THE OPTIMALITY INDEX - US

The Perinatal Background Index

The Optimality Index

Patricia A. Murphy, Dr.P.H., CNM

Judith T. Fullerton, Ph.D., CNM, FACNM

CODING AND SCORING GUIDELINES

July 2010

GENERAL CODES:

0 = Not Optimal **1 = Optimal** **7 = Not Applicable (N/A)**

8 = General missing (data that will never be found in these records, and will not be collected for this particular purpose)

9 = Missing data (data that should be present, but are not found on this particular record)

SPECIAL NOTES:

1) It may be the case that a practice guideline has been established that advocates "charting by exception", i.e., the guideline specifies that an item will be charted *only in the event* that it is present or is observed. Abstractors should always seek guidance from the PI. Abstractors may be advised that "if [specific item] is *not noted*, outcome = optimal."

2) **In the instance of multiple births,** re-enter mother's data for each baby

SCORING:

Numerator = sum of all items coded as "1" (optimal)

Denominator = Remainder of total N= 55 optimality items after deletion of all items coded as 7 (not applicable) or 8 (general missing)

MINIMUM NUMBER OF ITEM REQUIRED FOR USE OF THE TOOL:

The OI-US is a clinimetric index. There are no subscales. The index items are, nevertheless, ordered within logical clinical domains. Each item is coded as **E**ssential or **N**onessential. A valid application of the tool is possible ONLY if

a) there are one or more items present within each clinical domain (i.e., no clinical domain is scored entirely as system missing – code 8), and

b) *each* of the items designated as **E**ssential is generally available for scoring (i.e., codes 7 and 9 are acceptable reasons for missing data).

PROCESS VERSUS OUTCOME VARIABLES

Each item is coded as a **P**(rocess), **O(**utcome) or **P/O** (indicating that the item can be considered either a measure of process or a measure of outcome) variable. Users of the OI-US should confirm their understanding of the nature of each measurement item in the context of their own investigation.

INDEX ITEM	PROCESS OR OUTCOME VARIABLE	ESSENTIAL OR NONESSENTIAL *(preliminary ratings)*	GUIDELINE
THE PERINATAL BACKGROUND INDEX			
Social and medical background			
1. marital status	**P**	**N**	**OPTIMAL = Married or living in consensual union**
2. ethnic minority	**P**	**E**	**OPTIMAL = White – non Hispanic**
3. smoking	**P**	**E**	**OPTIMAL = No use of any** smoking since conception (during index pregnancy)
4. alcohol	**P**	**E**	**OPTIMAL = No use of any** alcohol since conception (during index pregnancy)
5. drug use	**P**	**E**	**OPTIMAL = No abuse of any** prescription drugs or **no use** of illicit substances since conception (during index pregnancy)
6. pre-pregnancy body mass index (weight [in kg] / height [in meters] ^{2})	**P**	**E**	**Record** weight in pounds **Divide** weight in pounds by 2.2 to yield weight in kg **Record** height in inches **Divide** height in inches by 2.54 to yield height in meters **Compute formula** **OPTIMAL = 18.5 to 24.9 [WHO and new IOM standards]** **Abstractors Note: Older IOM standards are [19.8 – 26] When conducting abstraction of retrospective data, confirm the standard used in the institution at the time, prior to calculation and coding.** Several on-line BMI calculators are available.
7. age	**P**	**E**	**OPTIMAL = age 18 – 40 at the time of the index pregnancy**
8. preexisting, major, chronic, disease	**P**	**E**	**OPTIMAL = There is no evidence** of any of these conditions in the health history
• chronic renal disease			

