OB/GYN Webinar Series 2017-2018

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Hot Topics in Obstetrical Care

Tuesday, January 9th, 12pm- 1pm EST

Presented by:

THE University of Vermont MEDICAL CENTER

VERMONT DEPARTMENT OF HEALTH

OB/GYN Webinar Series 2017-2018

Topics to be Discussed:

- Tobacco & Pregnancy

  802 Quits: Free Resources for Providers

  Rhonda Williams, MES, Health Promotion and Disease Prevention, Vermont Dept. of Health

  Smoking Cessation/Reduction in Pregnancy: A collaborative approach involving: VT Dept. of Health & Rutland Regional Medical Center

  Bethany Yon, PhD, Rutland Office of Local Health, Vermont Department of Health

- Fetal Monitoring Impact, Guidelines for Intermittent Auscultation, Proposed Algorithm for IA

  Marjorie Meyer, M.D., Associate Professor, UVMMC Obstetrics & Gynecology, Maternal Fetal Medicine




802Quits:

Free Resources for Providers

VERMONT
DEPARTMENT OF HEALTH

Rhonda Williams, MES
Health Promotion and Disease Prevention, Vermont Dept of Health

Who are Today's Tobacco Users?

- Low Income
- Less Education
- More Depression/Anxiety
- Disabled
- Racial/Ethnic Minority
- More Rural
- LGBTQ
- Young Adults
- Pregnant (in Vermont)

Vermont Department of Health

Quit Methods

Treatment	Tobacco Quit Rate
Cold Turkey	4 – 7%
Self Help	11 – 14%
Individual Counseling	15 – 19%
Group Counseling	12 – 16%
Medication Alone	22%
Medication and Counseling	25 – 30%

- Having the conversation matters
- Providers validate tobacco use as a priority health issue – and that they have confidence in their patient to quit
- Vermonters report providers:
  - 73% asked about cigarette use
  - 42% asked about OTP use
  - 66% advised to quit
  - 32% recommended program or medications to help quit

802Quits Videos\Dr. Grundel-Q116_SHORT.mov

Vermont Department of Health

Ask, Advise, Refer – Easy with 802Quits

- Providers can make a:
  - Web referral
  - Fax referral
  - Use an authorization to disclose health information – necessary for pregnant and breastfeeding
- 802Quits and National Jewish Health resources for providers
  - How to Talk to Your Patient about Tobacco
  - How to Make a Referral
  - AAR Model
  - Q & A's

Multiple Tries, Multiple Ways

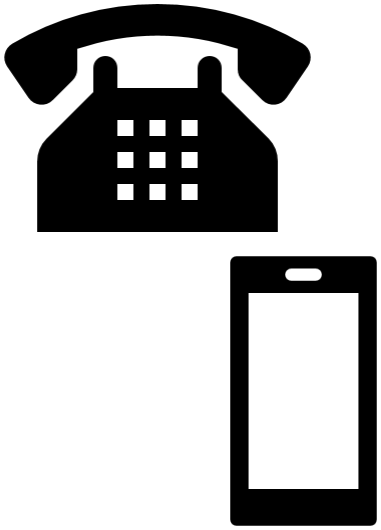
802Quits offers four types of **free** cessation services:

- Quitline, 1-800-QUIT-NOW, protocol for pregnant
- Convenient, supportive Quit Online
- Trusted Vermont Quit Partners statewide
- Tools to Quit on Your Own, Your Own Way

Quitlines Work

Quitline **1-800-Quit-NOW and it's FREE**

- Coaches available 24/7
- Translation services
- Up to eight weeks of free short- and long-acting nicotine replacement therapy (NRT)
- Dedicated coaches and gift cards ($65) for those who are pregnant
- Currently testing a new protocol for callers that report anxiety or depression



Quit Online – Innovative Practice

Quit Online **and it's FREE**

- Online support forum
- Personalized goal tracking
- Two weeks of NRT
- Text messaging support
- Automated chat feature
- Aligned with phone coaching – can use both during a quit

Quit Partners – Group Counseling

- Vermont Quit Partners available for FREE by referral or bring onsite
- Quit Partners are in every hospital service are - find one here
- Partners use American Cancer Society's Fresh Start curriculum
- Eight weeks of free dual NRT
- Groups provide peer support

Quit On Your Own, Quit Your Way

Cube Puzzle

A distraction for your hands and mind, your craving will disappear while you're solving the puzzle:

Worry Stone

Easy to take along anywhere, slip into your hand and rub your worries away until the craving is gone:

Clip-on Pedometer

This handy, clip-on pedometer will help you count the steps you've taken since your last cigarette:

Distraction Putty

Keep your hands and mind busy until the craving goes away. Helps you squish and shape your way to a smoke-free future:

37,000 women smokers in Vermont

- Nearly 50% (18,000) of women made a quit attempt in 2016.
- We need your help to:
  - Ask, Advise and Refer your patients before/ during pregnancy and post partum
  - Cigarettes and OTP
  - Connect to effective and free quit support
  - Refer to 802Quits




Smoking Cessation / Reduction in Pregnancy

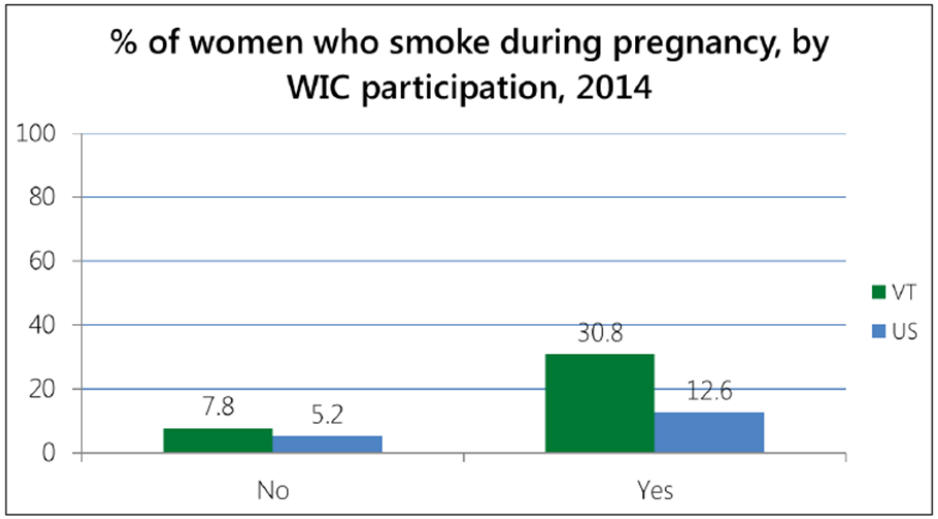
A collaborative approach involving:
VT Dept of Health & Rutland Regional Medical Center

VERMONT
DEPARTMENT OF HEALTH

Bethany Yon, PhD
Rutland Office of Local Health, Vermont Dept of Health

Smoking during Pregnancy

- Mother's Smoking Status (2013)
  - Vermont 18.2%
  - Rutland County 27.9%



2013-2014 National Vital Statistics System

Tobacco Education

Clinical Providers

- Smoking Cessation & Reduction in Pregnancy Treatment (SCRIPT)
- Rutland Women's Healthcare - October 2017
- 22 people trained

Human Services Providers

- Brief Tobacco Intervention Training for Human Services and Community Partners
- 2 trainings held (November & December 2017)
- 20 people trained

SCRIPT – *Changing Health Systems to Support Smoking Cessation among Pregnant Women*

- All staff trained to routinely screen pregnant women for tobacco use
- Patient flow chart
- Who will provide counseling and follow-up based on the 5As
- Understanding resources
  - UVM's Contingency Management Research
  - Community based Contingency Management Pilot Project

Society for Public Health Education

Brief Tobacco Intervention Training – 5As

- ASK
- ADVISE
- ASSESS
- ASSIST
- ARRANGE

- BRIEF! It takes less than 5 minutes.
- Draws on Motivational Interviewing skills to assess willingness to quit.
- Provides information tailored to readiness.
- Problem solving skills.
- Referrals.

