collaboration competencies. According to Hamric (2009), *Advanced Practice Nursing (APN)* is slightly different than *Advanced nursing practice* because it includes higher educational preparedness, along with direct clinical practice. These individuals demonstrate specific *APN competencies*. By completing this practicum, several of these competencies were exhibited, including consultation, expert coaching and guidance, research skills, and leadership.

Consultation

Consultation is defined as the acquisition of knowledge and expertise from others to enhance practice. Consultations can be formal or informal, which depends on the complexity of the consultation process (Barron & White, 2009). In the beginning of the practicum project, the clinical educator was informally consulted to determine a general focus for the practicum project. Next, various case room personnel were formally consulted to gain more insight into the orientation process. From this, important information was gleaned about the orientation process and a direction for future learning. The clinical educator was also consulted throughout the entire practicum project and provided important resources, such as unit policies. Finally, experienced case room RNs were formally consulted to review each module and determine if the information was comprehensive and appropriate.

Expert Coaching and Guidance

APNs demonstrate *expert coaching and guidance* when they can assist individuals through life transitions. To do this, the APN utilizes self-reflection, along with technical, clinical, and interpersonal competence (Spross, 2009). Throughout this practicum, newly hired RNs have been assisted through a developmental life transition: beginning a career in a new specialty. By reflecting on my past experience with orientation education, using prior technical and clinical knowledge of obstetrics and integrating this with pertinent research, and effectively communicating with case room personnel, self-learning modules were created. These modules will hopefully create an easier transition for newly hired case room RNs.

Research Skills

APNs must possess adequate *research skills*. They can locate, analyze, evaluate, and integrate pertinent research into practice. Therefore, their practice is evidence-based (DePalma, 2009). During the extensive literature review and creation of the modules, pertinent research was analyzed and summarized. By doing this, it will ensure that newly hired case room RNs are providing nursing care and support that is evidence-based. In addition, by completing this practicum and understanding pertinent research, my personal nursing practice will become more evidence-based.

Leadership

APNs demonstrate effective leadership skills by identifying a need for change and developing solutions. APNs are also activists for change thus engender the self-confidence and risk taking ability to champion change (Spross & Hanson, 2009). Throughout the practicum project, leadership skills were demonstrated. First, a need for change was identified: improved orientation education for newly hired RNs, especially related to normal childbirth and nursing

support. Then, the self-learning modules were created as a solution. Generating a group of newly hired RNs that have a specific knowledge base related to normal childbirth and the necessary nursing support, will hopefully lead to more evidence-based care and spark change of practice on the unit. Interestingly, as a results of developing the self-learning modules, I have experienced an increase in confidence to champion change on my unit. For example, other needs for change on the unit were identified by reviewing pertinent literature, such as continuous use of the lithotomy position for delivery. From this newly acquired knowledge and confidence, I will be able to better advocate for my patients, provide evidence-based care, and mobilize others to do the same.

Recommendations

There are specific recommendations for future research and practice. To complete a formal evaluation of the self-learning modules, the clinical educator could give each newly hired case room RNs a questionnaire with likert style questions after the modules are piloted in May. Mettiainen et al. (2014) used this type of questionnaire for nursing students to self-evaluate their level of competence after an educational program. From the results of this questionnaire, the clinical educator could determine if the self-learning modules are appropriate and useful. If so, these modules should be permanently integrated into case room orientation. Finally, due to the lack of written materials in the case room, other self-learning modules could be created pertaining to other important topics, such as breastfeeding or newborn care and assessment.

Conclusion

By completing this practicum project, a valuable educational tool was created to improve the orientation process in the case room of St. John’s, NL. These self-learning modules will set the stage for further learning during orientation and also generate a group of RNs that possess the knowledge and skills to provide evidence-based care and support for normal labor and childbirth.

This could lead to better outcomes for mothers, babies, and the organization as a whole. After being piloted in May, these modules will hopefully become a permanent and valuable adjunct to case room orientation.

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Appendix A
Consultation Report

Consultation Report:

Assessment for the Practicum Project

Memorial University of Newfoundland

Kaitlan Chambers

Introduction

According to Barron and White (2009), *consultation* is the acquisition of knowledge and expertise from other personnel. For this practicum, it was essential to consult key individuals in the case room to examine the effectiveness of the orientation education and identify gaps in this process. It was also necessary to determine what specific information should be included in self-learning modules pertaining to normal childbirth and nursing support. Numerous individuals were consulted, including the manager, the clinical educator, a patient care coordinator, a registered nurse (RN) with training in midwifery, several experienced case room RNs, a newly hired case room RN with experience in another specialty, a newly hired and newly graduated case room RN, an obstetrician, and an obstetrical resident. These individuals were asked to describe the educational process for newly hired RNs on the unit, discuss the effectiveness of this orientation, describe any gaps in the orientation process, and identify topics to include in self-learning modules for newly hired RNs pertaining to normal childbirth and nursing support. These consultations are summarized according to recurrent themes.

Current Case Room Orientation

First, I asked the above individuals to describe the orientation process and its effectiveness and identify gaps within this process. Although they did identify some positive attributes to orientation, such as the full week reserved for scrubbing in the operating room, most of the comments were negative. Three specific words summarize how these individuals perceived orientation: incomplete, disorganized, and uninteresting. The education offered during orientation does not provide RNs with the adequate information to work in the unit. The current clinical educator had experience in the United States where an abundance of information was offered to newly hired RNs, including a very large resource manual and intensive classroom

education. All case room RNs have access to the MoreOB program, which is an excellent resource for high risk obstetrics. However, there are no written materials pertaining to normal childbirth and nursing support.

Almost all individuals also commented on the disorganization of the orientation process. All newly hired RNs should receive formal classroom education before starting preceptorship within the unit. However, due to the unavailability of the clinical educator or the need to organize the classroom orientation so various newly hired RNs could be educated the same time, some RNs have started preceptorship without receiving any formal education. This left one RN feeling overwhelmed and stressed. These newly hired RNs also may be preceptored with different RNs during their orientation. This leads to inconsistent teaching and difficulty becoming familiar with labor and delivery nursing and the unit routines. Finally, many RNs commented on how uninteresting education has been in the past, where teaching methods have not keep newly hired RNs excited and engaged in the material.

Topics for Self-Learning Modules

When asking these individuals what should be included in the self-learning modules pertaining to normal childbirth and nursing support, various suggestions were offered. First, the "basics" need to be covered, including the anatomy and physiology of pregnancy and childbirth. Several RNs identified internal examinations (PV exams) and Leopold's maneuvers as specific skills that are key to labor and delivery nursing. Education with visual aids should be provided to help newly hired RNs become familiar with these skills before starting work in the case room. One experienced RN believed that visual aids, such as videos, could be incorporated into the modules for all topics. This innovative teaching strategy would ensure that newly hired RNs remain interested and engaged.

Several RNs also believed the modules should be linked to case room policies to ensure newly hired RNs understand exactly what is expected within the unit. This should include an overview of proper documentation, as the multiple forms and lengthy paper work for each patient can be confusing and overwhelming. One RN also believed specific unit routines should be reviewed, which could include a checklist to ensure certain tasks are completed for each patient. For example, when admitting a patient to the unit, a checklist could be available so newly hired RNs can identify what assessments, tasks, and documentation need to be completed.

With regards to the nursing care associated with normal childbirth, these individuals believed that it is very important for care to be patient-centered thus the woman's opinions and decisions are fundamental and guide nursing care. Informed consent must always be obtained from women before interventions. It is also important for newly hired RNs to understand that caring for the patient is of utmost importance and the RN must constantly be with the laboring woman to provide continuous support. Other tasks, such as documentation should never minimalize patient care. In addition, if a woman has an epidural, RNs need to understand how to care for these patients, thus education on epidurals is important.

However, newly hired RNs must also understand how to provide support and comfort measures for women who do not have an epidural. For example, newly hired RNs should have a strong knowledge base of the medications that are offered in the case room for pain, including their mechanism of action and side effects. Additionally, position changes for pain relief and progression of labor were highlighted as a key aspect of case room nursing that newly hired RNs must understand. Several RNs also believed that education for electronic fetal monitoring and intermittent auscultation should be included in orientation. Finally, two RNs believed that

immediate postpartum nursing care should be reviewed, including newborn care and the newborn assessment.

Conclusion

As can be concluded from the above summary of the consultations, there are many gaps in the orientation process. Many individuals feel that orientation is incomplete, disorganized, and lacks adequate teaching methods to ensure newly hired RNs are interested and engaged. Several suggestions were offered by theses individuals to determine the topics needed in the proposed self-learning modules. By completing these consultations thus identifying gaps and suggested topics, better orientation for newly hired RNs will be possible, which reflects the true needs of the unit.

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Appendix B
Literature Review

Literature Review:

Self-Learning Modules for Newly Hired Case Room RNs

Kaitlan Chambers

Memorial University of Newfoundland

When a registered nurse (RN) is newly hired within a particular specialty, he or she will need to gain new knowledge and master new skills. In the case room within the Janeway hospital of St. John's, NL, newly hired RNs are offered various opportunities for education. However, certain gaps are evident within this orientation process. Self-learning modules pertaining to normal childbirth and nursing support have been chosen as a beneficial solution to this problem. This paper will include a brief summary of orientation education in the case room; a detailed review of literature pertaining to undergraduate, continuing, and orientation nursing education in general and within obstetrics; and, an overview of the self-learning modules, the self-learning method, and the chosen theoretical framework.

Orientation Education in the Case Room of St. John's, NL

The case room in the Janeway hospital of St. John's, NL is part of the Eastern Health healthcare organization of the province. This unit consists of three triage beds, eight birthing rooms, two pre-operative beds, two operating rooms, and two recovery beds. It houses the highest number of births in the province, with an average birth rate of 200 per month. Furthermore, it is the tertiary center for Newfoundland and Labrador where most of the high-risk pregnancies and births are transferred from other areas of the province.

When RNs are newly hired in the case room, various opportunities for education exist. First, all these RNs would have completed obstetrical courses during nursing school to ensure they possess entry-level competencies within this specialty (Canadian Nurses Association, 2013a). From this, they would have learned the basic information about labor and delivery nursing. To expand this knowledge, newly hired case room RNs are offered one week of classroom orientation, where many pertinent topics are reviewed. These RNs then complete a preceptorship where they are paired with an experienced case room RN for five weeks and learn

how to care for obstetrical patients in various clinical situations. Within these five weeks, newly hired RNs spend a full week in the operating room learning how to scrub for cesarean sections and other obstetrical surgeries. Furthermore, all RNs within the unit are enrolled in the Managing Obstetrical Risk Efficiently (MoreOB) program.

Gaps in the Case Room's Orientation Process

To determine the effectiveness of the orientation process, various members of the case room team were consulted. First of all, it was determined that obstetrical education in nursing school does not provide adequate information to start working in this specialty area. This is supported by Kipnis (2013) who believed that undergraduate nursing programs generally offer courses in maternal and newborn care but this education may not be enough. Of course, newly hired case room RNs have the opportunity for further education during the orientation period, especially within the classroom lectures on the unit. However, as voiced by many case room RNs, there are gaps in the orientation information and important topics are not discussed in enough detail or at all.

Moreover, due to the unavailability of the clinical educator, RNs may start their preceptorship on the unit without the valuable classroom education. This was the case for a recently hired RN. She believed that starting work in the area without any formal education or reading materials, left her very overwhelmed and confused. She was given access to the MoreOB program, which provided excellent learning materials for high-risk obstetrical care but lacked information pertaining to normal childbirth and nursing support. Many of the experienced case room RNs also feel that newly hired RNs are not provided with adequate, standardized orientation education pertaining to normal childbirth and nursing support. Therefore, they may lack the knowledge and skills necessary to provide optimal nursing care during this event.

Literature Review

Orientation education has been highlighted as a priority for the case room and a program should be implemented to address this needs. Before starting to develop any program, important literature must be reviewed to gain a clear understanding of the material and help guide its development (McKenzie, Neiger, & Thackeray, 2013). To perform this literature review, textbooks were retrieved from the Memorial University of Newfoundland (MUN) libraries and healthcare databases were searched, including the Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, and The Cochrane Library. When searching these databases, key words, such as “education”, “orientation”, “nursing”, “obstetrics”, “labor”, “normal childbirth”, and “self-learning” were used.

Nursing Education

In the early 1970’s, Cooper and Hornback (1973) believed that our culture was undergoing a “knowledge explosion” that affected all professions, including nursing. An increased emphasis was placed on educating RNs and providing them with an adequate knowledge base, instead of merely training them to complete various tasks and perfect numerous skills (Waldner & Olson, 2007). Whether individuals are learning the basic knowledge in an undergraduate nursing program, continuing their learning as an experienced RN, or learning new knowledge during orientation within a new specialty, education is crucial to the nursing profession.

Undergraduate nursing education. In any undergraduate nursing program, it is important for students to gain the necessary knowledge and skills to competently care for patients in a variety of settings (Sullivan, Hirst, & Cronenwett, 2009). In general, nursing students must gain basic theoretical knowledge, while also practicing within a clinical setting.

For example, Memorial University of Newfoundland (MUN) (2013) combines a variety of innovative teaching techniques within the Bachelor of Nursing Program to provide students with theory-based knowledge through classroom courses and hands-on experience through laboratory training with simulation and clinical placements. An undergraduate nursing program is the crucial first step in nursing education, as it is the first opportunity for RNs to gain a specific knowledge base that can act as a foundation for further learning in the profession.

Undergraduate nursing education in obstetrics. All RNs, including those in the case room, would have completed either the undergraduate or diploma nursing program, with the former replacing the latter in recent years. This would have been their first experience with obstetrical nursing education. The Association of Registered Nurses of Newfoundland and Labrador (ARNNL) (2013) asserted that an entry-level RN must have the knowledge and skills necessary to care for individuals across their lifespan, including those applicable to obstetrics. MUN currently offers a Maternity and Women's Health course in the undergraduate program that consists of classroom lectures, laboratory training with simulation, and an 80-hour clinical component.

Nevertheless, obstetrics is a very specialized area of nursing care, especially within the intrapartum period (Elgart & Gaffney, 2009), and increased emphasis may need to be placed on undergraduate education within this field. Programs have been implemented to address this need. In Nebraska, Sittner, Hertzog, and Fleck (2013) developed a simulation-based program to help student nurses transfer didactic knowledge to a clinical scenario and improve their hands-on skills. From this program, students gained a better understanding of the classroom material and more confidence when performing obstetrical skills. Kipnis (2013) also created and evaluated an obstetrical program for student nurses in California, which consisted of a 3-hour lecture on

continuous labor support. From pre- and post-test scores, it was determined that these students experienced a significant increase in knowledge related to labor support and coaching.

Continuing nursing education. On the other end of the spectrum, all RNs are now involved in continuing education. According to the Canadian Nursing Association (CNA) (2014), “Canadian RNs are accountable for providing competent nursing care, which means they must maintain and continuously enhance the knowledge, skills, attitude and judgment required to meet client needs in an evolving health-care system”. In other words, it is the ethical responsibility of RNs to continue acquiring the necessary knowledge and skills to adequately care for their patients (CNA, 2008) and ensure their practice is evidence-based (CNA, 2007). This idea is exemplified in the ARNNL’s Continuing Competency Program. Within this program, all RNs in the province must complete a self-assessment based on the ARNNL’s standards of nursing practice, identify areas for improvement or learning, develop a learning plan with specific learning activities that include seven hours each of formal and informal education, and evaluate the entire process. By completing the Continuing Competency Program, RNs are dedicating the required amount of time towards continuing their education within the profession, thus committing themselves to life-long learning. In this way, RNs will gain current and evidence-based knowledge, which can be translated into more safe and competent care for the public.

Continuing nursing education in obstetrics. Continuing education for staff RNs has also been emphasized in obstetrics and many programs have been implemented to address this need for education. For example, the CNA (2010) created a specialty certification program in perinatal nursing, which includes competencies related to preconception, antepartum, intrapartum, and postpartum care. Within this program, RNs learn the necessary information

from specific resources and complete a certification exam to ensure adequate and pertinent knowledge was obtained. When RNs become certified within a particular specialty, they are proving to employers, colleagues, and the general public that they are committed to learning and providing the best care possible (CNA & NurseONE).

Canadian obstetrical RNs are also involved in the Managing Obstetrical Risk Efficiently (MoreOB) program. This program consists of online learning modules, classroom sessions, and simulation drills to improve knowledge levels and competence of staff within an obstetrical care setting. By completing this program, RNs can learn the skills necessary to care for patients during high-risk obstetrical situations (Salus Global Corporation, 2012). The MoreOB program was implemented in the case room four years ago. Since then, there has been a decrease in the caesarean section rate by 6.5%, the post-partum hemorrhage rate by 14.5%, and newborn shoulder damage from delivery by 33%. Also, the staff are highly satisfied with the program (Eastern Health, 2014). MoreOB is an example of how continuing education programs thus life-long learning are beneficial for the health care team and the public.

Other programs related to continuing education in obstetrics have been created in other countries, such as the United States. For example, Burke, Grobman, and Miller (2013) created a program similar to MoreOB in Chicago to increase interdisciplinary communication between physicians, midwives, and RNs during high-risk obstetrical situations. The program consisted of didactic classroom lectures and hands-on simulation sessions. The results revealed very high levels of satisfactions with the program and an increase in the perception of safety on the unit. In Egypt, Brimdyr, Widstrom, Cadwell, Svensson, and Turner-Maffei (2012) also created an educational program for all staff on an obstetrical unit, which included five days of intense education via classroom lectures, demonstrations, videotaping and review of actual practice, and

discussion to promote and improve skin-to-skin contact between the mother and newborn immediately after delivery. These authors found that this program significantly improved the adherence to the skin-to-skin protocol.

Orientation nursing education. Education for newly hired RNs lies somewhere in the middle of this nursing education spectrum. Whether RNs are newly graduated and starting work in a particular clinical area or experienced and starting work in a new setting, specific and unique education may be necessary for these individuals. Transitioning from nursing school to the actual work environment can be very challenging for the inexperienced nurse (Pennbrant, Nilsson, Ohlen, & Rudman, 2013). Even though RNs may be newly hired in an area where they have some previous experience thus require less education (Carcich & Rafti, 2007), they may lack the knowledge and skills associated with the new specialty. Therefore, their educational needs may be similar to that of a newly graduated RN (Godden, 2013).

According to the ARNNL (2003), it is imperative to provide adequate orientation education to ensure safe, competent care and retention of newly hired RNs. In fact, the ARNNL created best practice guidelines for orientation education in the province. Within these guidelines, the ARNNL asserted that orientation environments must be supportive to aid the transition and reduce stress levels; adequate material, financial, and human resources must be available; goals and objectives must be clearly outlined and competency-based; preceptorship and ongoing mentorship with experienced RNs is essential; adult-learning theories and principles must guide the development and implementation of these programs; opportunities for increased learning should be identified and used as “teachable moments”; and, newly hired RNs must be involved and seek opportunities to meet their learning needs.

Orientation nursing education in obstetrics. It can be determined that orientation education for newly hired RNs is important within all areas of health care and at any point in a RN's career. Since obstetrics is very specialized (Elgart & Gaffney, 2009), sufficient orientation education is even more essential as RNs must obtain a very specific knowledge and skills base. Many organizations have created and implemented orientation education programs for newly hired obstetrical nurses to address this need. To determine what has been done in the case room and other areas for orientation education in obstetrics, materials from organizations in the province and country were obtained and reviewed. Even though many institutions could not provide their actual educational materials, as individuals need a membership to access the information, some orientation packages were acquired.

Orientation education in the case room of St. John's, NL. First, the orientation education materials from the case room pertaining to normal childbirth and nursing support were reviewed, which consist of PowerPoint presentations on each topic, including normal labor, vaginal delivery, abdominal palpation, GBS management, intermittent auscultation, and newborn care. In all topics, the aims or objectives of the PowerPoint presentations were not stated and references were not provided. Most of the information appeared to be based on fact but no references were available to verify. Regarding content, most topics encompassed relevant information and it was relatively easy to understand. Although the format of PowerPoint generally requires a presenter to explain the content and provide further information, the slides were not accompanied by additional information thus key points were highlighted with no further written explanation. Therefore, the PowerPoint presentation alone may be difficult to understand for someone new to obstetrical nursing.

All PowerPoint presentations also had graphs, tables, and/or images. Most were labeled correctly, relevant, visually appealing, and contained an explanation. The general image of the materials was also very appealing. The font was consistent throughout each presentation and there was adequate contrast between the words and background thus it was easy to read. Also, the materials were appropriate and sensitive to the culture of the province. Overall, the educational materials from the case room encompassed valuable information pertaining to normal childbirth and nursing support. However, certain topics, such as nursing support in normal labor could have been covered in more detail with more evidence-based information. This is congruent with the results of the consultations, where many RNs believed the information included in classroom orientation was essentially incomplete.

Orientation education in Western Health. Beth Crummy, the clinical educator for obstetrics within the Western Health healthcare division of the province, was contacted and provided information into their orientation process. They are currently using the Association of Women's Health, Obstetric, and Neonatal Nurses' (AWHONN) (2013a) Perinatal Orientation and Education Program (POEP). This program contains ten modules with evidence-based information that is intended to adequately orientate newly hired RNs. Although the actual program materials could not be accessed due to cost and membership restrictions and no research has been done by other organizations to determine the effectiveness of this program, AWHONN (2013a) claims that this program will "reduce risk and errors, increase staff efficiency, provide consistency in care, drive better patient outcomes, improve staff competency, [and] build the knowledge and skills of [healthcare] team[s]" (p.1). During orientation to obstetrics in Western Health, these modules and the associated PowerPoint presentations are reviewed.

