Table D-44. Evidence table for studies addressing management of PPH (Deneux-Tharaux 2010)

| **Study**  **Description** | **Intervention** | **Inclusion/Exclusion**  **Criteria & Population** | **Outcomes** |
| --- | --- | --- | --- |
| Author:  Deneux-Tharaux et al.,  201019  Country: France  Enrollment period:  September 2004 – November 2006  Birth setting:  NR  Facility characteristics: 106 maternity units (university, public and private) within six perinatal networks  Funding:  French Ministry of Health’s Clinical Research Hospital Program (contract no. 27-35)  Design:  Cluster-randomized controlled trial  Note: See related studies Bonnett 201318, Schmitz 201120 | **Intervention:**  Multifaceted intervention for maternity unit including educational sessions, instruction on PPH protocol, local implementation of the protocol, posted placards of steps for addressing PPH, and installation of a “PPH box” (emergency kit w/drugs, etc), peer review of deliveries with severe PPH. (intervention: more than 3 mo. in duration)  **Groups:**  **G1:** educational intervention  **G2:** passive dissemination of PPH protocol  N (maternity units) at enrollment:  **G1:** 54  **G2:** 52  N (maternity units) at follow-up:  **G1:** 54  **G2:** 52  Duration of treatment:  Phase 1 of intervention = ≥ 3 mo  Phase 2 of intervention (data collection) = 1 year.  Timing of treatment: NR  Order of treatment: NA  Length of follow-up: NR | **Operational definition of PPH:**  PPH was defined by a peripartum hemoglobin decrease of 2 g/dl or more (equivalent to loss of more than 500 ml of blood).  Severe PPH - a PPH associated with one or more: blood transfusion, arterial embolization, arterial ligation, other conservative uterine surgery, hysterectomy, transfer to intensive care unit, peripartum hemoglobin decrease of 4 g/dl or more (equivalent to loss of 1000 ml or more of blood), maternal death.  **Definition of success of treatment**: effect of the multifaceted intervention on mean rate of severe PPH. (#deliveries with severe PPH / total number of deliveries)  **Method of blood loss measurement:**  Prepartum hemoglobin measured as part of routine prenatal care during last weeks of pregnancy.  **Severity:** defined above  Inclusion criteria:   * Maternity units belonging to one of six health networks   Exclusion criteria:   * Maternity units involved in concomitant clinical study   **Maternal age:** NR  **Parity:** NR  **Weeks gestation:** NR  **Single pregnancy:** NR  **Multiple pregnancy, mean ± SD (min, max):**  Rate of multiple pregnancy:  **G1:** 1.1 ± 0.7 (0.1; 2.9)  **G2:** 1.3 ± 0.9 (0.0; 4.6)  **Race/ethnicity:** NR  **BMI:** NR  **Baseline hemoglobin:** NR  **SES:** NR  **Mode of birth mean ± SD (min, max):**  Rate of caesarean delivery  **G1:** 20.2 ± 4.2 (11.1; 28.8)  **G2:** 20.0 ± 4.7 (11.8; 34.0)  **Risk factors:** NR  **Primary etiology of PPH:** NR | **Incidence of severe PPH mean ± SD (min, max):**  **G1:** 1.64 ± 0.80 (0.00, 3.84)  **G2:** 1.65 ± 0.96 (0.29, 4.29)  OR=1.02 (95% CI: 0.83 to 1.24)  Severe PPH blood transfusion (% of deliveries) mean rate (SD) (min, max)  **G1:** 0.44 ± 0.30 (0.00, 1.00)  **G2:** 0.41 ± 031 (000, 1.47)  OR=1.13 (95% CI: 0.88 to 1.44)  Severe PPH postpartum haemoglobin change ≥ 4 g/dl) (% of deliveries) mean rate ± SD (min, max):  **G1:** 1.49 ± 0.75 (0.00, 3.83)  **G2:** 1.44 ± 0.88 (0.15, 3.95)  OR=1.05 (95% CI: 0.86 to 1.29)  All PPH (% of deliveries) mean ± SD (min, max):  **G1:** 6.37 ± 3.63 (1.95, 22.05)  **G2:** 6.37± 4.16 (1.52, 17.63)  OR=1.01 (95% CI: 0.8 to 1.3)  Embolization for PPH, mean rates ± SD:  **G1:** 0.09 ± 0.15  **G2:** 0.10 ± 0.21  Conservative uterine surgery, mean rates ± SD:  **G1:** 0.04 ± 0.05  **G2:** 0.04 ± 0.07  Hysterectomy, mean rates ± SD:  **G1:** 0.05 ± 0.07  **G2:** 0.04 ± 0.06  Transfer to ICU, mean rates ± SD:  **G1**:0.16 ± 0.15  **G2:** 0.16 ± 0.22  Mean ± SD rate of severe PPH between 1st three month period to 3rd three month period:  **G1**: 1.79 ± 1.21 to 1.52 ± 0.87 (*p*=0.07)  **G2:** 1.91 ± 1.44 to 1.60 ± 1.05 (*p<0.05)*  Mean ± SD rate of ALL PPH between 1st three month period to 3rd three month period:  **G1:** 7.02 ± 4.48 to 6.2 ±3.82 (*p<0.05)*  **G2:** 7.33 ± 5.49 to 6.61 ± 4.75 (*p<0.05)*  **Procedures for PPH Management:**  Examination of uterine cavity and/or manual removal of placenta (*PPH after vaginal delivery)* mean rate ± SD (min, max):  **G1**: 75.9 ± 15 (30.8, 97.6)  **G2**: 76.3 ± 13.4 (42.9, 100)  OR=0.97 (95% CI: 0.71 to 1.32)  Examination of uterine cavity and/or manual removal of placenta within 15 min of PPH DX\* *after vaginal delivery* (incomplete data) mean rate ± SD (min, max):  G**1:** 53.2 ± 16.9 (15.4, 96)  **G2**: 49.5 ± 19.5 (0, 81.6)  OR=1.05 (95% CI: 0.79 to 1.4)  Instrumental examination of vagina and cervix *(PPH after vaginal delivery)* mean rate ± SD (min, max): **G1:** 28.8 ± 17.2 (0, 69.8) **G2:** 24.0 ± 18.1 (0, 66.7)  OR= 1.26 (95% CI: 0.87 to 1.81)  Call for help from senior staff mean rate ± SD (min, max):  **G1:** 79.9 ± 14.7 (42.7, 100)  **G2:** 71.2 ± 19.1 (27.8,100)  OR=1.65 (95% CI: 1.17 to 2.33)  Call for help from senior staff within 15 min of PPH Dx\* (data incomplete) mean rate ± SD (min, max)  **G1:** 67.0± 17,3 (27.6, 100)  **G2:**  58.4 ± 19.4 (17.6, 100)  OR=1.48 (95% CI: 1.05 to 2.09)  Administration of oxytocin, mean rate ± SD (min, max):  **G1**: 92.2 ± 6.6 (76.5, 100)  **G2**: 91.9 ± .6 (52.9, 100)  OR=0.92 (95% CI: 0.63 to 1.33)  **Procedures for *Severe* PPH Management:**  Administration of sulprostone (uterine atony or retained placenta) (severe PPH), mean ± SD (min, max):  **G1:** 48.7 ± 25.3 (0, 100)  **G2**: 39.9 ± 26.0 (0, 100)  OR=1.45 (95% CI: 0.99 to 2.13)  Administration of sulprostone within 30 min of PPH Dx (uterine atony or retained placenta) (severe PPH) mean ± SD (min, max):  **G1:** 24.2 ± 17.5 (0, 75.0)  **G2:** 16.9 ± 15.9 (0, 51.9)  OR=1.39 (95% CI: 0.96 to 2.00)  Blood test for hemoglobin and hemostasis within 60 min of PPH Dx\* (incomplete data)  Mean ± SD (min, max):  **G1**: 37.5 ± 20.5 (0, 87.5)  **G2**: 28.4 ± 22.1 (0, 80.0)  OR=1.36 (95% CI: 0.95 to 1.94) |

**Comments:** \*data on time of procedure missing in 19.1% of cases for exam of uterine cavity; 2.4% for call for extra help; 2.6% for admin of sulprostone and 10% for blood test