Figure 1. Evaluation of first trimester bleeding

Bleeding in desired pregnancy, < 12 weeks gestation

- Physical exam
  - Peritoneal signs or hemodynamic instability
    - Transfer to ED
  - Non-obstetric cause of bleeding identified
    - Diagnose and treat as indicated
  - Products of conception (POC) visible on exam
    - Incomplete abortion, treat as indicated
  - Patient stable, no POC or other causes of bleeding
    - Transvaginal ultrasound (TVUS) and β-hCG level
      - Ectopic or signs suggestive of ectopic pregnancy
        - Presume ectopic; refer for high-level TVUS and/or treatment
      - Viable intrauterine pregnancy (IUP)
        - Threatened abortion; repeat TVUS if further bleeding
      - Nonviable IUP
        - Embryonic demise, anembryonic gestation or retained POC; discuss treatment options
      - IUP, viability uncertain
        - Repeat TVUS in 7-14 days and/or follow serial β-hCG's; consider progesterone levels
      - No IUP, no ectopic seen
        - IUP seen on prior TVUS
          - Yes
          - Completed abortion; expectant management
          - No
            - See Figure 2 (PUL)
Figure 2. Evaluation of first trimester bleeding in Pregnancy of Unknown Location (PUL)

No intrauterine (IUP) or ectopic pregnancy seen on transvaginal ultrasound (TVUS)

IUP seen on prior TVUS?

Yes

Completed abortion; expectant management

No

PUL

Initial β-hCG > 3000*

Bleeding history not consistent with having passed POC

Ectopic precautions, Repeat β-hCG in 48 hrs

Concerning for ectopic but does not exclude early IUP or retained POC; Obtain high-level TVUS and serial β-hCGs. Consider urgent referral for evaluation and treatment of ectopic pregnancy

Bleeding history consistent with having passed POC

Repeat β-hCG fell < 50% or rose

Repeat β-hCG fell ≥50%

Suggests resolving PUL; ectopic precautions, follow β-hCG weekly to < 5mIU/mL**

Repeat β-hCG < 3000*

Repeat β-hCG ≥50% or rose ≤40%***

Suggests early pregnancy loss or ectopic; Serial β-hCG +/- high-level TVUS until definitive diagnosis or β-hCG < 5mIU/mL**

Repeat β-hCG rose > 40%***

Suggests viable pregnancy but does not exclude ectopic; Follow β-hCG until > 1500 – 3000*, then TVUS for definitive diagnosis

Initial β-hCG < 3000*

Ectopic precautions, repeat β-hCG in 48 hours

Repeat TVUS to evaluate for IUP

Repeat β-hCG fall

< 50%

≥50%

* the β-HcG level at which an intrauterine pregnancy should be seen on transvaginal ultrasound is referred to as the discriminatory zone and varies between 1500-3000 mIU depending on the machine, the sonographer, and number of gestations.

** β-hCG needs to be followed to zero only if ectopic pregnancy has not been reliably excluded. If a definitive diagnosis of completed miscarriage has been made, there is no need to follow further β-hCG levels.

*** In a viable intrauterine pregnancy, there is a 99% chance that the β-hCG will rise by at least 33-49% in 48 hours depending on the initial β-hCG values.