Orientation education in Nova Scotia. Next, educational materials from Nova Scotia were accessed and reviewed. Leeanne Lauzon, the Perinatal Nurse Consultant for that province, was contacted and provided a website link to an educational resource created by the Reproductive Care Program of Nova Scotia (2013) for all RNs in that province. This website contains PowerPoint presentations with voiceover narration and can be accessed by the general public for free. The presentation topics pertaining to normal childbirth and nursing support include: labor and birth, supportive care, postpartum care, newborn assessment, and breastfeeding.

First, the overall aims and objectives within each presentation were clearly identified and appropriate for each topic. The information was very thorough, and many appropriate topics pertaining to normal childbirth and nursing support were covered in detail. The stated aims and objectives within each topic were clearly achieved. Important points were highlighted throughout the presentations by changing font and using symbols, and reiterated at the end of each presentation through a summary of key points and quizzes/exercises. The information seemed to be evidence-based with very little bias, as references were usually provided and the author did identify gaps in the research on several occasions. References were often provided for additional sources, allowing the reader to expand their knowledge on a particular topic. However, in some instances, references were not provided within the document or at the end and there was no clear format for referencing.

The overall readability of the materials was very good. The information was written in plain language with minimal medical jargon, thus easy to read for anyone interested in learning about obstetrics. Key points were written in the presentations and accompanied by voiceover narration for each slide. The voiceover was very clear and easy to understand, and in

combination with the written material, would help the reader fully understand the material. The only disadvantages to the voiceover narration is that readers need to have access to audio on a computer, which may be unavailable, and the voiceover needs to be activated or "clicked" on each slide, which can be inconvenient.

The overall image or visual of the material was also very appealing. There was adequate contrast between the words and background, making it easy to read. There were also many images throughout the presentations, including photographs, diagrams, graphs, and tables. These images were very appropriate to the material, conveyed the desired message, were adequately explained within the text or voiceover narration, and were generally labeled. However, these images were sometimes not referenced. Furthermore, the image and content of the material seemed to be appropriate to the culture and society within that province. Overall, the Reproductive Care Program of Nova Scotia (2013) has created materials that are easily accessible, appropriate, evidence-based, and thorough. This province has employed innovative teaching techniques to provide a widespread audience of health care professionals with suitable and easy-to-understand information pertaining to normal childbirth and support.

Orientation education in Ontario. Representatives from Ontario were also contacted to determine what orientation education was currently being offered in that province pertaining to normal childbirth and nursing support. France Morrin, the Perinatal Consultant in Ottawa, and Gwen Peterek, the Perinatal Nurse Consultant for Southwestern Ontario, were contacted and responded to my request for information. Although neither could provide their actual orientation education materials, they did send an outline of their programs with specific learning objectives.

In Ottawa, the Perinatal Professional Development Program is offered to all RNs being oriented to this specialty. This program combines classroom lectures with a hands-on clinical

component. Modules in this program pertaining to normal childbirth and nursing support include: labor process, labor support, fetal heart monitoring, breastfeeding, and immediate newborn care (The Ottawa Hospital et al., 2012). Although the actual materials could not be reviewed, and no research was performed to determine the effectiveness of the program, the learning objectives seemed to encompass the important aspects of normal childbirth and nursing support.

In Southwestern Ontario, the Perinatal Outreach program is used to orientate newly hired RNs to that specialty. By utilizing videoconferencing technology, individuals in rural areas of Southwestern Ontario can avail of this educational opportunity, without extra costs and travel. The program consists of PowerPoint presentations, DVDs, and discussions. When reviewing the learning objectives for this course, many of the important topics pertaining to normal childbirth and nursing support seemed to be covered. However, the objectives were very broad, thus it was difficult to determine what specific information is included. Also, no research has been completed to determine the effectiveness of this orientation education program.

Orientation education in Saskatchewan. Francesca Carteri-Bitz, the clinical educator for obstetrics in Regina, was also contacted for the purposes of this review. She mentioned a valuable resource that is used during orientation associated with normal childbirth and nursing support: AWHONN's High-Touch Nursing Care During Labor DVD set. Although it could not be accessed and reviewed, AWHONN (2013b) claims that these videos will show RNs how to provide evidence-based nursing support during each stage of labor, including information on adequate positioning and coaching. Moreover, this type of education is flexible for teaching and self-learning.

Orientation education in Alberta. Finally, Ann Hense, a perinatal clinical educator with the Alberta Perinatal Health Program, was contacted and provided me with information on their orientation education program: Strategies for Teaching Obstetrics to Rural and Urban Caregivers (STORC). This program was created to educate all obstetrical health care professionals in urban and rural centers across Alberta. Although the actual materials could not be accessed and reviewed and the effectiveness of the program has not been studied, a list of the 40 modules were provided, which seemed to cover all aspects of obstetrical nursing and included many topics pertaining to normal childbirth and nursing support (Alberta Perinatal Health Program, 2013).

Self-learning Modules

From the above review, it can be determined that within the case room and other organizations across the province and country, unique and innovative programs have been implemented to provide obstetrical orientation education. Orientation education for newly hired case room RNs presents many gaps and new strategies need to be implemented to ensure these RNs are adequately educated in this specialty area. In collaboration with Krista Kinsella, the clinical educator in the case room, it has been determined that self-learning modules can address this need for further education on the unit. Normal childbirth and nursing support has been chosen as a key area for orientation education, thus will be the focus of the self-learning modules.

The Society of Obstetricians and Gynecologists of Canada (SOGC) et al. (2008) uses the term “normal childbirth” when the infant is born vertex at 37-42 weeks gestation, but there may be certain interventions from health care professionals, including pain management, augmentation of labor, artificial rupture of membranes, fetal heart rate monitoring, and active management of the third-stage of labor (oxytocin). Also, there must be no complications for the

mother or baby. This definition, excluding all these interventions, will be used for this practicum and the associated self-learning modules will be developed based on this description.

Understanding normal childbirth and nursing support will set the stage for further learning during orientation because knowing about the normal process of childbirth is crucial to understanding how to provide competent obstetrical nursing care. Also, according to Iliadou (2012), learning how to provide evidence-based, standardized care during each stage of normal labor is fundamental because it has been associated with better mental and physical outcomes for laboring women. Furthermore, adequate labor support has been associated with a decrease in the duration of labor and the need for analgesia, and an increase in the likelihood of having a spontaneous vaginal delivery and maternal satisfaction with the childbirth experience (Hodnett, Gates, Hofmeyr, & Sakala, 2009).

Since adequate labor support is associated with decreased rates of cesarean sections and the use of analgesia, such as an epidural (Hodnett et al., 2009), it is important to highlight the implications of these interventions. Having a cesarean delivery as compared with a spontaneous vaginal delivery is associated with increased rates of infection (Belfort et al., 2010), post-partum hemorrhage (Al-Zirqi, Vangen, Forsen,& Stray-Pedersen, 2008), poor post-delivery pain management with more narcotics use (Hardy-Faribanks, Lauria, Mackenzie, & Mccarthy, 2013), sleep disturbances, exhaustion, and bowel issues (Thompson, Roberts, Currie, & Ellwood, 2002). Not only do women have an increased risk of infertility after a cesarean section (Tollanes, Melve, Irgens, & Skjaerven, 2007), subsequent pregnancies and deliveries are associated with an increased risk for anemia, uterine rupture, placental abruption, and a hysterectomy (Jackson et al., 2012). Furthermore, infants born via cesarean section may have an increased risk of respiratory distress and hospital admission (Kamath, Todd, Glazner, Lezotte, & Lynch, 2009).

Interestingly, in this province, cesarean sections have also been linked to a greater risk of type 1 diabetes in childhood (Phillips, Gill, Sikdar, Penney, & Newhook, 2012). Although the implications of having an epidural may be less, this procedure is still associated with an increased risk of operative vaginal delivery, hypotension, fever, urinary retention, oxytocin use, and a longer second stage of labor (Anim-Somuah, Smyth, & Jones 2011).

There are remarkable implications associated with certain interventions during childbirth and adequate labor support can decrease the incidents of these interventions. These findings are important for the case room because, from 2009-2010, Newfoundland and Labrador experienced the highest increase in epidural use in the country (38.3-45.1%) (Canadian Institute for Health Information, 2012). In 2010, the rate of cesarean birth in Eastern Health was 33.4% (Newfoundland and Labrador Centre for Health Information, 2011) and any rate over 15% is considered overuse (Gibbons et al., 2010). Not only can interventions, such as a cesarean section, pose major health risks to mother and baby, high rates of cesarean births (Allen, O'Connell, Farrell, & Baskett, 2005) and epidural analgesia (Tracy & Tracy, 2003) can greatly increase health care costs. Therefore, a decrease in these rates could lead to better outcomes for patients and significant savings for Eastern Health.

Self-Learning Education in Practice

Since the self-learning method will be used in the case room to improve the education process, it is important to determine if it can address the problems and the needs of the unit. Many programs have recently been implemented that utilize self-learning with mainly positive results. Forfa (2013) created a self-learning program to increase the ability of dialysis RNs to recognize different cardiac rhythms. Several learning modules were developed, printed, and given to each dialysis RN. From pre- and post-test results, the RNs' knowledge of cardiac

rhythms increased and their competence to care for these patients improved. Cilbulka (2011) also utilized self-directed learning but in combination with a practicum component to teach RNs about research ethics. This program was also found to increase the RNs knowledge base. In addition, these RNs were highly satisfied with the entire program, including the self-learning component. Within a self-learning program for RNs to become preceptors for nursing students, Riley-Doucet (2008) also found that RNs experienced an increase in knowledge and were highly satisfied with the program.

When initiated before formal education, Nishiyama et al. (2009) found that self-learning is also effective for improving skills performance for chest compression-only cardiopulmonary resuscitation (CPR). Within their program, participants were either enrolled in the formal one-hour education session or this session in combination with a self-learning video. After the video but before the formal education session, participants in the video group were significantly more likely to begin chest compressions, perform an adequate amount of chest compressions, and use an automated defibrillator. However, after the formal education, there were no significant differences in the group's performances. These authors conclude that, although self-learning was initially effective in some aspects, skills performance was not adequate until formal education was implemented. Nevertheless, it is a valuable adjunct to formal education.

Daly, Kermode, and Reilly (2009) were also interested in the effectiveness of self-learning for skills performance but specifically for protocol compliance. Their program consisted of a self-learning and formal education programs to increase knowledge and compliance with alcohol withdrawal protocols. From pre- and post-chart reviews, these authors found that individuals in the self-learning group were more likely than those in the formal group to follow the protocol, thus provide better quality care.

Finally, self-directed learning has been found to be convenient and cost-effective. From their aforementioned program, Riley-Doucet (2008) found that self-learning education is convenient for teachers and learners because it can be completed when time is available. Berger, Topp, Davis, Jones, and Stewart (2009), created a program for RNs to increase their ability to provide patient education. These RNs were enrolled in either a self-directed web-based, instructor-led web-based, or instructor-led in-person education session. From the post-test results and cost analysis, these authors determined that there were no significant differences in the overall effectiveness of each course but the self-learning web-based session was more cost-effective.

Knowles' Principles of Adult Learning

From the above review, one can determine that the self-learning method can be very advantageous. However, it is important to closely analyze the theoretical underpinnings of this type of education to determine if it is an appropriate fit for the case room's educational needs. Also, these theories will act as a framework to guide the development of the program. First of all, it is important to note that the basis of self-learning is ultimately rooted in adult learning theories. According to Knowles (1975) self-learning or self-directed learning refers to a process in which individuals take the initiative to learn instead of simply being "taught". The process of self-learning originates from andragogy, which is essentially the art and science of using yourself as a source of direction and information, thus independently assessing needs and learning what is deemed appropriate. It is generally associated with adults. Knowles, Holton, and Swanson (2005) identified six assumptions of adults learning: adults are motivated and self-directed; adults have life experiences that can influence their learning; adults are practical and problem-based learners;

adults need to understand the relevancy of what is being learned; adults need to be ready to learn based on developmental tasks; and, adults need to be respected.

Many of these assumptions apply to the use of self-learning modules for newly hired case room RNs because these individuals are adults thus would benefit from the assumptions of andragogy and adult education. Instead of simply "teaching" these RNs, the self-learning modules would provide them with the necessary tools to educate themselves. It makes sense to provide RNs with these modules so they can learn the information themselves because adults are self-motivated. If they are newly graduated RNs or come from another specialty, they can use their previous life experiences in school or in another areas and relate it to the material. RNs will hopefully see the practicality and relevancy of this orientation education, as it is directly related to their current situation or developmental task. Finally, the learning abilities and competence of RNs will be respected by providing them with the opportunity to learn the material independently.

Benner's Stages of Clinical Competence. Another theoretical framework that is related to adult learning and self-learning is Benner's (1984) Stages of Clinical Competence, whereby RNs' levels of proficiency develop from *novice* to *expert* through time and experience. When RNs are considered *novice*, they have no proficiency, experience, or confidence to safely work within a particular specialty. Through gaining some knowledge and skills, RNs can move into the *advanced beginners* stage, where their proficiency is developing but they still need support. Next, RNs are considered *competent* when they have worked in that specialty for two to three years. In this stage, they intensely analyze a clinical situation and develop a detailed plan of care. They can now provide safe and competent care to patient population in that specialty. With more experience, RNs become *proficient* and can more easily develop a plan of care. They use a

holistic perspective and see the clinical situation as a whole instead of a combination of individual parts. From their experience, they are able to identify important aspects of a clinical situation and predict outcomes. Finally, RNs become *experts* in a particular specialty, when they have an immense understanding of most clinical situations. They are able to easily identify the problem and develop an appropriate solution.

Benner's (1984) Stages of Clinical Competence will be part of the theoretical framework that guides the development of the self-learning modules. It is applicable because RNs would start as either *novice* or *advanced beginners*. Newly graduated RNs would likely be *novice,* thus need considerable support to attain the knowledge and skills necessary to work in the case room. RNs who have previous experience within obstetrics or a similar specialty may be *advanced beginners* or higher. Nevertheless, obstetrics is a very specialized area of health care, thus most newly hired case room RNs would likely start at the *novice* stage. The self-learning modules should provide these RNs with the knowledge that is essential to work in case room. This knowledge could set the stage for further learning during orientation, which would hopefully generate an increase in proficiency, thus movement through these Benner's Stages of Clinical Competence. In turn, this increase knowledge and proficiency will translate into better patient care.

Conclusion

Education is crucial to the nursing profession, especially within the orientation period, and organizations have implemented many different programs to address this need. In the case room, many gaps were identified in the orientation process and the educational materials. It is proposed that self-learning modules pertaining to normal childbirth and nursing support be created for the unit. When RNs understand the basic process of natural childbirth, it will set the

stage for further learning in the orientation period. Learning how to provide adequate support could improve patient outcomes and potentially improve health care costs. By using the self-learning method, hence principles of adult learning, newly hired case room RNs can learn the required information in a way that is convenient and suits their unique needs. The self-learning modules will hopefully become a valuable adjunct to the orientation education already provided in the case room and meet the needs of newly hired case room RNs.

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Appendix C
Module 1

Introduction

Congratulations on starting an exciting career as a case room registered nurse (RN) with Eastern Health! The case room is a fast-paced labor and delivery unit within the Janeway hospital of St. John's, NL. It houses the highest number of births in the province, with an average birth rate of 200 per month. Furthermore, it is the tertiary center for Newfoundland and Labrador where most of the high-risk pregnancies and births are transferred from other areas of the province. Before beginning to work with childbearing women and their families, you need to understand labor and delivery basics and how to provide effective and essential nursing support. These modules will provide you with the information necessary to support women during normal childbirth. It will include a summary of basic labor and delivery terminology and the process of birth, along with supportive measures during each stage of labor.

Module 1-Anatomy and Physiology of Normal Pregnancy and Childbirth

Before caring for and supporting women in labor, it is important to learn the basics. This module will include an overview of anatomy and terminology of the female body and pregnancy, anatomy and physiology of labor, and the stages of labor.

Basic Anatomy and Terminology of the Female Body and Pregnancy

It is important to first understand basic female anatomy and terminology associated with normal pregnancy (see Figures 1 and 2). Many of these terms are frequently used in the case room:

Vulva- The external female genitalia that is visible. It includes all structures except for the anus.

Clitoris- Small structure that contains many nerve endings for sexual stimulation.

Labia majora- Bilateral fatty tissue covered in skin that protects the inner vulva.

Labia minora- Located inside the labia majora, these bilateral folds of smooth muscle and connective tissue contain many sensitive nerve endings.

Urethral opening- Opening of the urethra.

Vaginal opening- Opening of the vagina.

Perineum- Located between the vaginal opening and the anus. The perineum is a collection of muscles covered in skin that supports and anchors the pelvic structures.

Vagina- A tubular, mucosal structure that connects the vulva to the cervix and uterus. It is passageway for semen during conception and the birth canal for the fetus during labor.

Uterus- Muscular organ that houses the fetus during pregnancy and contracts to expel the fetus and placenta during labor.

Cervix- Lower portion of the uterus that separates the uterus from the vagina. During labor, it thins and opens to allow the fetus to exit through the birth canal.

Fundus- The top portion of the uterus. It is where a uterine contraction begins.

(Zdanuk, 2012)

Placenta- Vascular structure that attaches to the uterus and transfers blood back and forth to the fetus through the umbilical cord.

Umbilical cord- Consists of two arteries and one vein that joins the fetus to the placenta and transfers blood between the two. Oxygenated blood is transferred from the placenta to the fetus through the umbilical vein while deoxygenated blood is transferred from the fetus to the placenta through the umbilical arteries. The entire umbilical cord is covered in *Wharton's jelly*, which is a

special gelatinous connective tissue that protects the umbilical cord and keeps it from collapsing in utero.

Amniotic sac- Fluid-filled membrane or sac that holds the fetus and amniotic fluid during pregnancy.

Amniotic fluid- Located in the amniotic sac, it is the fluid that surrounds the fetus. The total volume of amniotic fluid later in pregnancy is between 700 to 1000ml. Most of this is comprised of fetal urine.

(Davidson, London, & Ladewig, 2012; Perry, 2012)

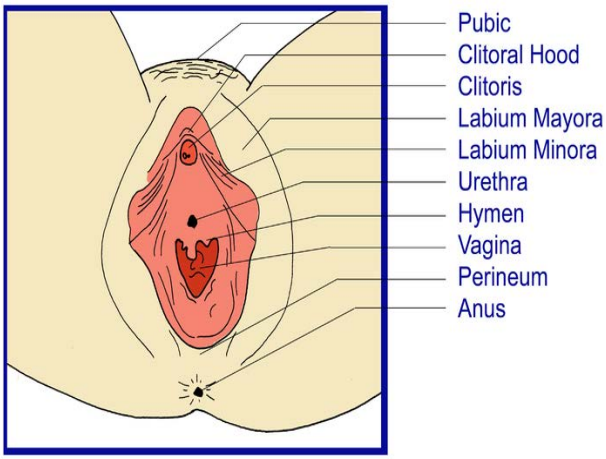

Figure 1. Female Anatomy

(Used with permission from Hiriadhi, 2007)

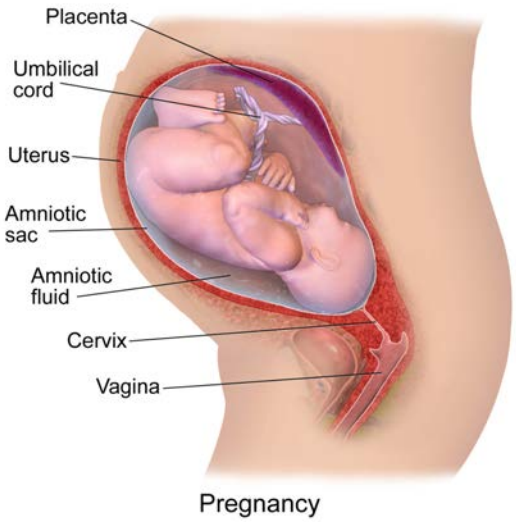

Figure 2. Pregnancy Anatomy

(Used with permission from Blausen.com staff, 2014)

(Both images are licensed under a Creative Commons Attribution 3.0 Unported license)

Gestation- Progression in the pregnancy, which is measured in weeks from the first day of the last menstrual period.

Term Gestation- Gestation between 37 and 42 weeks. A woman's due date is considered 40 weeks gestation.

Post-term Gestation- Gestation over 42 weeks.

Pre-term Gestation- Gestation at 20 weeks to less than 37 weeks.

Gravida- A pregnant woman.

Gravidity- A pregnancy.

Parity- All pregnancies experienced by a woman that were over 20 weeks gestation. This includes live and stillborn births. It does not include number of fetuses (For example, twins, triplets).

Abortion- Pregnancy loss at less than 20 weeks gestation and when the fetus weighs less than 500 grams. Abortions are considered *spontaneous* when no medical or surgical action is taken to terminate the pregnancy (also known as a "miscarriage"). Alternatively, *therapeutic* or *elective abortion* is when intentional medical or surgical action is taken to terminate the pregnancy.

