| **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**  **AUGUST 2012** | | | | | | | |
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| **INDEX ITEM** | **LOWEST RISK/**  **OPTIMAL OUTCOME** | **ABBREVIATED BIBLIOGRAPHIC REFERENCE** | **EVIDENCE GRADE FOR EACH CITATION** | | | | |
|  |  |  | **I Pos** | **I Neg** | **II Pos** | **II Neg** | **III** |
| **QUALITY OF THE EVIDENCE**  **I (Positive): Evidence from at least 1 randomized clinical trial proving the benefit of the optimal outcome, AND/OR compelling evidence that the cost/benefit ratio favors the optimal outcome from the epidemiological or societal perspective.**  **I (Negative): Evidence from at least 1 randomized clinical trial proving the adverse impact of the non-optimal outcome, AND/OR compelling evidence that the presence of a non-optimal outcome has broad adverse impacts from the epidemiologic or societal perspective.**  **II (Positive): Evidence from at least 1 clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from more than 1 center) or from multiple time-series studies, or dramatic results from uncontrolled experiments, AND/OR professional consensus, based on the midwifery philosophy of nonintervention in the absence of complications, that the cost/benefit ratio favors the optimal outcome.**  **II (Negative): Evidence from at least 1 clinical trial without randomization, from cohort or case-controlled analytic studies (preferably from more than 1 center) or from multiple time-series studies, or dramatic results from uncontrolled experiment, AND/OR professional consensus, based on the midwifery philosophy of nonintervention in the absence of complications, that the presence of a non-optimal outcome has broad adverse impacts from the epidemiologic or societal perspective.**  **III Evidence from opinions of respected authorities based on clinical experience, descriptive studies or reports of expert committees** | | | | | | | |
| **THE PERINATAL BACKGROUND INDEX** | | | | | | | |
| **Social and medical background** | | | | | | | |
| **1.** marital status | (as if) married | Auger et al., 2008 |  |  | X |  |  |
|  |  | Beeckman et al., 2009 |  |  |  | X |  |
|  |  | Havens et al., 2009 |  |  |  | X |  |
|  |  | Hohmann-Marriott, 2009 |  |  |  |  | X |
|  |  | Kiernan & Pickett, 2006 |  |  |  | X |  |
|  |  | Lutgendorf et al., 2009 |  |  |  | X |  |
| **2.** ethnic minority   * White – nonHispanic * Hispanic * Native American/Alaskan Indian * African-American * SouthEast Asian (Vietnamese, Lao, Cambodian) or Asian Pacific Islander * Chinese * Eastern Asian (Korean, Japanese) * East Indian/Pakistani | No | Bryant et al., 2010 |  |  |  |  | X |
|  |  | Goedhart et al., 2008 |  |  | X |  |  |
|  |  | MacDorman & Mathews, 2009 |  |  |  | X |  |
|  |  | Rich-Edwards & Grizzard, 2005 |  |  |  |  | X |
|  |  | Stewart et al., 2007 |  |  | X |  |  |
|  |  | Whitehead et al., 2009 |  |  | X |  |  |
| **3.** smoking | None | Aagaard-Tillery et al., 2008 |  |  | X |  |  |
|  |  | Cornelius & Day, 2009 |  |  |  |  | X |
|  |  | Delpisheh, Brabin, Drummond, et al., 2008 |  |  | X |  |  |
