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's) visible on exam: Incomplete abortion, treat as indicated
- Patient stable, no POC's or other cause 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’s; discuss treatment options
- IUP, viability uncertain: Repeat TVUS in one week and/or follow serial β-hCG’s
- No IUP, no ectopic seen: IUP seen on prior TVUS?
  - Yes: Completed abortion; expectant management
  - No: See Figure 2
**Figure 2. Evaluation of first trimester bleeding with no intrauterine pregnancy on ultrasound**

- **Serial β-hCG**’s rising and > 1500 – 2000*
- **Single β-hCG > 1500 – 2000**
  - and bleeding history not consistent with having passed POC’ s
  - Obtain high-level TVUS & serial bhCGs to differentiate between ectopic, early IUP, and retained POC’s; treat as indicated
  - Ectopic precautions, repeat β-hCG in 48 hrs
  - Repeat β-hCG fell <50% or rose
  - Repeat β-hCG fell >50%

- **Single β-hCG > 1500 – 2000**
  - and bleeding history consistent with having passed POC’s
  - Ectopic precautions, Repeat β-hCG in 48 hours
  - Repeat β-hCG fell <50%
  - Repeat β-hCG fell >50%

- **β-hCG < 1500 – 2000**

- **β-hCG > 1500 – 2000**

- **Ectopic precautions, Repeat β-hCG in 48 hours**
  - Repeat β-hCG fell <50%
  - Repeat β-hCG fell >50%
  - Suggests completed abortion; ectopic precautions, follow β-hCG weekly to zero**
  - Suggests early pregnancy failure or ectopic; serial β-hCG’ s +/- high-level TVUS until definitive diagnosis or β-hCG zero**
  - Suggests viable pregnancy but does not exclude ectopic; follow β-hCG until > 1500 – 2000*, then TVUS for definitive diagnosis

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* 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 – 2000 mIU depending on the machine and the sonographer.

** 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 53% in 48 hours. In ectopic pregnancy, there is a 21% chance that the β-hCG will rise by 53% in 48 hours.

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