(Davidson et al., 2012)

Stillbirth- The birth of a dead fetus after 20 weeks' gestation. In case room, this includes fetuses that weigh more than 500g, regardless of gestation (Eastern Health, 2009)

Note: In the case room, the health care team refers to *gravida* as the total number of pregnancies experienced by a woman and *para* as the total number of births over 20 weeks. While using these terms, along with abortion and stillbirth, they complete an obstetrical history. However, there are other methods to do this, including the TPAL system. Although this is not used in the case room, it may help you gather a more thorough obstetrical history. This acronym stands for:

T- Total number of term infants (≥37 weeks).
P- Total number of preterm infants (between 20 weeks and 37 weeks), regardless if these were living or stillborn.
A- Total number of abortions, regardless of type.
L- Total number of living children.

(Davidson et al., 2012)

Primigravida or "Primip"- Term used to describe a woman who is experiencing her first pregnancy.

Multigravida or "Multip"- Term used to describe a woman who has completed one or more pregnancies to 20 weeks.

Antepartum or Antenatal- Period of pregnancy from conception to the start of labor.

Intrapartum- Period of pregnancy that begins with the start of labor and ends with birth of the fetus and placenta.

Postpartum or Postnatal- Period from birth to normal pre-pregnancy condition. This can last for up to 6 weeks.

(Davidson et al., 2012; Lowdermilk, 2012a)

Anatomy and Physiology of Labor

Labor can be defined as a combination of processes that lead to birth of a fetus. There are five factors that can affect the process of labor and birth and are often referred to as the five ***P***'s: **P**assenger, **P**assageway, **P**owers, **P**osition, and **P**syche (Lowermilk, 2012a).

Passenger- The "passenger" refers to the fetus. There are several factors that affect how the fetus moves through the birth canal (Lowdermilk, 2012a).

The *fetal presentation* refers to the first part of the fetus that enters the birth canal. This can be the fetal head (cephalic presentation), buttock/feet (breech presentation), or shoulders (see Figures 3, 4, and 5). However, cephalic presentation is the most common and is actually seen is 96% of births. In the case room, this is referred to as *vertex presentation*. However, this is a specific form of cephalic presentation, which will be discussed in the section on fetal attitude. The size of the fetal head is very important, as it is generally the largest part of the fetus. For a successful vaginal birth, the fetal head must be proportionate to the maternal pelvis. In other words, it must fit through the maternal pelvis. The fetal head has certain properties that aid in this process. It is comprised of six bones, four sutures where these bones meet, and two fontanels ("soft spots") within these sutures. Since these bones are not fused together, they can actually overlap during labor to decrease the diameter of the fetal head thus creating easier passage through the birth canal. This process is called *molding* (Lowdermilk, 2012a).

Figure 3. Cephalic presentation

Figure 4. Breech presentation

Figure 5. Shoulder presentation

The *fetal lie* refers to the relationship between the fetal spine to the maternal spine. Fetal lie can be *longitudinal* where the spinal columns are parallel to each other, as with cephalic or breech presentations (see Figure 6). It can be *transverse* where the spinal columns are perpendicular to each other, as with shoulder presentation (see Figure 7). Finally, the fetal lie can be *oblique* where the spinal columns are at a 45-degree angle. This is in between a longitudinal and transverse lie (see Figure 8). Vaginal birth is possible only when the fetus is in the longitudinal lie (Lowdermilk, 2012a).

Figure 6. Longitudinal lie

Figure 7. Transverse lie

Figure 8. Oblique lie

The *fetal position* refers to the relationship between the presenting part and the mother's pelvis. The presenting part can be the occiput (back of the fetal head-cephalic presentation), sacrum (fetal tailbone-breech presentation), mentum (fetal chin-face presentation), or acromium (acromium process of the fetal scapula-shoulder presentation). When cephalic presentation with normal flexion (fetal attitude) occurs, the location of the *occiput* or back of the fetal head is assessed in relation to the maternal pelvis. In other words, you want to determine which way the head is positioned in the pelvis. The back of the fetal head is generally located by palpating the *posterior fontanel* during an internal exam (PV exam) (Davidson et al., 2012; Lowdermilk, 2012a). This will be described in more detail later in this module.

The fetal position is generally written as a three-letter abbreviation. The first letter denotes *the location of the occiput in the right or left side of the maternal pelvis*. Therefore, it is written as a "R" or "L" in the abbreviation. The second letter refers *to the presenting part of the fetus*, which is generally the occiput and is written as an "O". The third and final letter refers to the *location of the presenting part in relation of the anterior (front), posterior (back), or transverse (sideways) portions of the maternal pelvis*. In the abbreviation, this is written as an "A", "P", or "T" (Lowdermilk, 2012a). For example, if the fetus was determined to be in the LOA (Left Occipitoanterior) position, the **O**cciput (back of the fetal head) would be positioned in the anterior (front) portion of the maternal pelvis and slightly to the **L**eft (see Figure 9).

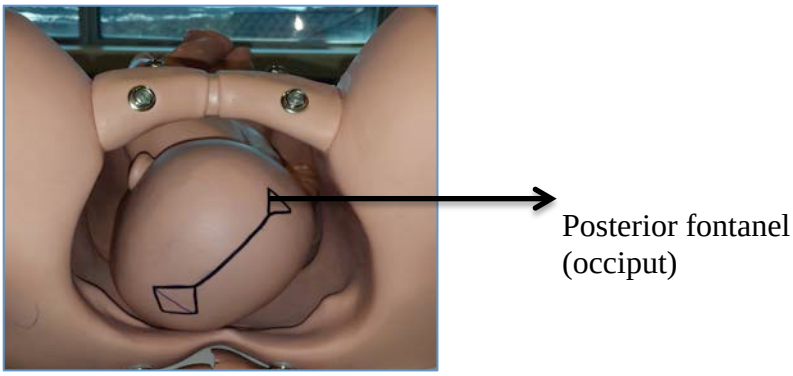

Figure 9. LOA position

Fetal attitude is the overall shape of the fetus in utero. It is based on the relationship of fetal body parts to each other. The fetus is generally flexed with the chin to the chest, arms flexed and crossed over the body, and legs bent and close to the body. Fetal attitude is particularly important when referring to the fetal head. When the fetal head is flexed with the chin to the chest, the occiput is presenting first. This allows the smallest diameter (suboccipitobregmatic diameter) of the fetal head to enter the true maternal pelvis. This is referred to as *vertex presentation* (see Figure 10). Other forms of cephalic presentation related to flexion of the fetal head include *sinciput presentation*, where the fetal head is partially flexed and the top of the head is presenting (see Figure 11), *brow presentation*, where the fetal head is partially extended and the brow is presenting (see Figure 12), and *face presentation* where the fetal head is hyperextended and the face is presenting (see Figure 13). When the head is partially flexed or extended as with cephalic presentations other than vertex, the diameter widens. This can impede birth because the diameter of the head may be too large to enter the true pelvis (Davidson et al., 2012; Lowdermilk, 2012a).

Figure 10. Vertex presentation

Figure 11. Sinciput presentation

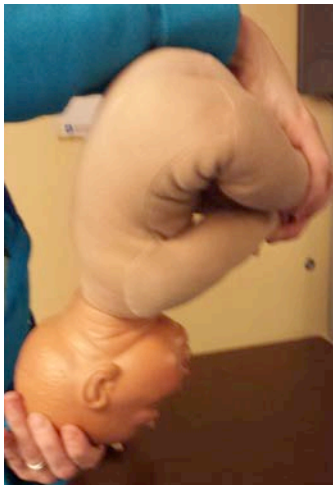

Figure 12. Brow presentation

Figure 13. Face presentation

Fetal station refers to the degree of fetal descent in the birth canal in relation to the ischial spines of the maternal pelvis. If the top of the fetal head is at the ischial spines the station is 0 (see Figure 14). If the fetal head is above or below the ischial spines, the distance is measured in centimeters. For example, if the fetal head is 1cm above or below the ischial spines, the station is -1 or +1 respectively (see Figures 15 and 16). When the largest diameter of the fetal head has passed through the maternal pelvis and is at station 0, it is referred to as *fetal engagement*. In primiparas, engagement can occur many days or even weeks before the onset of labor but may not occur until labor begins in multiparas (Lowdermilk, 2012a).

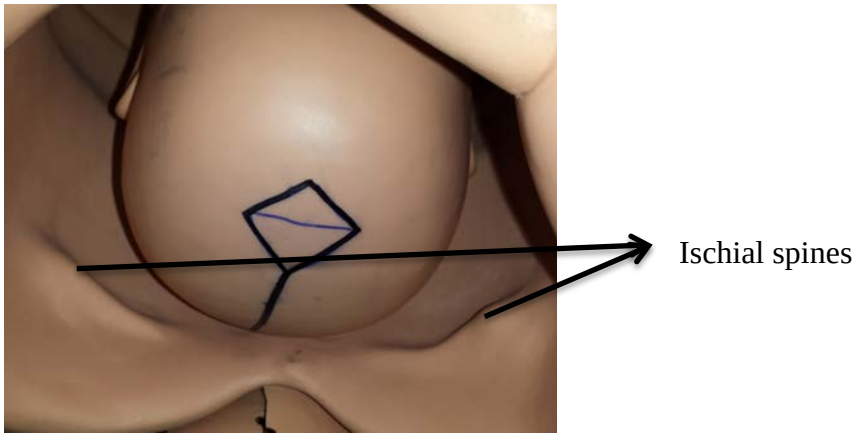

Figure 14. Station 0

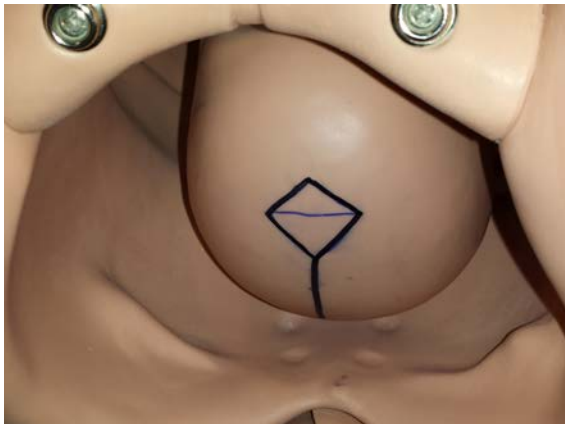

Figure 15. Station -1

Figure 16. Station +1

Leopold's Maneuvers- Many of the above characteristics of the fetus or "passenger" in utero, including fetal presentation, lie, attitude, presentation, and descent can be determined by Leopold's maneuvers. This is a generally non-invasive procedure that involves palpation of the woman's abdomen. Before starting, ask the woman to empty her bladder and lie supine on the bed with a left tilt so she is not on her back. Lying directly on her back can impede blood flow to the fetus. To do this, place a wedge (rolled towel or blanket) under the left side of the pelvis. You should stand on the same side of the bed as your dominate hand (if you are right handed, stand to the woman's right) (Piotrowski, 2012b). You are then ready to perform Leopold's maneuvers in these steps:

1. Fetal presentation and lie can be determined by facing the woman and palpating the fundus (top of the uterus). The fetal head feels round and firm. It is also freely moveable from the fetal body. If the fetal head is palpated in the fundus, the presentation is breech. On the other hand, the fetal buttock feels softer, irregularly shaped, and less moveable. If the fetal buttock is palpated in the fundus, the fetus is cephalic. If one of these fetal parts is palpated in the fundus, the lie is longitudinal, regardless if it is the head or the buttock. If these are not found in the fundus and rather to the side of the abdomen, a transverse or oblique lie should be considered.

2. Fetal position can be determined by palpating both sides of the abdomen with your palms to determine which way the fetus is facing. By doing this, you can locate the fetal back, which feels round and smooth along with the arms and legs, which feel bumpy and irregularly shaped. The fetal back is normally palpated on one side of the abdomen while the arms and legs are located on the other. This step is particularly important for monitoring the fetus because the fetal heart rate (FHR) is best monitored over the fetal back.

3. To determine fetal presentation along with descent, the presenting part is palpated. By gently grasping the lower portion of the uterus just above the symphysis pubis between the thumb and index finger (forming a “c”), you can feel if the presenting part is the head or the buttock, which will feel the same as in step one. If the head is palpated and is not easily moved or is stiff and rigid, then the fetal head is considered engaged. If it feels moveable, then the head is considered not engaged.

4. To further determine the fetal descent along with fetal attitude, stand on the same side of the bed but face the woman’s feet. Place your hands on each side of the bottom portion of the uterus just above the symphysis pubis. Palpate the presenting part. Feel how far or descended into the pelvis it is by determining how much can actually be palpated. If it is low and descended, very little can be palpated. Finally, determine the fetal attitude (flexion or extension of the fetal head). If it is flexed, the brow can be palpated on the same sides as the arms and legs. If it is extended, the occiput can be palpated on the same side as the fetal back.

(Davidson et al., 2012; Piotrowski, 2012b)

Note: Being able to determine the above fetal characteristics from Leopold’s maneuvers takes time and practice. Be patient!

Passageway- The next ***P*** or factor that impacts the process of labor is the “passageway”. The passageway refers to the maternal pelvis and the soft tissues within and surrounding it. Such tissues include the cervix, muscles of the pelvic floor and vagina, and the vaginal opening. Of these structures, the maternal pelvis is the most crucial anatomy in childbirth as it is hard, rigid and does not move or stretch during birth (see Figure 17). Depending of the shape and size of the maternal pelvis, it can support or impede the process of labor. The maternal pelvis is categorized into different types, with the gynecoid pelvis being the most common in women and associated with vaginal birth due to the round shape and wide pubic arch (Lowermilk, 2012a).

Figure 17. Maternal pelvis

Powers- The next factor affecting labor is known as the "powers" that expel the fetus from the uterus and birth canal. These include primary and secondary powers (Lowdermilk, 2012a).

The *primary powers* are the involuntary uterine contractions experienced during labor. The uterus is a large muscle, which contracts and relaxes in a systematic process during labor. *Uterine contractions* occur in a series of rhythmic contractions and relaxations that begin at the top (fundus) and move downward over the entire uterus (Lowdermilk, 2012a). Uterine contractions are assessed based on the frequency, duration, intensity, and resting tone. The *frequency* of contractions is measured as the amount of time from the beginning of one contraction to the beginning of the next. The *duration* is the length of a contraction, which is measured from the start of a contraction to the end. Both frequency and duration can be assessed when a woman is placed on electronic fetal monitoring (EFM) or by palpating the uterine fundus. However, EFM does not measure the intensity or resting tone unless an intrauterine pressure catheter (IUPC) is inserted (Piotrowski, 2012b). This is rarely used in the case room. Therefore, the *intensity*, which is the strength of the contraction, is usually measured by palpating the fundus. Contractions are described as mild, moderate, or strong. As a simple guide, mild contractions can be compared to feeling like the tip of your nose, moderate contractions feeling like your chin, and strong contractions feeling like your forehead. The *resting tone* is referred to as the amount of relaxation of the uterine muscle between contractions, which is also usually assessed by palpating the fundus when a contraction has ended. In general, the fundus should be soft between contractions (Piotrowski, 2012b).

It may also be useful to describe uterine contractions in terms of the duration they have been experienced. To do this, simply ask the woman how long she has been contracting. In addition, the woman's response to the contractions should be noted. Is she able to talk through the contractions or does she need to focus and breathe? This will give you an idea of her progress in labor, pain level, and ability to cope.

The main purpose of uterine contractions is to push the presenting part against the *cervix*, which is the cone-like bottom portion of the uterus. Before labor, the cervix is generally 2-3cm long and closed. As labor progresses and uterine contractions push the presenting part against the cervix, it is able to efface and dilate. *Effacement* refers to the process of thinning out the cervix so the edge is barely palpable. *Dilation* refers to the opening of the cervix from closed to 10cm (Lowdermilk, 2012a).

To determine the dilation and effacement of the cervix, health care providers must complete an internal vaginal exam. This is referred to as per vaginal or PV exam in the case room. First, don sterile gloves and place sterile lubricant on index and middle fingers (see Figure 18 and 19). Then, gently insert these fingers into the vagina until the opening of the cervix is palpated (see Figure 20). Once the cervix is located, it is important to determine the size of the opening in cm (dilation) and the thickness of the edges of the opening in either centimeters or as a percentage of the normal cervical thickness (effacement) (Piotrowski, 2012b). As a simple guide for dilation, 1, 3, 4, 7, and 10cm is equivalent to the size of a cheerio, slice of banana, round cracker, top of a soda can, and round doughnut, respectively (Your Childbirth Guide, 2015). The presentation, position, and station of the presenting part can also be determined through a PV exam (Piotrowski, 2012b).

Figure 18. Sterile gloves/ lubricant

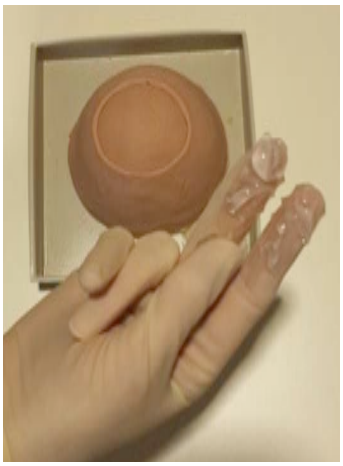

Figure 19. Donning sterile gloves/lubricant

Figure 20. Palpating cervical opening during PV exam

It is important to note that a PV exam should not be performed in certain cases. If placenta previa (placenta lies over the cervical opening) is confirmed or it not ruled out, a PV exam should not be performed (Davidson et al., 2012). Therefore, **ensure there is no placenta previa before performing a PV exam!** In addition, after a rupture of membranes (will be discussed later in this module), performing a PV exam increases the risk of infection (Radoff, 2014). Therefore, a PV exam may be delayed if the woman is not in labor to decrease the risk of infection.

Note: By palpating the hard fetal head during a PV exam, a cephalic or vertex presentation can often be confirmed. Leopold's maneuver's can also be performed to further confirm the fetal presentation (Piotrowski, 2012b). However, the obstetrical team in the case room will often perform an ultrasound of the abdomen to ensure the fetal head is actually the presenting part. If it is determined that the fetus is a breech or shoulder presentation, a major change in the plan of care is required.

The *secondary powers* are the voluntary pushing efforts of the woman. When the cervix reaches 10cm or full dilation the woman generally experiences an uncontrollable urge to "bear down" or "push". These voluntary pushing efforts increase the expulsive force on the fetus (Lowdermilk, 2012a). Although it is usually present, it is important to note that this urge to push may be delayed or completely absent in women with an epidural because of the numbing effects. Therefore, as a result of epidural use for pain relief in labor, these secondary powers may be altered thus decrease the expulsive effort on the fetus (Kopas, 2014).

Positioning- There are many "positions" that can be used to facilitate labor and increase comfort. Frequently changing positions and avoiding the recumbent position (lying in bed) can be beneficial for the mother and fetus (Lowdermilk, 2012a). Maternal positioning that enhances and facilitates descent and birth of the fetus will be discussed in more detail within the next two modules.

Psyche- The next ***P*** is "psyche". A woman may experience many emotions during childbirth. She may be fearful, anxious (Piotrowski, 2012c), overwhelmed, panicked, or excited (Dixon, Skinner, & Foureur, 2014). Although it is normal to feel fearful and anxious, an excess of these emotions can actually increase pain and slow the progress of labor. To ensure this fear and anxiety does not become debilitating, women should be provided with a relaxing, non-stressful, and supportive environment (Piotrowski, 2012c). In fact, providing effective continuous support during labor may be the key to decreasing stress, increasing confidence, and improving birth outcomes (Hodnett, Gates, Hofmeyr, & Sakala, 2009). Nursing support during labor will be discussed in detail within the next three modules.

Stages of Labor

There are theoretically four stages of labor. These are categorized based on the amount of cervical effacement and dilation, descent of the fetus, and characteristics of uterine contractions (Lowdermilk, 2012).

1. ***First stage-*** Period of labor from start of regular uterine contractions to full or 10cm dilation. This stage is divided into three phases (Lowdermilk, 2012a):

Latent phase- This phase begins with the start of uterine contractions. Although these contractions may be regular, an irregular pattern may also occur. During this time, some cervical effacement and dilation generally occurs (up to 3cm dilation) but there is little fetal descent. The contractions are generally mild and the woman can usually cope. This can also be referred to as *false labor* (Davidson et al., 2012; Lowdermilk, 2012a). The latent phase can last for 6-12 hours in primiparous women but is usually shorter for multiparous women (Mayo Foundation for

Medical Education and Research, 2013). When a woman is in the latent phase of the first stage of labor, she generally does not need to be admitted to the hospital for delivery unless complications are evident (Davidson et al., 2012).

Active phase- During this phase, the fetal head descends and the cervix begins to dilate rapidly from 4-7cm. In primiparas, effacement is often complete before dilation occurs but in multiparas, effacement and dilation occur simultaneously. Contractions become stronger and more intense. Women may feel helpless and lose their ability to cope. This can also be referred to as *true labor* (Davidson et al., 2012; Piotrowski, 2012b). This phase can last for up to 8 hours, but may take longer in primiparous women and shorter in multiparous women (Mayo Foundation for Medical Education and Research, 2013). When a woman is in this phase, a hospital admission is generally warranted (Davidson et al., 2012).