|  |  | Johansson et al., 2009 |  |  |  | X |  |
|  |  | Malik et al., 2008 |  |  |  | X |  |
|  |  | Nabet et al., 2005 |  |  |  | X |  |
|  |  | Rogers, 2009 |  |  |  |  | X |
|  |  | Usta et al., 2005 |  |  |  | X |  |
| **4.** alcohol | None | Aliyu et al., 2008 |  |  |  | X |  |
|  |  | Burd et al., 2007 |  |  |  |  | X |
|  |  | Floyd et al., 2009 |  |  |  |  | X |
|  |  | Jaddoe et al., 2007 |  |  |  | X |  |
|  |  | Maconochie et al., 2007 |  |  |  | X |  |
|  |  | Sen & Swaminathan, 2007 |  |  |  | X |  |
|  |  | Standberg-Larsen et al., 2008 |  |  |  | X |  |
|  |  | Standberg-Larsen et al. 2009 |  |  |  | X |  |
| **5.** drug use | None | Arlettaz et al., 2005 |  |  |  | X |  |
|  |  | Bada et al., 2007 |  |  |  | X |  |
|  |  | Dryden et al. 2009 |  |  |  | X |  |
|  |  | El Marroun et al., 2009 |  |  |  | X |  |
|  |  | Forrester & Merz, 2007 |  |  |  | X |  |
|  |  | Pinto et al., 2010 |  |  |  | X |  |
|  |  | Pulsifer et al., 2008 |  |  |  | X |  |
|  |  | Richardson et al., 2007 |  |  |  | X |  |
|  |  | Smith et al., 2006 |  |  |  | X |  |
|  |  | Wolfe et al., 2005 |  |  |  | X |  |
| **6.** pre-pregnancy body mass index  (weight [in kg] / height [in meters] **2**)  [Institute of Medicine and WHO Standards] | Normal weight range  BMI 18.5 – 24.9 | Cedergren, 2009 |  |  |  | X |  |
|  |  | Chu et al. 2009 |  |  |  | X |  |
|  |  | Davies et al., 2010 |  |  |  |  | X |
|  |  | Frederick et al., 2008 |  |  |  | X |  |
|  |  | Kristensen et al., 2005 |  |  |  | X |  |
|  |  | Rodriguez, 2010 |  |  |  | X |  |
|  |  | Torloni, Betrán, Horta et al. 2009 | X |  |  |  |  |
|  |  | Torloni, Betrán, Daher et al., 2009 | X |  |  |  |  |
| **7.** age | 18 – 40 | Cleary-Goldman et al., 2005 |  |  |  | X |  |
|  |  | Delpisheh, Brabin, Attia et al., 2008 |  |  |  | X |  |
|  |  | McIntyre et al., 2009 |  |  |  | X |  |
|  |  | Salihu et al., 2008 |  |  |  | X |  |
|  |  | Usta & Nassar, 2008 |  |  |  |  | X |
|  |  | Wilson et al., 2008 |  |  |  | X |  |
| **8.** preexisting, major, chronic, disease | No |  | | | | | |
| * hypertension |  | Abalos et al., 2007 | X |  |  |  |  |
|  |  | Chappell et al., 2008 |  | X |  |  |  |
|  |  | Gilbert et al., 2007 |  |  |  | X |  |
|  |  | Zetterstrȫm et al., 2006 |  |  |  | X |  |
| * chronic renal disease |  | Imbasciati et al. 2009 |  |  | X |  |  |
|  |  | Piccoli, Attini, et al., 2010 |  |  | X |  |  |
|  |  | Piccolli,Conijin, et al., 2010 |  |  |  | X |  |
| * diabetes (nongestational) |  | ACOG, 2005 |  |  |  |  | X |
|  |  | Allen et al., 2007 |  |  |  |  | X |
|  |  | Balsells et al., 2009 |  |  |  | X |  |
|  |  | Kitzmiller et al., 2008 |  |  |  |  | X |
|  |  | Lapolla et al., 2008 |  |  |  |  | X |
|  |  | Melamed et al., 2008 |  |  |  | X |  |
|  |  | National Collaborating Centre, 2008 |  |  |  |  | X |
|  |  | Persson et al., 2009 |  |  |  | X |  |
|  |  | Peticca et al., 2009 |  |  |  | X |  |
|  |  | Shand et al., 2008 |  |  |  | X |  |
|  |  | Temple et al., 2006 |  |  |  | X |  |
| * heart disease class II-IV |  | Sidlik et al., 2007 |  |  |  | X |  |