Engaging Pregnant Women

- Providing incentives is shown to help people make healthy choices.
- Quitting smoking can be one of the hardest things to do because of how addictive nicotine is.
- The **Quit Smoking in Pregnancy Project** is a collaboration between the Office of Local Health and its WIC Program, the RRMC's Women's Health Group, the Department of Health's Maternal and Child Health Division and the Vermont Tobacco Control Program.

Quit Smoking in Pregnancy

Up to 30 women can be referred by their provider. If successful, it will be expanded to support more women.

Women who are pregnant can sign up before their 25th week. Once signed up, women will participate in regular, brief counseling sessions extending 3 months post-partum.

Saliva (Cotinine) tests confirm smoke-free status. Gift Card Incentives up to $1,115.

Fetal Monitoring Impact, Guidelines for Intermittent Auscultation, Proposed Algorithm for IA

Presented by Marjorie Meyer, M.D., Associate Professor

UVMMC Obstetrics & Gynecology, Maternal Fetal Medicine

THE University of Vermont MEDICAL CENTER

Intermittent Auscultation

This meeting constitutes and will be conducted as the meeting of a "peer review committee" within the meaning of Vermont law, 26 V.S.A. § 1441. In accordance with Vermont law and the Medical Staff bylaws, the proceedings, reports and records of peer review committees are confidential and privileged and are not subject to discovery or introduction into evidence in any civil action against a provider of the health services arising out of matters which are subject to evaluation and review by such committee. Individuals participating in peer review activities shall not disclose any information arising from the peer review activity outside of the formal peer review process without proper authorization in accordance with Hospital and Medical Staff policies. Any breach of confidentiality may result in a professional review and/or legal action to ensure that confidentiality is preserved.

Objectives

- Review the impact of any fetal monitoring
- Review guidelines for intermittent auscultation
- Proposed algorithm for IA

BRITISH MEDICAL JOURNAL

LONDON SATURDAY NOVEMBER 12 1955

CAESAREAN SECTION

ITS USE IN DIFFICULT LABOUR IN PRIMIGRAVIDAE*

BY

DUGALD BAIRD, M.D., B.Sc., F.R.C.O.G., D.P.H.

Regius Professor of Midwifery, University of Aberdeen; Honorary Director, Obstetric Medicine Research Unit, Medical Research Council

Myth: Cesarean deliveries increased only when we started continuous fetal monitoring

Fact: Cesarean rate increased when any attention to the fetus was made.

- Focused on maternal age, especially in Primiparas
- As cesarean increased, stillbirth at term and birth trauma decreased
- Without a means to evaluate the fetus, at risk women underwent cesarean

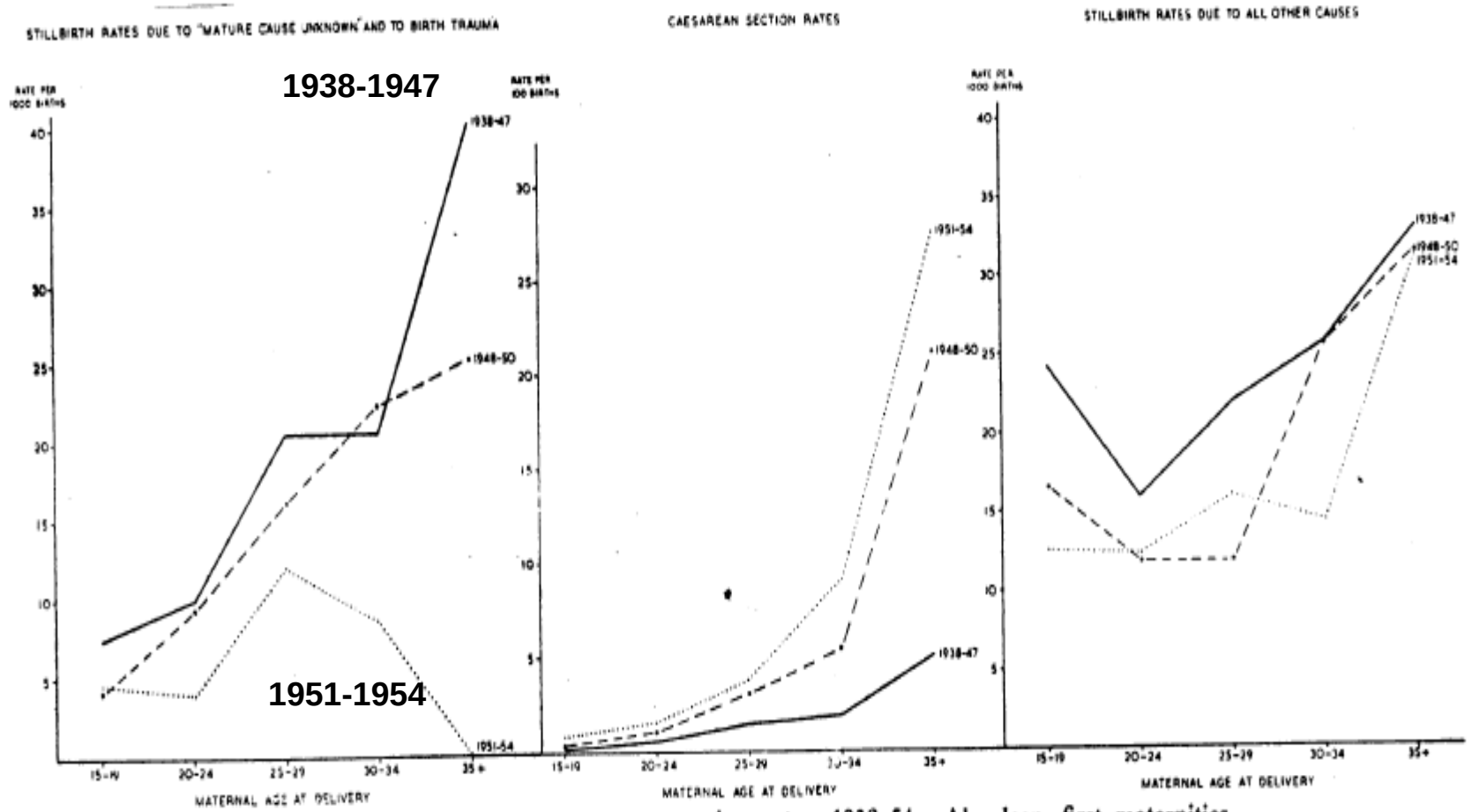


FIG. 2.—Stillbirth and caesarean section rates, 1938–54. Aberdeen, first maternities.

stillbirths of “mature” infants and birth trauma decreased as cesarean rate increased (no fetal monitoring) .

