DESCRIPTION/OVERVIEW

1. Purpose
HemaPrompt FG is composed of guaiac-impregnated paper mounted on a cardboard frame that permits sample applications to one side with development and interpretation from the reverse side. A buffer has been added to the paper to increase the pH of the gastric specimen, thus decreasing the likelihood of false negative test results, which may be seen with low pH gastric specimens. The stool or gastric aspirate specimen containing occult blood contacts the guaiac-impregnated paper and a pseudo-peroxidase reaction occurs when developing solution is brought into contact with the guaiac paper, by pulling the tab. The test paper will turn blue within 30 to 60 seconds in the presence of more than 2 mg hemoglobin per gram feces / 200 mcg hemoglobin per ml gastric juice.

2. Principle
The HemaPrompt FG test is based on the oxidation of phenolic compounds present in guaiac to quinones, resulting in the production of a blue color. If blood is present in the fecal or gastric sample, the heme portion of the hemoglobin molecule can function in a pseudoenzymatic manner, catalyzing the release of oxygen from the hydrogen peroxide, which in turn causes the oxidation of guaiac.

REFERENCES

AREAS OF REONSIBILITY
1. Point of Care Testing Fecal/Gastric Occult Blood Testing can be done on any inpatient or outpatient at University Hospital on receipt of an order from a physician or nursing staff designate.
2. Staff who have satisfied the required competency requirements may perform the testing, refer to the POCT Quality Assurance procedure.

PROCEDURE
1. Support
1.1. HemaPrompt FG test cards
1.2. Commercially available positive and negative Quality Control
1.3. Applicator sticks
1.4. Gloves
2. Ordering Information
2.1. Test cards are purchased from CDU.
2.2. The Point of Care department will order controls from purchasing.
3. Storage and Stability
3.1. Store HemaPrompt FG test cards at room temperature (10-22°C or 50-72°F) in original packaging.
3.1.1. As the storage temperature is increased to above 78.8 °F, the shelf life can be decreased to approximately 6-8 months.
3.1.2. The way to determine if the cards have a shortened expiration date is the failure of the internal controls to give the expected results upon test card development.

3.2. Protect cards from heat, sunlight, fluorescent light, UV radiation, humidity, volatile chemicals and gases.

3.3. Do not refrigerate or freeze.

3.4. Test cards are stable until the expiration date stamped on each test card label, after which time the cards should not be used.

4. External Quality Control

4.1. External quality control is performed by the Point of Care Testing Department (POCT) with each new lot or shipment.

4.2. The POCT department will document on each box the date of when QC was performed.

4.3. The POCT Department retains the quality control records for at least two years.

5. Internal Quality Control

5.1. Internal quality control is automatically performed on a test card each time a patient or external quality control sample is tested.

5.2. This control verifies that the test has been performed correctly and the card is functioning properly.

5.3. A blue checkmark (positive control) will appear through the clear plastic window after pulling the tab.

5.4. The background behind the blue checkmark should remain white, which serves as the negative control.

5.5. The internal quality control must be documented for every patient or external quality control sample tested.

5.6. If the positive control area does not produce the blue checkmark and/or the background behind the blue checkmark is not white, check the expiration date of all supplies involved and repeat the test with a new card.

5.7. If internal controls do not give expected results, patient results are not valid and should not be reported.

5.8. Contact the Point of Care Testing Office at 2-0980.

6. Patient Management

6.1. Patient Identification

6.1.1. Follow the hospital patient identification procedure.

6.2. Patient Preparation

6.2.1. The operator must describe to the patient the purpose and the steps of the procedure before testing can begin.

6.2.2. Fecal specimen

6.2.2.1. It is recommended that the patient be placed on a high residue diet for two days before collecting the stool specimen. Eliminate red meat, raw fruit, and vegetables high in peroxidase (broccoli, cauliflower, parsnips, turnips, red radishes, and horseradish). Drugs to avoid that could interfere with test results include the following: Vitamin C, alcohol, aspirin, Iron, Ibuprofen, Naproxin and other arthritis medicines. However, the special diet may be omitted initially with diet restrictions imposed upon re-testing of all positive results.

6.2.2.2. Stool samples from three consecutive bowel movements or three bowel movements closely spaced in time should be collected.

6.2.2.3. Collect specimens in a clean specimen collection container with a screw-capped top.
6.2.2.4. Alternately, the stool sample may be applied directly to the HemaPrompt FG test card after performing a rectal examination.

6.2.3. Gastric
6.2.3.1. Gastric contents obtained from a naso-gastric tube or vomitus may be applied directly to the HemaPrompt FG test card from the NG tube or by means of cotton tipped swab.

7. Specimen Collection and Handling
7.1. Standard precautions apply to all point of care tests.
7.2. Testing personnel should handle all patient samples as per the hospital’s Bloodborne Pathogen Exposure Control Plan procedure.
7.3. The Hemaprompt test requires only a small fecal specimen. The specimen is applied to the guaiac paper of the Hemaprompt test card as a thin smear using the applicator stick provided.
7.4. Slides containing samples may be stored for up to 5 days at room temperature (15° to 30°C) before developing.