|  |  | Stangl et al., 2008 |  |  |  | X |  |
|  |  | Thanajiraprapa & Phupong, 2009 |  |  |  |  | X |
| * HIV antibody positive |  | Aebi-Popp et al., 2010 |  |  |  | X |  |
|  |  | Haeri et al., 2009 |  |  |  | X |  |
|  |  | Sturt et al., 2010 |  | X |  |  |  |
|  |  | Volmink et al., 2010 |  | X |  |  |  |
|  |  | Watts et al., 2009 |  |  |  | X |  |
| * major psychiatric history (treated with drugs or inpatient therapy) |  | Harlow et al., 2007 |  |  |  | X |  |
|  |  | Hizkiyahu et al., 2010 |  |  |  | X |  |
|  |  | Lee & Lin, 2010 |  |  |  | X |  |
|  |  | Lin et al., 2010 |  |  |  | X |  |
|  |  | MacCabe et al., 2007 |  |  |  | X |  |
|  |  | Schneid-Kofman et al., 2008 |  |  |  | X |  |
| **9.** inter-pregnancy interval between index pregnancy and previous viable birth > 18 months and < 60 months | Yes | Cecatti et al., 2008 |  |  |  | X |  |
|  |  | Conde-Agudelo et al, 2006 |  | X |  |  |  |
|  |  | Conde-Agudelo et al., 2007 |  | X |  |  |  |
|  |  | Johnson et al., 2008 |  |  |  | X |  |
|  |  | Kauppila et al., 2009 |  |  |  | X |  |
|  |  | Stamilio et al., 2007 |  |  |  | X |  |
| **10.** previous preterm delivery < 37 weeks | No | Auger et al., 2008 |  |  | X |  |  |
|  |  | Beeckman et al., 2009 |  |  |  | X |  |
|  |  | Boyd et al., 2009 |  |  |  | X |  |
|  |  | Callaghan et al., 2006 |  |  |  | X |  |
|  |  | Esplin et al., 2008 |  |  |  | X |  |
|  |  | Goldenberg et al., 2008 |  |  |  |  | X |
|  |  | McIntire & Leveno, 2008 |  |  |  | X |  |
|  |  | Plunkett et al., 2008 |  |  |  | X |  |
|  |  | Plunkett & Muglia, 2008 |  |  |  |  | X |
|  |  | Sciscione et al., 2008 |  |  |  | X |  |
|  |  | Smith et al., 2007 |  |  |  | X |  |
| **11.** previous intrauterine fetal death | No | Black et al., 2008 |  |  | X |  |  |
|  |  | Kovac et al., 2010 |  |  |  | X |  |
|  |  | Menezes, 2009 |  | X |  |  |  |
|  |  | Menezes, Yakoob, et al., 2009 |  | X |  |  |  |
|  |  | Rasmussen et al., 2009 |  |  |  | X |  |
|  |  | Said et al., 2010 |  |  |  | X |  |
|  |  | Sharma et al., 2006 |  |  | X |  |  |
|  |  | Sharma et al., 2007 |  |  |  | X |  |
| **12.** previous Cesarean section | No | Algert et al, 2008 |  | X |  |  |  |
|  |  | Daltveit et al., 2008 |  |  |  | X |  |
|  |  | Galyean et al., 2009 |  |  |  | X |  |
|  |  | Getahun et al., 2006 |  |  |  | X |  |
|  |  | Gray et al., 2007 |  |  |  | X |  |
|  |  | Grobman et al., 2009 |  |  |  | X |  |
|  |  | Hansen et al, 2008 |  |  |  | X |  |
|  |  | Kennare et al., 2007 |  |  |  | X |  |
|  |  | Knight et al., 2008 |  |  |  | X |  |
|  |  | Macones et al., 2005 |  |  |  | X |  |
|  |  | Richter et al. 2007 |  |  |  | X |  |
|  |  | Silver et al., 2006 |  |  |  | X |  |
|  |  | Villar et al., 2007 |  |  |  | X |  |
|  |  | Wu et al., 2005 |  |  |  | X |  |
|  |  | Yang et al., 2007 |  |  |  | X |  |
| **13.** previous baby < 5 1/2 pounds at birth | No | Getahun et al., 2007 |  |  |  | X |  |
|  |  | Lykke et al., 2010 |  |  |  | X |  |
|  |  | Smith & Shah, 2007 |  |  |  | X |  |
| **14.** other serious antepartum complications (history of) | No |  | | | | | |
