

2014 NCC Task Analysis Content Validation Study

Electronic Fetal Monitoring Subspecialty Examination

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1. Background and Overview

The purpose of the content validation/task analysis study is to describe the domain of practice, knowledge, skills and abilities that are essential to the specialty practice of the health professionals who provide care based on electronic fetal monitoring knowledge.

The data collected from the content validation is used to identify possible content change to the NCC subspecialty examination in Electronic Fetal Monitoring (EFM) and to insure skills, knowledge and abilities of those engaging in EFM interpretation and management are reflected in the NCC testing process.

NCC EFM content team members, a geographically diverse group representing both academic and clinical practice venues, discussed practice norms and trends based on results of previous content validation results, practice changes including the incorporation of the categorization system of EFM tracings as recommended by the specialty organizations and reviewed the existing exam content outline. These discussions were the basis for the development of the survey instrument. NCC leadership for content teams can be found at <http://www.nccwebsite.org/NCC-Leadership.aspx>.

In addition, over the past year NCC delivered a post-exam feedback survey to EFM examinees to evaluate that the content tested on the exam reflects their current practice. All EFM examinees received the post-exam survey regardless of pass/fail results.

2. Development Process

With psychometric consultation, the knowledge competencies and tasks/skills identified by the content team were formulated into a survey instrument. The domains for query centered on the following:

- Interpretation of specific EFM tracing/patterns
- Responsibilities for the assessment/management of patients with certain conditions who are being monitoring with electronic fetal monitoring
- Incorporation of NICHD terminology in the description of components of the EFM tracing including the use of a categorization system to classify EFM tracings related to required intervention and reflection of fetal status
- Responsibilities for the assessment/management of patients undergoing adjunct fetal surveillance testing
- Use of professional issues (legal, ethics, patient safety, quality outcomes) within the context of management of the pregnant patient and fetus based on EFM tracing analysis
- Engagement of specific skills relative to electronic fetal monitoring

In preparation of survey development the content team reviewed the current NCC competency statements and detailed content outline for the Electronic Fetal Monitoring subspecialty examination. The content team identified essential knowledge, skills and abilities for this subspecialty and developed a specified skills list. In addition to this the following documents were reviewed:

- AWHONN Standards for Obstetric, Gynecologic and Neonatal Nursing
- Fetal Heart Monitoring Principles and Practices, 2009, AWHONN
- Clinical Guidelines for the Obstetrician/Gynecologists - Intrapartum Fetal Heart Rate Monitoring
- ACOG Practice Bulletin 116 Management of Intrapartum Fetal Heart Rate Tracings, November 2010
- Professional literature review

3. Data Collection

Proprietary software was used for survey deployment and aggregate data compilation from survey responses. All those holding an NCC certificate of added qualification in EFM with a valid email address (9,816) were notified by email contact and a general invitation to participate was posted on the NCC website. To encourage participation constituents could earn CE if they completed the survey. This resulted in a 88% overall increase in response rates from 2009. In the 2014 survey 1602 participated in the current content validation survey, which provided a 16% response rate.

A copy of the content validation survey can be found in Exhibit 1 and the survey responses in Exhibit 2. New items included in the content validation survey were validation of the core competency statements for the EFM examination and invitations to survey takers to identify content or competencies that were not addressed in the survey.

Additionally, surveys were sent to recent examinees asking them to rate the applicability of the content tested to their practice (post-exam feedback survey). Participation was voluntary and was offered to all who took the exam regardless of pass or fail outcomes (see Exhibit 3).

4. Survey Results and Review

Overall, the content validation analysis demonstrated extremely high ratings of the content included on the exam and the stated competency statements. The survey results can be found in Exhibit 2. Survey demographics reported that 88.8% of the respondents work in a hospital setting and 81% were responsible for direct patient care. The respondents represented an interprofessional team of providers with Nurses (87%), Advanced Practice Nurses (8%), Physicians (3.5%) and the rest "other". Twenty-eight percent of responders held either a masters or doctoral degree while 49% held a BSN and 22% had an Associate or diploma degree. The majority of participants had over 20 years of practice (44.6%) and on average worked 35-45 hours a week (61%). Participants represented a broad demographic region from 50 different states.

In reviewing the survey results the first area on the survey was the core competency review. It was found that 96-100% of survey takers felt the core competencies were essential and either a frequent expectation or critical to patient outcomes for those who use EFM in their practice. The majority of content were considered essential by participants and the survey was rich in comments and thought. The comments mentioned additional content that could be included but most of that content is found in other parts of the exam. In initial review it was felt that changes need to be made in regard to questions on the following:

- Artifact and equipment troubleshooting since newer technology is changing this area.
- Communication, teamwork and documentation as it relates to legal aspects of care as well as quality and safety need to be considered
- Expansion of topics on obesity and its effect on EFM management, triage, and effects of medication on the mother and fetus.

Some of the lower ratings made sense in that they may be outliers and not seen as often but remain essential for overall understanding of EFM by the certified constituent.

In addition to the content validation, over the past year, we have surveyed examinees to evaluate how the exam reflected on their practice and 493 completed the surveys. During this time frame 1,986 took the examination which provided us with a 24.8% response rate for the post-exam survey. The post-exam survey results can be found in Exhibit 3. Of those completing the survey years of practice ranged equally from 2-20 years. The respondents represented an interprofessional team of providers with Nurses (81%); Advanced

Practice Nurses (4%); Physicians (14%) and Physicians Assistants (1%). Seventy-eight percent of respondents are working full time providing direct patient care (92%) and most work in hospitals (90%). The majority of examinees felt the content areas were about right and reflected what is applied to their daily practice.

Both the post-exam and the content validation surveys were reviewed at the EFM content team meeting on August 11&12, 2014. The reviews were used to align the exam content with current EFM practice. Overall participants believe that the exam reflects their practice and the amount of content on the examination is appropriate to their practice as well. The one content area that generated some discussion was the equipment section but it was felt that although some of this may be rarely used it was essential. The majority of participants felt that the core competencies were essential and a frequent expectation or critical to patient outcomes for those who use EFM in their practice. In review of the exam content in the section on Pattern Recognition and Intervention the content team agreed with needed to increase questions on fetal heart rate patterns and decrease questions on common complications to better balance the exam. Based on the review and comments the content team will add more of the following:

- Case studies
- Communication and chain of command
- Effects of maternal drugs on the fetus
- Use of Bakari balloon
- Obese patients
- Intermittent auscultation
- Triage
- ELBW strips
- Legal aspects of documentation
- EMRs
- Acid-base and cord gases
- Non-stress test
- Ethics.

Two items, contraction stress testing and amnioinfusion, will be removed based on its decrease use in the country.

Introduction

NCC is conducting a content validation study for the Electronic Fetal Monitoring subspecialty exam. This is based on previous results of past content validations, review of standards of practice, professional literature and research.

Your responses as a professional holding a C-EFM credential, when compiled with the responses of your peers, will impact the test outline and drive new questions for future NCC examinations. Your input will be invaluable to the content team who is responsible for test development to insure the examination continues to reflect current practice in the specialty.

Upon your completion of the Electronic Fetal Monitoring content validation survey, NCC will award one (1) CE hour in EFM. Your CE hour will be automatically recorded into your online maintenance application within 12 hours. There will be no CE certificate issued as the credit is given in recognition of your participation in this content validation process and is not transferable for other purposes.

Thank you for your help with this process.

NCC

Electronic Fetal Monitoring (EFM) Core Competencies

The options that will be asked for each competency include

- This competency is essential and is a frequent expectation for those who use EFM in their practice
- This competency is essential and critical to patient outcomes for those who use EFM in their practice but not often performed
- This competency is not essential for those who use EFM in their practice
- This is not an expected competency of those who use EFM in their practice

Essential - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential and is a frequent expectation for those who use EFM in their practice	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	Not essential for those who use EFM in their practice	Not expected of those who use EFM in their practice
Apply knowledge of maternal-fetal assessment methods when selecting electronic fetal monitoring or intermittent auscultation to evaluate fetal status.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interpret data from the electronic fetal monitor to differentiate between actual fetal data and equipment failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use knowledge of the advantages and disadvantages of electronic fetal monitoring to provide information to the pregnant woman and her support person(s).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply knowledge of fetal heart rate regulation to the interpretation of electronic fetal monitoring data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify and interpret the significance of fetal heart rate patterns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Interpret data from electronic fetal monitoring to differentiate between normal and abnormal fetal heart rate patterns.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply knowledge of common pregnancy complications to the development of a comprehensive plan of care based on electronic fetal monitoring data.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply knowledge of uteroplacental and maternal-fetal physiology as they relate to fetal oxygenation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Identify indications for adjunct fetal assessment and incorporate findings into the plan of care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Incorporate knowledge of current standards of practice, legal practices and patient safety to EFM interpretation and management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Understand NICHD terminology and how it is applied and used to identify and interpret electronic fetal monitoring tracings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Apply common management strategies for abnormal or indeterminate fetal heart rate tracings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

Are these competencies in your experience

- A. Representative of the practice
 B. Not Representative of the practice

If you selected B, please comment on your rationale for your opinion.

Are there any additional competencies that are not represented?

Electronic Fetal Monitoring Equipment

In reviewing the following aspects of **Fetal Monitoring Equipment**, please rate the essentiality level you believe this knowledge represents. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Artifact Detection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment failure and troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
External fetal monitor equipment components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
External uterine monitoring - how it works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Internal fetal monitor equipment components	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IUPC uterine monitoring - how it works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telemetry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there other items that are routine to your practice that are not included on this list.

