Table D-51. Evidence table for studies addressing management of PPH (Audureau 2009)

| **Study**  **Description** | **Intervention** | **Inclusion/Exclusion**  **Criteria & Population** | **Outcomes** |
| --- | --- | --- | --- |
| Author:  Audureau et al.,  200952  Country:  France  Enrollment period:  2002 to 2005  (Pre: Sep to Dec 2002 and Post: Sep to Dec 2005)  Birth setting:  Maternity Units  Facility characteristics:  Level 1 (no non-routine neonatal care facilities), Level 2 (neonatal care unit), and Level 3 (onsite neonatal intensive care unit) units  Funding:  Grant from the Hospital Program for Clinical Research from the French Ministry of Health  Design:  Pre-post systems level | **Intervention:**  Multifaceted intervention conducted in a French regional perinatal network including all maternity unites of a defined geographic region and aimed at increasing the translation into practice of clinical guidelines related to PPH. The primary objective of the study was to assess the impact of the intervention on practices for prevention, diagnosis, and management of PPH. The secondary objective was to evaluate the impact of the intervention on the prevalence of major PPH.  Sample I: random selection of all women delivering in the time period  Sample II: representative sample of women with PPH deliveries  Sample III: all cases of major PPH  **Groups:**  **G1:** All deliveries 2002  **G1a:** Sample I 2002  **G1b:** Sample II 2002  **G1c:** Sample III 2002  **G2:** All deliveries 2005  **G2a:** Sample I 2005  **G2b:** Sample II 2005  **G2c:** Sample III 2005  N:  **G1:** 17,664  **G1a:** 294  **G1b:** 164  **G1c:** 143  **G2:** 17,772  **G2a:** 300  **G2b:** 166  **G2c:** 152  Duration of treatment: NR  Timing of treatment: NR  Order of treatment: Main steps of the protocol for prevention and management of PPH  1 Prevention: Systematic intravenous prophylactic injection of 10 IU oxytocin during the third stage of labor  2 Diagnosis: Systematic use of a blood collecting bag after vaginal delivery  3 Management: For PPH after vaginal delivery  Immediate manual removal of placenta and/or examination of the uterine cavity; instrumental examination of the vagina and cervix  Immediate intravenous administration of oxytocin  Intravenous administration of sulprostone in case of persistent PPH because of uterine atony 30 minutes after oxytocin administration  Red blood cell transfusion if hematocrit below 28%  Length of follow-up: NR | **Operational definition of PPH:**  The definition of PPH was based on its clinical diagnosis by attending staff, or by reports of abnormal bleeding leading to examination of the uterine cavity or manual removal of the placenta.  Major PPH was defined by the presence of one or more of the following criteria: blood transfusion of one unit or more, arterial embolization, arterial ligation, or other conservative uterine surgery, hysterectomy, peripartum hemoglobin delta of 4 g/dl or more or maternal death.  **Definition of success of treatment:** NR  **Method of blood loss measurement:** blood collecting bags  **Severity:** PPH; Major PPH  Inclusion criteria:   * Deliveries in the study area during 2002 and 2005   Exclusion criteria: NR  **Maternal age, yrs, mean (SD):**  **G1a:** 29.2 (5.1)  **G1b:** 29.8 (5.4)  **G1c:** 29.2 (9.1)  **G2a:** 29.6 (5.6)  **G2b:** 28.7 (5.3)  **G2c:** 29.4 (5.0)  **Parity:** NR  **Weeks gestation:** NR  **Single pregnancy:** NR  **Multiple pregnancy:** NR  **Race/ethnicity:** NR  **BMI, mean (SD):**  **G1a:** 23.7 (5.2)  **G1b:** 23.4 (4.8)  **G1c:** 23 (3.9)  **G2a:** 23.4 (5.0)  **G2b:** 23.1 (4.3)  **G2c:** 22.9 (4.5)  **Baseline hemoglobin:** NR  **Mode of birth, n:**  Cesarean  **G1a:** 20.7  **G1b:** 7.3  **G1c:** 12.6  **G2a:** 14.3  **G2b:** 9.6  **G2c:** 17.8  **Risk factors, %:**  Prior PPH  **G1a:** 2.4  **G1b:** 4.3  **G1c:** 6.3  **G2a:** 2.0  **G2b:** 4.2  **G2c:** 7.9  **Parity:** NR  **Maternal Age:** NR  **Obesity:** NR  **Multiple gestation:** NR  **Macrosomia:** NR  **Primary etiology of PPH, (%):**  Uterine Atony  **G1b:** 50.0  **G2b:** 42.8  Retained Placenta  **G1b:** 32.9  **G2b:** 35.5  Genital Tract Lesion  **G1b:** 5.5  **G2b:** 6.6  Abnormal Placental Implantation  **G1b:** 1.2  **G2b:** 3.0 | **Prevalence of prophylactic oxytocin administration after birth at all units Sample I, n (%):**  **G1a:** 137 (58.8)  **G2a:** 195 (75.9)  **G1a vs G2a:** p < 0.0001  **Prevalence of use of blood collecting bags after vaginal delivery at all units, n (%):**  **G1a:** 9 (3.9)  **G2a:** 196 (76.3)  **G1a vs G2a:** p < 0.0001  **Management of PPH practices from Sample II Examination of the uterine cavity and/or manual removal of placenta, n (%):**  **G1b:** 129 (84.9)  **G2b:** 118 (78.7)  **G1b vs G2b:** p=0.18  **Instrumental examination of the genital tract, n (%):**  **G1b:** 29 (17.7)  **G2b:** 40 (24.1)  **G1b vs G2b:** p=0.32  **Intravenous administration of oxytocin, n (%):**  **G1b:** 127 (77.4)  **G2b:** 125 (75.3)  **G1b vs G2b:** p=0.70  **Intravenous administration of sulprostone in case of persistent uterine atony, n (%):**  **G1b:** 19 (50.0)  **G2b:** 18 (56.3)  **G1b vs G2b:** p=0.64  **Blood transfusion of one unit or more if hematocrit was below 28%, n (%):**  **G1b:** 6 (28.6)  **G2b:** 12 (37.5)  **G1b vs G2b:** p=0.56  **Major PPH, n (prevalence):**  **G1:** 142 (0.80)  **G2:** 153 (0.86)  **G1 vs G2:** p=0.54  **PPH with peripartum hemoglobin delta >4 g/dl, n (prevalence):**  **G1:**124 (0.70)  **G2:** 125 (0.71)  **G1 vs G2:** p=0.97  **PPH requiring major treatment, n (prevalence):**  **G1:** 36 (0.20)  **G2:** 63 (0.36)  **G1 vs G2:** p=0.01  **Arterial embolization, n (prevalence):**  **G1:** 11 (0.06)  **G2:** 16 (0.09)  **G1 vs G2:** p=0.34  **Hemostatic Surgery, n (prevalence):**  **G1:** 10 (0.06)  **G2:** 22 (0.12)  **G1 vs G2:** p=0.03  **Emergency Hysterectomy, n (%):**  **G1b:** 4 (.02)  **G2b:** 10 (.06)  **G1 vs G2:** p=0.11 |