| * gestational diabetes |  | Alwan et al., 2009 | X |  |  |  |  |
|  |  | Golden et al., 2009 | X |  |  |  |  |
|  |  | Holmes et al., 2010 |  |  |  | X |  |
|  |  | Kwak et al., 2008 |  |  |  | X |  |
|  |  | Vambergue et al., 2007 |  |  |  | X |  |
| * intrauterine fetal demise |  | Black et al., 2008 |  |  | X |  |  |
|  |  | Measey et al., 2009 |  |  | X |  |  |
|  |  | Sharma et al., 2007 |  |  | X |  |  |
| * placenta previa |  | Grobman et al., 2007 |  |  |  | X |  |
|  |  | Lone et al., 2010 |  |  |  | X |  |
|  |  | Yang et al., 2009 |  |  |  | X |  |
| * preeclampsia |  | Brown et al., 2007 |  |  |  | X |  |
|  |  | Lykke et al., 2009 |  |  |  | X |  |
|  |  | McDonald et al., 2009 |  |  |  | X |  |
|  |  | Rasmussen et al., 2009 |  |  |  | X |  |
| * eclampsia |  | Gaugler-Senden et al., 2008 |  |  |  | X |  |
|  |  | Lykke et al., 2009 |  |  |  | X |  |
|  |  | Tang et al., 2009 |  |  |  | X |  |
| * pyelonephritis |  | Hill et al., 2005 |  |  |  | X |  |
|  |  | Luders et al., 2010 |  |  |  | X |  |
|  |  | Scholes et al., 2005 |  |  |  | X |  |
| * Rh sensitization |  | Cotter et al., 2005 |  |  |  |  | X |
|  |  | Koelewijn et al., 2009 |  |  |  | X |  |
|  |  | Lobato & Soncini, 2008 |  |  |  | X |  |
|  |  | Schonewille et al., 2007 |  |  |  | X |  |
| **THE OPTIMALITY INDEX** | | | | | | | |
| **Present pregnancy, diagnostic and therapeutic measures** | | | | | | | |
| **15.**  intrauterine fetal demise | No | Black et al., 2008 |  |  |  | X |  |
|  |  | Measey et al., 2009 |  |  |  | X |  |
|  |  | Menezes, 2009 |  |  |  |  | X |
|  |  | Sundby & Vangen, 2009 |  |  |  | X |  |
| **16.** domestic violence  (includes intimate partner) | No | Kaye et al., 2006 |  |  |  | X |  |
|  |  | Kiely et al., 2010 | X |  |  |  |  |
|  |  | Rosen et al., 2007 |  |  |  | X |  |
|  |  | Sharps et al., 2007 |  |  |  |  | X |
|  |  | Silverman et al., 2006 |  |  |  | X |  |
| **17.** other serious antepartum complications (current pregnancy) | No |  | | | | | |
| * anemia (Hgb < 10 gm in any trimester) – not improved with treatment |  | Kidanto 2009 |  |  |  |  | X |
|  |  | Reveiz et al., 2011 | X |  |  |  |  |
| * diabetes diagnosed in pregnancy |  | Crowther et al., 2005 |  | X |  |  |  |
|  |  | Langer et al., 2005 |  |  |  | X |  |
|  |  | Metzger et al., 2008 |  |  | X |  |  |
| * major psychiatric history (formally diagnosed or treated with drugs/inpatient therapy) |  | Jablensky et al, 2005 |  |  |  | X |  |
|  |  | Webb, 2008 |  |  |  | X |  |
|  |  | Wisner, 2009 |  |  |  | X |  |
| * multiple birth (twins or higher number of births anticipated) |  | Ortibus, 2009 |  |  |  | X |  |
|  |  | Tang et al., 2006 |  |  |  | X |  |
| * placenta praevia |  | Bahar et al., 2009 |  |  |  | X |  |
|  |  | Madan et al., 2010 |  |  |  | X |  |
| * pre-eclampsia (diagnosed in antepartum period) |  | Tang et al., 2009 |  |  |  | X |  |
|  |  | Villar et al., 2006 |  |  |  | X |  |
| * pyelonephritis |  | Archabald et al., 2009 |  |  |  |  | X |
|  |  | Hill et al., 2005 |  |  |  | X |  |
| * Rh sensitization |  | Ben-David et al., 2008 |  |  |  | X |  |