• diabetes (non-gestational)			
• heart disease class II-IV			
• HIV antibody positive			
• hypertension			
• major psychiatric history (treated with drugs or inpatient therapy)			
9 inter-pregnancy interval between index pregnancy and previous viable birth > 18 months and < 60 months	**P**	**N**	**OPTIMAL = Yes** (There were at least 18 months and < 60 months between previous live birth and index pregnancy. SAB/TAB are not counted as viable pregnancies.)
10. previous preterm delivery < 37 weeks	**P**	**E**	**OPTIMAL = No** (No prior infant was born before 37 weeks of pregnancy.) **Abstractors Note:** Code N/A if index pregnancy is the first pregnancy.
11. previous intrauterine fetal death	**P**	**E**	**OPTIMAL = No** (No prior infant died in utero, prior to birth.) **Abstractors Note:** Code N/A if index pregnancy is the first pregnancy.
12. previous Cesarean section	**P**	**E**	**OPTIMAL = No** (All prior infants were born vaginally.) **Abstractors Note:** Code N/A if index pregnancy is the first pregnancy.
13. previous baby < 5 ½ pounds at birth	**P**	**E**	**OPTIMAL = No** (All prior infants weighed at least 5 1/2 pounds at birth.) **Abstractors Note:** Code N/A if index pregnancy is the first pregnancy.
14. other serious antepartum complications (history of)	**P**	**E**	**OPTIMAL = There is no history** of ***any*** of these conditions in a prior pregnancy. **Definition:** ***preeclampsia*** is defined as blood pressure of 140/90 and proteinuria 1+ or greater in same visit **OR** use of this term by care provider. **Abstractors Note:** Code N/A if index pregnancy is the first pregnancy.
• diabetes			
• eclampsia			
• placenta previa			
• placenta abruption			
• pre-eclampsia			
• pyelonephritis			

• Rh sensitization			
THE OPTIMALITY INDEX – US			
Present pregnancy, maternal status, diagnostic and therapeutic measures			
15. intrauterine fetal demise	**O**	**E**	**OPTIMAL = No**
16. domestic violence (includes intimate partner)	**O**	**E**	**OPTIMAL = No**
17. other serious antepartum conditions /complications (current pregnancy)	**O**	**E**	**OPTIMAL = None** of these conditions is noted **Definition:** ***Anemia*** defined as Hgb < 10 gm in any trimester, not improved with treatment OR use of this term by care provider. **Definition: P*reeclampsia*** is defined as blood pressure of 140/90 and proteinuria 1+ or greater in same visit **OR** use of this term by care provider. **Abstractors Note**: ***Diabetes*** includes gestational diabetes. **Abstractors Note:** If the index patient is ***less than 24 weeks of gestation***, please bring this particular chart to the attention of the study investigator. **Abstractors Note:** ***Placental abruption*** will be collected as an intrapartum complication. **Abstractors Note:** ***If other conditions are listed in chart*****,** please check with researcher.
• anemia			
• diabetes diagnosed in pregnancy			
• major psychiatric history (formal diagnosis or treated with drugs/inpatient therapy)			
• multiple birth (twins or higher number of births anticipated)			
• placenta praevia			
• preeclampsia (diagnosed in antepartum period)			
• pyelonephritis			
• Rh sensitization			
• vaginal bleeding in 2nd or 3rd trimester, from cause other than placenta praevia.			
18. prenatal care: initiation in first trimester and minimum of 5 visits	**P**	**N**	**OPTIMAL = First visit prior to 14 weeks; minimum of 5 visits**
19. amniocentesis	**O**	**E**	**OPTIMAL = No procedure** **Abstractors Note:**: if CVS is documented, a note should be added to the abstraction record.

20. nonstress test/contraction stress test/biophysical profile	**O**	**N**	**OPTIMAL = No procedure**
21. medication use	**P**	**E**	**OPTIMAL = No medications** (prescribed or OTC) are taken during pregnancy. **EXCEPTION**: Iron or vitamins can be taken, with or without prescription.
Parturition			
22. period of time between first digital examination following rupture of membranes and birth	**P**	**E**	**OPTIMAL = 24 hours**
23. amniotic fluid	**O**	**E**	**OPTIMAL = Clear**
24. induction/augmentation of labor	**P**	**E**	**OPTIMAL = No** **Definition:** In the absence of onset of spontaneous labor ANY pharmacologic (including herbals and homeopathic) intervention to induce or augment labor. Does **not** include nipple stimulation, membrane stripping. **Abstractors Note:** If index patient has an elective primary or repeat C-section, without labor, code this item as N/A.
25. amniotomy	**P**	**E**	**OPTIMAL = No**
26. oral or injectable (IM or IV) medication during first or second stage of labor	**P**	**E**	**OPTIMAL = None**
27. epidural analgesia for labor and/or birth	**P**	**E**	**OPTIMAL = No** **Abstractors Note:** If index patient has an elective primary or repeat C-section, without labor, code this item as N/A.