Note: Unfortunately, it is difficult to distinguish between the latent and active phases. According to McDonald (2010), if women are admitted to the hospital when they are in latent labor, they risk more obstetrical interventions, such as operative deliveries or cesarean sections. In these cases, it is best for the woman to labor at home. Therefore, it is crucial to ensure women are actually in the active stage of labor before hospital admission, unless complications warrant an earlier admission. Eastern Health is currently developing a policy for the case room related to cervical dilation and hospital admission. They are using the guidelines developed by The Society of Obstetricians and Gynacologists of Canada (SOGC) (2013-2014) in their ALARM guidelines: Active labor is established when regular uterine contractions are evident and 3-4cm dilation is reached in the primiparous woman and 4-5cm dilation is reached in the multiparous woman. Effacement is 1cm (approximately 50%) or more.

Transition phase- During this phase, the fetal head descends more, the cervix dilates from 8-10cm, and the contractions become stronger, longer, and more frequent. Because the head is descending more deeply into the maternal pelvis, the woman may feel tremendous pressure and an overwhelming or uncontrollable urge to push or “bear down”. She may be very restless, irritable, angry, or withdrawn (Davidson et al., 2012).

Note: In general, for both primiparous and multiparous women, the World Health Organization (2014) recognizes cervical dilation of 0.5-1cm per hour as normal progress in the active stage of labor. As health care professionals in the busy world of Western medicine, we are often impatient and intervene because we expect birth to occur at a faster rate, especially for multiparous women. It is important to be patient and let birth happen naturally!

Rupture of membranes- It is important to note that a **spontaneous rupture of membranes (SROM)** usually occurs during the first stage of labor, which is the rupture of the amniotic sac and leakage of amniotic fluid through the vagina. The woman may experience a large “gush” of fluid or a small trickle. For this reason, SROM may be obvious or questionable. If a copious amount of fluid is leaking from the vagina, you can often assume SROM has occurred. However, this is often not the case and tests must be performed to ensure SROM has definitely occurred. If enough fluid is present on a pad or clothing, it may be placed on a nitrazine swab. Nitrazine changes color from yellow/orange to blue when certain bodily fluids are present, such as amniotic fluid. However, the nitrazine swab can render a false positive. In order to confirm

SROM, the amniotic fluid from the nitrazine swab must be smeared on a glass slide and placed under a microscope. If the fluid crystalizes after it is dried and a pattern of “ferning” is seen under the microscope (looks like snow flakes or ferns), the test is positive and SROM can be confirmed. If a sample cannot be obtained from a pad or clothing, a sterile speculum exam must be performed and the fluid tested from inside the vagina (Piotrowski, 2012b)

In the case room, a physician performs the sterile speculum exam (“sterile spec”), usually with assistance from a RN. This exam is similar to a Pap smear. The physician uses a PV tray with a speculum, a small portable light (“spec light”), a nitrazine swab, and a glass slide (see Figure 21). The woman lies on her back with her legs in stirrups. The speculum is interested into the vagina and positioned until the cervix is visualized. The RN adjusts the portable light to ensure the physician has a good view of the cervix. Next, the woman is instructed to cough because this downward pressure will release fluid through the cervix if SROM has occurred. Using the nitrazine swab, fluid from the upper part of the vagina near the cervix is obtained. The fluid is then tested for “ferning”.

Figure 21. PV tray, nitrazine swab, and glass slide for sterile spec

It is important to note the color, consistency, and odor of the fluid, along with the woman’s Group B streptococcus (GBS) status and the time of SROM. As a general rule, the fluid should be clear, thin, and odorless, although amniotic fluid does contain a faint, normal odor. The fluid may be slightly blood-tinged from bloody-show. **Bloody-show** is the mucousy bloody discharge emitted from the cervix that occurs during labor due to cervical changes. This is usually a normal finding but an excess of bright red bleeding in the amniotic fluid should be monitored closely as it could indicate problems with the placenta. In addition, the fluid may also be green. This indicates that **meconium** is present in the amniotic fluid and the fetus has moved its bowels in utero. Although this may be a relatively normal finding due to a post-term pregnancy or breech presentation, it may also indicate fetal compromise in utero. When birth occurs, the fetus is at an increased risk of developing the very serious meconium aspiration syndrome where the meconium is aspirated into the lungs. For these reasons, meconium-stained fluid must be

monitored very closely, primarily with continuous EFM. Furthermore, although amniotic fluid does contain a faint, normal odor, there may be an excessive foul odor. This may indicate an infection in the amniotic cavity named **chorioamnionitis** (Davidson et al., 2012; Piotrowski, 2012a, 2012b).

In addition, a woman's GBS status is very important in relation to infection. **Group B streptococcus (GBS)** is a normal flora that may be present in the vagina during pregnancy and labor. Although it is normal, it can cause major complications for the mother and especially the fetus after the membranes have ruptured. Therefore, a physician should screen for GBS at 36-37 weeks gestation through a rectovaginal swab (Lowdermilk, 2012b; Piotrowski, 2012a, 2012b). If the results are positive and the woman is in active labor or has had SROM, SOGC (2004) recommends that intravenous antibiotics should be given to protect against a GBS infection in the fetus. The antibiotic of choice is generally Penicillin G. If a woman is GBS negative, does not have a GBS result but is over 37 weeks gestation, and no signs of infection are apparent, she generally does not require antibiotics. Finally, noting the time of rupture is very important because after the membranes have ruptured, the barrier to infection is gone and thus a prolonged time between rupture and birth may increase the risk of infection (Lowdermilk, 2012b; Piotrowski, 2012a, 2012b).

In approximately 25% of cases, SROM occurs before labor and prompts contractions but mainly occurs during the transition phase. However, there may be a delay in the beginning of labor after SROM, but this is generally less than 24 hours. In certain cases, physicians actually induce labor by puncturing the amniotic sac during a PV exam with a large hook. This is referred to as an **artificial rupture of membranes (AROM)** or amniotomy (Piotrowski, 2012b).

2. ***Second stage-*** This stage includes10cm or full dilation and 100% or full effacement to the birth of the fetus (Davidson et al., 2012). The average time within this phase is 20 minutes for multiparous women and 50 minutes for primiparous women (Lowdermilk, 2012a) but it can last for up to 2 hours in primiparous women. When an epidural is present, the second stage can be increased by up to 1 hour, regardless of parity (Davidson et al., 2012). Like the first stage, the second stage can be divided into phases:

Latent phase- During this phase, the woman is not actively pushing or "bearing down". The fetus descends in the birth canal solely because of the uterine contractions (Lowdermilk, 2012a). This is also referred to as "laboring down" or "passive descent". If an expedited birth is not warranted due to certain complications, women should not be encouraged to push unless they feel the urge because their pushing may not be effective and it can waste valuable energy. It is reasonable to remain in the latent second stage of labor for up to 2 hours. Because an epidural may decrease the urge to push, these women are more likely to be in this phase and benefit from the extra time to gain this urge to push and help the fetus descend with minimal effort (Kopas, 2014).

Active phase- When the woman actively pushes or "bears down", this force is combined with the uterine contractions to help the fetus descend in the birth canal. Because the woman is actively pushing, it then becomes the active second stage of labor (Lowdermilk 2012a).

Cardinal movements of labor- Within the first two stages of labor, there are eight cardinal fetal movements that lead to a normal vaginal birth:

1. *Engagement*- When the largest part of the fetal head has descended into the true pelvis, which generally matches station 0. The fetus is then considered engaged. This often occurs weeks before labor begins, especially in primiparous women because the pelvic and abdominal muscles are firmer and can direct the fetal head into the true pelvis. In multiparous women, the fetal head may be free floating and not engaged until labor begins and contractions aid in descent.

2. *Descent*- The movement of the presenting part downward through the maternal pelvis. Station is used to measure this movement.

3. *Flexion*- When the fetal head meets resistance from tissues in the birth canal, such as the cervix or pelvic floor, the fetal head then flexes itself onto its chest to create the smallest diameter to descend and present to the pelvic outlet.

4. *Internal Rotation*- The fetus generally enters the pelvis in the occipitotransverse position (head sideways). When it reaches the ischial spines, or station 0, the occiput of the fetal head begins to rotate anteriorly into the occipitoanterior position. In other words, the fetal head rotates down from sideways to face down (occiput up).

5. *Extension*- When the fetal head passes under the pubic arch and reaches the perineum, the resistance causes the fetal head to extend upwards and deliver.

6. *Restitution*- Now that the head has passed the perineum and is expelled from he birth canal, the fetal head must restitute and rotate 45 degrees to align with the shoulders that are still inside the birth canal. This is generally the position the fetus had during engagement (sideways).

7. *External Rotation*- The fetal head rotates even farther as the shoulders move through the birth canal similar to maneuvers the fetal head just displayed during restitution. The anterior shoulder (upward) passes under the public arch first and is followed by the posterior (downward) shoulder, which passes over the perineum.

8. *Expulsion*- After the shoulders are born, the fetal head and shoulders are lifted anteriorly to slowly guide the rest of the fetus out of the birth canal. When this is complete, the baby is born!

(Lowdermilk, 2012a)

3. ***Third stage-*** The third stage of labor lasts from the birth of the fetus to the birth of the placenta, which is generally within 30 minutes (Lowdermilk, 2012a). The delivery of the placenta is often preceded by a gush of blood, change in the shape of the uterus, an increase in fundal height, and descending or lengthening of the clamped umbilical cord. The woman may also feel cramping an urge to push when the placenta is ready to be delivered (Davidson et al., 2012) but it will not be as intense and painful as the delivery of the fetus.

4. ***Fourth stage-*** During this stage, the woman is in recovery from the birth of the fetus and placenta. It generally last 1 to 2 hours after the placenta is delivered and it is a crucial time for monitoring to ensure the body returns to homeostasis and no complications are evident (Lowdermilk, 2012a). The woman has an increased risk for extra bleeding or a postpartum hemorrhage during this stage. This is also an important time for bonding between the mother and her newborn. The woman may be shaky, hungry, or thirsty, but the overwhelming symptoms of labor generally cease (Davidson et al., 2012).

Case Study

Jill is a 33-year old woman pregnant with her third child at 38 weeks gestation. She has a set of 3-year old twins at home that were born at 34 weeks gestation. She had a miscarriage at 6 weeks just before this pregnancy. Before the birth of her twins, she had a therapeutic abortion at 19 weeks due to fetal anomalies. That fetus was not born alive and weighed 450g. Her current pregnancy has been healthy and uneventful. She presents to the case room early in the morning. She reports a spontaneous rupture of membranes (SROM) and signs of labor.

1. What is Jill's obstetrical history? Complete this using both the case room's system and the TPAL acronym.

2. Jill has reported SROM. What test must be performed to confirm SROM? What results indicate a positive test?

3. If the SROM test is positive, what questions must you ask Jill related to the SROM?

4. Jill also believes she is in labor. What questions must you ask Jill related to her contractions? How can you assess her contractions?

5. What exam can you perform to gain a better understanding of Jill's labor progression and characteristics of the fetus?

6. What exam should be completed to determine if Jill is actually in active labor? What findings from this exam would suggest that she is in labor? From this exam, what can you determine about Jill's labor progression and characteristics of the fetus?

See end of module for answers to case study questions!

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Case Study Answers

1. What is Jill's obstetrical history? Complete this using both the case room's system and the TPAL acronym.

Case room system

Gravidity- **4 (Jill has had 4 pregnancies in total)**

Parity- **1 (Jill has had twins, which count as 1 birth)**

Abortions- **2 (This includes the miscarriage and the therapeutic abortion because the fetus was born at 19 weeks and weighed less than 500g)**

Stillbirths- **0**

TPAL

T- **0 (Jill has not yet had a infant born at term gestation)**

P- **3 (Jill had twins and an birth at 23 weeks)**

A- **2 (Jill has 1 spontaneous and 1 therapeutic abortion)**

L- **2 (Jill had twins that are living)**

2. Jill has reported SROM. What test must be performed to confirm SROM? What results indicate a positive test?

SROM can occur when amniotic fluid is leaking in copious amounts and can be visualized by the health care professional. This often does not require a test because SROM is very obvious. However, sometimes the obstetrical team will require a sample. This can easily be obtained by placing amniotic fluid on a nitrazine swab. If it turns from yellow to blue, the test is positive. Still, this test can give false positive results thus the only way to confirm SROM is to smear the amniotic fluid on the glass slide and view it under a microscope. If "ferning" is evident, SROM is confirmed. Often, SROM is not obvious and amniotic fluid is not visible. In these cases, a physician must perform a sterile speculum exam ("sterile spec") to obtain the sample on the nitrazine swab. Then, it can be examined for a change in color and "ferning" under the microscope.

3. If the SROM test is positive, what questions must you ask Jill related to the SROM?

Jill must be asked about the time of SROM and the color, consistency, and odor of the fluid. If she has a GBS result, her status should be determined by viewing her prenatal record or the lab results in Meditech, where the latter is the preferred method.

4. Jill also believes she is in labor. What questions must you ask Jill related to her contractions? How can you assess her contractions?

You must ask Jill how often she is contracting (frequency), how long they last (duration), how strong they are (strength), and how long she has been experiencing the contractions. If Jill is on the electronic fetal monitor (EFM) you can usually determine the frequency and length of the contractions. However, this does not indicate the strength of the contractions. To assess frequency, duration, and strength, along with resting tone, you must place your hand on her fundus and palpate her contractions. You should also ask Jill how long she has been experiencing the contractions, which will give you an idea of how long she has been in labor thus how her labor is progressing. Finally, you can ask Jill if she is able to talk through her contractions or if she needs to focus and breathe through them. This will help you further determine the strength of the contractions along with her pain level.

5. What exam can you perform to gain a better understanding of Jill's labor progression and characteristics of the fetus?

First, Leopold's maneuvers can be performed to further explore the fetal presentation, position, lie, attitude, and station. This is generally done before assessing the fetal heart rate (FHR) because it can help you find the best signal (on the fetal back). Of course, determining the fetal presentation is very important thus an abdominal ultrasound is usually performed to confirm a cephalic presentation.

6. What exam should be completed to determine if Jill is actually in active labor? What findings from this exam would suggest that she is in labor? From this exam, what can you determine about Jill's labor progression and characteristics of the fetus?

A PV exam can be performed to determine if Jill is in active labor. Cervical effacement and dilation must be determined. If her cervix is ≥4-5cm with regular contractions, active labor can be confirmed (SOGC, 2013-2014). While performing a PV exam, the fetal presentation, position, and station may also be confirmed. It is important to note that a PV exam is NEVER performed until placenta previa is ruled out.

Appendix D
Module 2

Module 2-Nursing Care and Support for the First Stage of Labor

An overview of the normal childbirth process was discussed in the previous module, including the stages of labor. In this module, the first stage of labor will be reviewed in more detail with a specific focus on continuous labor support and nursing care.

The First Stage of Labor

In the previous module, you learned that labor can be divided into four stages. The **first stage of labor** lasts from the start of regular uterine contractions to full or 10cm dilation. This stage is further divided into three phases (Lowdermilk, 2012):

Latent phase- This phase begins with the start of regular uterine contractions. During this time, some effacement and dilation of the cervix generally occurs (up to 3cm dilation with some effacement) but there is little fetal descent. The contractions are generally mild and the woman can usually cope (Davidson, London, & Ladewig., 2012; Lowdermilk, 2012). This stage can last for 6-12 hours in primiparous women but is usually shorter for multiparous women (Mayo Foundation for Medical Education and Research, 2013).

Active phase- During this phase, the fetal head descends and the cervix begins to dilate more rapidly from 4-7cm. In primiparous women, effacement is often complete before dilation occurs but in multiparous women, effacement and dilation occur simultaneously. Contractions become regular, stronger, and more intense. Women may feel helpless and lose their ability to cope (Davidson et al., 2012; Piotrowski, 2012). This phase can last for up to 8 hours, but may take longer in primiparous women and shorter in multiparous women (Mayo Foundation for Medical Education and Research, 2013). When a woman is in the active phase, she is considered to be in active labor because the cervix is progressively changing and her contractions are regular and painful (Davidson et al., 2012).

Transition phase- During this phase, the fetal head descends more into the maternal pelvis, the cervix dilates from 8-10cm, and the contractions become progressively more frequent, longer, and stronger. Because the head is descending more deeply into the maternal pelvis, the woman may feel tremendous pressure and an overwhelming or uncontrollable urge to push or “bear down”. She may experience nausea and vomiting, shakiness, restlessness, and irritability. She may become withdrawn and find it difficult to focus and follow directions or she may outwardly express her discomfort and lose her ability to cope. Phrases such as “I can’t do this anymore” or “the pain is too much” are common in the transition phase (Davidson et al., 2012).

Note: In general, for both primiparous and multiparous women, the World Health Organization (WHO) (2014) recognizes cervical dilation of 0.5-1cm per hour as normal progress in the active stage of labor. As health care professionals in the busy world of Western medicine, we are often impatient because we expect birth to occur at a faster rate, especially for multiparous women. Because of this, labor is labeled as a *failure of progress* too frequently, which may lead to

interventions and eventually a cesarean section. With low-risk situations, we need to be patient and understand that birth is a normal physiological process. This will hopefully decrease the rate of interventions, such as cesarean sections (Lothian, 2014). Be patient and let birth happen naturally!

When to Admit to Hospital?

Although the stages of labor are a great guide to determine the progress of labor, these definitions are only theoretical and are difficult to apply to all women during labor as each woman experiences and progresses through labor differently. In other words, labor is a fluid process that commonly progresses without clear and noticeable changes (Davidson et al., 2012). In fact, it is often very difficult to distinguish between certain phases, especially the latent and active phases of the first stage of labor. Because of this, it is difficult to determine when labor has progressed enough that a hospital admission is warranted. In general, women are only admitted to the hospital when they are in active labor. According to McDonald (2010), women who are admitted in the latent phase of labor are at a greater risk of obstetrical interventions, such as operative deliveries and cesarean sections. In these cases, it is best for women to labor at home. Therefore, it is crucial to ensure women are actually in the active phase of labor before hospital admission, unless complications warrant an earlier admission.

In the case room, all women are seen in triage and a registered nurse (RN) and physician perform an initial assessment. Although many exams are required, depending on the reason for the case room visit, low-risk women in possible labor at term gestation require three very important assessments to determine if they are actually in active labor. These assessments include an internal vaginal exam (PV exam), an assessment of contractions, and a possible ultrasound. To be considered in active labor, The Society of Obstetricians and Gynaecologists of Canada (SOGC) (2013-2014) believe that the primiparous woman should be at least 3-4cm dilated and the multiparous woman should be at least 4-5cm dilated on PV exam. Cervical effacement should be at least 1cm (50%). The woman must also be experiencing a regular contraction pattern (SOGC, 2013-2014), which is at least every 2-5 minutes and lasting 40-60 seconds. The contractions are generally painful and not relieved by position changes, such as resting or ambulating (Davidson et al., 2012). When palpating the fundus, the intensity of the contractions should be moderate to strong, where moderate contractions feel like your chin and strong contractions feel like your forehead (Piotrowski, 2012). In addition, if the fetal head is not obviously palpated on PV exam, the woman may need an ultrasound to confirm a cephalic presentation. If it is not confirmed and a breech presentation is evident, other interventions may be warranted, which will not be covered in the manual. If something unexpected like this arises in triage, you may need to consult your charge RN and the obstetrical team for further instruction and direction.

Women also come into the case room with a spontaneous rupture of membranes (SROM) and labor. Even if no contractions or labor are evident or she is still within the latent phase of labor, it requires a hospital admission if SROM is confirmed. Since labor often ensues after SROM (Davidson et al., 2012), physicians may wait before intervening to start labor, especially if the woman is low-risk (clear, odorless fluid and a negative GBS status).

From the above labor assessments, women are often determined to be in latent labor. An admission is not warranted and these women are sent home, unless other complications are evident. However, it is important to realize that latent labor can still be very uncomfortable and last for many hours. It these cases, it is important to be positive about her progress and ensure she does not leave the case room feeling disappointed. Ensure she understands the importance of staying home in the latent stage of labor to avoid intervention. It is especially important to give guidance and education regarding comfort measure for laboring at home (Davidson et al., 2012). Many of the same comfort measures used in active labor can be used in these cases, which will be discussed in this module. In addition, explain to her when to return to the case room for reassessment as latent labor will eventually become active. Explain that she should return when her contractions are closer together (approximately every 3-4 minutes for primiparas and every 4-5 minutes for multiparas), last longer (approximately 60 seconds), and are stronger (she has to breathe through the contractions and they are not relieved by position changes). If she has any questions or concerns, instruct her to call the case room to speak to a RN and give her the number (777-7417). Speaking with a case room RN can provide reassurance and save her an unneeded trip to the case room!

Admission Process

When the triage assessment warrants a hospital admission, a case room RN is assigned to that patient. In general, all patients in the case room receive one-to-one nursing care, which means there is one RN assigned to each patient and this RN takes responsibility for the admission and subsequent nursing care. There is a general process for hospital admission in the case room for all patients that requires certain tasks and protocols.

Preparing the birthing room- Before the woman is settled in a birthing room, the room must be set up and all equipment must be checked to ensure it works properly. To set up the room, the birthing bed in lowered to a safe level and a soaker pad and/or blue pads are placed on the bed. Each birthing room is also equipped with two tables for placing supplies and performing certain procedures. The bedside table is seen in Figure 2. Although the other table seen in Figure 1 does not have a specific name, it will be referred to as the birthing room table in these modules.