| * Vaginal bleeding in 2nd or 3rd trimester, from cause other than placenta praevia. |  | Harlev et al., 2008 |  |  |  | X |  |
|  |  | Koifman et al., 2008 |  |  |  | X |  |
| **18.** prenatal care: initiation in first trimester (<14 weeks) and minimum of 5 visits | Yes | Raatikainen et al., 2007 |  |  |  | X |  |
| **19.** amniocentesis  NOTE: that if CVS is documented, a note should be added to the abstraction record | No | Cederholm et al., 2005 |  |  |  | X |  |
|  |  | Eddleman et al., 2006 |  |  | X |  |  |
|  |  | Grobman et al., 2009 |  |  |  | X |  |
| **20.** nonstress test/contraction stress test/biophysical profile | No | Grivell et al., 2009 |  | X |  |  |  |
| **21.** medication use | No | Briggs et al., 2012 |  |  |  |  | X |
| **Parturition** | | | | | | | |
| **22.** period of time between first digital examination following rupture of membranes and birth | 24 hours | Cahill et al., 2012 |  |  |  | X |  |
| **23.**  amniotic fluid | Clear | Bhat & Rao, 2008 |  |  |  |  | X |
|  |  | Liu et al., 2005 |  |  |  | X |  |
|  |  | Locatelli et al., 2005 |  |  | X |  |  |
|  |  | Xu et al., 2009 |  |  |  | X |  |
| **24.** induction/augmentation of labor | No | Caughey et al., 2009 | X |  |  |  |  |
|  |  | Elsedeek et al., 2009 |  | X |  |  |  |
|  |  | Glantz, 2010 |  |  |  | X |  |
|  |  | Heinemann et al., 2008 |  | X |  |  |  |
| **25.** amniotomy | No | Smyth, 2007 |  | X |  |  |  |
| **26.** oral or injectable (IM or IV) medication during first or second stage of labor | None | Jones et al., 2012 |  | X |  |  |  |
| **27.** epidural analgesia for labor and/or birth | No | Abrao et al., 2009 |  | X |  |  |  |
|  |  | Anim-Somuah et al., 2011 |  | X |  |  |  |
|  |  | Beilin et al., 2005 |  | X |  |  |  |
| **28.** fetoscope, Doppler, or intermittent electronic monitoring during labor (rather than continuous electronic fetal monitoring) | Yes | Bailey, 2007 |  | X |  |  |  |
|  |  | Gourounti & Sandall, 2007 |  | X |  |  |  |
|  |  | Sisco et al., 2009 |  |  |  |  | X |
| **29.** fetal heart rate abnormalities that altered management of the labor process  **(SEE CODE BOOK!)** | No | Althaus et al., 2005 |  |  |  | X |  |
|  |  | Haydon et al., 2006 |  |  |  | X |  |
|  |  | Larma et al., 2007 |  |  |  | X |  |
| **30.** presence of a support person during labor (other than care provider) | Yes | Campbell et al., 2007 | X |  |  |  |  |
|  |  | Hodnett et al., 2011 | X |  |  |  |  |
|  |  | McGrath & Kendell, 2008 | X |  |  |  |  |
| **31.** nondirected pushing | Yes | Bloom et al., 2005 | X |  |  |  |  |
|  |  | Schaffer et al., 2005 | X |  |  |  |  |
|  |  | Simpson & James, 2005 | X |  |  |  |  |
| **32.**  delivery occurred in the place originally intended at the onset of labor | Yes | Declecq et al., 2010 |  |  |  | X |  |
| **33.** nonsupine position at birth | Yes | De Jonge et al., 2005 | X |  |  |  |  |
|  |  | Lawrence et al., 2009 | X |  |  |  |  |
|  |  | Soong & Barnes, 2005 |  |  | X |  |  |
|  |  | Terry et al., 2006 |  |  | X |  |  |
| **34.** presentation at birth | Cephalic | Stitely & Gherman, 2005 |  |  | X |  |  |
