A. PURPOSE
To aid in differentiating between amniotic fluid and maternal urine/vaginal secretions. Results obtained are considered definitive for purposes of patient care and diagnosis.

B. PRINCIPLE
The Fern Test, often used in conjunction with the Amnio Test or Nitrazine pH paper test, detects leakage of amniotic fluid from the membranes surrounding the fetus during pregnancy. Ruptured membranes increase the risk of fetal infection and subsequent mortality. The risk may be eliminated by induction of labor. The proteins and saline content of amniotic fluid crystallize on a slide when dry yielding the appearance of ferns. A positive test shows the presence of fern-like patterns characteristic of amniotic fluid crystals.

C. SPECIMEN REQUIREMENTS
- Microscope
- Glass slide
- Sterile swab

D. REAGENTS, EQUIPMENT AND MATERIALS
- Vaginal secretion from the posterior vaginal pool collected with a sterile swab
- Do not touch the mucus plug in the cervix

E. PROCEDURE
1. After collection immediately place a small drop of fluid to be examined on a clean microscope slide labeled with the patient’s name and medical record number.
2. Smear the fluid thinly over the slide and allow the specimen to air dry. Do not apply a coverslip.
3. Using a microscope, examine the dried smear under low power without a cover slip.
4. If present, the amniotic fluid crystallizes to form a fern-like pattern due to the relative concentrations of sodium chloride, proteins, and carbohydrates in the fluid.
5. If ferning is difficult to locate, examine all fields on the slide thoroughly.

Procedure Notes
- The Fern Test should be performed in conjunction with pH determination, using pH paper or Amnio Test.
- If the pH determination and the Fern Test are positive, probable rupture has occurred.
- If the pH determination is negative, but the Fern Test is positive, there is probable rupture of the membranes due to the Fern Test’s greater specificity.
- If the pH determination is positive, but the Fern Test is negative, a second specimen should be collected and tested.
Interpretation
The proteins in amniotic fluid give the appearance of ferning (see below)

F.  REFERENCE RANGE

- NO FERNING – Absence of amniotic fluid
- FERNING – Presence of amniotic fluid

G.  RESULT DOCUMENTATION – EPIC Order – POC 50

1. Results are reported in Epic. The test is ordered and released. Enter the required data through the Enter/Edit Results function. Complete all fields with RED STOP SIGN. Accept filed data when completed. See example below.
2. Downtime Log – In the event of EPIC or a network downtime, testing is ordered and results are documented on the Point of Care Fern Provider Performed (POC 50). This record is scanned into the patient’s EPIC chart for a permanent record.

H. LIMITATIONS
1. False positive may occur from specimens contaminated with blood, urine, cervical mucous.
2. False negative may occur from prolonged rupture of membranes (greater than 24 hours).
3. False negative may occur if only a small volume of fluid has leaked.

I. MAINTENANCE
Refer to the Point of Care Testing Maintenance Record for microscope maintenance.

J. REFERENCES:
1. Clinical Diagnosis and Management by Laboratory Methods, 16th edition, Todd, Sanford, and Davidson 1979, pg. 707.
2. UCSF Medical Center – document, Rev 2, Ver 1, 6/2013