OBSERVATIONS ON "PATHOLOGIC" FETAL BRADYCARDIA*

EDWARD H. HON, M.D.,** NEW HAVEN, CONN.

(From the Department of Obstetrics and Gynecology, Yale University School of Medicine)

SINCE 1893 when Von Winckel[1] drew attention to the association of fetal bradycardia with poor fetal outcome, slowing of the fetal heart rate to less than 100 beats per minute between contractions has been considered the chief criterion of fetal distress.[2] Application of this dictum to clinical obstetrics has produced a number of seeming inconsistencies, for bradycardia of this magnitude has been frequently noted both in the antepartum period and during labor, yet the infant has been in good condition at birth.

Am. J. Obst. & Gynec.
May, 1959

1950:

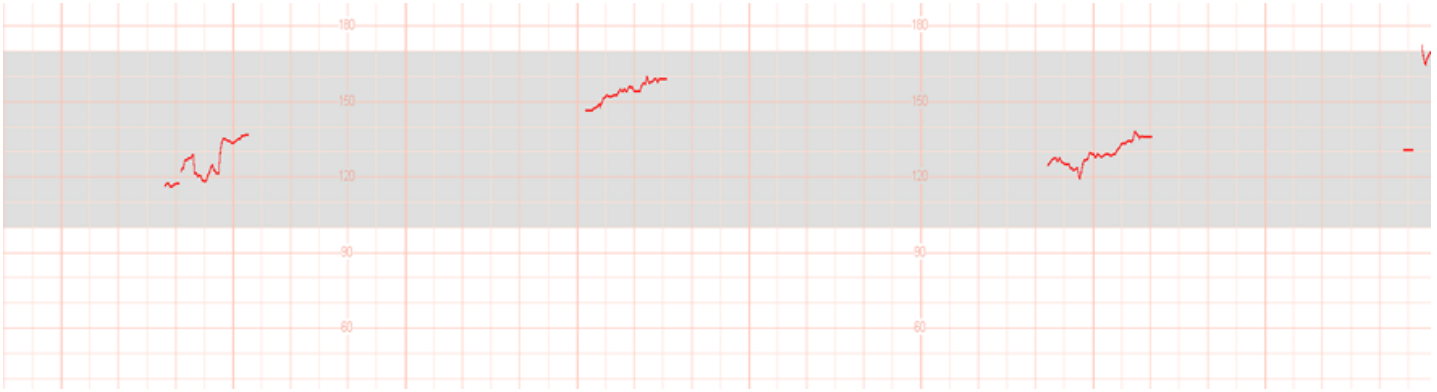
intermittent auscultation: high forceps and breech extraction were performed because of the limitations of intermittent auscultation (especially in the second stage):

Stillbirth, asphyxia, birth trauma

Cesarean

Why we need to review IA

- Need to standardize when:
  - Shift from intermittent to continuous monitoring
  - Need to shift from doppler to FSE
  - Use documentation of maternal heart rate coincident with fetal heart rate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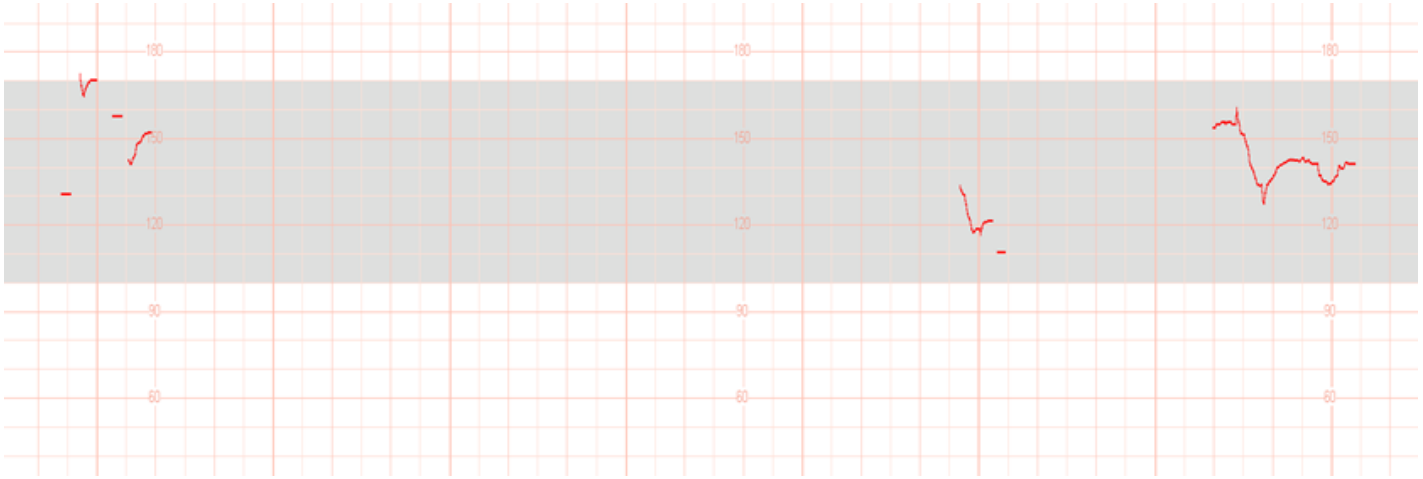
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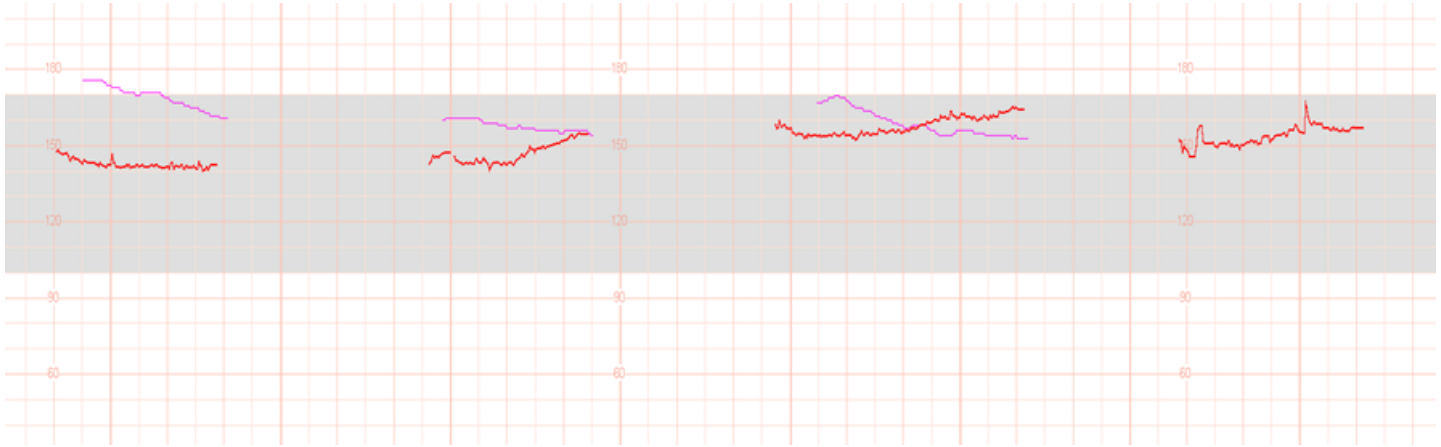
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We do not have an intermittent monitoring protocol.

