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., 201327Country: USEnrollment period: Pre: 6 month prior to systems interventionIntervention: Feb 2008 to Jan 2009 Post: 6 months after interventionBirth setting: HospitalFacility characteristics: Tertiary care hospitalFunding:Ken and Anne Griffin FoundationDesign: 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: postN: **G1:** 278**G2:** 341Duration of treatment: NRTiming of treatment: NROrder of treatment: NRLength 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:** NRInclusion 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 +/- 701G2: 3384 +/- 698Multiple gestation**G1:** 35 (13)**G2:** 45 (13)Chorioamnionitis**G1:** 38 (14)**G2:** 54 (16)Retained placenta: NRAntepartum hemorrhage: NRMagnesium 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 ± 932p= 0.33EBL > 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 ± 1.6p= 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 |