- Yes
 No

If yes, please list specifics below

Maternal/Fetal Physiology

In reviewing the following core practice knowledge competencies regarding **Maternal/Fetal Physiology**, please rate the essentiality level you believe this knowledge represents. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Effects of maternal drugs on the fetus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Factors affecting fetal oxygenation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal circulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal heart regulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Physiology of fetal circulation and uteroplacental circulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uterine activity (resting tone and contractions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uteroplacental circulation	7 <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

Are there other items that are routine to your practice that are not included on this list.

Yes

No

If yes, please list specifics below

Pattern Recognition, Interpretation and Intervention

In reviewing the following core practice knowledge competencies regarding **Pattern Recognition, Interpretation and Intervention**, please rate the essentiality level you believe this knowledge represents. Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Baseline fetal heart rate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Common maternal or iatrogenic complications affecting EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dysrhythmias and other variant patterns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal heart rate patterns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Responses to tachysystole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In reviewing the following core practice knowledge competencies regarding **EFM tracing interpretation in patients with the following common complications of pregnancy**, please rate the essentiality level you believe this knowledge represents. Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epidural anesthesia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HELLP syndrome	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hypertension (any)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Induction of labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intrauterine growth restriction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multiple gestation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placenta accreta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placental abruption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placental disorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preeclampsia/eclampsia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preterm labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prolapsed cord	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prolonged pregnancy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scar dehiscence/uterine rupture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal bleeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

VBAC/TOLAC

Are there other items that are routine to your practice that are not included on this list.

Yes
 No

If yes, please list specifics below

Adjunct Fetal Assessment

In reviewing the following core practice knowledge competencies regarding **Adjunct Fetal Assessment**, please rate the essentiality level you believe this knowledge represents. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Auscultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biophysical profile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contraction stress testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doppler ultrasound	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal acid base interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal acoustic stimulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal movement counting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nonstress testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there other items that are routine to your practice that are not included on this list.

Yes
 No

If yes, please list specifics below

Legal Aspects of Electronic Fetal Monitoring

In reviewing the following core practice knowledge competencies regarding **Legal Aspects of Electronic Fetal Monitoring**, please rate the essentiality level you believe this knowledge represents. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Essential** - an expected competency that those who use EFM in their practice should possess no matter the educational background, practice setting, patient population focus or years of experience.

	Essential	Not essential	Neutral	No longer applicable to practice
Chain of command	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Documentation and charting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limitations of use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient Safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Are there other items that are routine to your practice that are not included on this list.

Yes
 No

Exhibit 1: Electronic Fetal Monitoring (EFM)

If yes, please list specifics below

EFM Equipment and Monitoring

In regard to **EFM Equipment and Monitoring**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

EFM Equipment and Monitoring (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Artifact detection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Equipment troubleshooting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Patient education about how EFM works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placement and management of external EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placement and management of internal EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uterine monitoring (External or IUPC)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telemetry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EFM Tracing Interpretation and Management

In regard to **EFM Tracing Interpretation and Management**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

EFM Tracing Interpretation and Management (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Application of fetal circulation to EFM interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Application of fetal heart regulation to EFM interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How anesthesia affects EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How drugs (therapeutic and recreational) affect EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How maternal physiologic conditions affect EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How placental factors affects EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How umbilical blood flow affects EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How uterine activity affects EFM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uterine contractions (frequency, duration and intensity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uterine resting tone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uteroplacental circulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fetal Heart Rate Baseline

Exhibit 1: Electronic Fetal Monitoring (EFM)

In regard to **Fetal Heart Rate Baseline**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Fetal Heart Rate Baseline (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
<110 beats per minute (bradycardia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
110 to 160 beats per minute (normal baseline)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
>160 beats per minute (tachycardia)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fetal Heart Variability (Amplitude range)

In regard to **Fetal Heart Variability (Amplitude range)**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Fetal Heart Variability (Amplitude range) (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Absent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Minimal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Marked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fetal Heart Rate Patterns

In regard to **Fetal Heart Rate Patterns**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Fetal Heart Rate Patterns (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Acceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Early deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Episodic pattern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Late deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Non-episodic pattern	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prolonged acceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prolonged deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recurrent late deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recurrent variable deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Variable deceleration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Other Fetal Heart Rate Patterns (check all that apply)

	Essential	Frequently	Routinely	Occasionally	Rarely	Never
Arrhythmia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

Fetal heart block	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sinusoidal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Detection of Maternal Pulse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Uterine Contractions

In regard to **uterine contractions**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Uterine Contractions (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Application of physiology of uterine contraction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Calculation of montevideo units	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hypertonic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hypotonic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Normal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Paired or Coupling of contractions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tachysystole	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use of external monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use of internal monitoring	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Interpret EFM tracing in mothers with common complications of pregnancy

In regard to **EFM tracing interpretation in patients with the following common complications of pregnancy**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Interpret EFM tracing in mothers with common complications of pregnancy (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Diabetes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Epidural anesthesia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HELLP syndrome	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hypertension (any)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Induction of labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Infection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intrauterine growth restriction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multiple gestation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placenta accreta	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placental abruption	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Placental disorders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preeclampsia/eclampsia	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preterm labor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Prolapsed cord	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

Prolonged pregnancy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scar dehiscence/uterine rupture	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vaginal bleeding	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VBAC/TOLAC	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Adjunct Fetal Assessment Testing

In regard to **Adjunct Fetal Assessment Testing**, please indicate the frequency in which you encounter this aspect of care in your practice. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

Adjunct Fetal Assessment Testing (check all that apply)

	Frequently	Routinely	Occasionally	Rarely	Never
Auscultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biophysical profile	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contraction stress testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal acid base interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal acoustic stimulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fetal movement counting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nonstress testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EFM Tracing Classifications and Documentation

Indicate below how often you classify EFM tracings using the 3 tiered classification system. *Note: All listings are presented in alphabetical order and the importance of the item should not be based on where it is placed on the list.*

- **Frequently** - at least one a week
- **Routinely** - at least once a month
- **Occasionally** - every 2-6 months
- **Rarely** - less than 1-2 times per year

	Frequently	Routinely	Occasionally	Rarely
Category I	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Category II	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Category III	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Identify how EFM tracings are documented in your institution

- By category
- By description
- Both
- Other

If Other (please specify)

Current Credentialing Test Outline

Below is shown the percentage of questions devoted to each core competency on the NCC EFM exam, please indicate if you feel these percentages should be increased, decreased or stay as they are.

	increased	decreased	stay as they are
Electronic Monitoring Equipment at 5-10%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exhibit 1: Electronic Fetal Monitoring (EFM)

Physiology at 10-15-%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pattern Recognition, Interpretation and Intervention at 60-70%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adjunct Fetal Assessment at 5-10%	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal Aspects and Patient Safety of EFM at 5% or less	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographic Information

What best describes your practice setting?

- Hospital
- Office or clinic setting
- Academic setting
- Education (not an academic institution)
- Administration
- Research
- Other

If Other (please specify)

If you work in a hospital, is it designated as

- Level I
- Level II
- Level III
- Not applicable
- Other

If Other (please specify)

Are you employed by a

- Hospital
- Government Agency
- Private company
- Other

If Other (please specify)

What type of health care professional are you? (Choose the best response)

- Nurse
- Nurse-Midwife
- Nurse Practitioner
- Physician
- Physician Assistant
- Other

If Other (please specify)

What is your highest level of education

- MD/DO
- Doctorate - PhD
- Doctorate - DNP
- Post Master's
- Master's
- Baccalaureate
- Associate
- Diploma

Exhibit 1: Electronic Fetal Monitoring (EFM)

Other

If Other (please specify)

How long have you been working in the obstetric specialty area?

- Less than a year
- 1-5 years
- 6-10 years
- 11-15 years
- 16-20 years
- Over 20 years

How many hours do you work a week? Work is defined as clinical practice, education, research or administration?

- 46 hours or more
- 35-45 hours
- 20-34 hours
- Less than 20 hours
- Not working in the obstetric specialty at this time
- Self Employed
- Salaried
- Per Contract
- Retired
- Other

If Other (please specify)

How would you best describe the focus of your position? (Select the one that is most representative of your position).

- Direct patient care
- Administrative or managerial
- Education
- Research
- Other

If Other (please specify)

What state do you live in

If Other (please specify)

Which of the following statements apply to your NCC EFM certificate of added qualification? (check all that apply)

- Being NCC EFM credentialed is required for employment
- Being NCC EFM credentialed is encouraged
- Being NCC EFM credentialed is not required or encouraged
- There is a financial incentive tied to being NCC EFM credentialed
- There is no financial incentive tied to being NCC EFM credentialed
- My NCC credential in Electronic Fetal Monitoring was attained for personal reasons.
- Being NCC credentialed in Electronic Fetal Monitoring is tied to other employer-based recognition (please specify)

Please specify other employer-based recognition

In the last 24 months what new practice change(s) have been incorporated into your practice?