Why we need a protocol
(Disclosure: I was resistant because of legal issues; it will be done with their help):

There is variability in how intermittent auscultation is performed

There is variability in how intermittent auscultation is interpreted and the response to findings

Why people are concerned with having/consequences of a protocol:

There is concern about patient desire for minimal intervention, including continuous monitoring

There is concern about patient mobility and comfort in getting additional information such as maternal heart rate coincident with fetal heart rate

There is concern that we will increase risk of intervention by increasing continuous monitoring

ACOG: follow existing guidelines for intermittent auscultation

COMMITTEE OPINION

Number 687 • February 2017

Committee on Obstetric Practice

The American College of Nurse–Midwives and the Association of Women's Health, Obstetric and Neonatal Nurses endorse this document. This Committee Opinion was developed by the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice, in collaboration with American College of Nurse–Midwives' liaison member Tekoa L. King, CNM, MPH, and College committee members Kurt R. Wharton, MD, Jeffrey L. Ecker, MD, and Joseph R. Wax, MD.

This document reflects emerging clinical and scientific advances as of the date issued and is subject to change. The information should not be construed as dictating an exclusive course of treatment or procedure to be followed.

Approaches to Limit Intervention During Labor and Birth

Delay admission for low risk (not defined) women with reassuring fetal status (does not specify how to assess fetal status)

- Admission to labor and delivery may be delayed for women in the latent phase of labor when their status and their fetuses' status are reassuring. The women can be offered frequent contact and support, as well as nonpharmacologic pain management measures.

Facilitate use of intermittent auscultation and follow established guidelines.

- To facilitate the option of intermittent auscultation, obstetrician–gynecologists and other obstetric care providers and facilities should consider adopting protocols and training staff to use a hand-held Doppler device for low-risk women who desire such monitoring during labor.

tant consideration. Guidelines, indications, and protocols for intermittent auscultation are available from the American College of Nurse–Midwives (30), the National Institute for Health and Care Excellence (31), and the Association of Women's Health, Obstetric and Neonatal Nurses (29).

Intermittent Auscultation (regular fetal assessment that is not continuous) Guidelines:

Frequency recommended but not interpretation. Not a lot of detail.

No definition of low risk. No specific mention of maternal heart rate.

Table 2. Recommendations of Professional Organizations for Frequency of Fetal Heart Rate Auscultation for Women who are Low Risk[a] During Labor

Organization	Latent Phase	Active Phase Minutes	Second Stage Minutes
American College of Nurse-Midwives		15-30	5
American College of Obstetricians and Gynecologists		30	15
American College of Obstetricians and Gynecologists and American Academy of Pediatrics Joint Guidelines for Perinatal Care		15	5
Association of Women's Health, Obstetric And Neonatal Nurses		15-30	5-15
Royal College of Obstetricians and Gynaecologists		15[d]	5[d]
Society of Obstetrics and Gynaecologists of Canada[b]	At time of assessment and approximately every hour	15-30	5[c]

[a]None of the guidelines of the professional organizations included here specifically define *low risk*. For the purpose of this bulletin, low risk refers to women who have no medical or obstetric conditions that are associated with uteroplacental insufficiency or conditions that are associated with an increased incidence of umbilical artery pH of less than 7.1 at birth.
[b]Intermittent auscultation should only be used by practitioners with experience in the technique of auscultation, palpation of contractions, and auditory recognition of pertinent fetal heart rate changes.
[c]When pushing has been initiated.
[d]For a minimum of 60 seconds after a contraction.

Table 2: Recommendations for Assessment of Fetal Status during Labor

When Using Electronic Fetal Monitoring[a,b]

	Latent phase (<4 cm)	Latent phase (4-5 cm)	Active phase (≥6cm)	Second stage (passive fetal descent)	Second stage (active pushing)
Low-risk without oxytocin	At least hourly	Every 30 minutes	Every 30 minutes	Every 15 minutes	Every 15 minutes
With oxytocin or risk factors	Every 15 minutes with oxytocin; every 30 minutes without	Every 15 minutes	Every 15 minutes	Every 15 minutes	Every 5 minutes

Note. [a]Frequency of assessment should always take into consideration maternal-fetal condition and at times will need to occur more often based on maternal-fetal clinical needs, for example a temporary or on-going change in maternal or fetal status.
[b]Summary documentation is acceptable and individual hospital policy should be followed.

AWHONN 2015

Recommendation 1: document whether intermittent auscultation was used a (correctly, please)

