Table D-22. Evidence table for studies addressing management of PPH (Lappen 2013)

| **Study**  **Description** | **Intervention** | **Inclusion/Exclusion**  **Criteria & Population** | **Outcomes** |
| --- | --- | --- | --- |
| Author:  Lappen et al., 201327  Country: US  Enrollment period:  Pre: 6 month prior to systems intervention  Intervention:  Feb 2008 to Jan 2009  Post: 6 months after intervention  Birth setting:  Hospital  Facility characteristics:  Tertiary care hospital  Funding:  Ken and Anne Griffin Foundation  Design:  Pre-post | **Intervention:**  Safety program that d 1) educational initiative to improve accuracy of blood loss estimation, 2) training regarding and institution of a checklist for management of PPH, and 3) institution of routine use of active management of 3rd stage of labor.  **Groups:**  **G1:** period A- pre intervention  **G2:** period B: post  N:  **G1:** 278  **G2:** 341  Duration of treatment: NR  Timing of treatment: NR  Order of treatment: NR  Length of follow-up: NR | **Operational definition of PPH:**  Estimated blood loss greater than 500 mL for vaginal delivery and > 1,000 mL for cesarean delivery)  **Definition of success of treatment**: Changes in patient care and outcomes  **Method of blood loss measurement:** NR  **Severity:** NR  Inclusion criteria:   * Identified from perinatal database and meeting criteria of PPH   Exclusion criteria:   * All patients presenting with PPH during time period d   **Maternal age, yrs, mean ± SD:**  **G1:** 31.6 ± 6.0  **G2:** 31.6 ± 6.2  **Parity, n:**  Nulliparous  **G1:** 183 (66)  **G2:** 235 (69)  **Gestational age, weeks mean:**  **G1:** 38.6 ± 2.87  **G2:** 38.9 ± 244  **Single pregnancy, n (%):**  **G1:** 243 (87)  **G2:** 296 (88)  **Multiple pregnancy, n (%):**  **G1:** 35 (13)  **G2:** 41 (12)  **Race/ethnicity:**  Caucasian  **G1:** 139 (52)  **G2:** 176 (55)  African-American  **G1:** 41 (16)  **G2:** 32 (10)  Hispanic  **G1:** 53 (20)  **G2:** 60 (19)  Asian  **G1:** 9 (3)  **G2:** 15 (5)  Other  **G1:** 36 (9)  **G2:** 58 (11)  **BMI**  **G1:** 29.9 ± 5.7  **G2:** 31.3 ± 6.6  **Baseline hemoglobin:** NR  **SES:** NR  **Mode of birth, n:**  Spontaneous vaginal  **G1:** 135 (49)  **G2:** 140 (41)  Operative vaginal  **G1:** 29 (10)  **G2:** 34 (10)  Cesarean  **G1:** 114 (41)  **G2:** 167 (49)  **Risk factors, n (%):** Race/ethnicity: NR  History of cesarean  **G1:** 35 (13)  **G2:** 41 (12)  Labor induction/augmentation  **G1:** 81 (29)  **G2:** 120 (35)  Preeclampsia  **G1:** 32 (12)  **G2:** 35 (10)  Placenta previa  **G1:** 9 (3)  **G2:** 7 (2)  Birth weight (g)  G1: 3310 +/- 701  G2: 3384 +/- 698  Multiple gestation  **G1:** 35 (13)  **G2:** 45 (13)  Chorioamnionitis  **G1:** 38 (14)  **G2:** 54 (16)  Retained placenta: NR  Antepartum hemorrhage: NR  Magnesium sulfate use  **G1:** 32 (12)  **G2:** 33 (10)  Any oxytocin  **G1:** 185 (67)  **G2:** 249 (73)  **Primary etiology of PPH, n (%):**  Uterine Atony  **G1:** 169 (160.8)  **G2:** 214 (62.8)  Surgical laceration  **G1:** 47 (16.9)  **G2:** 76 (22.3)  Vaginal laceration  **G1:** 17 (6.1)  **G2:** 27 (7.9)  Retained products  **G1:** 19 (6.8)  **G2:** 16 (4.7)  Placenta accreta  **G1:** 4 (1.4)  **G2:** 2 (0.6)  Uterine inversion  **G1:** 2 (0.7)  **G2:** 1 (0.3)  Other  **G1:** 20 (7.2)  **G2:** 5 (1.4) | **Blood loss:** EBL (mL) **G1:** 1,211 ± 681 **G2:** 1,274 ± 932 p= 0.33  EBL > 1,500 mL  **G1:** 45 (16.2)  **G2:** 62 (18.2)  p= 0.51  **Transfusion:**  Any packed red cells **G1:** 34 (44.7) **G2:** 42 (55.3)  4 or more Units pRBCs  **G1:** 9 (3.2)  **G2:** 11 (3.2)  Fresh frozen plasma  **G1:** 9 (3.2)  **G2:** 8 (2.4)  Cyroprecipitate  **G1:** 4 (1.4)  **G2:** 4 (1.2)  ICU admission **G1:** 7 (2.5) **G2:** 12 (3.5) p= 0.47  **Anemia:** Nadir Hemoglobin g/dL **G1:** 8.8 ± 1.6  **G2:** 8.9 ± 1.6 p= 0.55  **Length of stay:** NR  **Mortality:** NR  **Uterine preservation:** NR  **Uterine artery embolization: G1:** 1 (0.4) **G2:** 5 (1.5)  **Hysterectomy:**  **G1:** 3 (1.1)  **G2:** 6 (1.8)  **Composite morbidity (transfusion, embolization, hysterectomy, ICU admission): G1:** 36 (13.0) **G2:** 42 (12.3) p= 0.81  **Future fertility:** NR  **Breastfeeding:** NR  **Psychological impact:** NR  **Harms of intervention:** NR – “There were no adverse events related to interventions for PPH, including the use of uterotonics or B-lynch sutures, in either time period of the stuy.  **Confounders:** NR  **Effect modifiers:** NR |