- None
- Listed below

Exhibit 1: Electronic Fetal Monitoring (EFM)

List practice change(s) here:

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
Electronic Fetal Monitoring Core Competencies				
Apply knowledge of maternal-fetal assessment methods when selecting electronic fetal monitoring or intermittent auscultation to evaluate fetal status.	Essential and is a frequent expectation for those who use EFM in their practice	1,408	82.73%	1702
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	257	15.10%	
	Not essential for those who use EFM in their practice	22	1.29%	
	Not expected of those who use EFM in their practice	15	0.88%	
Interpret data from the electronic fetal monitor to differentiate between actual fetal data and equipment failure.	Essential and is a frequent expectation for those who use EFM in their practice	1,423	84.10%	1692
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	259	15.31%	
	Not essential for those who use EFM in their practice	9	0.53%	
	Not expected of those who use EFM in their practice	1	0.06%	
Use knowledge of the advantages and disadvantages of electronic fetal monitoring to provide information to the pregnant woman and her support person(s).	Essential and is a frequent expectation for those who use EFM in their practice	1,231	72.71%	1693
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	408	24.10%	
	Not essential for those who use EFM in their practice	40	2.36%	
	Not expected of those who use EFM in their practice	14	0.83%	
Apply knowledge of fetal heart rate regulation to the interpretation of electronic fetal monitoring data.	Essential and is a frequent expectation for those who use EFM in their practice	1,473	87.11%	1691
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	202	11.95%	
	Not essential for those who use EFM in their practice	13	0.77%	
	Not expected of those who use EFM in their practice	3	0.18%	
Identify and interpret the significance of fetal heart rate patterns.	Essential and is a frequent expectation for those who use EFM in their practice	1,587	93.46%	
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	110	6.48%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Not essential for those who use EFM in their practice	1	0.06%	1698
	Not expected of those who use EFM in their practice	0	0%	
Interpret data from electronic fetal monitoring to differentiate between normal and abnormal fetal heart rate patterns.	Essential and is a frequent expectation for those who use EFM in their practice	1,578	93.10%	1695
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	117	6.90%	
	Not essential for those who use EFM in their practice	0	0%	
	Not expected of those who use EFM in their practice	0	0%	
Apply knowledge of common pregnancy complications to the development of a comprehensive plan of care based on electronic fetal monitoring data.	Essential and is a frequent expectation for those who use EFM in their practice	1,367	80.60%	1696
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	312	18.40%	
	Not essential for those who use EFM in their practice	14	0.83%	
	Not expected of those who use EFM in their practice	3	0.18%	
Apply knowledge of uteroplacental and maternal-fetal physiology as they relate to fetal oxygenation.	Essential and is a frequent expectation for those who use EFM in their practice	1,416	83.64%	1693
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	263	15.53%	
	Not essential for those who use EFM in their practice	14	0.83%	
	Not expected of those who use EFM in their practice	0	0%	
Identify indications for adjunct fetal assessment and incorporate findings into the plan of care.	Essential and is a frequent expectation for those who use EFM in their practice	1,258	74.53%	1688
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	399	23.64%	
	Not essential for those who use EFM in their practice	25	1.48%	
	Not expected of those who use EFM in their practice	6	0.36%	
Incorporate knowledge of current standards of practice, legal practices and patient safety to EFM	Essential and is a frequent expectation for those who use EFM in their practice	1,387	82.12%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
interpretation and management	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	284	16.81%	1689
	Not essential for those who use EFM in their practice	17	1.01%	
	Not expected of those who use EFM in their practice	1	0.06%	
Understand NICHD terminology and how it is applied and used to identify and interpret electronic fetal monitoring tracings	Essential and is a frequent expectation for those who use EFM in their practice	1,508	89.66%	1682
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	166	9.87%	
	Not essential for those who use EFM in their practice	8	0.48%	
	Not expected of those who use EFM in their practice	0	0%	
Apply common management strategies for abnormal or indeterminate fetal heart rate tracings	Essential and is a frequent expectation for those who use EFM in their practice	1,510	90.85%	1662
	Essential and critical to patient outcomes for those who use EFM in their practice but not often performed	148	8.90%	
	Not essential for those who use EFM in their practice	3	0.18%	
	Not expected of those who use EFM in their practice	1	0.06%	
Are these competencies in your experience	A. Representative of the practice	1671	98.76%	1692
	B. Not Representative of the practice	21	1.24%	
Electronic Fetal Monitoring Equipment - please rate the essentiality level you believe this knowledge represents.				
Artifact Detection	Essential	1,419	88.41%	1605
	Not essential	35	2.18%	
	Neutral	141	8.79%	
	No longer applicable to practice	10	0.62%	
Equipment failure and troubleshooting	Essential	1,470	91.99%	1598
	Not essential	37	2.32%	
	Neutral	88	5.51%	
	No longer applicable to practice	3	0.19%	
External fetal monitor equipment components	Essential	1,511	94.32%	1602
	Not essential	25	1.56%	
	Neutral	61	3.81%	
	No longer applicable to practice	5	0.31%	
External uterine monitoring - how it works	Essential	1,531	95.33%	1606
	Not essential	30	1.87%	
	Neutral	41	2.55%	
	No longer applicable to practice	4	0.25%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
Internal fetal monitor equipment components	Essential	1,486	92.36%	1609
	Not essential	43	2.67%	
	Neutral	61	3.79%	
	No longer applicable to practice	19	1.18%	
IUPC uterine monitoring - how it works	Essential	1,494	92.80%	1610
	Not essential	40	2.48%	
	Neutral	58	3.60%	
	No longer applicable to practice	18	1.12%	
Telemetry	Essential	895	56.29%	1590
	Not essential	265	16.67%	
	Neutral	357	22.45%	
	No longer applicable to practice	73	4.59%	
Are there other items that are routine to your practice that are not included on this list.	Yes	133	8.84%	1505
	No	1372	91.16%	
Maternal/Fetal Physiology - please rate the essentiality level you believe this knowledge represents.				
Effects of maternal drugs on the fetus	Essential	1,582	99.18%	1595
	Not essential	2	0.13%	
	Neutral	10	0.63%	
	No longer applicable to practice	1	0.06%	
Factors affecting fetal oxygenation	Essential	1,586	99.56%	1593
	Not essential	0	0%	
	Neutral	5	0.31%	
	No longer applicable to practice	2	0.13%	
Fetal circulation	Essential	1,379	86.62%	1592
	Not essential	83	5.21%	
	Neutral	128	8.04%	
	No longer applicable to practice	2	0.13%	
Fetal heart regulation	Essential	1,441	91.09%	1582
	Not essential	44	2.78%	
	Neutral	96	6.07%	
	No longer applicable to practice	1	0.06%	
Physiology of fetal circulation and uteroplacental circulation	Essential	1,472	92.75%	1587
	Not essential	41	2.58%	
	Neutral	73	4.60%	
	No longer applicable to practice	1	0.06%	
Uterine activity (resting tone and contractions)	Essential	1,576	99.31%	1587
	Not essential	4	0.25%	
	Neutral	6	0.38%	
	No longer applicable to practice	1	0.06%	
Uteroplacental circulation	Essential	1,489	94.60%	1574
	Not essential	27	1.72%	
	Neutral	57	3.62%	
	No longer applicable to practice	1	0.06%	
Are there other items that are routine to your practice that are not included on this list.	Yes	67	4.49%	1493
	No	1426	95.51%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
Pattern Recognition, Interpretation and Intervention - please rate the essentiality level you believe this knowledge represents.				
Baseline fetal heart rate	Essential	1,573	99.81%	1576
	Not essential	0	0%	
	Neutral	3	0.19%	
	No longer applicable to practice	0	0%	
Common maternal or iatrogenic complications affecting EFM	Essential	1,534	97.27%	1577
	Not essential	7	0.44%	
	Neutral	36	2.28%	
	No longer applicable to practice	0	0%	
Dysrhythmias and other variant patterns	Essential	1,324	83.74%	1581
	Not essential	90	5.69%	
	Neutral	167	10.56%	
	No longer applicable to practice	0	0%	
Fetal heart rate patterns	Essential	1,574	99.68%	1579
	Not essential	1	0.06%	
	Neutral	4	0.25%	
	No longer applicable to practice	0	0%	
Responses to tachysystole	Essential	1,553	99.11%	1567
	Not essential	5	0.32%	
	Neutral	8	0.51%	
	No longer applicable to practice	1	0.06%	
EFM tracing interpretation in patients with the following common complications of pregnancy - please rate the essentiality level you believe this knowledge represents.				
Diabetes	Essential	1,492	94.25%	1583
	Not essential	33	2.08%	
	Neutral	61	3.85%	
	No longer applicable to practice	0	0%	
Epidural anesthesia	Essential	1,536	96.97%	1584
	Not essential	14	0.88%	
	Neutral	26	1.64%	
	No longer applicable to practice	9	0.57%	
HELLP syndrome	Essential	1,499	94.93%	1579
	Not essential	29	1.84%	
	Neutral	55	3.48%	
	No longer applicable to practice	0	0%	
Hypertension (any)	Essential	1,555	98.29%	1582
	Not essential	12	0.76%	
	Neutral	18	1.14%	
	No longer applicable to practice	0	0%	
Induction of labor	Essential	1,540	97.35%	1582
	Not essential	10	0.63%	
	Neutral	25	1.58%	
	No longer applicable to practice	7	0.44%	
Infection	Essential	1,555	98.36%	
	Not essential	7	0.44%	
	Neutral	20	1.27%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	No longer applicable to practice	0	0%	1581
Intrauterine growth restriction	Essential	1,517	95.95%	1581
	Not essential	18	1.14%	
	Neutral	46	2.91%	
	No longer applicable to practice	0	0%	
Medications	Essential	1,566	98.99%	1582
	Not essential	4	0.25%	
	Neutral	12	0.76%	
	No longer applicable to practice	0	0%	
Multiple gestation	Essential	1,517	95.59%	1587
	Not essential	17	1.07%	
	Neutral	51	3.21%	
	No longer applicable to practice	3	0.19%	
Placenta accreta	Essential	1,343	84.63%	1587
	Not essential	93	5.86%	
	Neutral	155	9.77%	
	No longer applicable to practice	2	0.13%	
Placental abruption	Essential	1,565	98.86%	1583
	Not essential	5	0.32%	
	Neutral	12	0.76%	
	No longer applicable to practice	1	0.06%	
Placental disorders	Essential	1,482	93.62%	1583
	Not essential	30	1.90%	
	Neutral	71	4.49%	
	No longer applicable to practice	1	0.06%	
Preeclampsia/eclampsia	Essential	1,557	98.48%	1581
	Not essential	13	0.82%	
	Neutral	11	0.70%	
	No longer applicable to practice	0	0%	
Preterm labor	Essential	1,554	98.17%	1583
	Not essential	9	0.57%	
	Neutral	20	1.26%	
	No longer applicable to practice	0	0%	
Prolapsed cord	Essential	1,560	98.24%	1588
	Not essential	11	0.69%	
	Neutral	14	0.88%	
	No longer applicable to practice	3	0.19%	
Prolonged pregnancy	Essential	1,435	90.82%	1580
	Not essential	47	2.97%	
	Neutral	91	5.76%	
	No longer applicable to practice	9	0.57%	
Scar dehiscence/uterine rupture	Essential	1,526	96.28%	1585
	Not essential	17	1.07%	
	Neutral	38	2.40%	
	No longer applicable to practice	5	0.32%	
Vaginal bleeding	Essential	1,549	97.85%	
	Not essential	12	0.76%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Neutral	22	1.39%	1583
	No longer applicable to practice	0	0%	
VBAC/TOLAC	Essential	1,466	93.73%	1564
	Not essential	21	1.34%	
	Neutral	55	3.52%	
	No longer applicable to practice	23	1.47%	
Are there other items that are routine to your practice that are not included on this list.	Yes	111	7.42%	1496
	No	1385	92.58%	
Adjunct Fetal Assessment - please rate the essentiality level you believe this knowledge represents.				
Auscultation	Essential	1,121	70.86%	1582
	Not essential	156	9.86%	
	Neutral	208	13.15%	
	No longer applicable to practice	97	6.13%	
Biophysical profile	Essential	1,300	82.49%	1576
	Not essential	117	7.42%	
	Neutral	152	9.64%	
	No longer applicable to practice	7	0.44%	
Contraction stress testing	Essential	936	59.39%	1576
	Not essential	170	10.79%	
	Neutral	302	19.16%	
	No longer applicable to practice	168	10.66%	
Doppler ultrasound	Essential	1,287	81.77%	1574
	Not essential	109	6.93%	
	Neutral	163	10.36%	
	No longer applicable to practice	15	0.95%	
Fetal acid base interpretation	Essential	1,152	73.19%	1574
	Not essential	139	8.83%	
	Neutral	223	14.17%	
	No longer applicable to practice	60	3.81%	
Fetal acoustic stimulation	Essential	1,126	71.58%	1573
	Not essential	142	9.03%	
	Neutral	229	14.56%	
	No longer applicable to practice	76	4.83%	
Fetal movement counting	Essential	1,429	90.50%	1579
	Not essential	57	3.61%	
	Neutral	89	5.64%	
	No longer applicable to practice	4	0.25%	
Nonstress testing	Essential	1,546	98.72%	1566
	Not essential	9	0.57%	
	Neutral	10	0.64%	
	No longer applicable to practice	1	0.06%	
Are there other items that are routine to your practice that are not included on this list.	Yes	54	3.62%	1490
	No	1436	96.38%	
Legal Aspects of Electronic Fetal Monitoring - please rate the essentiality level you believe this knowledge represents.				