8. Specimen Labeling
8.1. Specimens can be tested immediately at the patient’s bedside and discarded.
8.2. If immediate bedside testing does not occur, label the card following the hospital’s Specimen Labeling procedure.

9. Patient Testing
9.1. Open the Hemaprompt FG test card so both specimen windows are visible.
9.2. Apply the specimen to the test card windows
9.3. Fecal Specimen:
   9.3.1. Using Standard Precautions, collect a small fecal sample on the applicator stick provided in Hemaprompt FG kit.
   9.3.2. Apply a very thin smear of stool to the first window (do not completely cover window)
   9.3.3. Reuse applicator to obtain a second sample from a different part of the specimen.
   9.3.4. Apply a thin smear to the second window (do not completely cover window).
   9.3.5. Close the cover of the test card, avoiding finger pressure to card.
   9.3.6. Turn the card over to the back. Holding the card facing you, gently lift up the silver tab so that the white developer pad is exposed.
   9.3.7. While gripping the tab with thumb and finger of other hand, slowly and steadily pull the long silver tab all the way to the right and completely remove it from the test card.
   9.3.8. Wait a minimum of 1 minute but less than 3 minutes after pulling tab before interpreting the test result.
   9.3.9. Dispose of test card and applicator stick in biohazard container.
9.4. Gastric Specimen:
   9.4.1. Using Standard Precautions collect and apply a thin smear of specimen directly from NG tube or by means of cotton tipped applicator.
   9.4.2. Apply gastric specimen to both windows on the test card (do not completely cover window)
   9.4.3. Close the cover of the test card, avoiding finger pressure to card.
   9.4.4. Turn the card over to the back. Holding the card facing you, gently lift up the silver tab so that the white developer pad is exposed.
   9.4.5. While gripping the tab with thumb and finger of other hand, slowly and steadily pull the long silver tab all the way to the right and completely remove it from the test card.
   9.4.6. Wait a minimum 1 minute but less than 3 minutes after pulling tab before interpreting the test result.
   9.4.7. Dispose of test card and applicator stick in biohazard container.
10. Interpretation
   10.1. Positive - Any blue color in either specimen window. Look for any shade of blue, even if
   only a faint tinge.
   10.2. Negative - No detectable blue color on either window.
11. Reference Range
   11.1. A normal occult blood test is negative for blood.
12. Result Reference
   12.1. Patient results should be immediately reported in the permanent medical record.

**NORMAL RANGE:**
- A normal fecal screen for occult blood is negative.
- A normal gastric screen for occult blood is negative.

13. Limitations
   13.1. Stool samples should not be collected if the patient is experiencing menstrual bleeding,
   constipation bleeding, bleeding hemorrhoids or when rectal suppositories or medication is
   being used.
   13.2. Gastro-intestinal cancers, adenomas and ulcerations do not always bleed.
   13.3. Blood if present, may not be distributed uniformly in the fecal specimen. Consequently, a
   test result may be negative even when disease is present.
   13.4. HemaPrompt test cards are designed for preliminary screening as an aid to diagnosis.
   13.5. They are not intended as a replacement for other diagnostic procedures. Further testing and
   examination by the physician such as gastroscopy, sigmoidoscopy, barium enema, and x-ray
   studies need to be performed to determine the exact cause and source of the occult blood in
   the stool/gastric specimen.
   13.6. HemaPrompt test results are to be read 1 minute after pulling the gray tab. After 3 minutes,
   intensity of blue color may decrease or fade, and possibly appear negative.
   13.7. Gastric samples may occasionally appear green or blue when applied to the test card.
   13.7.1. When this occurs, care must be taken that only the formation of additional blue can be
   regarded as positive.

14. Interfering Substances
   14.1. Fecal specimens
   14.1.1. Red and rare meats, horseradish, raw fruits and vegetables such as broccoli,
   cauliflower, red radish, cantaloupe, parsnips and turnips, or other high peroxidase
   containing vegetables, which can cause false positive results.
   14.1.2. Certain medications such as aspirin, indomethacin, phenylbutazone, reserpine,
   corticosteroids and non-steroidal anti-inflammatory drugs can cause gastrointestinal
   bleeding and give false positive results. Iron containing compounds may cause false
   positive results.
   14.1.3. Vitamin C in dosages greater than 250 mg per day has been shown to cause false
   negative results.
   14.2. Gastric specimens
   14.2.1. All foods and medications listed above may cause false positive (or negative) results in
   gastric specimens.
   14.2.2. Cimetidine (Tagamet) may cause false positive results.

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SUMMARY OF CHANGES

RESOURCES/TRAINING

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DOCUMENT APPROVAL & TRACKING

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<td>Point of Care Testing Coordinator</td>
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<td>Consultant(s)</td>
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<td>Nursing Director</td>
<td>Sheena Ferguson, Chief Nursing Officer</td>
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<td>Medical Director</td>
<td>Matthew Luke, MD, PhD; Rapid Response Laboratory</td>
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<td>Erin Dole, Administrator, Professional &amp; Support Services</td>
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