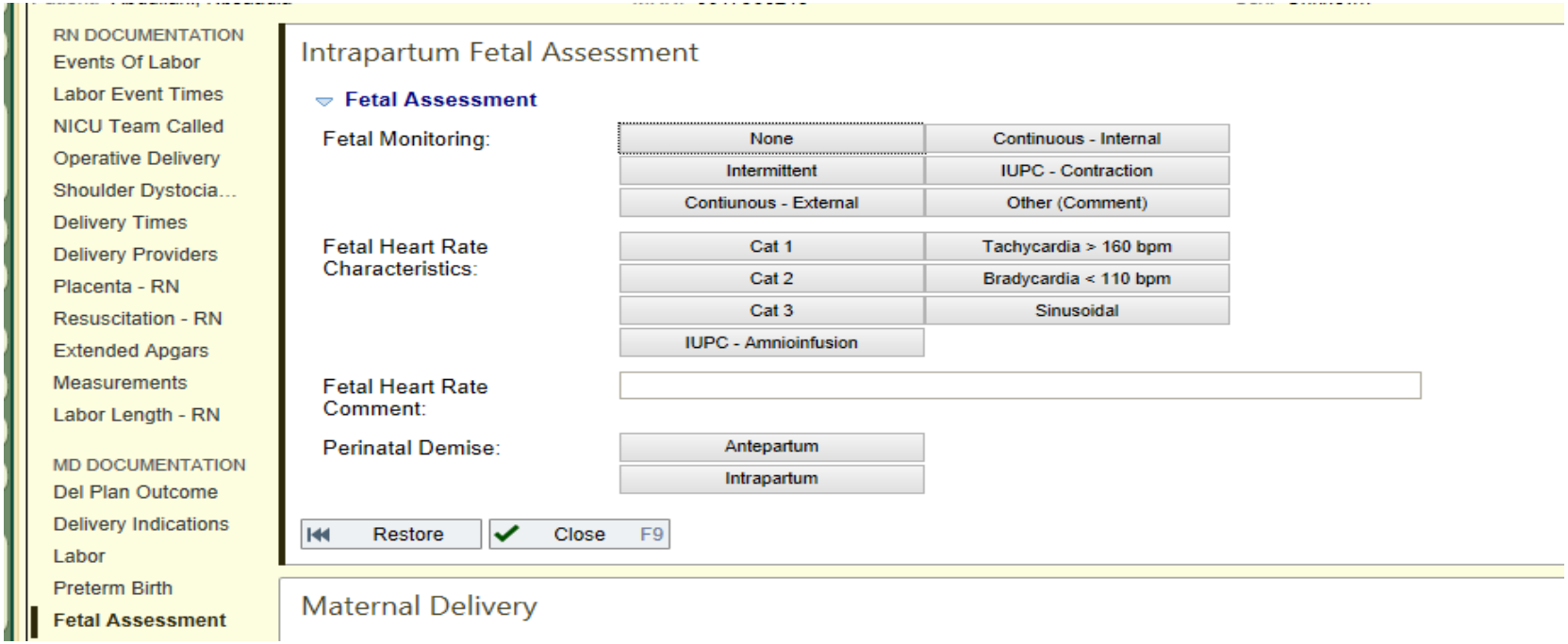
Documentation of use of intermittent auscultation is not reliable through STORK

9-1-2016 to 8-31-2017

N=500 noted intermittent monitoring; only 300 presented in labor
This group included women that were induced and had preeclampsia
Of these pts only n=20 had FSE

Need to make sure that we correctly identify pts that received IA so we can perform appropriate QAI

Process: Select IA if the patient has intermittent auscultation for any portion of labor, including those that go on to further monitoring



Recommendation 2: Standardize how fetal and maternal heart rates are obtained an

Obtained	Recorded	Timing of documentation	Documentation includes	Pros/Cons
Fetoscope	Manually by RN in chart; need to standardize place	Must be concurrent with assessment (AWHONN) q15 min	Baseline, variability*, presence or absence of accels/decels; Interpretation, intervention, notification.	• No maternal HR confusion • Hard to hear • Pt positioning difficult • Manual documentation
Hand held doppler	Manually by RN in chart; need to standardize place	Must be concurrent with assessment (AWHONN) q15 min		• Maternal HR confusion • Easier to hear • Manual documentation
Doppler feeding into monitoring system (AWHONN refers to this as intermittent EFM)	Intellispace perinatal	Less frequent summary note acceptable	Interpretation, intervention, notification.	• Maternal HR confusion • Easier documentation and QA review (population management)

*AWHONN has variability in their statement but this can not be assessed with IA. Continuous EFM is need

Recommendation 3: Standardize how FHR is measured: counting methods: Baseline, periodic changes, contractions

	When and How	Interpretation	Not interpretable
Baseline	• Between contractions • No fetal movement • Maternal radial pulse palpated • 15-60 seconds between contractions	Must be stable for interpretation	Wandering (no definition)
Periodic changes	• 15-60 seconds • Audible increase or decrease in rate • Multiple count: FHR in several 5-15 second intervals: increase indicates acceleration, decrease a decel. (not single count) • Can plot manually on graph. • Listen through contraction if uncertain.	• Must be interpreted with baseline • Must listen longer to differentiate accels/decels from baseline change (not specified) • Multiple count method difficult to perform • Manual documentation time consuming	• It is not clear how these are interpreted without more information and a graph with assessment of baseline unless listen through entire accel or decel. • Doppler with electronic tracing might help; extend tracing through contraction
Frequency (no evidence based parameters)	Latent phase: no clear guidelines, 1 hr mentioned; Q15-30 active phase; q15 passive second stage; q5 min active second stage	In the absence of evidence-based parameters to define the optimal interval for auscultation….(recommended guidelines). …… may be reasonable as long as the auscultated FHR is normal and there are no other labor characteristics that would suggest a need for more frequent monitoring. The frequency of auscultation should be individualized based upon the contraction pattern, level of maternal activity, and institution interventions that may affect the FHR (ie: ROM).	
Timing relative to contractions (no evidence based parameters)	One of the primary goals of listening throughout the contraction and for a brief time after the contraction ends is to ensure the listener can detect periodic FHR decelerations if they are present. The best technique for detecting decelerations is to listen during the last portion of a uterine contraction and for a short period after the contraction is complete.		

Recommendation 4: Standardize Interpretation of intermittent auscultation and a

Table 4. Interpretation of Auscultation Findings

Category I

Category I FHR characteristics by auscultation include the following:

Normal FHR baseline between 110 and 160 bpm and,

Regular rhythm and,

Absence of FHR decreases or decelerations from the baseline

Note: Presence of FHR increases or accelerations from the baseline may or may not be present in a FHR auscultated and determined to be Category I. Accelerations should be assessed for and documented if present. If present, FHR accelerations signify fetal well-being at the time they are noted.

Category II

Category II FHR characteristics by auscultation include any of the following:

Irregular rhythm

Presence of FHR decreases or decelerations from the baseline[a]

Tachycardia (baseline >160 bpm >10 minutes in duration)

Bradycardia (baseline <110 bpm >10 minutes in duration)

Abbreviations: bpm, beats per minute; EFM, electronic fetal monitoring; FHR, fetal heart rate; NICHD, National Institute of Child Health and Human Development.
[a]When recurrent decelerations are detected, a transfer to EFM is indicated. EFM will be able to determine if the decreases from baseline are early, late, or variable decelerations and a diagnostic category I, II, or III will then be assigned using NICHD criteria for EFM generated FHR tracings.
From Lyndon A, Ali LU, eds. *Fetal Heart Monitoring Principles and Practices*. 4th ed. Dubuque, IA: Kendall-Hunt Publishing Company; 2009. Used with permission from the Association of Women's Health, Obstetric and Neonatal Nurses.