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
Chain of command	Essential	1,532	97.02%	1579
	Not essential	12	0.76%	
	Neutral	35	2.22%	
	No longer applicable to practice	0	0%	
Documentation and charting	Essential	1,568	99.43%	1577
	Not essential	2	0.13%	
	Neutral	7	0.44%	
	No longer applicable to practice	0	0%	
Limitations of use	Essential	1,464	93.49%	1566
	Not essential	20	1.28%	
	Neutral	82	5.24%	
	No longer applicable to practice	0	0%	
Patient Safety	Essential	1,547	99.04%	1562
	Not essential	3	0.19%	
	Neutral	12	0.77%	
	No longer applicable to practice	0	0%	
Are there other items that are routine to your practice that are not included on this list.	Yes	67	4.53%	1479
	No	1412	95.47%	
EFM Equipment and Monitoring - please indicate the frequency in which you encounter this aspect of care in your practice.				
Artifact detection	Frequently	380	22.92%	1658
	Routinely	431	26.00%	
	Occasionally	605	36.49%	
	Rarely	237	14.29%	
	Never	13	0.78%	
Equipment troubleshooting	Frequently	386	23.61%	1635
	Routinely	473	28.93%	
	Occasionally	576	35.23%	
	Rarely	202	12.35%	
	Never	9	0.55%	
Patient education about how EFM works	Frequently	1,213	73.83%	1643
	Routinely	318	19.35%	
	Occasionally	81	4.93%	
	Rarely	36	2.19%	
	Never	8	0.49%	
Placement and management of external EFM	Frequently	1,503	91.48%	1643
	Routinely	113	6.88%	
	Occasionally	24	1.46%	
	Rarely	9	0.55%	
	Never	8	0.49%	
Placement and management of internal EFM	Frequently	920	55.72%	1651
	Routinely	392	23.74%	
	Occasionally	212	12.84%	
	Rarely	55	3.33%	
	Never	87	5.27%	
Uterine monitoring (External or IUPC)	Frequently	1,353	81.90%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Routinely	186	11.26%	1652
	Occasionally	81	4.90%	
	Rarely	25	1.51%	
	Never	18	1.09%	
Telemetry	Frequently	385	23.32%	1651
	Routinely	333	20.17%	
	Occasionally	362	21.93%	
	Rarely	245	14.84%	
	Never	339	20.53%	
EFM Tracing Interpretation and Management - please indicate the frequency in which you encounter this aspect of care in your practice.				
Application of fetal circulation to EFM interpretation	Frequently	978	59.82%	1635
	Routinely	361	22.08%	
	Occasionally	202	12.35%	
	Rarely	78	4.77%	
	Never	23	1.41%	
Application of fetal heart regulation to EFM interpretation	Frequently	1,155	70.73%	1633
	Routinely	344	21.07%	
	Occasionally	94	5.76%	
	Rarely	38	2.33%	
	Never	8	0.49%	
How anesthesia affects EFM	Frequently	1,234	75.47%	1635
	Routinely	274	16.76%	
	Occasionally	66	4.04%	
	Rarely	34	2.08%	
	Never	37	2.26%	
How drugs (therapeutic and recreational) affect EFM	Frequently	1,245	76.19%	1634
	Routinely	302	18.48%	
	Occasionally	67	4.10%	
	Rarely	18	1.10%	
	Never	11	0.67%	
How maternal physiologic conditions affect EFM	Frequently	1,291	79.01%	1634
	Routinely	293	17.93%	
	Occasionally	50	3.06%	
	Rarely	5	0.31%	
	Never	6	0.37%	
How placental factors affects EFM	Frequently	1,329	81.33%	1634
	Routinely	248	15.18%	
	Occasionally	48	2.94%	
	Rarely	9	0.55%	
	Never	5	0.31%	
How umbilical blood flow affects EFM	Frequently	1,258	77.04%	1633
	Routinely	290	17.76%	
	Occasionally	70	4.29%	
	Rarely	15	0.92%	
	Never	7	0.43%	
How uterine activity affects EFM	Frequently	1,432	87.75%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Routinely	175	10.72%	1632
	Occasionally	20	1.23%	
	Rarely	8	0.49%	
	Never	5	0.31%	
Uterine contractions (frequency, duration and intensity)	Frequently	1,483	90.81%	1633
	Routinely	127	7.78%	
	Occasionally	22	1.35%	
	Rarely	3	0.18%	
	Never	4	0.24%	
Uterine resting tone	Frequently	1,402	85.85%	1633
	Routinely	188	11.51%	
	Occasionally	32	1.96%	
	Rarely	11	0.67%	
	Never	5	0.31%	
Uteroplacental circulation	Frequently	1,275	78.27%	1629
	Routinely	273	16.76%	
	Occasionally	69	4.24%	
	Rarely	14	0.86%	
	Never	9	0.55%	
Fetal Heart Rate Baseline - please indicate the frequency in which you encounter this aspect of care in your practice.				
< 110 beats per minute (bradycardia)	Frequently	485	29.70%	1633
	Routinely	535	32.76%	
	Occasionally	491	30.07%	
	Rarely	136	8.33%	
	Never	3	0.18%	
110 to 160 beats per minute (normal baseline)	Frequently	1,557	95.46%	1631
	Routinely	72	4.41%	
	Occasionally	5	0.31%	
	Rarely	1	0.06%	
	Never	5	0.31%	
> 160 beats per minute (tachycardia)	Frequently	511	31.41%	1627
	Routinely	641	39.40%	
	Occasionally	423	26.00%	
	Rarely	62	3.81%	
	Never	6	0.37%	
Fetal Heart Variability (Amplitude range) - please indicate the frequency in which you encounter this aspect of care in your practice.				
Absent	Frequently	219	13.47%	1626
	Routinely	295	18.14%	
	Occasionally	472	29.03%	
	Rarely	593	36.47%	
	Never	65	4.00%	
Minimal	Frequently	754	46.43%	
	Routinely	499	30.73%	
	Occasionally	337	20.75%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Rarely	49	3.02%	1624
	Never	3	0.18%	
Moderate	Frequently	1,529	94.21%	1623
	Routinely	96	5.91%	
	Occasionally	8	0.49%	
	Rarely	0	0%	
	Never	4	0.25%	
Marked	Frequently	255	15.74%	1620
	Routinely	451	27.84%	
	Occasionally	576	35.56%	
	Rarely	342	21.11%	
	Never	17	1.05%	
Fetal Heart Rate Patterns - please indicate the frequency in which you encounter this aspect of care in your practice.				
Acceleration	Frequently	1,577	97.11%	1624
	Routinely	47	2.89%	
	Occasionally	4	0.25%	
	Rarely	0	0%	
	Never	2	0.12%	
Early deceleration	Frequently	1,352	83.15%	1626
	Routinely	179	11.01%	
	Occasionally	68	4.18%	
	Rarely	28	1.72%	
	Never	6	0.37%	
Episodic pattern	Frequently	1,087	67.14%	1619
	Routinely	324	20.01%	
	Occasionally	168	10.38%	
	Rarely	39	2.41%	
	Never	11	0.68%	
Late deceleration	Frequently	925	57.10%	1620
	Routinely	468	28.89%	
	Occasionally	208	12.84%	
	Rarely	30	1.85%	
	Never	2	0.12%	
Non-episodic pattern	Frequently	945	58.84%	1606
	Routinely	402	25.03%	
	Occasionally	200	12.45%	
	Rarely	51	3.18%	
	Never	15	0.93%	
Prolonged acceleration	Frequently	862	53.14%	1622
	Routinely	499	30.76%	
	Occasionally	238	14.67%	
	Rarely	30	1.85%	
	Never	3	0.18%	
Prolonged deceleration	Frequently	662	40.81%	
	Routinely	579	35.70%	
	Occasionally	319	19.67%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
	Rarely	69	4.25%	1622
	Never	6	0.37%	
Recurrent late deceleration	Frequently	576	35.58%	1619
	Routinely	537	33.17%	
	Occasionally	391	24.15%	
	Rarely	122	7.54%	
	Never	8	0.49%	
Recurrent variable deceleration	Frequently	933	57.77%	1615
	Routinely	472	29.23%	
	Occasionally	189	11.70%	
	Rarely	32	1.98%	
	Never	6	0.37%	
Variable deceleration	Frequently	1,340	83.54%	1604
	Routinely	217	13.53%	
	Occasionally	52	3.24%	
	Rarely	5	0.31%	
	Never	2	0.12%	
Other Fetal Heart Rate Patterns - please indicate the frequency in which you encounter this aspect of care in your practice.				
Arrhythmia	Essential	175	10.79%	1622
	Frequently	146	9.00%	
	Routinely	231	14.24%	
	Occasionally	664	40.94%	
	Rarely	480	29.59%	
	Never	35	2.16%	
Fetal heart block	Essential	135	8.34%	1618
	Frequently	42	2.60%	
	Routinely	85	5.25%	
	Occasionally	339	20.95%	
	Rarely	853	52.72%	
	Never	259	16.01%	
Sinusoidal	Essential	165	10.19%	1619
	Frequently	48	2.96%	
	Routinely	67	4.14%	
	Occasionally	285	17.60%	
	Rarely	904	55.84%	
	Never	264	16.31%	
Detection of Maternal Pulse	Essential	422	26.00%	1623
	Frequently	464	28.59%	
	Routinely	250	15.40%	
	Occasionally	378	23.29%	
	Rarely	216	13.31%	
	Never	24	1.48%	
Uterine Contractions - please indicate the frequency in which you encounter this aspect of care in your practice.				
Application of physiology of uterine contraction	Frequently	1,226	76.43%	
	Routinely	277	17.27%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Occasionally	82	5.11%	1604
	Rarely	24	1.50%	
	Never	6	0.37%	
Calculation of montevideo units	Frequently	441	27.53%	1602
	Routinely	464	28.96%	
	Occasionally	319	19.91%	
	Rarely	198	12.36%	
	Never	193	12.05%	
Hypertonic	Frequently	416	25.98%	1601
	Routinely	472	29.48%	
	Occasionally	489	30.54%	
	Rarely	177	11.06%	
	Never	64	4.00%	
Hypotonic	Frequently	460	28.79%	1598
	Routinely	467	29.22%	
	Occasionally	426	26.66%	
	Rarely	176	11.01%	
	Never	81	5.07%	
Normal	Frequently	1,454	90.93%	1599
	Routinely	130	8.13%	
	Occasionally	17	1.06%	
	Rarely	3	0.19%	
	Never	7	0.44%	
Paired or Coupling of contractions	Frequently	833	51.93%	1604
	Routinely	534	33.29%	
	Occasionally	201	12.53%	
	Rarely	33	2.06%	
	Never	15	0.94%	
Tachysystole	Frequently	596	37.39%	1594
	Routinely	558	35.01%	
	Occasionally	355	22.27%	
	Rarely	74	4.64%	
	Never	26	1.63%	
Use of external monitoring	Frequently	1,533	95.63%	1603
	Routinely	70	4.37%	
	Occasionally	8	0.50%	
	Rarely	1	0.06%	
	Never	2	0.12%	
Use of internal monitoring	Frequently	918	57.30%	1602
	Routinely	392	24.47%	
	Occasionally	177	11.05%	
	Rarely	48	3.00%	
	Never	77	4.81%	
Interpret EFM tracing in mothers with common complications of pregnancy - please indicate the frequency in which you encounter this aspect of care in your practice.				
Diabetes	Frequently	857	53.53%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Routinely	557	34.79%	1601
	Occasionally	170	10.62%	
	Rarely	21	1.31%	
	Never	5	0.31%	
Epidural anesthesia	Frequently	1,408	88.17%	1597
	Routinely	97	6.07%	
	Occasionally	18	1.13%	
	Rarely	15	0.94%	
	Never	68	4.26%	
HELLP syndrome	Frequently	187	11.70%	1598
	Routinely	421	26.35%	
	Occasionally	653	40.86%	
	Rarely	320	20.03%	
	Never	30	1.88%	
Hypertension (any)	Frequently	998	62.34%	1601
	Routinely	489	30.54%	
	Occasionally	116	7.25%	
	Rarely	4	0.25%	
	Never	2	0.12%	
Induction of labor	Frequently	1,348	84.04%	1604
	Routinely	167	10.41%	
	Occasionally	30	1.87%	
	Rarely	10	0.62%	
	Never	62	3.87%	
Infection	Frequently	339	21.20%	1599
	Routinely	632	39.52%	
	Occasionally	500	31.27%	
	Rarely	123	7.69%	
	Never	16	1.00%	
Intrauterine growth restriction	Frequently	387	24.20%	1599
	Routinely	631	39.46%	
	Occasionally	502	31.39%	
	Rarely	82	5.13%	
	Never	6	0.38%	
Medications	Frequently	1,274	79.58%	1601
	Routinely	243	15.18%	
	Occasionally	79	4.93%	
	Rarely	13	0.81%	
	Never	5	0.31%	
Multiple gestation	Frequently	359	22.44%	1600
	Routinely	597	37.31%	
	Occasionally	501	31.31%	
	Rarely	129	8.06%	
	Never	25	1.56%	
Placenta accreta	Frequently	67	4.19%	
	Routinely	136	8.50%	
	Occasionally	486	30.38%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Rarely	784	49%	1600
	Never	133	8.31%	
Placental abruption	Frequently	95	5.94%	1600
	Routinely	226	14.13%	
	Occasionally	668	41.75%	
	Rarely	571	35.69%	
	Never	50	3.13%	
Placental disorders	Frequently	169	10.61%	1593
	Routinely	349	21.91%	
	Occasionally	621	38.98%	
	Rarely	435	27.31%	
	Never	30	1.88%	
Preeclampsia/eclampsia	Frequently	685	42.81%	1600
	Routinely	642	40.13%	
	Occasionally	250	15.63%	
	Rarely	32	2%	
	Never	6	0.38%	
Preterm labor	Frequently	762	47.65%	1599
	Routinely	606	37.90%	
	Occasionally	203	12.70%	
	Rarely	38	2.38%	
	Never	7	0.44%	
Prolapsed cord	Frequently	53	3.33%	1593
	Routinely	81	5.08%	
	Occasionally	412	25.86%	
	Rarely	910	57.12%	
	Never	150	9.42%	
Prolonged pregnancy	Frequently	395	24.92%	1585
	Routinely	462	29.15%	
	Occasionally	375	23.66%	
	Rarely	306	19.31%	
	Never	58	3.66%	
Scar dehiscence/uterine rupture	Frequently	46	2.88%	1595
	Routinely	51	3.20%	
	Occasionally	266	16.68%	
	Rarely	935	58.62%	
	Never	305	19.12%	
Vaginal bleeding	Frequently	480	30.13%	1593
	Routinely	556	34.90%	
	Occasionally	432	27.12%	
	Rarely	118	7.41%	
	Never	16	1.00%	
VBAC/TOLAC	Frequently	470	29.41%	1598
	Routinely	503	31.48%	
	Occasionally	325	20.34%	
	Rarely	149	9.32%	
	Never	163	10.20%	