Figure 1. Birthing room

Figure 2. Birthing room

Blue pads are also placed on the birthing room table with supplies needed for the delivery (see Figure 3):

1. Oxytocin for intramuscular (IM) injection during delivery (oxytocin vial, 3ml syringe, 22G 1 ½ inch needle for injection, 18G needle for drawing up, alcohol swab, 2x2 gauze).
2. Supplies for perineal repair (1% and 2% lidocaine vials, 10ml syringe, 22G 1 ½ inch needle, 2.0 suture).
3. Supplies for obtaining cord gases from the umbilical cord after delivery (cord gas syringes and 2 25G 5/8 inch needles).
4. Bands for the mother and baby after delivery (paper bands for writing information and plastic band covers). These bands are partially filled out on admission (see Figure 4).

Figure 3. Set up on birthing room table

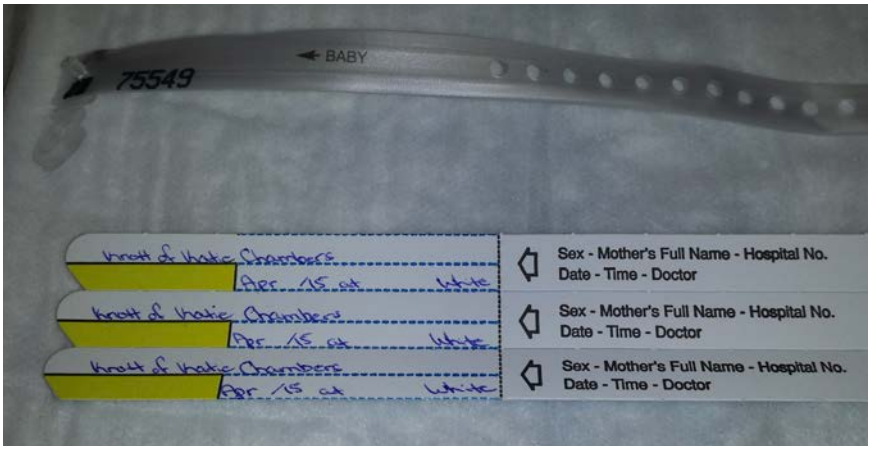

Figure 4. Partially completed baby bands with plastic band covers

In addition, you must ensure all equipment is in the room and working properly, if applicable (see Figures 5, 6, 7, and 8). This includes:

1. Delivery tray
2. Minor pan and stand
3. Cord blood tube
4. Sterile gowns

5. Sterile gloves (sizes 5 ½ to 8 ½)
6. Under buttock drape
7. Small sponges
8. Electronic fetal monitor
9. Maternal oxygen and suction setups
10. Baby cot

Figure 5. Delivery supplies needed in birthing room

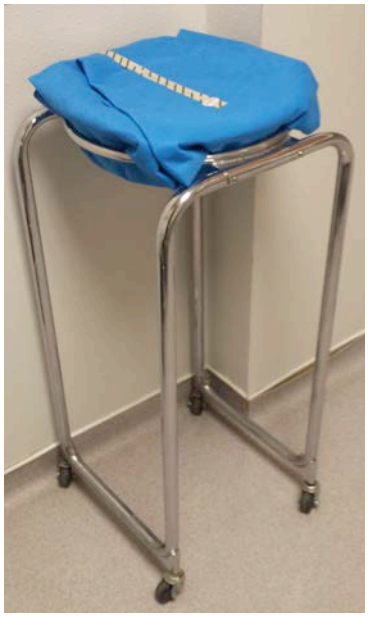

Figure 6. Minor pan and stand

Figure 7. Electronic fetal monitor

Figure 8. Maternal oxygen and suction setups

The baby cot has specific equipment that must be thoroughly checked (see Figure 9). Although this equipment is not needed in most deliveries, it all must work properly and be ready to use. The equipment on the baby cot that must be available and checked includes:

1. Baby stethoscope
2. Laryngoscope for intubation with 2 different size blades
3. Bulb suction
4. Prefilled epinephrine syringe
5. Meconium aspirator
6. Cord clamp scissors
7. ET tubes sizes 2.5-4.5 (2 of each)
8. Stylet for intubation
9. Baby cot heater (turn on heater and ensure it emits heat)
10. Bag/mask setup (ensure bag and mask are hooked up to oxygen at room air and a manometer to measure pressure)
11. Suction setup (ensure a 10F suction catheter is connected to a suction canister and wall suction with suction tubing)

Figure 9. Baby cot

Note: How to check and use the baby cot equipment will be covered in more detail during the Neonatal Resuscitation Program (NRP), which all case room RNs must complete.

Beginning the patient chart- All women admitted to the case room require a chart with specific documentation forms. When the woman is settled into the birthing room, some of these forms should be completed or started. This includes the *Obstetrical Nursing Care Plan* (nursing history), *Labor and Delivery Record*, and *Live Birth Notification* (provincial statistics form). In the nursing history, a detailed account of the women's overall health and obstetrical history is obtained, including her blood type, serology (HIV and Hepatitis B status), and GBS results. Most of this information can be obtained from the woman's prenatal record, which is a detailed account of her pregnancy and prenatal care. She should have brought this to the case room for the initial triage assessment and it is added to her chart on admission. For ongoing nursing assessments, the *Labor and Delivery Flow Chart* (partogram) and *Progress Notes* are used. The partogram is a detailed spreadsheet used to document most aspects of labor and the progress notes are an adjunct to provide a more detailed account of patient care. These forms are initiated on admission and used throughout the labor process.

Obtaining maternal vital signs- The temperature, pulse, respirations (TPR) and blood pressure (BP) should be checked on admission. Although vital signs can be checked every 4 hours if no interventions or complications arise, temperature should be checked every 2 hours if the membranes are ruptured (The Salvation Army Grace General Hospital, 1994). Eastern Health is currently revising the policy for vital signs, which will require more frequent assessment.

Monitoring fetal heart rate (FHR) and contractions- How to monitor the FHR and contractions must be determined on admission. Monitoring FHR in relation to contractions is a very important part of nursing care in labor because it can help determine the fetal status is utero. In general, labor can cause physiological stress to the fetus because uterine contractions result in decreased blood flow thus a decreased oxygen supply to the fetus. To obtain an assessment of fetal wellbeing, the fetal heart rate is monitored via electronic fetal monitoring (EFM) or intermittent auscultation (IA) (Shahzad, 2012). Learning how to monitor the FHR is a very specific and sometimes difficult skill that takes time and education to master. Although it will be reviewed extensively during case room orientation, it will be discussed very briefly in this manual.

Electronic Fetal Monitoring (EFM)- If certain risk factors are present, such as meconium stained fluid or gestational diabetes, EFM should be used to monitor the fetal heart rate in labor. See Eastern Health policy on EFM for more details- policy number 270-MNG-ALD-180. Two separate transducers are applied to the mother's abdomen and connected to a monitor. The ultrasound transducer monitors the fetal heart rate while the tocotransducer (toco) monitors the frequency and duration of uterine contractions (intensity and resting tone only monitored by palpation). The monitor simultaneously prints the FHR and contraction pattern on special graph paper (Shazad, 2012) (see Figure 7).

Although it may seem like continuously monitoring the FHR and contractions through EFM in labor would be safer because a constant FHR assessment is obtained, research has demonstrated otherwise. According to Alfirevic, Deyane, and Gyte (2013), using continuous EFM has decreased the rate of newborn seizures but has not decreased the rates of infant mortality or cerebral palsy. In fact, these authors also found that the use of EFM has increased the rates of operative vaginal deliveries and cesarean sections. This may be due to the fact that the woman

has to remain in certain positions to obtain a constant FHR and contraction tracing. She must often lie down or sit if a wireless monitor is not available. Since these monitors are often on throughout the entire labor process, it greatly reduces a woman's ability to change position and ambulate (Shazad, 2012).

Intermittent Auscultation (IA)- As an alternative to EFM, IA can be used if the woman has no risk factors. When using this method, the FHR is auscultated using a wireless monitor (doppler) at certain intervals in labor (Shahzad, 2012). The monitor is placed on the woman's abdomen and the FHR is auscultated for a full minute after a contraction. The monitor is then removed. The FHR is auscultated every hour in latent labor, 15 to 30 minutes in active labor, and every 5 minutes in the active second stage labor (pushing) (The Society of Obstetricians and Gynaecologists, 2007). Contractions are monitored by palpating the fundus to determine frequency, duration, intensity, and resting tone. It is important to note that concerning IA findings may warrant a switch to EFM to gain a more detailed picture of fetal status. Both EFM and IA may be used at different points during labor (Shahzad, 2012). See Eastern Health policy on IA for more details- policy number 270-MNG-ALD-310.

The Society of Obstetricians and Gynaecologists of Canada (SOGC) (2007) actually recommends using IA for fetal monitoring in low-risk women because it can reduce the risk of unnecessary obstetrical intervention without placing risks on the mother and fetus. There are many other benefits to using IA. Because the monitor is only placed on the abdomen for short intervals, the woman is allowed to move more freely and ambulate during labor. It is also more easy to use for health care providers (Shahzad, 2012). In addition, the RN does not need to frequently adjust the monitors to gain a constant FHR or contraction pattern like with EFM, which can be very distracting for a woman and create undo stress for her. By using IA, the woman can better focus and concentrate on her labor in an environment free from distractions. Using IA can help switch the focus of labor from a medical situation to a more natural process (Riffle, 2014).

Obtaining blood work- On admission to the case room, all women require blood work through venipuncture, which is generally in the antecubital vein. For low-risk women, only a complete blood count (CBC) and a type and screen (T&S) need to be obtained. These are the purple and pink laboratory tubes, respectively (see Figure 10). This blood work is ordered in Meditech as "STAT" and the labels are printed at the main nursing desk in the case room. When the case room RN obtains the blood work, the tubes are labeled and sent to the laboratory through the hospital pneumonic tube system. The blood work results take approximately 1-2 hours to come back, which can be seen in the Meditech system. From the CBC and T&S, the white blood cell count, hemoglobin, platelet count, blood type, and antibody screen are of particular interest for all patients. From these results, the woman's physiologic state can be determined and care can be tailored to these results. For example, although hemoglobin is generally lower in pregnancy, very low results could indicate anemia and the woman may require blood products at some point (Davidson et al., 2012).

Establishing intravenous access- At any point during labor, a woman may need intravenous (IV) access. It may be determined that the woman needs an IV immediately on admission. A common reason for needing an IV on admission is when a woman's GBS status is positive and

prophylactic IV antibiotics are needed. In the case room, an 18-gauge cannula (green) is used on all women (see Figure 11). This larger size is used in the event that she requires blood products at any point during the labor and birth process. The IV is usually inserted in the hands or arms of the patient. It is important to note that not all women require an IV and it should only be inserted if needed. In addition, the IV can be disconnected and saline locked (heplocked) in certain cases, like between doses of antibiotics to allow for easier movement and ambulation.

Figure 10. Supplies for blood work

Figure 11. 18G cannula for IV

Note: A case room admission is very unique and varies from admission to medical or surgical units. There are many steps and processes to consider for a complete admission and this can take time. However, it is very important to understand that a woman may be very uncomfortable with contractions and need a great amount of nursing support. As a case room RN, your utmost duty is to support your patient. Do not get caught up in quickly completing the admission, especially the lengthy paper work. If you are admitting a patient in active labor, ask for help! Case room RNs are always eager to help when they can. If help is not available, set priorities. Obtain the most important details, such as gravida/para, previous mode of delivery, bleeding disorders, GBS status, meconium stained fluid, and plan for pain management. From this information, you will decide on your plan of care quickly. For example, begin IV access if needed and decide on the method for fetal monitoring (EFM or IA). Much of the paper work can be completed slowly once your patient is supported, settled into a birthing room, and coping well. In fact, this paper work can even be completed after birth. Your priority is the patient!

Remember, *"we are nursing patients not charts!"* – Margaret Ann Dooling, Case Room RN

Labor Support

Now that the woman is admitted to the case room and settled comfortably into a birthing room, you must begin providing continuous labor and nursing support. Why provide continuous labor

support? Hodnett, Gates, Hofmeyr, and Sakala (2009) completed a large research review to determine the effectiveness of continuous, one-to-one labor support. From 16 studies, over 13,000 laboring women were included in this review. The researchers found that continuous, one-to-one labor support was associated with a higher likelihood of having a vaginal delivery, a shorter labor, and greater maternal satisfaction with the labor process. In addition, these women were less likely to have analgesia or anesthesia in labor, such as an epidural. This continuous support was more beneficial when provided by someone outside of the hospital setting, such as a family member or doula. Therefore, continuous support from just the nursing staff may not be the key to improving these birth outcomes. However, ensuring that all women have some form of continuous support from trained personnel, such as the nursing staff, could help us strive toward these invaluable benefits. As stated by these authors, "continuous support during labour should be the norm, rather than the exception" (p. 11). **As case room RNs, it is our utmost duty to provide all women with continuous, one-to-one labor support!**

How do we provide this continuous, one-to-one labor support? In general, it means a provider, such as an RN has one patient and he or she provides constant care and continuous support throughout the entire labor and birth process. The RN is constantly with the patient and attending to her needs, which can be physically and mentally demanding for the RN. It is certainly not easy but it is very rewarding!

In general, the RN provides emotional, informational, and physical support, while advocating for and respecting the patient's and family's choices (Hodnett et al., 2009).

Emotional Support

Childbirth is a very exciting time for the expectant family. A woman may be eager to finally meet her baby. However, childbirth and labor can also be very terrifying and a woman may experience overwhelming fear, stress, and anxiety (Davidson et al., 2012). A woman may fear for her own wellbeing and her unborn child's wellbeing, along with the care she will receive from the nursing and medical staff. Since the process of birth is unpredictable, she may fear she will lose control of the situation and that her plan of care is essentially unknown (Piotrowski, 2012). Because of these fears, she may experience a lack of confidence in her ability to cope with the labor and give birth (Avery, Saftner, Larsen, & Weinfurter, 2014). Fear and increased anxiety in labor, along with decrease confidence, will likely increase pain and impede the process of birth. Providing continuous emotional support for all laboring women is crucial. Building a positive trusting relationship with the woman and her family is the first step in providing this emotional support. During the initial greeting and throughout the entire laboring process, it is important to be calm and friendly, while expressing genuine care and concern for the woman and her family. It is also crucial for you to be in the room and give constant encouragement and coaching, which confirms a woman's belief that you are truly there to support her throughout the entire labor. This will decrease anxiety and increase her ability to cope (Davidson et al., 2012, Hodnett et al., 2009). You are an important player in her journey towards birth because you can empower her to have faith in her body and confidence in her ability to withstand labor and give birth (Perez, 2002).

Culture can play a very important role in a woman's emotional response to labor. In some cultures, women are very quiet and stoic while others are verbal and distraught. Although you should assume that all women are modest and vigorously protect their privacy, modesty is of particular importance in certain cultures. For example, Muslim women usually like their body to be covered at all times and want to be treated only by female staff (Davidson et al., 2012). However, it is not possible to guarantee female staff in the case room thus a male may be present at any time during labor and birth. Nevertheless, it is imperative that you make them aware of case room practices and that you cannot guarantee the presence of female staff. Having said that, you must still strive to understand and uphold cultural beliefs and expectations as much as possible. In this way, you can decrease anxiety and fear, while instilling comfort and building a positive trusting relationship that is culturally competent.

Informational Support

Giving adequate and clear information during labor will also help build this positive trusting relationship. In the prenatal period, women should receive education related to pregnancy, labor, birth, and infant care, especially if they are primiparous. This education can decrease stress and anxiety in labor and improve physiological and psychological health in the postpartum period (Bahrami, Simbar, & Bahrami, 2013). Prenatal education is offered at various locations throughout Eastern Health, including the Health Sciences Centre (Eastern Health, 2013). However, a woman may not receive this important education. In addition, even if she has received prenatal education or has previously had a child, labor and birth can be unpredictable thus a woman's plan of care can change in an instant. These situations may be outside of her current knowledge. Giving clear, adequate information on admission about the what to expect during labor and updating this information as the labor progresses will ensure the woman and family understands what is happening and what will occur. This will decrease fear of the unknown and help further build that trusting positive relationship (Davidson et al., 2012).

Physical Support

The word "labor" means work. Childbirth takes a tremendous amount of energy, work, and physical ability. It can be compared to a marathon, which requires tremendous energy and sometimes hours and hours of discomfort to reach the finish line or birth of the baby. In the first stage of labor, discomfort or pain is caused by the contractions, dilation of the cervix, and pressure on the pelvic structures from the descending fetus. In general, pain is the most intense around the lower abdomen and back (Davidson et al., 2012). During labor, women often report feeling like they are "being ripped apart". However, women express pain in various ways, which may depend on their individual characteristics, such as previous childbirth experiences, learned coping mechanisms, fear of childbirth, expectations, or their culture (Otley, 2011; Rachmawati, 2012). For example, some women are very withdrawn and quiet during labor, while others moan or scream loudly (Davidson et al., 2012). It is important to note that no way of coping is right or wrong thus moaning and screaming is often a normal response.

One of the most important aspects of providing physical support is to suggest comfort measures to help women cope with this pain, which can be pharmacological and/or non-pharmacological. Although pharmacological pain relief is widely used in the case room, the focus of these modules

is on non-pharmacological comfort measures that should be utilized before turning to pharmacological measures. These non-pharmacological comfort measures include breathing techniques, position changes, hot and cold therapy, hydrotherapy, massage, attending to personal hygienic needs, monitoring intake and output, and creating a relaxing environment.

Breathing techniques- Using effective breathing techniques is extremely important because it increases a woman's ability to cope with labor by improving relaxation and providing distraction. In addition, it enhances the labor process by improving the function of the uterus. When a woman does not effectively breathe through contractions, especially when she breathes too fast (hyperventilates), it can cause many problems, such as numbness in the extremities, dizziness, visual disturbances, and muscle spasms (Davidson et al., 2012). Maternal hyperventilation may also cause a decrease in the oxygenation of the fetal brain (Tomimatsu et al., 2013).

Although there are different techniques for breathing in labor, most of these employ slow, rhythmic, and focused breathing through contractions. In the case room, most nurses encourage stage one of the Lamaze breathing. To do this, women inhale through their nose and exhale through their mouths when they have a contraction. Their lips are pursed together when they exhale, like they are "blowing out a candle". Their breaths are deep and slow at a rate of 2 breaths per 15 seconds. When the contraction is over, they may breath normally. It is important to coach and encourage women to focus and breath effectively through their contractions (Davidson et al., 2012). Also encourage them to not resist and actually "give in to" the contractions. This will hopefully help them relax and breathe more effectively (Rachmawati, 2012).

Robyn Beaudry, a case room RN and trained midwife, believes that breathing techniques are crucial for relaxation in labor. If a woman is not relaxed, the fetal head will likely not descend and the cervix will not dilate. She encourages women to inhale slowly and visualize their breath going down through their body to their toes when exhaling. Women should relax their entire body when exhaling, including their face, shoulders, pelvis, and hips (personal communication, April 17, 2015).

Position changes- Changing positions during labor is essential. These positions should be changed at least every hour or more frequently (Davidson et al., 2012). Women should be encouraged to find positions that they find comfortable (Vargens, Silva, Progianti, 2013). When possible, the nurse should promote **upright positions** and **ambulation** because it can decrease the duration of the first and second stages of labor, decrease the need for obstetrical interventions, such as cesarean sections, decrease pain and the need for an epidural, decrease neonatal intensive care unit (NICU) admissions, and increase overall satisfaction with the labor and birth process (Lawrence, Lewis, Hofmeyr, & Styles, 2013; Priddis, Dahlen, & Schmied, 2012). It makes perfect sense to promote ambulation in labor because gravity will aid in the descent of the fetus into the birth canal! In the case room, patients can easily walk around. There are bars around the unit so they can stop walking during a contraction, grip the bars for support, and focus on breathing through their contractions. Women may find walking for extended periods of time very tiring. In these cases, they can stand and lean on a support person or an

object such as, the birthing bed, which can be raised to a greater height for leaning (see Figure 12).

In addition, women can try **sitting** on a chair or any other surface they find comfortable (see Figure 13). They may find the birthing ball helpful, which is a large, air-filled plastic ball. By sitting on this ball a slowly rocking back and forth, it can increase comfort and promote fetal descent (Davidson et al., 2012). Because there is a risk of falling of the ball, someone should be present with the woman at all times when she is sitting on the birthing ball. Women can also sit on the toilet during the first stage of labor, which can feel very natural and comfortable.

Figure 12. Leaning position

Figure 13. Sitting position

Leaning or **hands and knees** ("all fours") position may promote comfort and enhance labor progression. When the fetus is in the occipitoposterior (OP) position, it can impede labor progression and cause increased maternal discomfort, especially in the lower back. In theory, using the hands and knees position can help rotate the fetal head out of the OP position thus aid the progress of labor (Guittier, Othenin-Girard, Irion, & Boulvain, 2014) Although research has not demonstrated a link between the use of the hands and knees position and rotation out of the OP position (Desbriere et al., 2013), it may still increase maternal comfort by taking pressure off the lower back (Guittier et al., 2014). In addition, the lower back is easily accessible in this position for massage and hot or cold therapy, which may be especially helpful for the intense lower back pain with the OP position. To practice leaning positions, women can use the edge of the bed or other surfaces in the case room, as described above (see Figure 12). For the hands and knees position, women can do this on the floor with pillows placed under the knees and hands/elbows or in the birthing bed (see Figure 14).