<table>
<tr><td>28. fetoscope, Doppler or intermittent electronic monitoring used during labor, rather than continuous electronic fetal monitoring</td><td>P</td><td>E</td><td>OPTIMAL = Yes
Abstractors Note: If index patient has an elective primary or repeat C-section, without labor, code this item as N/A.

Abstractors Note: If index patient has received an “admission strip”, code this item as optimal. (An admission strip is considered the equivalent to the intermittent EFM during labor.)</td></tr>
<tr><td>29. fetal heart rate abnormalities</td><td>O</td><td>E</td><td>OPTIMAL = No recording of FHR abnormality that altered management of the labor process.

Use the following for coding of data recorded prior to 2009
INCLUDING:
abnormal baseline variability (absent, minimal or marked)
bradycardia
late or prolonged decelerations
tachycardia
Use the following for coding of data recorded 2009 and thereafter
INCLUDING: ALL Category III FHR tracings
absent baseline FHR variability and any of the following
recurrent late decelerations
recurrent variable decelerations
bradycardia
sinusoidal pattern
Abstractors Note: Fetal scalp sampling is not scored in the OI-US.</td></tr>
<tr><td>30. presence of a support person during labor (other than care provider)</td><td>P</td><td>E</td><td>OPTIMAL = Yes</td></tr>
</table>

31. non-directed pushing	**P**	**N**	**OPTIMAL = Yes** **Definition:** Non-directed pushing refers to a pattern of maternal bearing down in second stage labor characterized by *both* the following: a) initiated by the mother and b) neither directed or instructed (either verbally or nonverbally) by the provider. Directed pushing refers to prolonged valsalva, closed glottis pushing. **Abstractors Note**: *May use* supportive language, "e.g., good job." **Abstractors Note:** This may be "code 8" in this setting.
32. delivery occurred in the place originally intended at the onset of labor	**P/O**	**N**	**OPTIMAL = Yes**
33. nonsupine position at birth	**P**	**N**	**OPTIMAL = Yes** **Definition #1:** Any position ***other than*** flat on back (supine) or lithotomy. **Definition #2: (if degree of head elevation is noted).** Any position *other* than flat on back, or back lying (including lithotomy) with less than 45 degree of head elevation. **Abstractors Note:** This may be "code 8" in this setting.
34. presentation at birth	**O**	**E**	**OPTIMAL = Cephalic**
35. instrumental (vaginal) delivery	**P/O**	**E**	**OPTIMAL = No** **Abstractors Note:** If index patient has a C-section, code this item as N/A.
36. Cesarean section	**P/O**	**E**	**OPTIMAL = No** **Abstractors Note:** If index patient has a vaginal delivery (either spontaneous or instrumental), code this item as N/A.
37. episiotomy	**P**	**E**	**OPTIMAL = No** **Abstractors Note:** If index patient has a C-section, code this item as N/A. **Abstractors Note;** It is assumed that episiotomies will be sutured.