Exhibit 2: Electronic Fetal Monitoring (EFM)		# per answer option	% per answer option	Total per item
Questions	Answer Options			
Adjunct Fetal Assessment Testing - please indicate the frequency in which you encounter this aspect of care in your practice.				
Auscultation	Frequently	585	36.72%	1593
	Routinely	273	17.14%	
	Occasionally	260	16.32%	
	Rarely	265	16.64%	
	Never	222	13.94%	
Biophysical profile	Frequently	729	45.76%	1593
	Routinely	527	33.08%	
	Occasionally	241	15.13%	
	Rarely	61	3.83%	
	Never	44	2.76%	
Contraction stress testing	Frequently	124	7.77%	1595
	Routinely	183	11.47%	
	Occasionally	424	26.58%	
	Rarely	504	31.60%	
	Never	365	22.88%	
Fetal acid base interpretation	Frequently	403	25.28%	1594
	Routinely	367	23.02%	
	Occasionally	306	19.20%	
	Rarely	259	16.25%	
	Never	269	16.88%	
Fetal acoustic stimulation	Frequently	258	16.23%	1590
	Routinely	383	24.09%	
	Occasionally	408	25.66%	
	Rarely	333	20.94%	
	Never	215	13.52%	
Fetal movement counting	Frequently	794	49.69%	1598
	Routinely	411	25.72%	
	Occasionally	252	15.77%	
	Rarely	111	6.95%	
	Never	43	2.69%	
Nonstress testing	Frequently	1,319	82.59%	1597
	Routinely	218	13.65%	
	Occasionally	48	3.01%	
	Rarely	15	0.94%	
	Never	11	0.69%	
EFM Tracing Classifications and Documentation - Indicate below the how often you classify EFM tracings using the 3 tiered classification system.				
Category I	Frequently	1,460	91.59%	1594
	Routinely	77	4.83%	
	Occasionally	21	1.32%	
	Rarely	36	2.26%	
Category II	Frequently	1,249	78.85%	
	Routinely	238	15.03%	
	Occasionally	56	3.54%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Rarely	41	2.59%	1584
Category III	Frequently	286	18.16%	1575
	Routinely	408	25.90%	
	Occasionally	541	34.35%	
	Rarely	340	21.59%	
Identify how EFM tracings are documented in your institution	By category	372	23.50%	1583
	By description	250	15.79%	
	Both	951	60.08%	
	Other	10	0.63%	
Current Credentialing Test Outline - please indicate if you feel these percentages should be increased, decreased or stay as they are.				
Electronic Monitoring Equipment at 5-10%	increased	110	7.01%	1570
	decreased	256	16.31%	
	stay as they are	1,204	76.69%	
Physiology at 10-15-%	increased	351	22.37%	1569
	decreased	137	8.73%	
	stay as they are	1,081	68.90%	
Pattern Recognition, Interpretation and Intervention at 60-70%	increased	258	16.40%	1573
	decreased	83	5.28%	
	stay as they are	1,232	78.32%	
Adjunct Fetal Assessment at 5-10%	increased	199	12.71%	1566
	decreased	128	8.17%	
	stay as they are	1,239	79.12%	
Legal Aspects and Patient Safety of EFM at 5% or less	increased	384	24.44%	1571
	decreased	46	2.93%	
	stay as they are	1,141	72.63%	
What best describes your practice setting?	Hospital	1391	88.83%	1566
	Office or clinic setting	94	6.00%	
	Academic setting	32	2.04%	
	Education (not an academic institution)	24	1.53%	
	Administration	5	0.32%	
	Research	3	0.19%	
	Other	17	1.09%	
If you work in a hospital, is it designated as	Level I	287	18.75%	1531
	Level II	522	34.10%	
	Level III	651	42.52%	
	Not applicable	42	2.74%	
	Other	29	1.89%	
Are you employed by a	Hospital	1427	91.71%	1556
	Government Agency	20	1.29%	
	Private company	70	4.50%	
	Other	39	2.51%	
What type of health care professional are you? (Choose the best response)	Nurse	1365	87.28%	
	Nurse-Midwife	84	5.37%	
	Nurse Practitioner	34	2.17%	
	Physician	55	3.52%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Physician Assistant	0	0%	1564
	Other	26	1.66%	
What is your highest level of education	MD/DO	58	3.70%	1569
	Doctorate - PhD	13	0.83%	
	Doctorate - DNP	13	0.83%	
	Post Master's	30	1.91%	
	Master's	333	21.22%	
	Baccalaureate	767	48.88%	
	Associate	280	17.85%	
	Diploma	72	4.59%	
	Other	3	0.19%	
How long have you been working in the obstetric specialty area?	Less than a year	3	0.19%	1561
	1-5 years	152	9.74%	
	6-10 years	283	18.13%	
	11-15 years	240	15.37%	
	16-20 years	187	11.98%	
	Over 20 years	696	44.59%	
How many hours do you work a week? Work is defined as clinical practice, education, research or administration?	46 hours or more	192	12.24%	1568
	35-45 hours	962	61.35%	
	20-34 hours	290	18.49%	
	Less than 20 hours	72	4.59%	
	Not working in the obstetric specialty at this time	10	0.64%	
	Self Employed	2	0.13%	
	Salaried	26	1.66%	
	Per Contract	4	0.26%	
	Retired	4	0.26%	
	Other	6	0.38%	
How would you best describe the focus of your position? (Select the one that is most representative of your position).	Direct patient care	1267	81.11%	1562
	Administrative or managerial	120	7.68%	
	Education	145	9.28%	
	Research	6	0.38%	
	Other	24	1.54%	
What state do you live in	Alaska	5	0.32%	1562
	Alabama	5	0.32%	
	Arkansas	2	0.13%	
	Arizona	25	1.59%	
	California	141	8.94%	
	Colorado	59	3.74%	
	Connecticut	78	4.95%	
	District of Columbia	2	0.13%	
	Florida	57	3.61%	
	Georgia	25	1.59%	
	Guam	1	0.06%	
	Hawaii	4	0.25%	
	Iowa	28	1.78%	
	Idaho	28	1.78%	

Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Illinois	74	4.69%	
	Indiana	17	1.08%	
	Kansas	6	0.38%	
	Kentucky	6	0.38%	
	Louisiana	6	0.38%	
	Massachusetts	17	1.08%	
	Maryland	59	3.74%	
	Maine	6	0.38%	
	Michigan	100	6.34%	
	Minnesota	5	0.32%	
	Missouri	24	1.52%	
	Mississippi	1	0.06%	
	North Carolina	26	1.65%	
	Nebraska	16	1.01%	
	New Hampshire	10	0.63%	
	New Jersey	38	2.41%	
	New Mexico	11	0.70%	
	Nevada	8	0.51%	
	New York	165	10.46%	
	Ohio	155	9.83%	
	Oklahoma	2	0.13%	
	Ontario	1	0.06%	
	Oregon	10	0.63%	
	Pennsylvania	29	1.84%	
	Rhode Island	3	0.19%	
	South Carolina	19	1.20%	
	South Dakota	3	0.19%	
	Tennessee	30	1.90%	
	Texas	53	3.36%	
	Utah	121	7.67%	
	Virginia	32	2.03%	
	Vermont	1	0.06%	
	Washington	22	1.40%	
	Wisconsin	36	2.28%	
	West Virginia	4	0.25%	
	Wyoming	1	0.06%	1577
Which of the following statements apply to your NCC EFM certificate of added qualification? (check all that apply)	Being NCC EFM credentialed is required for employment	8	32%	
	Being NCC EFM credentialed is encouraged	9	36%	
	Being NCC EFM credentialed is not required or encouraged	3	12%	
	There is a financial incentive tied to being NCC EFM credentialed	4	16%	
	There is no financial incentive tied to being NCC EFM credentialed	8	32%	
	My NCC credential in Electronic Fetal Monitoring was attained for personal reasons.	10	40%	

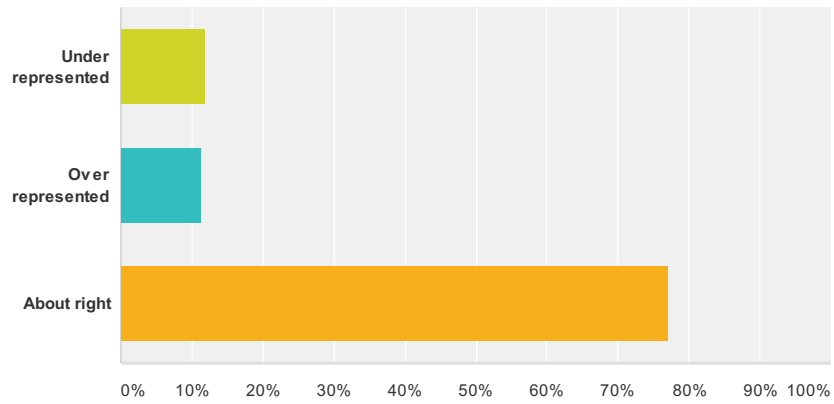
Exhibit 2: Electronic Fetal Monitoring (EFM)				
Questions	Answer Options	# per answer option	% per answer option	Total per item
	Being NCC credentialed in Electronic Fetal Monitoring is tied to other employer-based recognition (please specify)	4	16%	25
In the last 24 months what new practice change(s) have been incorporated into your practice?	None	13	48.15%	27
	Listed below	14	51.85%	

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q1 Did you think the Electronic Monitoring Equipment content tested on exam was

Answered: 483 Skipped: 9



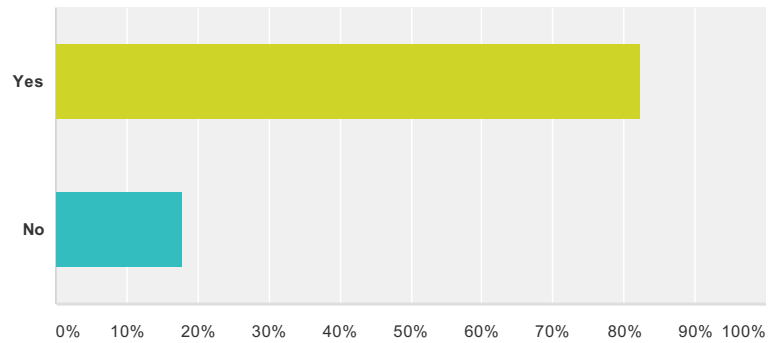
Answer Choices	Responses	
Under represented	11.80%	57
Over represented	11.18%	54
About right	77.02%	372
Total		483

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q2 Does this content adequately reflect what is applied to your daily practice relative to Electronic Monitoring Equipment?