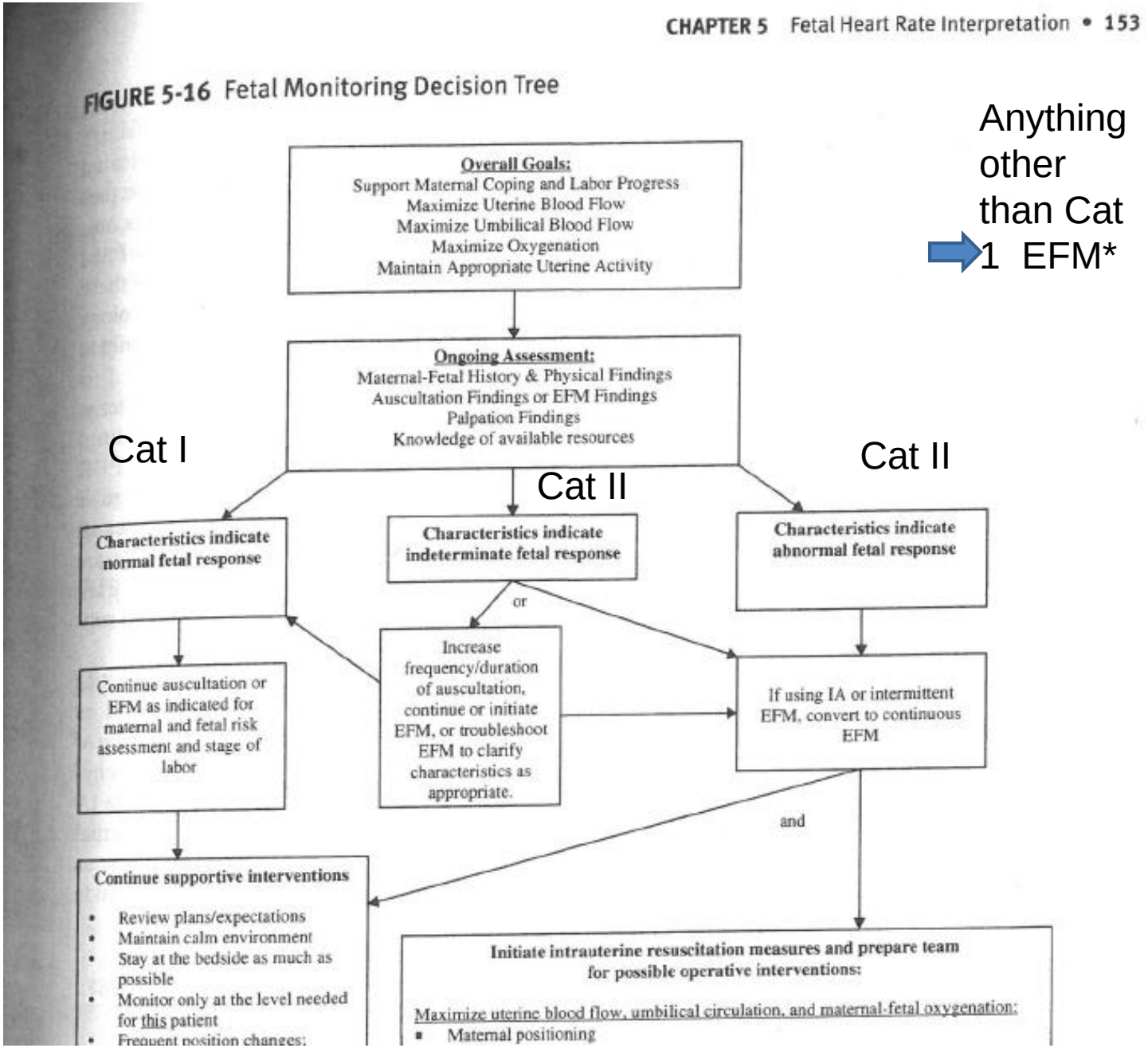
- Derived from NICHD EFM criteria
- No prospective data have validated this system for use
- Underscores inability of IA to measure baseline variability
- No prospective data have documented interventions for Cat II

Category II auscultated FHR characteristics include all FHR characteristics that are not Category I. These FHR characteristics may be either indeterminate or abnormal depending on the FHR variability which cannot be determined via IA. EFM should be used to verify or clarify an indeterminate or abnormal FHR pattern and guide management. Management

Indeterminate FHR characteristics are in Cat
Use continuous EFM to verify or clarify

ACNM 2015

FIGURE 5-16 Fetal Monitoring Decision Tree



Anything other than Cat 1 EFM*

AWHONN, Fetal Monitoring Guidelines

*there are no trials that demonstrate efficacy of this tiered approach

Recommendation 5: Standardize where and how maternal and FHR data are docu

….information about the labor course or maternal status that may assist in the interpretation of data by independent observers should be documented in the record

Flowsheets
Intellispace Perinatal

Documentation must be able to be reviewed and interpreted in retrospect

intermittent auscultation

- continuous monitoring
- Increased (but not only) intervention (cesarean)

- Increasing the cesarean rate resulted in decreases in birth trauma and asphyxia before continuous monitoring

- Other etiologies of perinatal mortality can mask any intervention for the small subset of asphyxia and birth trauma:
  - overall perinatal mortality is not the correct benchmark
  - HIE/asphyxia data are needed

- Homebirth: uses intermittent auscultation, much less access to continuous monitoring, intervention not available

Table 1 The natural course of intermittent auscultation without intervention: UK data

Characteristics of healthy women with low risk pregnancies by their planned place of birth at start of care in labour. Values are numbers (percentages) of women unless stated otherwise

	Obstetric unit (n=19 706)	Home (n=16 840)	Freestanding midwifery unit (n=11 282)	Alongside midwifery unit (n=16 710)
Maternal age (years):				
Mean (SD)	28.2 (6.0)	31.1 (5.2)	28.8 (5.8)	28.3 (5.7)
<20	1506 (7.7)	218 (1.3)	677 (6.0)	1069 (6.4)
20–24	4251 (21.6)	1706 (10.2)	2132 (18.9)	3489 (20.9)
25–29	5701 (29.0)	4346 (25.9)	3267 (29.0)	5001 (30.0)
30–34	5063 (25.7)	5848 (34.8)	3248 (28.8)	4582 (27.5)
35–39	2640 (13.4)	4017 (23.9)	1690 (15.0)	2232 (13.4)
≥40	520 (2.6)	671 (4.0)	254 (2.3)	299 (1.8)
Missing	25	34	14	38
Ethnic group:				
White	16 068 (81.7)	15 937 (94.8)	10 329 (91.6)	13 485 (80.9)
Body mass index in pregnancy:				
Mean (SD)	24.4 (4.0)	24.0 (3.7)	24.1 (3.7)	24.0 (3.8)
Not recorded in maternity notes	3566 (18.1)	3268 (19.5)	1861 (16.5)	2927 (17.6)
<18.5	570 (2.9)	321 (1.9)	234 (2.1)	438 (2.6)
18.5–24.9	8856 (45.1)	8155 (48.7)	5605 (49.8)	8218 (49.4)
25.0–29.9	4731 (24.1)	3776 (22.5)	2653 (23.6)	3789 (22.8)
30.0–35.0	1928 (9.8)	1226 (7.3)	912 (8.1)	1272 (7.6)
Missing	55	94	17	66
Gestation (completed weeks):				
Mean (SD)	39.8 (1.1)	39.8 (1.0)	39.8 (1.0)	39.7 (1.0)
37	717 (3.6)	378 (2.3)	315 (2.8)	474 (2.8)
38	1969 (10.0)	1568 (9.3)	978 (8.7)	1565 (9.4)
39	4557 (23.2)	4089 (24.3)	2669 (23.7)	4132 (24.8)
40	6976 (35.5)	6596 (39.3)	4364 (38.8)	6492 (39.0)
41	4908 (25.0)	3866 (23.0)	2821 (25.1)	3797 (22.8)
≥42	523 (2.7)	302 (1.8)	108 (1.0)	195 (1.2)
Previous pregnancies (≥24 weeks):				
0	10 626 (54.0)	4568 (27.2)	5187 (46.0)	8350 (50.1)