| **35.** instrumental (vaginal) delivery | No | O’Mahony et al., 2010 | X |  |  |  |  |
| **36.** Cesarean section | No | Bodner et al., 2011 |  |  |  |  | X |
|  |  | Declercq et al., 2007 |  |  | X |  |  |
| **37.** episiotomy | No | Carroli & Mignini, 2009 | X |  |  |  |  |
|  |  | Hartmann et al., 2005 |  |  |  | X |  |
|  |  | Viswanathan et al., 2005 |  |  | X |  |  |
|  |  | Youseff et al., 2005 |  |  | X |  |  |
| **38.** 1st or 2nd degree laceration of perineum or perineal tissue ***requiring sutures*** (including sulcus and cervical lacerations) | No | Lai et al., 2009 |  |  | X |  |  |
| **39.** 3rd or 4th degree extension of either an episiotomy or a 1st or 2nd degree laceration | No | Fernando et al., 2006 | X |  |  |  |  |
| **40.** medication (other than oxytocin or local anesthetic for perineal repair) during the third stage of labor | No | Briggs, 2012 |  |  |  |  | X |
| **41.**. skin-to-skin contact | Yes | Moore et al., 2012 | X |  |  |  |  |
| **42.** placental retention (≥ 30 minutes) | No | Sosa et al., 2009 |  |  |  | X |  |
| **43.** postpartum hemorrhage (provider’s documentation that this did not occur; actual amount of blood loss not relevant) | No | Al-Zirqi et al., 2008 |  |  |  | X |  |
|  |  | Bateman et al., 2010 |  |  |  |  | X |
| **44.** blood transfusion | No | Jansen et al., 2005 |  |  |  |  | X |
| **45.** other serious intrapartum complications | No |  | | | | | |
| * chorioamnionitis |  | Aziz et al., 2009 |  |  |  | X |  |
|  |  | Blume et al., 2008 |  |  |  | X |  |
|  |  | Botet et al., 2010 |  |  |  | X |  |
|  |  | Holzman et al., 2007 |  |  |  | X |  |
|  |  | Soraisham et al., 2009 |  |  |  | X |  |
| * cord prolapse |  | Onwuhafua et al., 2007 |  |  |  | X |  |
| * eclampsia |  | Duley 2009 |  |  |  |  | X |
|  |  | Knight, 2007 |  |  |  | X |  |
|  |  | Zwart et al., 2008 |  |  |  | X |  |
| * placental abruption |  | Pitaphrom & Sukcharoen, 2006 |  |  |  | X |  |
| * pre-eclampsia present during intrapartum period |  | Gul et al., 2005 |  |  |  | X |  |
|  |  | Yücesoy et al., 2005 |  |  |  |  | X |
| * shoulder dystocia |  | Bjørstad et al., 2010 |  |  |  | X |  |
|  |  | Rahman et al., 2009 |  |  |  | X |  |
| **Neonatal condition** | | | | | | | |
| **46.** estimate of gestational age | 37-42 weeks | Erez et al., 2005 |  |  |  | X |  |
|  |  | Khashu et al., 2009 |  |  |  | X |  |
|  |  | Zhang & Kramer, 2009 |  |  | X |  |  |
| **47.** birth weight | 2500-4000 grams | Esakoff et al., 2009 |  |  |  | X |  |
| **48.** Apgar score at 5 minutes | 7, 8,9 or 10 | AAP and ACOG, 2006 |  |  |  |  | X |
|  |  | Harrington et al., 2007 |  |  |  | X |  |
|  |  | Odd et al., 2008 |  |  |  | X |  |
| **49.** transfer to high risk neonatal care setting | No | Brady, 2005 |  |  |  | X | X |
|  |  | Lambert et al., 2007 |  | X |  |  |  |
| **50.** congenital anomalies | No | Tennant et al., 2010 |  |  |  | X |  |
| **51.** birth trauma, or other serious medical problem | No |  | | | | | |
| * bacterial infections other than sepsis |  | Himmelmann et al., 2011 |  | X |  |  |  |