Answered: 484 Skipped: 8



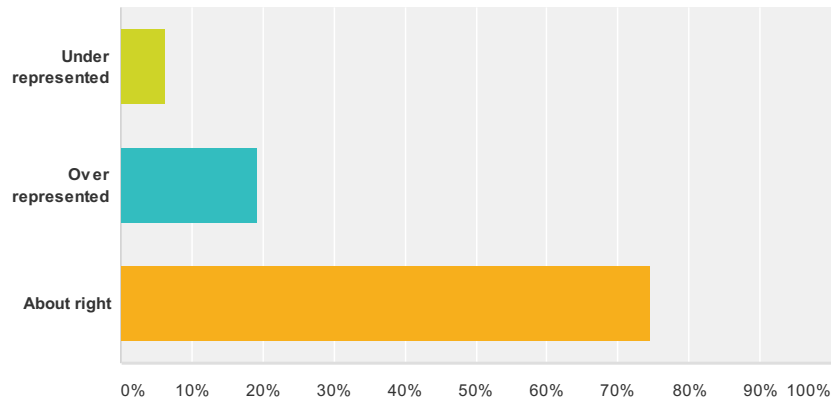
Answer Choices	Responses	
Yes	82.23%	398
No	17.77%	86
Total		484

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q4 Did you think the Physiology content tested on exam was

Answered: 467 Skipped: 25



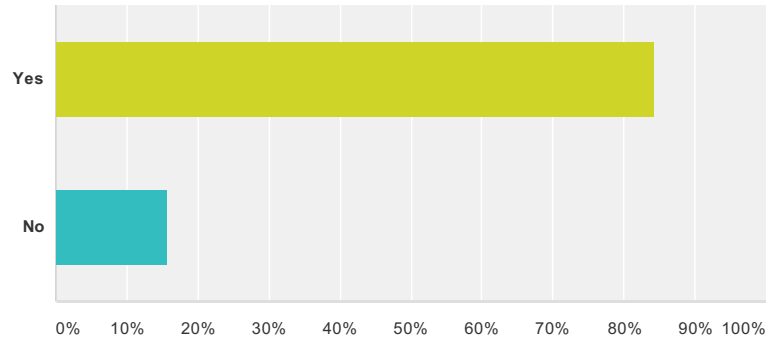
Answer Choices	Responses	
Under represented	6.21%	29
Over represented	19.27%	90
About right	74.52%	348
Total		467

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q5 Does this content adequately reflect what is applied to your daily practice relative to Physiology?

Answered: 471 Skipped: 21



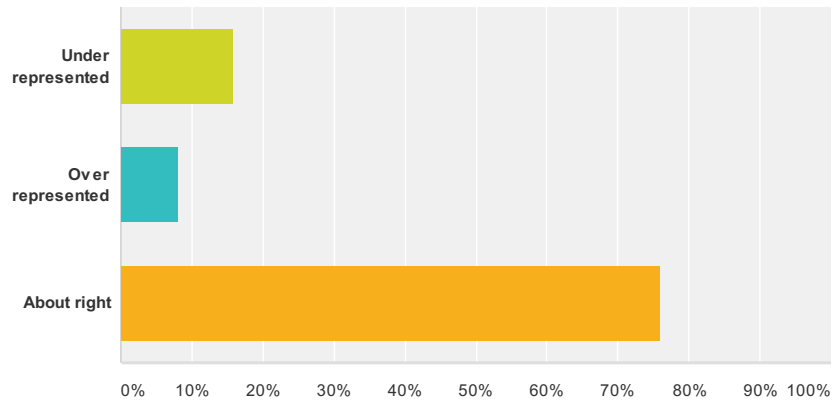
Answer Choices	Responses
Yes	84.29% 397
No	15.71% 74
Total	471

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q7 Did you think the Pattern Recognition, Interpretation and Intervention content tested on the exam was

Answered: 463 Skipped: 29



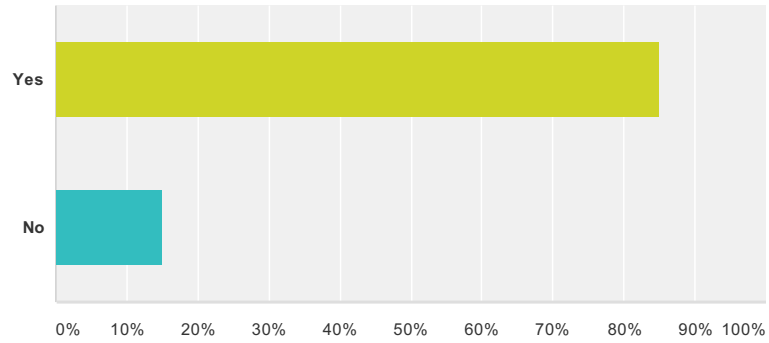
Answer Choices	Responses	Count
Under represented	15.77%	73
Over represented	8.21%	38
About right	76.03%	352
Total		463

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q8 Does this content adequately reflect what is applied to daily practice relative to Pattern Recognition, Interpretation and Intervention?

Answered: 457 Skipped: 35



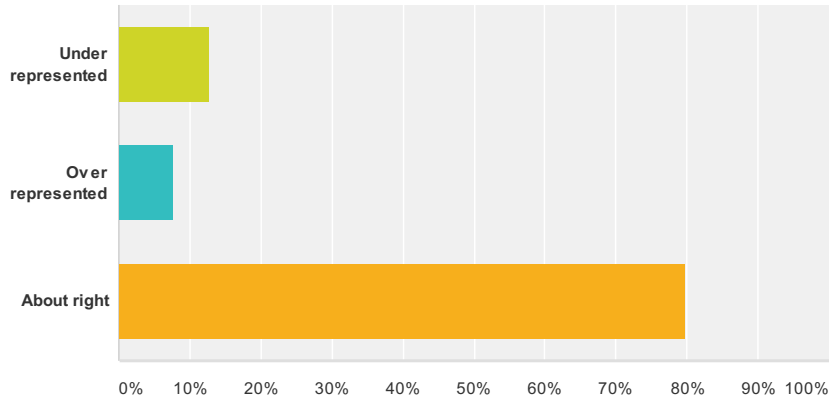
Answer Choices	Responses
Yes	84.90% 388
No	15.10% 69
Total	457

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q10 Did you think the Adjunct Fetal Assessment content tested on the exam was

Answered: 458 Skipped: 34



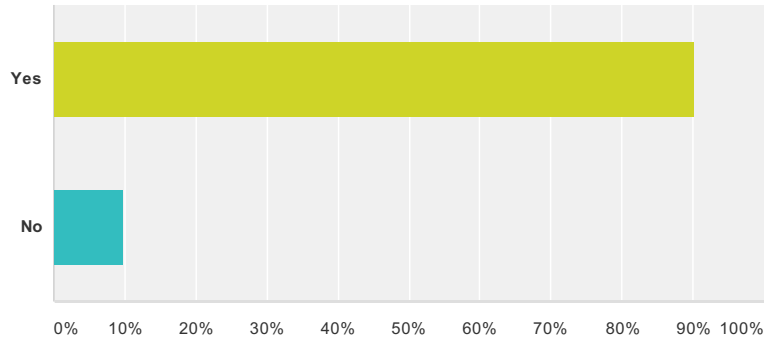
Answer Choices	Responses	Count
Under represented	12.66%	58
Over represented	7.64%	35
About right	79.69%	365
Total		458

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q11 Does this content adequately reflect what is applied to daily practice relative to Adjunct Fetal Assessment?

Answered: 460 Skipped: 32



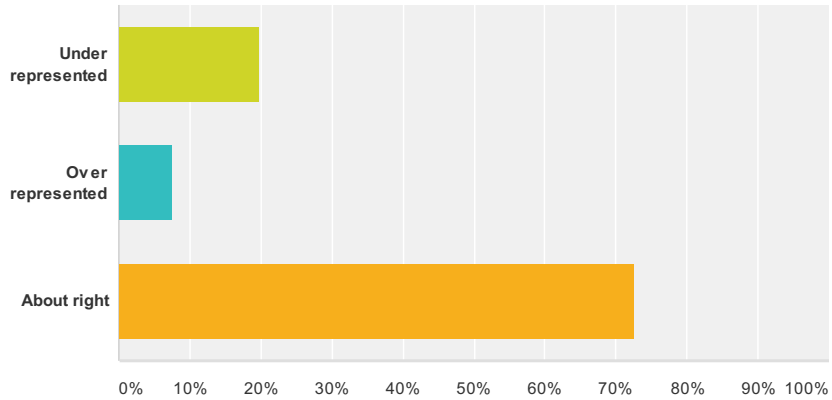
Answer Choices	Responses	
Yes	90.22%	415
No	9.78%	45
Total		460

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q13 Did you think the Legal Aspects of Electronic Fetal Monitoring content tested on the exam was

Answered: 457 Skipped: 35



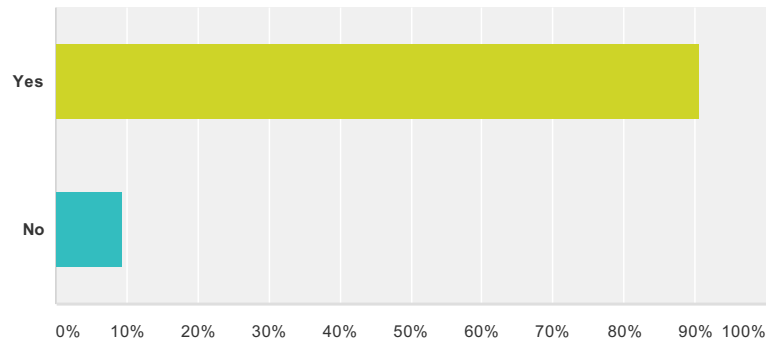
Answer Choices	Responses	Count
Under represented	19.91%	91
Over represented	7.44%	34
About right	72.65%	332
Total		457

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q14 Does this content adequately reflect what is applied to daily practice relative to the Legal Aspects of Electronic Fetal Monitoring?