38. 1st or 2nd degree laceration of perineum or perineal tissue ***requiring sutures*** (including sulcus and cervical lacerations)	**O**	**E**	**OPTIMAL = No** **Abstractors Note:**: IF the woman also experiences a 3rd or 4th degree extension, this item is still also coded as not optimal (one point deduction).
39. 3rd or 4th degree extension of either an episiotomy or a 1st or 2nd degree laceration	**O**	**E**	**OPTIMAL = No** **Abstractors Note:**: It is assumed that the lacerations and extensions will be sutured. **Abstractors Note:**: The point deducted for this 3rd or 4th degree extension is ***in addition to*** the point or points lost for an intentional episiotomy (if applicable) and an unintended 1st or 2nd degree laceration (if applicable).
40. medication (other than oxytocin or local anesthetic for perineal repair) during the third stage of labor	**P**	**E**	**OPTIMAL = No**
41. skin-to-skin contact	**P**	**E** **(unless code 8)**	**OPTIMAL = Yes** **Definition:** Placement of the unwrapped newborn infant in direct contact with maternal skin as immediately as possible or appropriate following birth; both infant and mother are then covered with a thermal conservation cover/blanket. **Abstractors Note**: This may be "code 8" in this setting
42. placental retention ($\geq$ 30 min)	**O**	**E**	**OPTIMAL = No** **Abstractors Note:** If delivery is by C-section, code N/A
43. postpartum hemorrhage	**O**	**E**	**Vaginal Deliveries: OPTIMAL** = provider's documentation that this did **not** occur; **or** estimation of blood loss <500 cc. **C-section: OPTIMAL** = provider's documentation that this did **not** occur, **or** estimation of blood loss < 1000 cc. **Tool Users Note:** The OI-US does not include active management of the third stage of labor (AMTSL) as a process variable, because the item is a complex variable (3 independent actions) and because the strategy is not widely used in the U.S. The item should be included in international adaptations of this measurement tool.
44. blood transfusion	**O**	**E**	**OPTIMAL = No**

45. other serious intrapartum complications	**O**	**E**	**OPTIMAL** = **No evidence** that any these conditions are present. **Tool Users Note:** GBS infection is not included here, because it does not represent an adverse health condition for the mother. Intravenous antibiotic use for prophylactic treatment of the infant will be reflected in the maternal score (see related items).
• chorioamnionitis			
• cord prolapse			
• eclampsia			
• pre-eclampsia present during intrapartum period			
• placental abruption			
• shoulder dystocia			
Neonatal condition			
46. estimate of gestational age	**O**	**E**	**OPTIMAL = birth between 37-42 weeks**
47. birth weight	**O**	**E**	**OPTIMAL = birth weight between 2500-4000 grams (5 1/2 - 8 1/2 pounds)**
48. Apgar score at 5 minutes	**O**	**E**	**OPTIMAL = 7, 8, 9, 10**
49. transfer to high risk neonatal care setting	**P/O**	**E**	**OPTIMAL = No**
50. congenital anomalies	**O**	**E**	**OPTIMAL = No**
51. birth trauma, or other serious medical problem	**O**	**E**	**OPTIMAL** = **No evidence** that any of these conditions is present.
• bacterial infections other than sepsis			
• bronchopulmonary dysplasia			
• cardiac failure			
• hypovolemia, hypotension, shock			
• intraventricular hemorrhage			
• necrotizing enterocolitis			

• pneumonia			
• persistent pulmonary hypertension			
• renal failure			
• respiratory distress syndrome			
• Rh disease			
• seizures			
• sepsis			
52. breastfeeding	**O**	**E**	**OPTIMAL** = **Yes** at time of mother's discharge from birth facility or up to 72 hours postpartum. **Abstractors Note**: Any evidence of breastfeeding is acceptable; does not have to be exclusive.
53. perinatal death:	**O**	**E**	**OPTIMAL** = **No** (time period birth: up to 72 hours of age).
Condition of the mother prior to discharge from birth facility or from provider's care (up to 72 hours)			
54. fever (100.4 degrees F or higher) while mother remains in the birth setting, OR provider diagnosis of infectious process or major complication	**O**	**E**	**OPTIMAL** = **No evidence** that any of these conditions are present.
• cystitis			
• endometritis			
• hematoma			
• local infection of sutures			
• mastitis			

55. prescription medications for conditions newly identified in IP or PP period	**O**	**E**	**OPTIMAL = No** **Exception:** Analgesic medications at over-the counter dosages (OTC), iron and vitamins, oral contraceptives, RhoGam©, rubella vaccine **Abstractor Note:** Some OTC medications may be written as prescriptions, for insurance purposes. These medications are still "exceptions," as noted above.
56. maternal mortality	**O**	**E**	**OPTIMAL = No** **Abstractors Note:** Recorded through time of mother's discharge from the birth site or the transfer setting.