|  |  | Murk et al., 2011 |  | X |  |  |  |
| * bronchopulmonary dysplasia |  | Christou & Brodsky, 2005 |  |  |  |  | X |
|  |  | Gough et al., 2012 | X | X |  |  |  |
| * cardiac failure |  | Hoch & Netz, 2005 |  |  |  |  | X |
|  |  | Hsu & Pearson, 2009 |  | X |  |  |  |
| * hypovolemia, hypotension, shock |  | Giliberti et al., 2010 |  | X |  |  |  |
| * intraventricular hemorrhage |  | Owens, 2005 |  |  |  |  | X |
|  |  | Luu et al., 2009 |  | X |  |  |  |
| * necrotizing enterocolitis |  | Guner et al., 2008 |  |  |  | X |  |
|  |  | Lambert et al., 2007 |  | X |  |  |  |
| * pneumonia |  | Nohynek et al., 2009 |  | X |  |  |  |
| * persistent pulmonary hypertension |  | Saini-Chohan et al., 2011 |  | X |  |  |  |
|  |  | Winovitch et al., 2011 |  | X |  |  |  |
| * renal failure |  | Cataldi et al., 2005 |  |  |  | X |  |
|  |  | Vikse et al., 2008 |  |  |  | X |  |
| * respiratory distress syndrome |  | Soll, 2009 | X |  |  |  |  |
| * Rh disease |  | Murki et al., 2011 |  |  |  |  | X |
|  |  | Bonifacio et al., 2011 |  |  |  |  | X |
| * sepsis |  | Schrag & Schuchat, 2005 |  |  |  |  | X |
|  |  | Sinvanandan et al., 2011 |  |  |  |  | X |
|  |  | Vergnano et al., 2005 |  |  |  |  | X |
| **52.** breastfeeding  (time period: at time of mother’s discharge from birth setting or up to 72 hours postpartum) | yes | Duijts et al., 2009 | X |  |  |  |  |
|  |  | Fewtrell et al., 2007 | X |  |  |  |  |
|  |  | Horvath et al., 2009 | X |  |  |  |  |
|  |  | Kramer & Kakuma, 2009 | X |  |  |  |  |
|  |  | Pirilä et al., 2011 | X |  |  |  |  |
|  |  | Sonnenschein-van der Voort et al, 2012 |  |  |  |  |  |
| **53.**  perinatal death:  (time period birth: up to 72 hours of age) | no | Blencowe et al., 2012 |  | X |  |  |  |
|  |  | Lawn et al., 2008 |  | X |  |  |  |
|  |  | Lawn et al., 2009 |  | X |  |  |  |
|  |  | Liu et al., 2012 |  | X |  |  |  |
|  |  | Lozano et al., 2011 |  | X |  |  |  |
| **Condition of the mother prior to discharge from birth facility or from provider’s care (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 | no | Shipp et al., 2003 |  |  |  | X |  |
| * cystitis |  | Bolton et al., 2012 |  |  |  |  | X |
|  |  | Emamghorashi et al., 2012 |  |  |  | X |  |
|  |  | Evron et al., 2008 |  |  |  | X |  |
| * endometritis |  | Smaill & Gayle, 2010 | X |  |  |  |  |
| * hematoma |  | Saleem & Rydhström, 2004 |  |  |  | X |  |
| * local infection of sutures |  | Kettle et al., 2010 |  | X |  |  |  |
|  |  |  |  |  |  |  |  |
| * mastitis |  | Scott et al., 2008 |  |  |  | X |  |
|  |  | Semrau et al., 2011 |  | X |  |  |  |
|  |  | Wöckel et al., 2010 |  |  |  | X |  |
| **55.** prescription medications for conditions newly identified in IP or PP period (exception: iron and vitamins, oral contraceptives, RhoGam©, rubella vaccine) | no | Briggs, 2012 |  |  |  |  | X |
|  |  | Battle et al., 2008 |  |  |  | X |  |
|  |  | Peterson et al., 2010 |  |  |  | X |  |
| **56.** maternal mortality | no | Beck et al., 2010 |  | X |  |  |  |
|  |  | Hogan et al., 2010 |  | X |  |  |  |
|  |  | Lozano et al., 201 |  | X |  |  |  |