Answered: 456 Skipped: 36



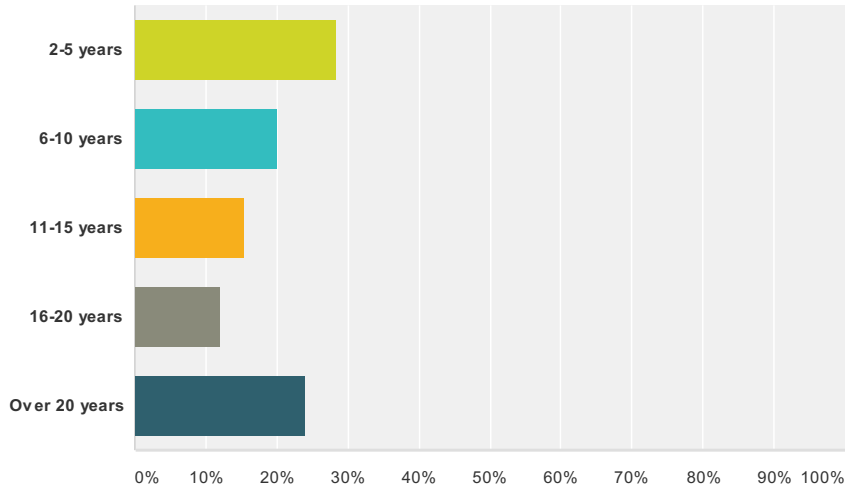
Answer Choices	Responses	
Yes	90.57%	413
No	9.43%	43
Total		456

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q16 How long have you been practicing Electronic Fetal Monitoring?

Answered: 458 Skipped: 34



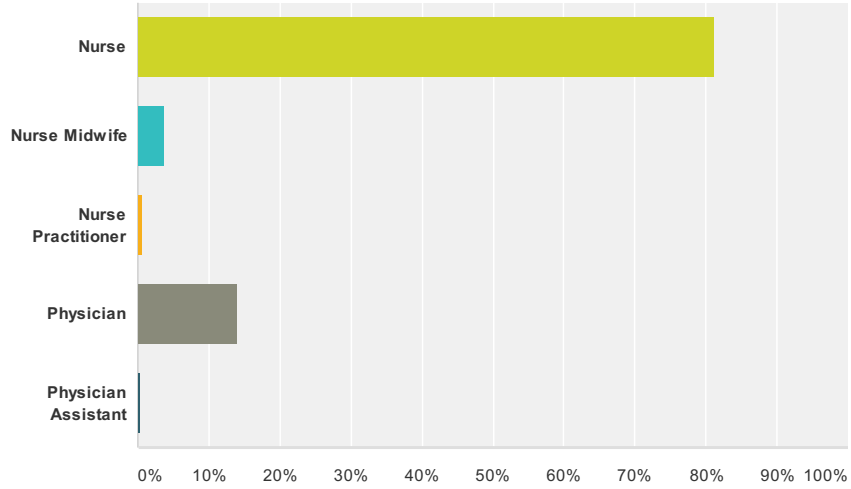
Answer Choices	Responses	Count
2-5 years	28.38%	130
6-10 years	20.09%	92
11-15 years	15.50%	71
16-20 years	12.01%	55
Over 20 years	24.02%	110
Total		458

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q17 Are you a

Answered: 459 Skipped: 33



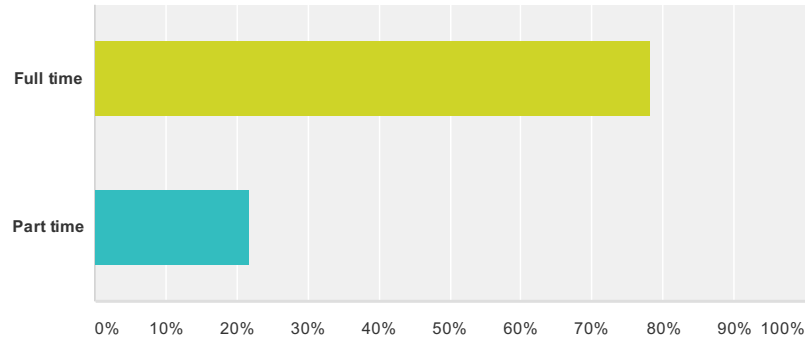
Answer Choices	Responses	
Nurse	81.26%	373
Nurse Midwife	3.70%	17
Nurse Practitioner	0.65%	3
Physician	13.94%	64
Physician Assistant	0.44%	2
Total		459

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q18 Do you work

Answered: 456 Skipped: 36



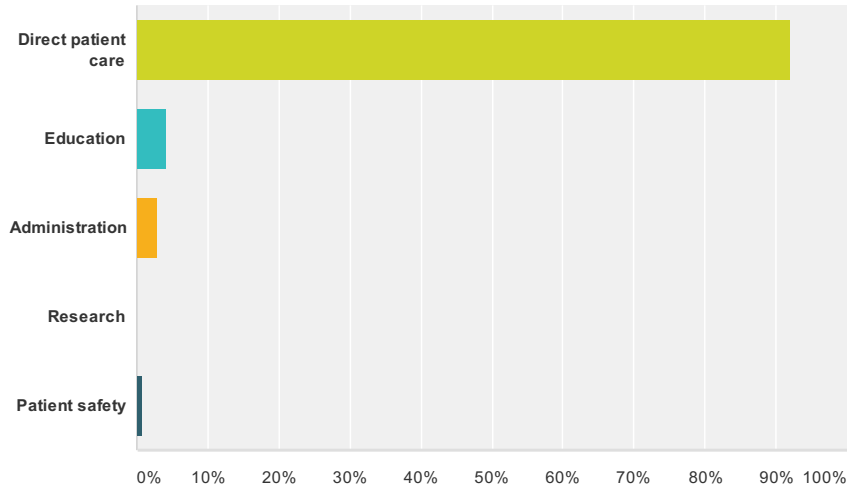
Answer Choices	Responses
Full time	78.29% 357
Part time	21.71% 99
Total	456

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q19 What is your major focus of your practice?

Answered: 458 Skipped: 34



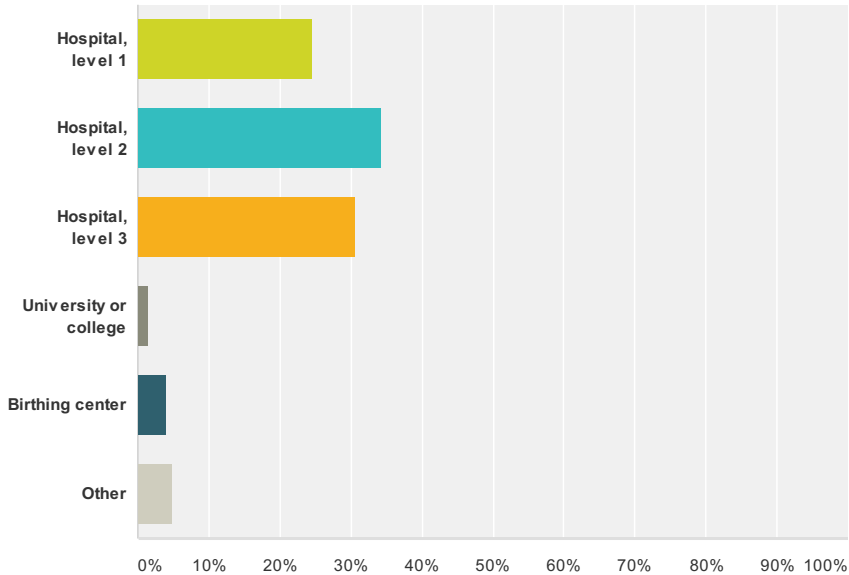
Answer Choices	Responses	
Direct patient care	92.14%	422
Education	4.15%	19
Administration	2.84%	13
Research	0.00%	0
Patient safety	0.87%	4
Total		458

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q20 Where do you work?

Answered: 458 Skipped: 34



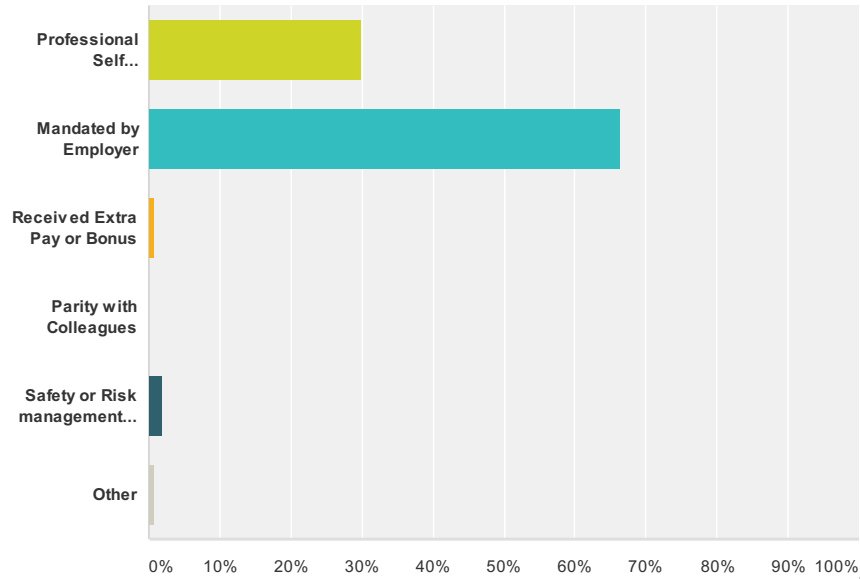
Answer Choices	Responses	Count
Hospital, level 1	24.67%	113
Hospital, level 2	34.28%	157
Hospital, level 3	30.79%	141
University or college	1.53%	7
Birthing center	3.93%	18
Other	4.80%	22
Total		458

Exhibit 3: Electronic Fetal Monitoring (EFM)

2013-2014 Electronic Fetal Monitoring - Post Exam Feedback Survey

Q21 Why did you primarily seek certification? (select one)

Answered: 461 Skipped: 31



Answer Choices

Responses

Professional Self Development	29.93%	138
Mandated by Employer	66.38%	306
Received Extra Pay or Bonus	0.87%	4
Parity with Colleagues	0.00%	0
Safety or Risk management initiative	1.95%	9
Other	0.87%	4
Total		461