Figure 14. Hands and knees position

Because labor is so tiring, the woman may want to rest in the bed for periods of time. She will also need to be in bed if an epidural is established. Generally, the **side lying** position should be used when a woman is in bed (see Figure 15). To increase comfort, pillows should be placed under her head, between her legs, and behind her back (Davidson et al., 2012). In the case room, RNs refer to the left side lying position as the "*magic left side*" because it seems to greatly aid in labor progression! Whatever position is used for labor, the woman may want to rock or sway her body, especially her hips. This can promote comfort and should be encouraged.

Figure 15. Side lying position

Hot and cold therapy- During any time in labor, a woman may be hot or cold. She may feel warm and perspire profusely and then feel cold and shaky in a very short period of time. This is a normal response to the physical exertion during labor. To regulate her body temperature and promote comfort, hot and cold therapy can be used. Using intermittent hot and cold compresses on pain locations has been found to be effective for reducing pain. In addition, it has no side effects to the mother or fetus, is easy to use, and is inexpensive (Ganji, Shirvani, Rezaei-Abhari, & Danesh, 2013). In the case room, forms of heat include hot blankets from the blanket heater and hot water from a bath or shower (will be discussed in more detail within the section on Hydrotherapy). Forms of cold include, cold cloths, fans, and ice chips (using ice chips will be reviewed in intake and output). To create cloths that are very cold, a basin is filled with water and ice chips from the ice machine (see Figure 16). Face cloths that have been cooled in this ice-cold water are placed on the laboring woman, generally on her forehead or back of her neck (see Figure 13).

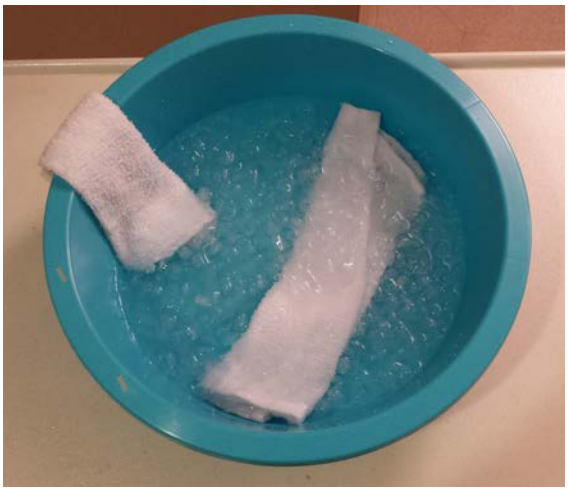

Figure 16. Basin with ice-cold water

Hydrotherapy- Using hydrotherapy during labor, such as a bath or shower can promote relaxation, increase comfort, and decrease the duration of labor (Davidson et al., 2012). It also helps improve hygiene and increase satisfaction with the labor process (Lee, Liu, Lu, & Gau, 2013). When a woman does not have complications that would restrict her movement, such as continuous EFM that is difficult to trace, or a rupture of membranes she can usually have a bath or shower. However, if she has ruptured her membranes, a bath is not recommended in the case room because of the theoretical risk of infection. Although this is a routine practice, research suggests that a bath does not increase the risk of infection when membranes are ruptured (Harper, 2014). Nevertheless, if there are concerns about the risk of infection, these women can still use the shower as a comfort measure.

In the case room, each birthing room is equipped with facilities for both baths and showers (see Figure 17). For a bath, plug the bathtub and fill it with warm water. Ask the woman to feel the water temperature and adjust it to a temperature that she finds comfortable. Help the woman to lie on her back or side in the warm bath water. For a shower, change the bathtub to shower mode. Each bathtub had a showerhead that can be removed and adjusted to suit the needs of the woman.

The RN or a family member can hold the showerhead and move it over her most painful areas. Shower chairs are usually available in each room. Depending on if the woman is experiencing pain in her abdomen or back, she can sit on or lean over the shower chair on her hands and knees. It is important to still be with the woman while she is in the bath or shower. For example, sit by the side of the bathtub and continue to provide support.

Figure 17. Bath/shower in birthing room

Massage- Any form of touch during labor can be very helpful. Women may find it distracts them from the pain and increases comfort. Massage is a form of touch where soft tissues are manipulated to increase blood flow, reduce muscular tension, decrease pain, and increase overall comfort and wellbeing (Davidson et al., 2012). Although there is limited research on massage in labor, it may be effective for reducing labor pain and anxiety (Smith, Levett, Collins, & Jones, 2012). To massage women in labor, certain tools can be used or just the hands. For example, you can use your hands to stroke, glide, kneed, or press. Using a circular motion or pattern may be particularly helpful. Since many women complain of intense lower back pain in labor, massage can be applied to this area (Davidson et al., 2012). In addition, the shoulders and back may be very tense thus gentle massage to these areas may be beneficial. It is important to note that some women like to be touched during labor while others find it invasive and irritating. Asking the woman if she wants to be touched will help you determine if techniques like massage are appropriate (Davidson et al., 2012).

Attending to personal hygienic needs- Besides the obvious pain of labor, there are many other reasons for discomfort during this time. Supporting basic hygiene is very important. Large amounts of vaginal discharge and amniotic fluid may flow from the vagina during labor. This can cause embarrassment and discomfort. Therefore, it is important to cleanse the perineum and

change the woman's pads, gown, and bed linens frequently (Davidson et al., 2012). This will be comforting and also help maintain skin integrity.

Monitoring intake and output- The woman's intake and output should also be monitored (Davidson et al., 2012). Research suggests that fasting during labor is not recommended for a low-risk woman (Sharts-Hopko, 2010). However, in the case room, a woman is not advised to eat or drink. She is only offered ice chips and popsicles during labor. This is due to the risk of aspiration if a general anesthetic was needed for an emergency cesarean section (Sharts-Hopko, 2010). During labor, a woman's mouth will likely become very dry from the aforementioned breathing techniques and this can be very uncomfortable. Offering ice chips and popsicles may decrease this discomfort. If the woman is receiving IV fluids for reasons such as needing IV antibiotics or dehydration, you should closely monitor this intake. It is also very important to monitor a woman's output. Because the bladder is so close to the vagina thus the descending fetus, frequently emptying the bladder is crucial to ensure the fetus has optimal space to descend. This will also decrease pressure and promote comfort. The woman should be advised to ambulate to the toilet and empty her bladder every one to two hours (Davidson et al., 2012; Piotrowski, 2012). In addition, this will promote position change and many women find laboring on the toilet helpful.

Creating a relaxing environment- It is important to create a calming and relaxing environment for the laboring woman. Too often, labor is seen as a medical situation where bright lights and loud equipment envelop the room and create an environment that is far from relaxing. Women can benefit from a "homey" atmosphere with dimmed lights, little noise, and minimal equipment. This can decrease stress and promote relaxation (McNelis, 2013).

Recently, women have been using "hypnobirthing". It is a form of labor support, which focuses on natural childbirth through a process of hypnosis. By decreasing outside stimuli, the woman becomes very focused and introverted. This promotes relaxation and decreases the perception of pain. To reduce the amount of stimulus and promote hypnosis, the environment is crucial. Low lighting, minimal noise, and warmth are of particular importance (Harkin, 2015). Voice recordings with relaxing music and voices may even be used to promote hypnosis. In addition, the family actively engages in the laboring process and is the main form of support. Women who want to use "hypnobirthing" come into the case room with the specific equipment and usually a doula. A **doula** is an individual that is trained to give labor support throughout the entire birth process. They are employed by the woman thus are separate from the hospital team. Although they cannot replace the RN, they work alongside the RN in a complimentary role (Piotrowski, 2012). When caring for patients that choose to use hypnobirthing, it is important to create the right environment and participate in this form of care, when possible (Harkin, 2015). In addition, it is important to work with the woman, family, and doula to provide care together.

Advocacy

It is also important to advocate for the needs and wants of women and their families. In general, most women have certain expectations of their childbirth. Although these may be very simple, some women have very specific requests, which are sometimes written in a **birth plan**. Within this document, women can request what they would and would not like during childbirth. This

document is then brought to the case room and reviewed by their RN when they are admitted. From this, the RN can determine what is requested during labor and form a plan of care. Nevertheless, certain requests may not be advisable or even possible and this can cause undo stress for a woman and family who have certain expectations. In these cases, the RN should try to uphold their requests as much as possible and provide education when their expectations cannot be met (Davidson et al., 2012). In addition, at any point during labor you may feel that certain interventions are unnecessary, such as artificial rupture of membranes (AROM). In these cases, you must speak to the obstetrical team and advocate for your patient thus ensure she has the safest possible labor without unnecessary intervention.

Case Study

Jill is admitted to the case room with SROM and in active labor. Her cervix is 5cm dilated and 80% effaced. Jill has been assigned to you. You transfer her into birthing room #4.

1. What should have been prepared or checked in the birthing room before Jill's admission?

2. Overall, what type of support will your provide to Jill? Why?

3. As you are completing Jill's nursing history, she becomes very distressed and screams that she "cannot do this anymore"! What must you immediately do?

4. You just performed a PV exam and Jill is now 7cm dilated and 100% effaced. Jill is still very vocal and screaming that she "cannot do this anymore"! She stated earlier that she does not want any pain medications during labor thus desires a natural birth. What comfort measures can you offer to Jill to support a natural birth?

See end of module for answers to case study questions!

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Case Study Answers

1. What should have been prepared or checked in the birthing room before Jill's admission?

Before Jill is settled in a birthing room, the room must be set up and all equipment must be checked to ensure it works properly. To set up the room, the birthing bed in lowered to a safe level and a soaker pad and/or blue pads are placed on the bed. Blue pads are also placed on the birthing room table with supplies needed for the delivery. In addition, you must ensure all equipment is in the room and working properly, such as the delivery tray, electronic fetal monitor, and baby cot. The baby cot has specific equipment that must be thoroughly checked. Although this equipment is not needed in most deliveries, it all must work properly and be ready to use. In addition, the patients chart must be assembled with the appropriate documents (see section on *Preparing the birthing room* within in this module for a full list of equipment and supplies).

2. Overall, what type of support will your provide to Jill? Why?

You will be providing one-to-one, continuous nursing support throughout the entire labor and birth process. You will be constantly with her and attend to her needs. Continuous, one-to-one labor support is associated with a higher likelihood of having a vaginal delivery, a shorter labor, and greater maternal satisfaction with the labor process. In addition, women are less likely to have analgesia or anesthesia in labor, such as an epidural (Hodnett et al., 2009). As a case room RN, it is your utmost duty to provide all women with continuous, one-to-one labor support!

3. As you are completing Jill's nursing history, she becomes very distressed and screams that she "cannot do this anymore"! What must you immediately do?

Stop completing the nursing history! Ask for help from other case room RNs. If help is not available, set priorities. Obtain only the most pertinent details about Jill's history (such as GBS status, gravida/para, previous mode of delivery, bleeding disorders) from the prenatal record, triage record, or by asking her or her family short, simple questions. From this information, you will decide on your plan of care quickly. At this time, you must ignore the lengthy charting and focus on Jill. You must ensure that you are there for her and providing emotional, informational, and physical support. You must try to make her as comfortable as possible and attend to her needs. Because this is not Jill's first birth, you may also consider performing a PV exam to determine if she is fully dilated and ready to push.

4. You just performed a PV exam and Jill is now 7cm dilated and 100% effaced. Jill is still very vocal and screaming that she "cannot do this anymore"! She stated earlier that she does not want any pain medications during labor thus desires a natural birth. What comfort measures can you offer to Jill to support a natural birth?

First, you must understand that moaning, screaming, and shouting in labor are usually normal responses. Unless Jill specifically asks for pharmacological pain medications, you

should instead offer non-pharmacological comfort measures: You can coach Jill on effective breathing techniques, encourage position changes, provide hot and cold therapy (warm blankets, cold cloths, and ice chips), offer a bath or shower (shower preferred for SROM in case room), provide a massage, attend to her hygienic needs (clean pads, linens, and gowns), monitor her intake and output (ice chips, IV fluids, emptying bladder), and create a relaxing and calming environment (dim lights, decreased noise, and quiet voices). If Jill eventually requests pharmacological comfort measures and she is not fully dilated, you should support her in this decision and educate her on the different options.

Appendix E
Module 3

Module 3-Nursing Care and Support for the Second Stage of Labor

In the previous module, nursing support for the first stage of labor was reviewed. In this module, nursing care and support for women in the second stage of labor will be discussed in detail.

The Second Stage of Labor

In the first module, you learned that the second stage of labor begins with the cervix being 10cm or fully dilated and 100% or fully effaced and ends with the birth of the fetus (Davidson, London, & Ladewig, 2012). The average time within this phase is 20 minutes for multiparous women and 50 minutes to 2 hours for primiparous women (Davidson et al., 2012; Lowdermilk, 2012). When an epidural is insitu and used for pain relief in labor, the second stage of labor can be prolonged by up to at least 1 hour, regardless of parity (Davidson et al., 2012). In the case room, the second stage of labor can be very lengthy, especially for primiparous women with an epidural.

Like the first stage, the second stage can be divided into phases:

Latent phase- During this phase, the woman is not actively pushing or "bearing down". The fetus descends in the birth canal solely because of the uterine contractions (Lowdermilk, 2012). This is also referred to as "laboring down" or "passive descent". If an expedited birth is not warranted due to certain complications, women should not be encouraged to push unless they feel the urge because their pushing may not be effective and it can waste valuable energy. It is reasonable to remain in the latent second stage of labor for up to 2 hours. Because an epidural may decrease the urge to push, these women are more likely to be in this phase and benefit from the extra time to gain this urge to push and help the fetus descend with minimal effort (Kopas, 2014).

Active phase- When the woman actively pushes or "bears down", this force is combined with the uterine contractions to help the fetus descend in the birth canal. Because the woman is actively pushing, it then becomes the active second stage of labor (Lowdermilk, 2012).

When to Start Pushing?

When women are fully dilated, especially when they do not have an epidural, they will usually feel an overwhelming urge to push. Even when they have an epidural, this urge is often present. When the fetus descends into the maternal pelvis, the cervix stretches and pressure is exerted on the posterior vagina, which causes this urge to push. This is also referred to as **Ferguson's Reflex** (Lowdermilk, 2012). The urge to push or Ferguson's Reflex generally feels like an intense urge to have a bowel movement. Although the woman will often verbally express her need to push, you can usually tell she is ready by listening for certain cues, like grunting. When full dilation and a readiness to push are suspected, it is important to perform a PV exam. Late in the transition phase women may start feeling this urge to push, especially if the fetus is the

occipitoposterior (OP) position (Borrelli, Locatelli, & Nespoli, 2013). However, it is important to refrain from pushing unless full dilation is confirmed with a PV exam (Davidson et al., 2012). Pushing against a cervix that is not fully dilated can cause maternal exhaustion and cervical edema (Borrelli et al., 2013). In addition, the birth of the fetus can be very fast when pushing begins, especially in multiparous women, thus you should try to ensure all supplies, equipment, and personnel are ready. If possible, pushing should only begin when the urge is experienced, full cervical dilation is confirmed, and the unit it ready for the birth. If the birth is imminent before the room is ready and all necessary personnel are not present, don gloves, call for help, and position yourself to deliver the baby. You must remain calm even though you will likely be nervous. Although we try not to, case room RNs sometimes have to deliver babies that are in a hurry! The process for delivery will be explained later in this module.

Nursing Support for Pushing

The second stage of labor is usually very intense, especially when the woman is pushing. She may express herself in various ways while pushing. She may be quiet and introverted or grunt, scream, and shout. These responses are generally normal but a woman in this stage needs a great deal of support and guidance. Like with the first stage of labor, the nurse can give emotional, informational, and physical support, while advocating for the woman and her family (Davidson et al., 2012).

Emotional Support

Although the entire labor process is intense, the woman may experience heightened emotions during the second stage of labor, especially when she is pushing. As pain and pressure increases, the woman may become distressed and lose her ability to cope. She may cry, scream, and plead for the labor to be over. Although these are often normal responses, the nurse can help enhance a woman’s confidence in her ability to give birth by acknowledging her pain, giving information, providing choices, such as different positions for pushing, and giving reassurance. Creating a calm environment and speaking in low, soothing tones may also decrease stress and enhance the woman’s ability to cope (Bergstrom, Richards, Morse, & Roberts, 2010).

Informational Support

As with the first stage of labor, it is important to provide informational support to women in the second stage of labor. A woman may not be able to completely absorb the information during this time because of the pain and stress associated with labor. Therefore, you should give concise and straightforward information and ensure the woman understands (Holvey, 2014). In addition, it is important to be honest when the woman asks questions about her labor progress. This will help build trust and confidence in your relationship (Davidson et al., 2012).

Physical Support

Pain and pressure are often very severe when a woman is pushing. She may feel like she is “splitting apart” or there is a “ring of fire” on her perineum. This pain is caused by the uterine contractions, stretching of the vagina and perineum, and pressure from the descending fetus on

the lower body. Pain is most severe on the lower abdomen, lower back, and perineum (Davidson et al., 2012). The woman requires a tremendous amount of physical support during this time to help alleviate the pain and progress toward birth. Effective coaching for pushing, position changes, hot and cold therapy, perineal massage, visualization, intake and output, and personal hygienic needs are of particular importance.

Effective coaching for pushing- Pushing is hard work. A woman needs effective coaching and guidance to push effectively and efficiently. First, the uncontrollable urge to push is usually very strange, alarming, and embarrassing because it is like an urge to have a bowel movement. This often causes women to tense up and work against this urge to push (Davidson et al., 2012). One of the major concerns voiced by women in the pushing stage is a fear of having a bowel movement. Although this may occur when pushing, you must reassure the woman that this is very normal. Encourage her to listen to her body and not be afraid to push. By doing this, she will essentially let her body take over. Women usually report satisfaction and relief when doing this (Davidson et al., 2012; Piotrowski, 2012).

According to research, the method of pushing is highly debated. In the case room, **directed pushing** or closed-glottis pushing is generally used. To do this, the RN instructs the woman to wait for a contraction when the urge to push is the strongest. When she feels a contraction and urge to push, she is instructed to take a big deep breath, hold it, and bear down or push for approximately 10 seconds. While doing this, she should not let any air out or make any noise. This is also referred to as the **Valsalva Maneuver** (Kopas, 2014). After 10 seconds, she should exhale, quickly take another deep breath, and then push for another 10 seconds. The sequence is then repeated. A woman is encouraged to push for a total of three times during a contraction, while resting in between. The RN provides encouragement and guidance throughout the pushing process. You will often hear case room RNs say “push, push, push”, “harder, harder, harder” or “more, more, more” to encourage the woman.

Although this method is used in the case room, studies have shown that it may cause many problems for the mother and fetus, such as stress on the mother’s cardiovascular system and changes in the fetal heart rate (DiFranco & Curl, 2014). Therefore, spontaneous (non-directed) pushing is recommended if possible (Kopas, 2014). In fact, The Society of Obstetricians and Gynaecologists of Canada et al. (2008) recommend spontaneous pushing instead of directed-pushing. When using this method, the woman does not follow a particular pattern of pushing and is not directed by the RN. She listens to her body and pushes naturally. For example, she may not hold her breath during contractions (open-glottis) and not use the Valsalva Maneuver. She may also grunt and groan during a contraction (DiFranco & Curl, 2014). In addition, the RN does not yell at the woman to “push, push, push” and gentle, quiet encouragement is preferred (Kopas, 2014).

Although research and SOGC et al. (2008) recommend spontaneous pushing, you must individualize your care. Depending on the situation and the woman’s preference, different styles of pushing and coaching can be used. For example, if fetal wellbeing is compromised, directed pushing may be used to expedite the birth (Kopas, 2014).

Position changes- There are many positions that can be assumed for pushing. Because the presenting part is usually rotating during labor to fit through the maternal pelvis, it is important to change positions frequently to allow for this rotation thus fetal descent. Certain positions also open the pelvis to allow for easier descent. Therefore, frequent position changes that promote fetal rotation, open the maternal pelvis, and are comfortable for the woman should be used (DiFranco & Curl, 2014; Piotrowski, 2012).

When using the directed pushing method, the woman is often advised to pull back her legs and place her chin to her chest (Davidson et al., 2012). Since the elbows are flexed and point outwards, this position resembles "rowing". This technique is often used when a woman is pushing in the **recumbent or lithotomy** (on her back) and **side-lying positions**. These are generally done in the birthing bed (see Figures 1 and 2). In the case room, innovative recumbent positions are used. A squatting bar can be attached to the birthing bed and a towel/sheet can be tied to the bar. The woman can place her feet on the bar and concurrently pull back on the sheet while pushing, like a tug-of-war (see Figure 3). Although these recumbent/lithotomy and side-lying positions allow a woman to better rest between contractions thus can allow for better relaxation, they do not avail of gravity thus promote fetal descent (DiFranco & Curl, 2014). Therefore, upright positions are more beneficial for pushing, such as squatting, sitting, or hands and knees.

Figure 1. Recumbent position for pushing

Figure 2. Side-lying position for pushing

Figure 3. Tug-of-war position for pushing

For **squatting positions,** a woman may squat by the side of the birthing bed or use the squatting bar, which is easily secured on the birthing bed for pushing (see Figure 4). These squatting positions not only utilize gravity but also open the pelvis by 28% thus allow more space for the descending fetus and increase the strength of uterine contractions (Davidson et al., 2012).