Planned Home birth:

- Older
- White
- Lower BMI (7% BMI>35)
- Multiparous (only 27% nulliparous vs 54% in hospital)

BMJ, 2011

About 35% of nulliparous women were transferred to higher level of care during labor (ie: need more than intermittent monitoring); expect high conversion rate to cEFM
(45% if include PP)

Table 2

Transfers during labour or immediately after birth among healthy women with low risk pregnancies by their planned place of birth at start of care in labour. Values are numbers (percentages) of women

	Home (n=16 840)	Freestanding midwifery unit (n=11 282)	Alongside midwifery unit (n=16 710)
All women			
Transferred before delivery	2387 (14.2)	1863 (16.5)	3539 (21.2)
Transferred after delivery	1046 (6.2)	545 (4.8)	719 (4.3)
Timing of transfer missing	97 (0.6)	60 (0.5)	152 (0.9)
All transferred	3530 (21.0)	2468 (21.9)	4410 (26.4)
Nulliparous women	**(n=4568)**	**(n=5187)**	**(n=8350)**
Transferred before delivery	1605 (35.1)	1535 (29.6)	2825 (33.8)
Transferred after delivery	407 (8.9)	306 (5.9)	427 (5.1)
Timing of transfer missing	45 (1.0)	43 (0.8)	108 (1.3)
All transferred	2057 (45.0)	1884 (36.3)	3360 (40.2)
Multiparous women	**(n=12 256)**	**(n=6078)**	**(n=8323)**
Transferred before delivery	782 (6.4)	321 (5.3)	707 (8.5)
Transferred after delivery	639 (5.2)	238 (3.9)	291 (3.5)
Timing of transfer missing	51 (0.4)	14 (0.2)	43 (0.5)
All transferred	1472 (12.0)	573 (9.4)	1041 (12.5)

A small proportion of births planned in an obstetric unit also involved a transfer (n=135 (0.7%)).

BMJ, 2011

Perinatal Outcome and Interventions: Planned Home Birth:

- Planned home birth was associated with less intervention
- Planned Home birth in nulliparous women increased poor perinatal outcome
- Interventions, especially in nulliparous patients, might be needed to minimize poor perinatal outcome

	Nullip	**Multip**
Primary Outcome (stillbirth, neonatal death, HIE, mec asp, fetal injury)	36/4063 9.5/1000 (6.6-13.7) adjOR 2.8 (1.6-4.9)	26/11461 2.0/1000 (1.4-2.9) adjOR 0.83 (0.44-1.58)
Vacuum, forceps (adj parity)	714/16825 (4%) Home 2842/19688 (14%) OB unit OR ~0.4	
Cesarean (adj parity)	458/16825 Home (2.7%) 2158/19688 OB unit (11%) OR 0.3(0.23-0.41)	

ORIGINAL ARTICLE

Durations of second stage of labor and pushing, and adverse neonatal outcomes: a population-based cohort study

A Sandström[1,2], M Altman[1,3], S Cnattingius[1], S Johansson[1,4], M Ahlberg[1,5] and O Stephansson[1,2]

nulliparous

All units use intermittent monitoring

Table 2. Duration of second stage of labor and rates of specific birth asphyxia-related complications

		Birth asphyxia-related complications (N = 269)[a]											
	Total	*HIE*		*Hypothermia treatment*		*Neonatal seizures*		*Meconium aspiration*		*Heart compressions*		*Intubation*	
		N	%	N	%	N	%	N	%	N	%	N	%
	42 539	97	0.23	23	0.05	95	0.22	68	0.16	46	0.11	71	0.17
Second stage (h)													
< 1	13 558	18	0.13	3	0.02	20	0.15	15	0.11	8	0.06	12	0.09
1 to < 2	12 225	25	0.20	5	0.04	23	0.19	16	0.13	9	0.07	16	0.13
2 to < 3	7710	17	0.22	5	0.06	23	0.30	19	0.25	6	0.08	16	0.21
3 to < 4	5238	15	0.29	3	0.06	12	0.23	8	0.15	13	0.25	14	0.27
⩾4	3808	22	0.58	7	0.18	17	0.45	10	0.26	10	0.26	13	0.34
P-value			< 0.0001		0.0047		0.0055		0.0648		0.0001		0.0021

Abbreviation: HIE, hypoxic ischemic encephalopathy. [a]Infants had one or several diagnoses.

	Acidosis[a]				Birth asphyxia-related complications[b]				Admission to NICU			
	Non-epidural											
	N Total[c]	%	aRR[d]	(95 % CI)	N Total	%	aRR[d]	(95 % CI)	%	aRR[d]	(95 % CI)	
	11 317	1.08			14 949	0.50			5.83			
Second stage (h)												
<1	5070	0.87	1.00	Reference	6 794	0.38	1.00	Reference	4.86	1.00	Reference	
1 to <2	3 489	1.09	1.21	(0.78-1.88)	4 567	0.46	1.15	(0.64-2.07)	5.32	1.11	(0.94-1.31)	
2 to <3	1 561	1.15	1.27	(0.74-2.20)	2 026	0.79	1.90	(1.00-3.58)	7.01	1.48	(1.22-1.80)	
3 to <4	776	1.93	1.63	(0.85-3.12)	1 005	0.50	1.11	(0.42-2.94)	9.25	1.90	(1.51-2.38)	
≥4	421	1.66	1.38	(0.59-3.24)	557	1.26	2.57	(1.11-5.94)	11.31	2.23	(1.70-2.91)	

Complications increased with duration second stage

HIE:

0.13% <1 hr vs 0.58% >4 hrs

Nullip no epidural: complications increased with duration second stage

Birth asphyxia 0.38% <1 hr vs 1.3% >4 hrs

aRR 2.57 (1.11-5.94)

The number of hospitals in Sweden that used continuous monitoring in the second stage in 1999 was 29%; by 2010 it was increased to 57%

J Perinatol, 2017

Historical and Contemporary aspects of fetal monitoring

- Importance of differentiation of maternal and fetal HR has emerged as especially important (all recent European guidelines make some mention)
- Acknowledgement of the difficulty of monitoring in the second stage in particular has been noted
- The second stage (and duration) as a time of increased risk to the fetus has been noted since the FHR was initially heard in 1821
- This concern appears to have contributed to the common practice of delivery by forceps to minimize the second stage
- The role of increased obstetric intervention, including monitoring, in the reduction of death related to asphyxia or birth trauma can not be denied
- That this reduction has been at the cost of increased obstetric interventions can likewise not be denied

