Table D-4. Evidence table for studies addressing management of PPH (Einerson 2014)

| **Study** **Description** | **Intervention** | **Inclusion/Exclusion** **Criteria & Population** | **Outcomes** |
| --- | --- | --- | --- |
| **Author:**Einerson et al., 20145**Country:**US**Enrollment period:** August 2007 to December 2011**Birth setting:** Hospital**Facility characteristics:** Tertiary care**Funding:**Grant from Kenneth and Anne Griffin Foundation**Design:** Pre-post (Systems level) | **Intervention:** Training program for perinatal nursing, residents, fellows, midwives and physicians in OB and anesthesia departments in early diagnosis and management of PPH. Program d: 1) mandatory educational sessions to improve EBL assessment, 2) multidisciplinary checklist for PPH management, and 3) institution if universal active management of 3rd stage of labor.**Groups:****G1:** pre protocol**G2:** post protocol**N:** **G1:** 592**G2:** 2513 **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 or if received a blood transfusion or uterotonic medications for obstetric hemorrhage**Definition of success of treatment**: changes in patient care and outcomes**Method of blood loss measurement:** NR **Severity:** NR**Inclusion criteria:** Query electronic records to identify women with PPH defined as EBL of > 500 mL for vaginal delivery or > 1000 mL for cesarean or if received a blood transfusion or uterotonic medications for obstetric hemorrhageRecords identified electronically were individually reviewed to confirm diagnosis of PPH**Exclusion criteria:** NR**Maternal age, yrs, mean ± SD:****G1:** 31.5 ± 6.1**G2:** 32.0 ± 5.6p=0.038**Parity, n (%):** Nulliparous**G1:** 378 (63.9)**G2:** 1543 (61.4)p= 0.265**Gestational age, mean weeks ± SD:** **G1:** 38.6 ± 2.8**G2:** 38.6 ± 2.7p=0.879**Single pregnancy, n (%):** NR**Multiple pregnancy, n (%):****G1:** 75 (12.7)**G2:** 309 (12.3)p=0.802**Race/ethnicity:**Caucasian**G1:** 307 (51.9)**G2:** 1379 (54.9)African-American**G1:** 72 (12.2)**G2:** 282 (11.2)Hispanic**G1:** 107 (18.1)**G2:** 444 (17.7)Asian**G1:** 19 (3.2)**G2:** 185 (7.4)Other**G1:** 87 (14.7)**G2:** 220 (8.8)p< 0.001**BMI****G1:** 30.4 ± 5.9**G2:** 31.4 ± 6.5p< 0.001**Baseline hemoglobin:** NR**SES:** NR**Mode of birth, n:** Spontaneous vaginal**G1:** 271 (45.8)**G2:** 1084 (43.1) Operative vaginal**G1:** 63 (10.6)**G2:** 215 (8.6)Cesarean**G1:** 258 (43.6)**G2:** 1215 (48.3)p= 0.067**Risk factors, n (%):** History of cesarean**G1:** 71 (12)**G2:** 362 (14.4)p=0.13Labor induction**G1:** 158 (26.7)**G2:** 793 (31.6)p=0.021Preeclampsia**G1:** 54 (9.1)**G2:** 269 (10.7)p=0.26Placenta previa**G1:** 20 (3.4)**G2:** 73 (2.9)p=0.54Use of oxytocin**G1:** 378 (64.2)**G2:** 1659 (66.3)p=0.32Chorioamnionitis**G1:** 65 (11)**G2:** 300 (11.9)p=0.52**Primary etiology of PPH, n (%):** NR | **Blood loss, estimated mL****G1:** 1,168 ± 688**G2:** 1,265 ± 905p= 0.014EBL > 1,500 mL, n (%)**G1:** 127 (21.5)**G2:** 669 (26.6)p= 0.01**Transfusion, n (%):** Packed red cells**G1:** 63 (10.6)**G2:** 134 (12.5)p= 0.21Fresh frozen plasma**G1:** 18 (3.0)**G2:** 64 (2.6)p= 0.50Cyroprecipitate**G1:** 11 (1.9)**G2:** 94 (3.8)p= 0.02Platelets**G1:** 7 (1.2)**G2:** 39 (1.6)p= 0.50More than 2 units pRBCs**G1:** 27 (4.6)**G2:** 113 (4.5)p= 0.94More than 2 units FFP**G1:** 9 (1.5)**G2:** 36 (1.4)p= 0.87More than 2 units cryoprecipitate**G1:** 1 (0.2)**G2:** 22 (0.9)p= 0.07More than 2 units platelets**G1:** 1 (0.2)**G2:** 11 (0.4)p= 0.344 or more units total blood products**G1:** 22 (3.7)**G2:** 106 (4.2)p= 0.58ICU admission**G1:** 14 (2.4)**G2:** 57 (2.3)p= 0.93**Anemia:** NR**Length of stay:** NR**Mortality:** None**Uterine preservation, n (%):**Embolization via interventional radiology**G1:** 4 (0.7)**G2:** 45 (1.8)p= 0.05Hysterectomy**G1:** 7 (1.2)**G2:** 43 (1.7)p= 0.36**Future fertility:** NR **Breastfeeding:** NR**Psychological impact:** NR**Harms of intervention:** NR**Confounders:** NR **Effect modifiers:** NR**Uterotonic used, n (%):G1:** 278 (47.0)**G2:** 1628 (64.8)p<0.001**Intrauterine balloon tamponade, n (%):****G1:** 17 (2.9)**G2:** 155 (6.2)p=0.002**B-Lynch, n (%):****G1:** 23 (3.9)**G2:** 151 (6.0)p = 0.042**Curettage, n (%):****G1:** 29 (4.9)**G2:** 127 (5.1)p = .875**Use of >2 uterotonics, n (%):G1:** 125 (21.1)**G2:** 1064 (42.3)p<.001 |

**Comments:** See also Lappen et al., 2013 for earlier report on same intervention