The woman may also like **sitting positions**, such as birthing chairs (Davidson et al., 2012). Although these are not available in the case room, sitting on the toilet and pushing should have the same benefits. This position also utilizes gravity and increases the strength of uterine contractions (Davidson et al., 2012). In addition, because the urge to push feels like an urge to have a bowel movement, a woman may find the toilet is a comfortable and natural place to push (Piotrowski, 2012).

Finally, the **hands and knees position** is another option for pushing that a woman can try in the second stage of labor. Women usually do this in the birthing bed because of the extra comfort and softness for their knees and hands (see Figure 5). This position could be particularly beneficial when the fetus is in the occipitoposterior (OP) position because it could theoretically help with rotation from OP to occipitoanterior (OA) (Davidson et al., 2012). Although research has not demonstrated a link between the use of the hands and knees position and rotation out of the OP position (Desbriere et al., 2013), it may still increase maternal comfort by taking pressure off the lower back (Guittier et al., 2014). The hands and knees position also opens the pelvis and increases the strength of contractions (Davidson et al., 2012).

Figure 4. Squatting position for pushing

Figure 5. Hands and knees position for pushing

In the case room, various positions are used for pushing but most women actually deliver on their back with their legs in stirrups or on foot pedals (lithotomy). The use of this position is likely due to the cultural norms and the medicalization of birth. More specifically, it is better for fetal monitoring and easier for the health care team to deliver the fetus. However, upright

positions for birth have been shown to decrease the risk of operative delivery and episiotomies. Even though upright positions may increase the amount of blood loss with delivery (Gupta, Hofmeyr, & Shehmar, 2012), it may be important to review our use of the lithotomy position and offer women the choice to deliver in an upright position.

Hot and cold therapy- Pushing is hard work thus a woman may become very warm and perspire from the physical exertion. She may benefit from cold cloths on her forehead and neck, a fan to blow cool air, or ice chips and popsicles to wet her mouth. She may also want to remove her clothing. Although you should protect her privacy, you should respect her decision to remove her clothing for birth. While most women are warm when pushing, some still benefit from heat. Warm compresses on the perineum during pushing can decrease perineal trauma and tears (Aasheim, Nilsen, Lukasse, & Reinar, 2011). In the case room, the nurse can easily do this while the woman is pushing. Sterile warm water from the heater, a sterile basin and sterile towel from the delivery tray or minor pan, and sterile gloves are generally used. First, the sterile water is poured into the basin. You then don sterile gloves and place the towel into the water. While the woman is pushing, the towel with the warm water is gently placed on the perineum. Although birth is not a sterile process, we try to decrease the contamination around the perineum in the case room. Therefore, a sterile technique is used for warm perineal compresses.

Perineal massage- Perineal massage with lubricant (called “muco” in the case room) can be used during the pushing stage to stretch the perineal tissues and decrease the burning sensation and pressure from the descending fetus (Davidson et al., 2012). In addition, it can decrease the incidence of third and fourth degree perineal tears (Aasheim et al., 2011). However, vigorous perineal massage, especially when the fetus is crowning, may cause perineal edema and trauma thus should be avoided (Davidson et al., 2012). Therefore, very gentle perineal massage with lubricant can be used. To do this, open a sterile glove package and place lubricant on the sterile field. Don the sterile gloves and place the index and forefinger of your dominant hand into the lubricant to ensure they are well covered with the lubricant. Place these two fingers into the lower portion of the vagina (perineum) and very gently massage back and forth. Remember to avoid vigorous massage!

Visualization- The woman may also benefit from visualization in the second stage of labor. For example, you can ask her to imagine “her body opening for her baby” or “the baby descending into her birth canal”. By creating a mental picture of what is happening inside her body, it may increase her focus and confidence in her ability to give birth. This can help her remain calm and push more effectively. In addition, you can offer her the mirror so she can actually see her perineum bulge and, if the fetus is visible (generally the fetal head), she can visualize her progress with each contraction and push. In other words, she can see the fetus descending, which can promote confidence and excitement (Davidson et al., 2012). A mirror is available in the case room to use during a vaginal birth. It can be wheeled in the room and adjusted so the woman can view her birth. If she refuses to use the mirror, you can also encourage her to touch the fetal head as it is crowning, which will show her that the baby will soon be born!

Figure 6. Mirror in case room

Intake and output- It is also important to monitor a woman's intake and output while she is pushing. Although her oral intake may be limited, again it is important to ensure her mouth does not become dry by offering ice chips and popsicles. In addition, her bladder should be emptied thus she should be encouraged to void every 2 hours to increase the space for the descending fetus (Piotrowski, 2012). If she passes urine while pushing, she may need to void thus should be encouraged to ambulate to the toilet.

Personal hygienic needs- Personal hygiene must be maintained during the second stage of labor. Not only may the woman be warm and sweaty, a mixture of bodily fluids can be released with pushing, including amniotic fluid, vaginal discharge, bloody show, urine, and feces. It is imperative to keep the woman clean and comfortable. Ensure her gown, bed linens, and pads under her perineum are changed frequently (Davidson et al., 2012). In addition, her perineum will likely need to be cleansed frequently, which can be done with warm soap and water. Unlike warm compresses, cleansing the perineum does not require a sterile technique. In the case room, a clean basin, facecloths, soap, and warm water are used to cleanse the perineum during pushing or at any other time in labor.

Advocacy

The woman may have certain expectations and requests for the second stage of labor. She may express these verbally or have them written down in her birth plan. If these requests are unrealistic or a change in the situation requires you to modify the plan of care, you should give an adequate explanation (Davidson et al., 2012). In addition, at any point during labor you may

feel that certain interventions or practices are unwarranted, such as pushing in the lithotomy position. In these cases, you could speak to the obstetrical team and advocate for your patient.

Note: It is important to remember that, while you are providing this support for the women, you must closely monitor the fetal heart rate. In the last module, you learned that intermittent auscultation (IA) is recommended by the SOCG (2007) in low-risk women. Nevertheless, some women are placed on electronic fetal monitoring (EFM). During the active second stage of labor, you must interpret the fetal heart tracing and appropriately document your findings every 5 minutes for EFM, and auscultate the fetal heart rate every 5 minutes for IA (Eastern Health, 2011a, 2011b).

Delivery and the RN's Role

In the case room, there is a general process for delivery. During this time, the nurse must prepare the birthing room, support the woman, and assist the physician during the delivery process. You should start preparing for delivery when the fetal head is visible head in a primiparous woman (approximately 4-5cm visible). However, you need to prepare for the delivery much sooner for a multiparous woman because delivery may be eminent even before she is fully dilated (Davidson et al., 2012). Because a multiparous woman tends to give birth very fast, call for help immediately and be prepared to assist the woman to give birth. You must have equipment and supplies ready. In addition, you must don sterile gloves and ensure you are ready to deliver the baby if the obstetrical team is not present. **Remember, never turn you back on a multip!**

Preparing the Room

Birthing rooms are equipped with the necessary supplies and equipment required to manage low-risk births. You must ensure all equipment is functioning properly and all the necessary supplies are available. Although the birthing room should be checked before admission and when you first come on shift, this may not always be possible. Therefore, you may need to check the birthing room just before delivery. You must first check and turn on the baby cot/radiant warmer (see Figure 7). The Neonatal Intensive Care Unit (NICU) resuscitation team recommends using 100% heat on the baby cot initially for delivery (personal communication, April 13, 2015) Although policy states the newborn is to be placed skin-to-skin with the mother immediately after delivery (will be discussed later in this module), adequate warmth is needed in case the newborn requires further resuscitation and assessment on the baby cot. You should also turn on and check the suction, bag/mask, and laryngoscope. Furthermore, you should ensure all other supplies are available on the baby cot. See module 2 for details.

Other supplies necessary for delivery should have been placed on the birthing room table. In module 2, you learned about these supplies. At this time, it is important to draw up the oxytocin so it is ready to be administered during delivery (see Figure 8). In the case room, **oxytocin 10 units is given intramuscularly (IM)** after the delivery of the fetal anterior shoulder in all vaginal deliveries. This helps the uterus contract and the placenta separate, which decreases bleeding (Davidson et al., 2012). A 3ml syringe and a 22G, 1 ½ inch needle is used to administer the oxytocin.

Figure 7. Turning on baby cot to 100%

Figure 8. Supplies for oxytocin injection

You can also set up the delivery tray that is required for birth (see Figure 9). This tray should be available in every birthing room. First, place the tray on the bedside table and open it using sterile technique. Add a cord blood tube (red-topped tube) to the delivery tray using sterile technique. Don sterile gloves and arrange the supplies for delivery. Although different physicians will arrange the supplies based on their preferences, the picture below depicts a general setup. You should also ensure a minor pan with a stand, sterile gowns, sterile gloves, sterile drapes, sponges, sutures, and local Lidocaine are readily available for delivery. These are not added to the tray but should be available on the birthing room table. If at any time sponges or needles/sutures are added to the delivery tray, these must be counted by a nurse and physician (Eastern Health, 2006). See Eastern Health policy II-C-100 for more details.

Figure 9. Delivery tray setup

When you decide delivery is imminent, press the patient buzzer on the wall behind the birthing bed. Do not confuse this with the red panic button, which is located on another wall in each birthing room and is only used for major emergencies! Once someone at the main desk answers, state your patient ready to deliver and request for him or her to retrieve sterile water and warm blankets from the heater, call the physician, and arrange for a "baby nurse". In the case room, there is usually a resident and obstetrician present for every delivery thus both are called at this time. The "baby nurse" could be any case room RN that has completed the Neonatal Resuscitation Program (NRP). This nurse receives the baby after delivery and performs the initial newborn care and assessment, thus assigns the APGAR scores (will be described in module 4).

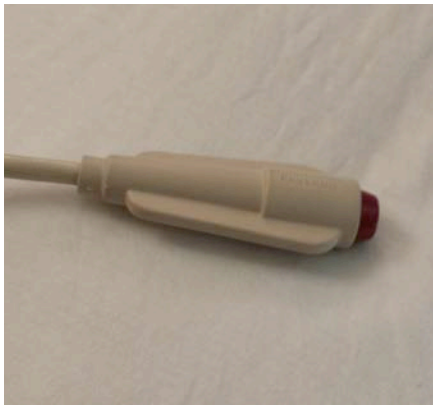

Figure 10. Patient buzzer

Figure 11. Panic button

In summary, these steps should be taken to prepare the room for delivery:
1. Check and ready all equipment and supplies, including the baby cot and oxytocin
2. Open and arrange the delivery tray
3. Call for sterile water and blankets, the physician, and the "baby nurse"

The Delivery Process

Now that the birthing room is ready and all personnel are present, the woman will hopefully be ready to deliver. She should be in a comfortable position for delivery, which could include upright positions, like squatting or hands and knees (Gupta et al., 2012). However, in the case room, the lithotomy position is used the majority of the time (see Figure 12). If the woman requests to deliver in another position, advocate for her and speak with the physician.

Since the lithotomy position is usually used for delivery in the case room, it will be reviewed in this module for the delivery process. Place her feet in the stirrups or foot pedals on the side of the bed and then proceed to detach the bottom of the bed. She will likely need to move down in the bed so that her perineum is at the edge. Detaching the bottom of the bed and moving the woman down to the edge will help with possible delivery of a large newborn, visualization of the perineum in case of episiotomy, and possible use of instruments for an operative delivery

(vacuum or forceps) (Piotrowski, 2012). Then, you need to turn on and adjust the delivery lights, which are located in the ceiling of each birthing room. The switch/panel is on the wall in each room (see Figure 13). The physician may also need assistance with tying his or her gown and readying any additional supplies.

Figure 12. Lithotomy position for delivery

Figure 13. Switch/panel for delivery lights

While preparing for delivery and assisting the physician, you must remember that the woman is still your priority. While you are preparing for delivery and people are entering the room, she may become very overwhelmed and stressed. It is important to provide reassurance and continuous support.

Once it has been established that birth is imminent, the fetal head must be delivered. When the fetal head is **crowning**, which is when the largest portion of the head is visible (see Figure 14), certain techniques are used to aid in the delivery and decrease trauma. The thumb and forefingers of one hand is placed over the perineum, while the other hand is placed over the fetal head to maintain flexion. This helps support the perineum and decreases the incidence of perineal tears (Davidson et al., 2012; Moore, 2013). Pushing efforts should change during this time to ensure the fetus is not expelled too quickly. When the head is almost out, the woman should be instructed to give small pushes or grunts and then refrain from pushing or pant when the head is almost expelled. This will allow the perineum to stretch and accommodate the fetal head without tearing (Davidson et al., 2012).

When the fetal head is delivered, restitution and external rotation will occur. It is important to wait for this, which will be evident when the anterior shoulder is visible at the symphysis pubis. While waiting, it is important to check for the umbilical cord around the neck. If it is present and is loose, it should be slipped over the fetal head or shoulder before the rest of the fetus is delivered. However, if the cord is tight around the neck, it may need to be clamped and cut at the perineum (Davidson et al., 2012; Piotrowski, 2012). Since the fetus receives no further oxygen if the umbilical cord is clamped and cut at the perineum, the delivery of the anterior shoulder and rest of the fetus may the expedited

Next, when the anterior shoulder is visible at the symphysis publis, it must be delivered. To do this, hands are gently placed on each side of the fetal head around the neck. By pulling downward, the anterior shoulder will be released from under the symphysis pubis (Davidson et al., 2012). After delivery of the anterior shoulder, oxytocin 10 units is administered IM in the vastus lateralis muscle of the woman's thigh. The RN assigned to the woman administers the oxytocin. Then, the posterior shoulder is delivered by pulling upward. Finally, the fetal body is delivered by holding the posterior shoulder in one hand while controlling the fetal body in the other (Davidson et al., 2012). When the baby is born, note the exact time. If possible, the baby should be placed immediately on the mother's chest skin-to-skin with the "baby nurse" present for initial care and assessment. Warm blankets are placed over the baby to minimize heat loss. While the baby is on the mother's chest, the physician will clamp the cord twice and cut in between. A yellow umbilical clamp is usually used to clamp the cord closest to the baby because it is less bulky than the metal clamp and more secure. The woman's support person is usually offered the opportunity to cut the cord. If they refuse, the physician cuts the cord (Davidson et al., 2012).

Figure 14. Crowning of the fetal head

Figure 15. Metal clamp/umbilical clamp

After the delivery, the woman enters the third stage of labor that begins with the birth of the fetus and ends with the expulsion of the placenta (Davidson et al., 2012). The third and fourth stages of labor will be covered in the next module.

Case Study

Jill is progressing well through her labor. She is now beginning to grunt loudly and state that she needs to push.

1. What must you do before Jill starts to push? Why?

2. Jill is fully dilated and ready to deliver. The fetal head begins to crown. Jill is becoming very distressed. What can you do to support Jill and help her through the crowning and delivery of the fetal head?

3. The fetal head is delivered. What are the next steps in the delivery of the fetus?

4. A healthy baby girl is born! Where should the baby be placed for immediate care?

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Case Study Answers

1. What must you do before Jill starts to push? Why?

First, because Jill may be feeling very overwhelmed, it is important to remain calm and reassure her. Explain exactly what could be happening and needs to be done. You must perform a PV exam to ensure she is fully dilated because pushing against a cervix that is not fully dilated can cause maternal exhaustion and cervical edema (Borrelli et al., 2013). In addition, Jill is a multip thus her delivery may be very quick. Therefore, you must ensure that the room is ready:
1) Check and ready the equipment and supplies, especially the baby cot and oxytocin
2) Open and arrange the delivery tray
3) Call for water and blankets, the physician, and the "baby nurse"
Also, you may want to don sterile gloves in case you need to perform the delivery. Remember, never turn your back on a multip!

2. Jill is fully dilated and ready to deliver. The fetal head begins to crown. Jill is becoming very distressed. What can you do to support Jill and help her through the crowning and delivery of the fetal head?

Since Jill is a multip, her delivery will likely occur very quickly. Nevertheless, you can still provide physical, emotional, and informational support. For example, place cold cloths on her head or neck if she is warm, give her ice chips, place warm compresses on her perineum, speak to her in low soothing tone, explain to her what is happening, and provide encouragement. When the head is ready to be delivered, you or the physician will calmly instruct her to give small pushes, grunt and/or pant when the head is almost expelled. This will allow the perineum to stretch and accommodate the fetal head without tearing (Davidson et al., 2012).

3. The fetal head is delivered. What are the next steps in the delivery of the fetus?

When the fetal head is delivered, it will restitute and external rotation will occur. When the anterior shoulder is visible at the symphysis publis, this has likely occurred. At this time, it is important to check for the umbilical cord around the neck. If it is present and is loose, it should be slipped over the fetal head or shoulder before the rest of the fetus is delivered. However, if the cord is tight around the neck, it may need to be clamped and cut at the perineum. Next, the anterior shoulder must be delivered. To do this, hands are gently placed on each side of the fetal head around the neck. By pulling downward, the anterior shoulder will be released from under the symphysis pubis (Davidson et al., 2012). After delivery of the anterior shoulder, the RN assigned to the woman administers oxytocin 10 units IM in the vastus lateralis muscle of the woman's thigh. Then, the posterior shoulder is delivered by pulling upward. Finally, the fetal body is delivered by holding the posterior shoulder in one hand while controlling the fetal body in the other (Davidson et al., 2012).

4. A healthy baby girl is born! Where should the baby be placed for immediate care?

The newborn should be placed immediately on the mother's chest skin-to-skin with the "baby nurse" present for initial care and assessment!

Appendix F
Module 4

Module 4- Nursing Care and Support for the Third and Fourth Stages of Labor

In the previous module, nursing care and support for the second stage of labor was reviewed. This module will be focused on nursing care and support for the third and fourth stages of labor.

The Third Stage of Labor

The third stage of labor begins with the birth of the fetus and ends with the birth of the placenta, which is generally within 30 minutes. In the case room, oxytocin is administered IM with delivery of the fetal anterior shoulder, which will help the uterus contract and aid in separation of the placenta. When the placenta separates and descends into the vagina, the woman may feel cramping or an urge to push. Obvious signs of placental separation include a gush of blood, change in the shape of the fundus, an increase in fundal height, and descending or lengthening of the clamped umbilical cord. The physician will likely aid in the delivery of the placenta by compressing the fundus then concurrently applying gentle traction to the attached umbilical cord (Davidson, London, & Ladewig, 2012; Lowdermilk, 2012a).

The Fourth Stage of Labor

When the placenta is delivered, the fourth stage of labor commences. During this stage, the woman is in recovery from the birth of the fetus and placenta. It generally lasts 1 to 2 hours after the placenta is delivered and it is a crucial time for monitoring to ensure the woman's body returns to homeostasis and no complications are evident (Lowdermilk, 2012a). The woman has an increased risk for extra bleeding or a postpartum hemorrhage during this stage. This is also an important time for bonding between the mother and her newborn (Davidson et al., 2012). When the woman enters this stage, she is in the early postpartum period.

Nursing Routine

After the baby is delivered, a common routine is followed with certain protocols and tasks. These include performing the initial baby assessment, admitting the baby in the Meditech system, obtaining cord gases and cord blood samples, assisting with possible suturing of the perineum, cleansing the perineum, performing a postpartum assessment, disposing of the placenta and delivery tray, completing a full baby assessment, and assisting with breast or bottle feeding.

Performing the Initial Baby Assessment

From the previous module, you learned that a "baby nurse" is present at delivery for the initial baby care and assessment. This is an RN who has completed the Neonatal Resuscitation Program (NRP) thus is able to care for a baby at delivery. In normal low-risk births, the baby is usually placed skin-to-skin immediately after delivery. This means the baby is placed on the mother's chest, dried by the "baby nurse", placed unclothed on the mother's unclothed chest, and then covered with a warm blanket. The "baby nurse" assesses the baby during this time and assigns

the APGAR score, which is a score out of 10 that each baby receives at 1 minute and 5 minutes after delivery. It is based on heart rate, color, respirations, tone, and response. This score helps the health care team gauge the baby's condition immediately after birth and determine if resuscitation is required (Davidson et al., 2012). If any concerns are noted, the baby can be transferred over to the baby cot in the birthing room for further assessment. In addition, the neonatal intensive care unit (NICU) team can be paged directly from the birthing room by pressing the NICU buzzer on the wall (see Figure 1). They are experts in neonatal resuscitation and should be "buzzed" if there are concerns with the baby's condition at birth.

Figure 1. NICU buzzer

Skin-to-skin contact- In all normal low-risk deliveries, the baby should be immediately placed skin-to-skin on the mother's chest and left undisturbed for 1 hour. Skin-to-skin contact is great for mothers and babies. Eastern Health (2013) stated that immediate skin-to-skin contact helps regulate the baby's blood sugar, temperature, heart rate, and respirations, encourage early breastfeeding, decrease stress, and promote bonding. In addition, it decreases maternal stress and promotes healing (Eastern Health, 2013). Immediate skin-to-skin contact can act as an important distraction from the discomfort in the third and fourth stages of labor. It is important to note that if the woman is very uncomfortable and unsettled, the baby may need to be removed from her chest, especially if she requests this. In addition, you must frequently assess and closely monitor the baby during this 1-hour of skin-to-skin contact. If any concerns are noted, the baby may be brought to the cot for further assessment.