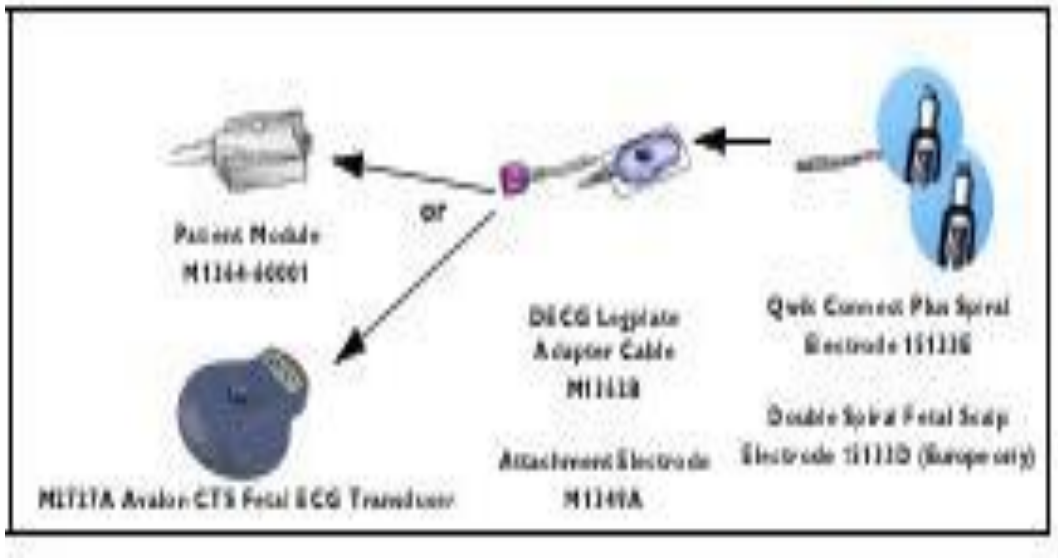
"Those who don't study history are doomed to repeat it. Yet those who *do* study history are doomed to stand by helplessly while everyone else repeats it."

Desire for mobility should not be a barrier to monitoring choice:

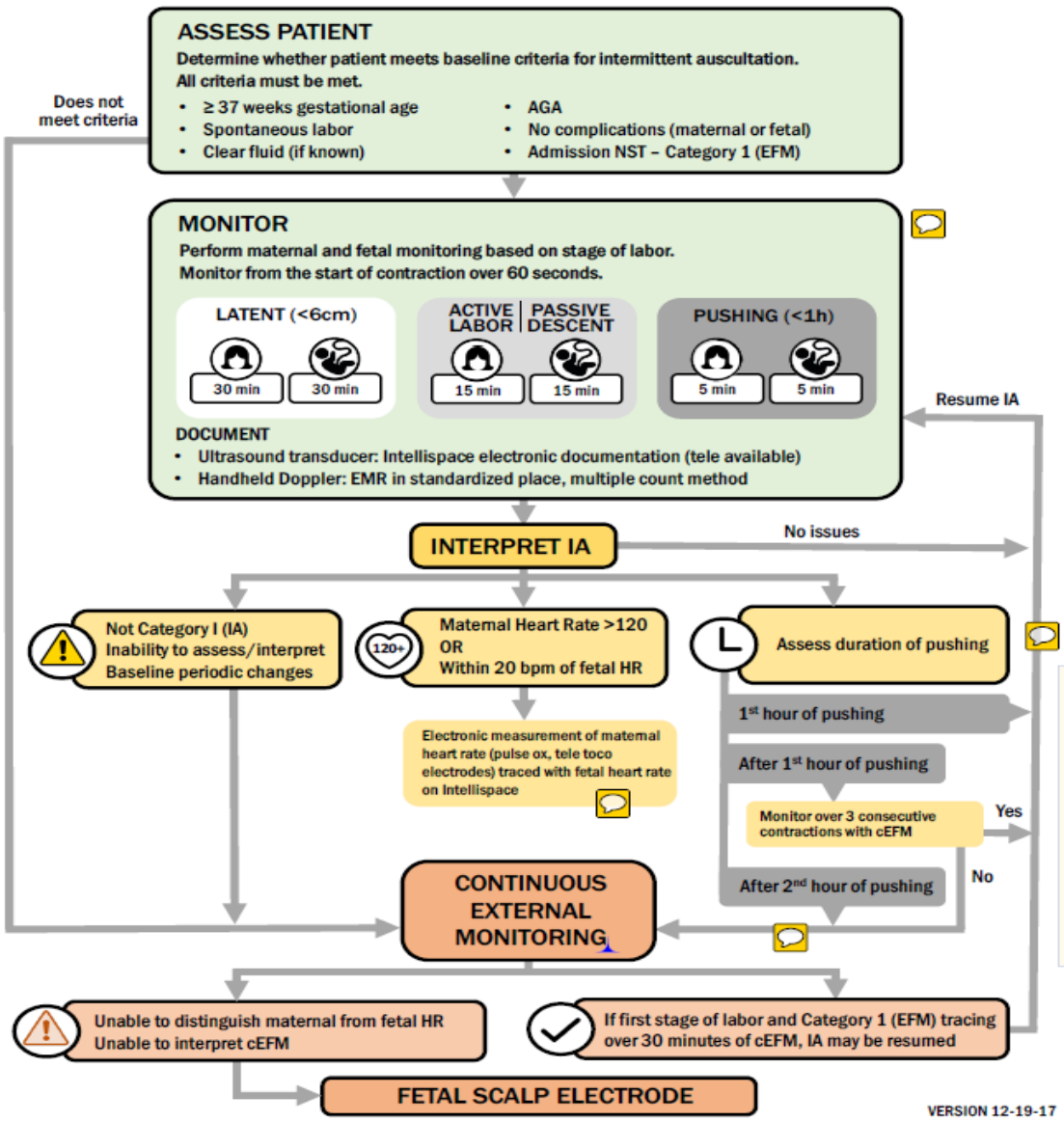
Telemetry doppler and toco

Telemetry (electrode) maternal heart rate (have to check about tub)

Telemetry FSE (and can be used in the tub)



Intermittent Auscultation (IA) Algorithm (DRAFT)



Key points:
Differentiate maternal and FHR every time
cEFM after 1 hr second stage

p145201

start monitoring per procedure: listen to HR before, during, and 30-60 sec after contractions: consider include definition in document

take off 6 cm and leave at latent phase per protocol; explain in document

12/27/2017 7:51 AM

p145201

p145201 better clock

omit 1st hr pushing
add >1 hr to main box
cEFM for 3 contractions
after 1 hr pushing initiate cEFM for 3 consecutive contractions. If Cat 1 (cEFM) may resume IA for additional hour

12/27/2017 8:11 AM

(cEFM)

12/27/2017 8:04 AM

Questions?

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•Thursday, February 8th @ 12pm – Expanded Carrier Screening
•Thursday, February 15th @ 12pm – Conventional Aneuploidy Screening: Does it still have a place?

Educational/ Hot Topic Webinars:

•Tuesday, March 13th @ 12pm – Low Dose Aspirin & Pregnancy , Domestic Violence
•Tuesday, May 8th @ 12pm – Gestational Diabetes, Preconception Health and Well Women Care.

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Thank you!