NICHD Nomenclature
Standardizing Terminology in Intrapartum EFM
Preliminary Assumptions in 1997

• Definitions developed for visual interpretation
  – Direct electrode or external Doppler (3rd generation)
  – Paper speed 3cm/minute
• Intrapartum emphasis
• No assumptions regarding etiology or pathophysiology
Preliminary Assumptions in 1997

- Pattern categories:
  - Baseline
  - Periodic
  - Episodic

- No distinction between “short-term variability” and “long-term variability”, rather, variability is read as a unit based on amplitude (excluding sinusoidal pattern)

- Must evaluate clinical in context
FHR Tracing Evaluation

- Qualitative & quantitative description of:
  - Baseline rate
  - Baseline variability
  - Presence of accelerations
  - Periodic or episodic decelerations
  - Changes or trends over time

- 2008 report added uterine contractions to complete tracing evaluation
Baseline Fetal Heart Rate

- Approximate mean FHR rounded to increments of 5 beats/min
- Read over 10 minutes (2 minute minimum, 2008 clarified that it need not be contiguous)
- Excludes accels, decels, marked variability, and any segments differing by ≥ 25 beats/min
- Bradycardia: baseline < 110 beats/min
- Tachycardia: baseline > 160 beats/min
Baseline FHR Variability

• Fluctuations in baseline FHR that are irregular in amplitude and frequency

• Variability is quantitated as amplitude of peak to trough in beats/min
  • Absent : Undetectable
  • Minimal : > Undetectable but ≤ 5 beats/min
  • Moderate : 6-25 beats/min
  • Marked : > 25 beats/min
Sinusoidal FHR Baseline

- Visually apparent, smooth, sine wave–like undulating pattern in FHR baseline with a cycle frequency of 3–5/min that persists for 20 minutes

- Not considered variability
Qualification of Waveform

- **Abrupt** - Onset to nadir (or peak) is $< 30$ seconds
- **Gradual** - Onset to nadir (or peak) is $\geq 30$ seconds
Accelerations

- At 32 weeks and beyond, an acceleration is defined as an abrupt increase above the baseline with an acme of $\geq 15$ beats/min and a duration of $\geq 15$ seconds but $< 2$ minutes.

- Before 32 weeks gestation, an acceleration is defined as an abrupt increase above the baseline with an acme of $\geq 10$ beats/min and a duration of $\geq 10$ seconds but $< 2$ minutes.

- An acceleration lasting $\geq 2$ minutes but $< 10$ minutes is defined as a prolonged acceleration.
Late Decelerations

- Defined as a gradual decrease and return to baseline associated with a contraction
- Delayed onset, with nadir occurring after the peak of the contraction and offset usually after the end of the contraction
- Because of the importance in timing related to uterine contractions, be careful regarding the use of a toco versus palpation or IUPC
Early Decelerations

• Defined as a gradual decrease and return to baseline associated with a contraction

• Onset, nadir, and offset occur coincidentally with the contraction, with the nadir at the peak of the contraction

• Because of the importance in timing related to uterine contractions, be careful regarding the use of a toco versus palpation or I UPC
Variable Decelerations

• Defined as an abrupt decrease in FHR below the baseline of $\geq 15$ beats/min lasting $\geq 15$ seconds but $< 2$ minutes

• When associated with uterine contractions, they may vary in onset, depth, and duration from contraction to contraction

• May be accompanied by other characteristics, the clinical significance of which requires more research
Prolonged Decelerations

• Defined as a decrease of $\geq 15$ beats/min from baseline that has a duration of $\geq 2$ minutes but $< 10$ minutes

• Onset may be gradual or abrupt

• Duration of $> 10$ minutes is considered a change in baseline
Quantification of Decelerations

• Decelerations are quantified by depth in beats/min and duration in minutes and seconds

• Decelerations are “recurrent” if they occur with ≥ 50% of contractions in a 20 minute window; they are “intermittent” if they occur with < 50% of contractions in 20 minutes

• Bradycardia and tachycardia are quantitated in beats/min or in a range if the FHR is not stable
Baseline rate: closest to 140 beats/min
Baseline variability: Moderate (6-25 beats/min)

Acceleration (15 beats/min peak, 15 seconds onset to offset, term IUP)

FHR Practicum Sample
FHR tracing practicum

• Interpret the following monitor strips using the standardized terminology for documentation

• You will have 15 minutes and we will review the strips as a group

• Assume you have a ten-minute window on each page
Acceleration (15 beats/min peak, 15 seconds onset to offset, term IUP)

Baseline rate: closest to 130 beats/min for majority of tracing

Baseline variability: Moderate (6-25 beats/min)

FHR Practicum # 1
Baseline rate: closest to 180 beats/min

Baseline variability: Minimal (≤ 5 beats/min)
Variable deceleration: Abrupt (<30 seconds) onset, meets 15 beats/min by 15 second minimum, lasts less than 2 minutes onset to offset

Baseline rate: closest to 135 beats/min

Baseline variability: Moderate (6-25 beats/min)
Late deceleration

Variable decelerations

Baseline rate: closest to 150 beats/min

Baseline variability: Minimal ($\leq$ 5 beats/min)
Baseline rate: indeterminate due to marked variability (> 25 beats/min)

Sample charting: “Baseline indeterminate due to episode of marked variability, FHR ranging from 130-170 beats/min”
Prolonged deceleration: Onset may be gradual or abrupt, key here is that the deceleration is 2 minutes or more onset to offset.

Baseline: closest to 135 beats/min

Baseline variability: Moderate (6-25 beats/min)
Baseline: 180 beats/min

Baseline variability: Absent (undetectable)

Late decelerations: Gradual (30 seconds or more) onset, onset occurs after U/C begins, nadir occurs after peak of U/C, & return to baseline after U/C concludes.
Early deceleration: Gradual onset, coincides with contraction

Baseline rate: closest to 130 beats/min

Baseline variability: Minimal (> 5 beats/min)

FHR Practicum # 8
Accelerations (15 beats/min peak, 15 seconds onset to offset, term IUP)
Baseline: closest to 170 beats/min

Baseline variability: Moderate (6-25 beats/min) versus sinusoidal?

FHR Practicum # 10
Late decelerations

Baseline: closest to 185 beats/min

Baseline variability: Absent

FHR Practicum # 11
Variable decelerations: Abrupt (<30 seconds) onset, meets 15 beats/min by 15 second minimum, lasts less than 2 minutes onset to offset

Baseline rate: closest to 160 beats/min

Baseline variability: Moderate (6-25 beats/min)
Baseline rate: closest to 155 beats/min for majority of this portion of the tracing

Baseline variability: Moderate (6-25 beats/min)

Late decelerations: Gradual (30 seconds or more) onset, onset occurs after U/C begins, nadir occurs after peak of U/C, & return to baseline after U/C concludes

Variable deceleration: Abrupt (<30 seconds) onset, meets 15 beats/min by 15 second minimum, lasts less than 2 minutes onset to offset

Baseline rate: closest to 155 beats/min for majority of this portion of the tracing

Baseline variability: Moderate (6-25 beats/min)