Admitting the Baby and Completing Baby Bands

While the "baby nurse" is completing the baby's initial assessment, the RN assigned to the woman will be completing other tasks and routines. First, it is important to note the exact time of birth. Although this time must be recorded on various documentation forms within the chart, it is important to first note the time of birth on the *baby bands*. In the second module, you learned that these bands are partially completed upon admission. When the time is recorded, these bands should be taken to the case room's main nursing desk. From the information on the baby bands, a ward clerk or RN can admit the baby in the Meditech system. When the admission is complete, the baby will receive a hospital chart number, which is written on the baby bands. Then, these completed bands are placed in the plastic band covers and checked by two RNs to ensure the

information is correct (see Figure 2). One band is placed on the mother's wrist while the other two are placed on the baby's ankles during the full baby assessment.

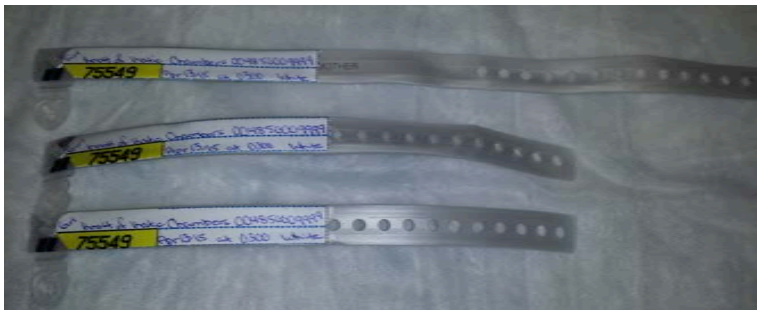

Figure 2. Completed baby bands

Obtaining Cord Gases and Cord Blood Samples

Next, you must collect the cord gases and cord blood samples. Cord gas samples from the vein and artery of the umbilical cord provide health care professionals with information about the fetus' oxygenation in utero (Davidson et al., 2012). After the baby is delivered, the physician will clamp and cut a portion of the umbilical cord. This portion of the cord is transferred to the birthing room table and placed on a blue pad. Using two 25G 5/8-inch needles attached to two cord gas syringes, a cord gas sample is obtained from the artery and vein of the umbilical cord (see Figure 3). The venous cord gas sample is generally filled more blood to distinguish it from the arterial sample when labeling the two. To avoid recapping the needles while obtaining these samples, use the special sharps container on each birthing room table, which helps you detach and directly deposit the needle without recapping.

A cord blood sample is obtained to determine the baby's blood type. After the section of the umbilical cord is retrieved for cord gases, the physician will fill a cord blood tube (red-topped tube) with blood from the portion of the umbilical cord still attached to the placenta (see Figure 4). This tube is also placed upon the blue pad on the birthing room table. Since the cord blood tube is usually soiled with blood, it should be rinsed with tap water and dried.

Figure 3. Cord gas supplies

Figure 4. Cord blood tube

When the baby is admitted, cord gas and cord blood samples are ordered in Meditech and labels are printed at the main nursing desk. These labels are properly attached to the cord gases and cord blood tube. These cord gas samples are then placed in a biohazard bag and **immediately transferred to the Janeway stat lab** in the neonatal intensive care unit (NICU) for analyzing. The cord blood tube is also appropriately labeled. However, the date and time of collection, along with the physician's name that collected the sample must be written on the label. The labeled cord blood tube is then placed in a biohazard bag and transferred to a basket in the dirty utility room. Since the cord blood sample is not analyzed by the lab immediately, it can be brought to the dirty utility room whenever possible. This is usually done when the mother and baby are stable and the used delivery tray is brought to the dirty utility room.

Assisting with Suturing Tears and Episiotomies

After the placenta is delivered, the physician will inspect the woman for lacerations and tears. An episiotomy may have been performed or the perineum, vagina, urethra, or cervix may be torn spontaneously during birth. Perineal tears are categorized based on the depth of the tear: A first-degree tear extends just through the perineal skin but not the perineal muscle, a second-degree tear extends through the perineal skin and muscle, a third-degree tear extends through the perineal skin, perineal muscle, and anal sphincter, and a fourth-degree tear extends through all structures to the anterior rectal wall. The amount of perineal tearing depends of the individual characteristics of the woman, such as parity and tissue elasticity, and nature of the birth, including the size of the presenting part, the use of a vacuum or forceps, fetal malposition (OP), or a precipitous second stage. In general, primiparous women sustain more tearing because their tissues are firmer and less elastic (Piotrowski, 2012).

All tears must be carefully repaired to avoid future complications especially third- and fourth-degree tears because they involve the anus and rectum thus could result in fistulas and fecal incontinence (Piotrowski, 2012). In the case room, the resident will likely suture uncomplicated episiotomies or first- and second-degree tears. If episiotomies or tearing are more extensive, the obstetrician will likely perform the repair, especially when third- and fourth degree tears are evident. To perform a repair, the resident or obstetrician will likely need small sponges, local anesthetic (10ml syringe, 22G 1 ½ inch needle, 1% or 2% local lidocaine), and sutures. Although the 2.0 Polysorb suture is generally used, the physician may ask for 3.0 Polysorb or Maxon sutures. It is crucial to count these supplies with the physician when added to the delivery tray and then after the suturing is complete (Eastern Health, 2006b). See Eastern Health policy number 11-C-100 for more details.

Cleansing the Perineum

In the previous modules, you learned that labor and birth can be very messy. After the sponges and needles are counted, you must thoroughly clean the woman. This is not a sterile procedure thus you can use a regular non-sterile basin, warm tap water, soap, face cloths, and towels. Gently cleanse her perineum, buttock, abdomen, inner thighs, or any other areas that are soiled. Be careful when cleansing the perineum, especially if suturing was required because this area

may be very tender. Place clean blue pads under her buttock. You may also need to change the bed linens if these are soiled.

Performing a Postpartum Assessment

When the woman is cleansed, you need to reattach the bottom of the birthing bed, turn off the delivery lights, and cover the woman with a sheet or blanket. Next, you must perform a postpartum assessment. In the case room, this is referred to as a postpartum "check". It includes examining the woman's fundus, bleeding, perineum, and vital signs. Postpartum checks are performed after delivery (usually after suturing is complete) and then every 15 minutes x 1 hour (first check included in this hour), every 30 minutes x 1 hour, every hour x 3 hours, and every 4 hours x 24 hours (Eastern Health, 2002). See Eastern Health policy V-C-40 for more details.

Checking the fundus- According to Davison et al. (2012), assessing the fundus is extremely important because excess bleeding from the uterus is the most common cause of a postpartum hemorrhage. To assess the fundus, lower the head of the bed so the woman is lying flat, place one hand above the woman's symphysis pubis to support the uterus, and place the other hand on the woman's abdomen. Gently palpate the abdomen to find the fundus, which should feel hard and round. If the fundus feels soft or boggy, it may be not contracting properly, which could result in extra uterine bleeding and clots. In these cases, provide gentle massage until the fundus feels firm. Measure the depth of the fundus in fingerbreadths from the woman's umbilicus. In general, the uterus should be at or below the umbilicus. A distended uterus may not be contracting properly thus filling with blood and clots (Davidson et al., 2012). It is important to note that the uterus may have been overextended during pregnancy (large fetus, twin pregnancy, large amount of amniotic fluid) (Lowdermilk, 2012b), thus it may cause the fundus to be above the level of the umbilicus immediately postpartum. If all other findings are normal, this may not be concerning but should be monitored closely.

Also, note the position of the fundus in relation to the midline of the woman's abdomen. If the fundus is displaced to the right, her bladder may be full, which could result in extra uterine bleeding. She should be encouraged to void at this time or in and out catheterization may be required. In general, the fundus should be firm, at or below the umbilicus, and at the midline of the woman's abdomen. It is important to note that the uterus may be extremely tender in the postpartum period thus gentle massage should be used, if possible (Davidson et al., 2012).

While you are assessing the fundus, you should concurrently note the amount of uterine bleeding or **lochia**. Lochia is generally bright red in the immediate postpartum period, which is called **lochia rubra**. Ask the woman to open her legs so you can view her perineum and assess the amount of lochia on her pad while assessing the fundus. The amount of lochia is categorized as minimal, moderate, or large. The expulsion of clots should be noted because it could mean that the uterus is not contracting properly thus blood is pooling in the uterus and vagina. If her pad is saturated after 15 minutes, there is pooling under the woman buttock, or clots are present, the woman should be closely monitored. Generally in the immediate postpartum period, the lochia should be bright red (rubra) and minimal in amount with no clots (Davidson et al., 2012; Perry, 2012).

If a trickle of blood is noted but the fundus is firm, it would not be categorized as uterine bleeding or lochia and other possible causes of bleeding should be considered. The cervix, vagina, or perineum may have sustained tears or lacerations during delivery that were unobserved by the physician (Davidson et al., 2012).

Checking the perineum- The perineum must also be assessed during each postpartum check, noting the condition of the sutures if any were used and the presence of bleeding, edema, and bruising. The sutures should be intact and no excess bleeding or oozing should be noted at the site. Any excess bleeding from other non-sutured areas of the perineum should also be noted because a repair may be required. It is common to see edema and bruising at the perineum, especially if a repair was needed. If excessive edema and bruising is present in certain area like a bulging, discolored mass, this could be a sign of a hematoma, which can be very serious (Davidson et al., 2012; Perry, 2012).

Checking vital signs- The woman's blood pressure, heart rate, and respirations are assessed with each postpartum check. The woman's temperature is generally only checked once postpartum while she is in the case room, if no concerns are noted. The blood pressure often returns to normal pre-pregnancy level and the heart rate can be lower or higher, especially if the woman is excited, dehydrated, or has a fever. If a drop in blood pressure and rise is heart rate are noted, it may be a sign of excessive blood loss thus the woman should be monitored closely (Davidson et al., 2012).

***Note*: If you are concerned about any findings within a postpartum check, appropriately document your findings and ask for help. You can consult your co-workers or charge nurse if you are questioning the woman's condition. In addition, you should speak with the obstetrical resident or obstetrician on call so they are aware of the woman's condition. They may need to perform additional assessments and interventions.**

Disposing of the Placenta and Delivery Tray

When the placenta is delivered, the perineum is inspected and repaired, and the woman is cleansed, it is important to appropriately dispose of the placenta, delivery tray, and any other used delivery supplies. However, the placenta must first be inspected to determine how it will be disposed (see Figure 5). The physician will first inspect the placenta to ensure it is intact. If portions of the placenta are missing, it will require further exploration (Davidson et al., 2012; Piotrowski, 2012). Based on certain patient history, such as possible infection or a compromised baby, or obvious abnormalities in the placenta upon examination, the physician may want the placenta sent to pathology for a full assessment. In these cases, the placenta must be placed in formalin, appropriately labeled, and placed in the dirty utility room. See Eastern Health policy 11-C-40 for more details. In some cultures, the placenta is regarded as sacred and the woman may want to take her placenta home to perform certain rituals, like disposing of it in a certain way or even eating it (Piotrowski 2012). You should respect the woman's decision to take her placenta home and follow the guidelines for this process. See Eastern Health policy 270-MNG-ALD-466 for more details. If the placenta does not need to be sent to pathology or the woman does not want to take it home, it can be placed in a clear bag and disposed of in the yellow bag in

the dirty utility room. The delivery tray and any other used supplies, along with the cord blood sample should also be brought to the dirty utility room.

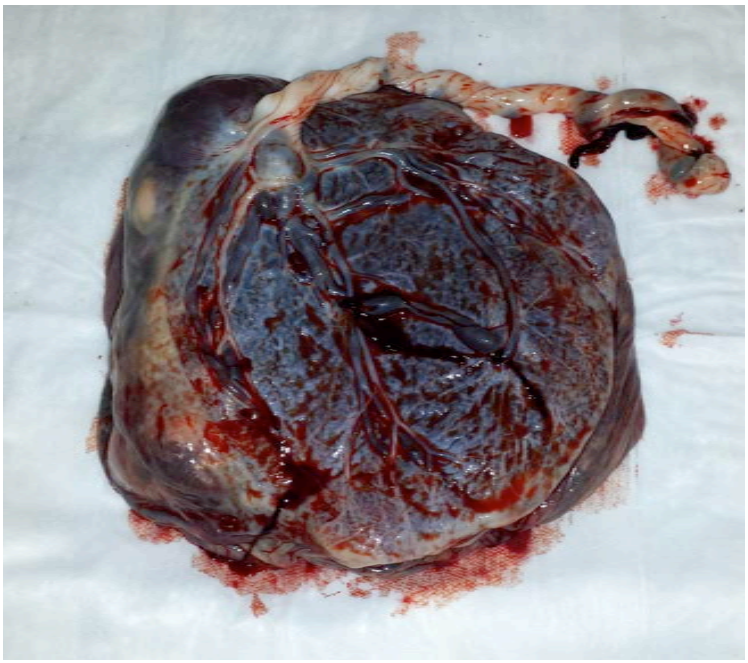

Figure 5. Placenta

Performing a Full Baby Assessment

After the 1 hour of skin-to-skin contact with the mother, the baby can be taken to the cot for a full nursing assessment. You can ask another RN to complete this assessment while you are caring for the mother. However, when the case room is busy, you may have to complete it yourself. The full baby assessment includes:

1. Measurements (weight, length, head circumference)
2. Vital signs (heart rate, respirations, temperature)
3. Full body assessment (head, face, eyes, ears, abdomen, arms, hands, legs, feet, genitalia, back, neck, buttock, anus, reflexes)
4. Medications (Erythromycin in each eye, Vitamin K 1mg IM)
5. Application of baby bands to each ankle
6. Dressing the baby (diaper, hat, sleeper, blankets)

The newborn assessment, including normal and abnormal findings, will be reviewed in more detail during case room orientation.

Note: Part of the baby assessment can be performed on the mother's chest while the baby is skin-to-skin. For example, giving the Vitamin K injection while the baby is skin-to-skin or breastfeeding may help reduce the baby's stress (Taddio et al., 2010)

Assisting with Breast or Bottle Feeding

If the mother is breastfeeding, she can be assisted to latch the baby to the breast during the first hour of skin-to-skin contact. The baby can also be placed skin-to-skin after the full assessment to initiate feeding. Breastfeeding support will be covered in more detail during the case room orientation. Eastern Health fully supports and promotes breastfeeding. However, some women still choose to bottle feed and should be supported to do so. Enfamil A+ is the current formula used in the case room and the woman should be encouraged to bottle feed her baby while in the case room (Eastern Health, 2006a). Enfamil A+ is found in the case room's clean utility room.

Nursing Care and Support

Although the baby is born and the strenuous labor is complete, the woman still needs adequate nursing care and support. After birth, the RN is required to follow the above routine with certain protocols and tasks. However, the woman and her baby are your priority and it is crucial for you to continue to provide emotional, informational, and physical support, while still advocating for the woman and family.

Emotional Support

The third and fourth stages of labor are often a very overwhelming and emotional time (Davidson et al., 2012). The woman has finally given birth and met her new baby! Hearing that first cry, seeing her baby for the first time, and realizing that she has finally given birth can cause a woman to be excited and joyous or overwhelmed and shocked. Interestingly, most women do not recall what occurs after the birth, like the delivery of the placenta, because they are so enthralled by their baby (Dixon, Skinner, & Foureur, 2014). Whatever their emotional response, it is important to continue to be present and provide support for women during this time. In addition, immediately after birth is an important time for bonding between the woman and her baby (Davidson et al., 2012) thus you should provide ample, undisturbed time for this bonding. For example, if the baby is skin-to-skin, perform certain nursing tasks and protocols in ways that do not disturb this special bonding. You should also support the woman's partner and other family members. It is important to note that her partner has also just become a parent and may need your support during this emotional time. You should give the partner adequate time to hold and bond with his or her new baby (Piotrowski, 2012). You can even place the baby skin-to-skin on the partner's chest.

Informational Support

Although the woman may be engrossed in her new baby and not notice what is occurring around her, it is important to continue to provide informational support. For example, while performing postpartum checks, you should explain what you are doing and why, especially if extra bleeding is noted. This will enhance the positive trusting relationship with the woman (Davidson et al., 2012).

Physical Support

Although the third stage of labor is generally short and most women do not even notice the delivery of the placenta (Dixon et al., 2014), they may still experience cramping and pain, especially above the symphysis pubis when the placenta is separating and delivering. During the fourth stage of labor, the woman may still feeling cramping or *after pains* because the uterus continues contracting to return to its normal pre-pregnancy state (Davidson et al., 2012). Cramping is more pronounced when the uterus was overdistended during pregnancy (large baby, twin pregnancy, large amount of amniotic fluid) and when the woman is breastfeeding (Perry, 2012). The woman may also feel perineal pain, especially if a large perineal tear occurred or an episiotomy was performed (Davidson et al., 2012). Although women may benefit from pharmacological pain relief during this time, such as oral Tylenol (acetaminophen) or Anaprox (naproxen), you can also provide non-pharmacological comfort techniques, related to hot and cold therapy, intake and output, and personal hygienic needs.

Hot and cold therapy- During the strenuous process of labor, the woman may have become very warm and perspire heavily. Cloths immersed in ice water can be placed on her head and neck during this time, as described in module 2. In addition, her perineum may be very swollen and sore. Placing cold ice packs on her perineum may decrease the swelling and increase comfort (Davidson et al., 2012). She may also feel cold and shaky from the labor thus could be covered in warm blankets from the case room's heater. Finally, cramping or after pains may be uncomfortable and warm blankets to her abdomen may be helpful.

Intake and output- Because the process of birth is very strenuous and requires heavy breathing at times, the woman's mouth may become very dry. You should offer her ice chips and popsicles for comfort during the third stage and immediate fourth stage of labor. After approximately three stable postpartum checks, you can offer the woman a light snack. Generally, toast and liquids (juice, milk, water, tea) are offered. In addition, you must monitor the woman's output. If her bladder is full, it may cause extra bleeding (Davidson et al., 2012). If her fundus is displaced to the right or extra bleeding is noted, she should be encouraged to ambulate to the bathroom. If this is not possible, you may need to consider performing an in and out catheterization. Before she is transferred to the postpartum unit (5NB OBS), the woman should be encouraged to ambulate to the bathroom and void. Ensure she is stable and not dizzy before ambulating.

Personal hygienic needs- Personal hygiene must be maintained in the third and fourth stages of labor. The woman should be adequately cleansed after delivery and throughout the immediate postpartum period because of bleeding. You may also need to change her gowns and sheets after delivery, and frequently change her blue pads to increase comfort. Finally, she may want to shower after delivery. If she is stable and the case room is not too busy, she should be given an opportunity to shower. If the case room is busy, the woman may be asked to shower after transfer to 5NB OBS.

Advocacy

During the third and fourth stages of labor, it is still important to advocate for your patient. She may have certain requests that pertain to the third and fourth stages of labor. For example, she

may want a “hands off” approach to delivery of the placenta where the physician does not compress the fundus or apply traction to the attached umbilical cord. Or, she may request more time skin-to-skin with her baby before the full baby assessment. In these cases, you should speak with the obstetrical team and try to uphold her requests. If her requests are not possible to follow, you should provide adequate information.

Transfer

If the woman is stable after the first hour of postpartum checks, she can be transferred to 5NB OBS. You must ensure all the paperwork that you began on admission and all the necessary protocols and procedures are complete. Because she may be tired, sore, and slightly dizzy when ambulating, the woman should be transferred in a wheelchair. The baby is transferred in a wheeled bassinette. When the mother and baby are settled in her assigned room, you need to check the baby’s bands with a 5NB OBS RN to ensure the information is correct. Then, you must give a thorough report to the RN assigned to the woman and baby.

Case Study

Jill has just given birth to a healthy baby girl and she is placed on Jill’s chest for skin-to-skin contact. The placenta is delivered 5 minutes later and Jill has no tears. Jill’s perineum is cleansed and the bottom of the birthing bed is attached.

1. You must now perform a postpartum check. What is included in a postpartum check? What findings are considered normal?

2. When performing your second postpartum check, you notice that Jill’s fundus is firm and at the umbilicus, but displaced to the right. What should Jill do now? Why?

3. Jill is experiencing uterine cramping. What can you offer to help with this cramping?

See end of module for answers to case study questions!

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Case Study Answers

1. You must now perform a postpartum check. What is included in a postpartum check? What findings are considered normal?

1. Assessing the fundus (firm, at or below the umbilicus, midline)
2. Bleeding (lochia rubra, minimal amount, no clots)
3. Perineum (no bleeding or oozing, some edema and bruising, no hematoma)
4. Vital signs (normal temperature, blood pressure, heart rate, and respirations)

2. When performing your second postpartum check, you notice that Jill's fundus is firm and at the umbilicus, but displaced to the right. What should Jill do now? Why?

Jill should ambulate to the bathroom to void. When the fundus is displaced to the right, it could be caused by a full bladder, which can cause extra bleeding (Davidson et al., 2012). Ensure she is stable and not dizzy before she ambulates. If Jill cannot ambulate to the bathroom or she cannot void when she is in the bathroom, you may need to consider performing an in and out catheterization.

3. Jill is experiencing uterine cramping. What can you offer to help with this cramping?

Warm blankets on her lower abdomen may help promote comfort. In addition, she may want to try certain mild pain medications, such as Anaprox (naproxen) or Tylenol (acetaminophen).