Clinical Decision Support (CDS) Content and Health Level 7 (HL7)-Compliant Knowledge Artifacts (KNARTs)

Gastroenterology: Colorectal Cancer Risk Clinical Content White Paper

Department of Veterans Affairs (VA)

Knowledge Based Systems (KBS)
Office of Informatics and Information Governance (OIIG)
Clinical Decision Support (CDS)

Clinical Decision Support (CDS) Content and Health Level 7 (HL7)-Compliant Knowledge Artifacts (KNARTs): Gastroenterology: Colorectal Cancer Risk Clinical Content White Paper

by Department of Veterans Affairs (VA), , , , and

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Table 1. Relevant KNART Information: Gastroenterology: Colorectal Cancer Risk KNARTs

Gastroenterology KNART	Associated CLIN
Colorectal Cancer Risk: Colorectal Cancer Screening, Diagnostics, and Surveillance – Event Condition Action (ECA) Rule	CLIN0003AB
Colorectal Cancer Risk: Colorectal Cancer Risk – Documentation Template/Consult Request	CLIN0005AB
Colorectal Cancer Risk: Personal History of Colon Cancer or Polyp – Order Set	CLIN0004AB
Colorectal Cancer Risk: Family History of Colon Cancer, Colon Cancer Syndrome, or Advanced Adenoma – Order Set	CLIN0004AB
Colorectal Cancer Risk: Inflammatory Bowel Disease – Order Set	CLIN0004AB
Colorectal Cancer Risk: Iron Deficiency – Order Set	CLIN0004AB
Colorectal Cancer Risk: Rectal Bleeding, Positive Screening Test - Order Set	CLIN0004AB
Colorectal Cancer Risk: Average Risk Screening – Order Set	CLIN0004AB
Colorectal Cancer Risk: Fecal Immunochemical Test (FIT) – Order Set	CLIN0004AB
Colorectal Cancer Risk: Other Issues – Order Set	CLIN0004AB
Colorectal Cancer Risk - Composite/Consult Request	N/A

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VA Subject Matter Expert (SME) Panel

Table 2. VA Subject Matter Expert (SME) Panel

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Introduction

The VA is committed to improving the ability of clinicians to provide care for patients while increasing quality, safety, and efficiency. Recognizing the importance of standardizing clinical knowledge in support of this goal, VA is implementing the Health Level 7 (HL7) Knowledge Artifact Specification for a wide range of VA clinical use cases. Knowledge Artifacts, referred to as (KNARTs), enable the structuring and encoding of clinical knowledge so the knowledge can be integrated with electronic health records to enable clinical decision support.

The purpose of this Clinical Content White Paper (CCWP) is to capture the clinical context and intent of KNART use cases in sufficient detail to provide the KNART authoring team with the clinical source material to construct the corresponding knowledge artifacts using the HL7 Knowledge Artifact Specification. This paper has been developed using material from a variety of sources: VA artifacts, clinical practice guidelines, evidence in the body of medical literature, and clinical expertise. After reviewing these sources, the material has been synthesized and harmonized under the guidance of VA subject matter experts to reflect clinical intent for this use case.

Unless otherwise noted, items within this white paper (e.g., documentation template fields, orderable items, etc.) are chosen to reflect the clinical intent at the time of creation. To provide an exhaustive list of all possible items and their variations is beyond the scope of this work. Note that clinical decision support tools do not substitute for clinical judgement, evaluation, and decision making.

Conventions Used

Conventions used within the knowledge artifact descriptions include:

<obtain>: Indicates a prompt to obtain the information listed

- If possible, the requested information should be obtained from the underlying system(s). Otherwise, prompting the user for information may be required
- Default Values: Unless otherwise noted, <obtain> indicates to obtain the most recent observation. It is recognized that this default time-frame value may be altered by future implementations

[...]: Square brackets enclose explanatory text that indicates some action on the part of the clinical user, or general guidance to the clinical or technical teams. Examples include, but are not limited to:

> [Begin ...], [End ...]: Indicates the start and end of specific areas to clearly delineate them for technical purposes.
>
> [Activate ...]: Initiates another knowledge artifact or knowledge artifact section.
>
> [Section Prompt: ...]: If this section is applicable, then the following prompt should be displayed to the user.
>
> [Section Selection Behavior: ...]: Indicates technical constraints or considerations for the selection of items within the section.
>
> [Attach: ...]: Indicates that the specified item should be attached to the documentation template if available.
>
> [Link: ...]: Indicates that rather than attaching an item, a link should be included in the documentation template.
>
> [Clinical Comment: ...]: Indicates clinical rationale or guidance.
>
> [Technical Note: ...]: Indicates technical considerations or notes.
>
> [If ...]: Indicates the beginning of a conditional section.
>
> [Else, ...]: Indicates the beginning of the alternative branch of a conditional section.
>
> [End if ...]: Indicates the end of a conditional section.

#: Indicates items that should be selected based upon the section selection behavior.

Chapter 1. Gastroenterology: Colorectal Cancer Risk

1.1. Clinical Context

[Begin Clinical Context.]

Screening techniques have greatly decreased the incidence of colon cancer (Shaukat, 2013). Assisting clinicians in ordering the appropriate screening modality and screening interval requires authoritative, evidence-based decision support. Implementing such decision support across the VA could save lives, decrease morbidity, and manage constrained resources in a cost-effective manner. Although surveillance colonoscopy may be warranted based on numerous potential indications, emphasis should be placed on identifying veterans for whom screening colonoscopy is recommended based on age or for whom surveillance is recommended based on personal or family history of neoplasia or the most significant risk factors for colorectal cancer (Rex, 2017).

[Clinical Comments: Intended to identify patients for whom colorectal cancer screening, diagnostic evaluation, or surveillance is recommended, facilitate discussion between the primary care provider and the patient regarding risk factors and screening preferences, support decision-making and documentation related to the screening discussion, and promote appropriate ordering based on patient-specific risk factors and preferences.]

Table 1.1. Clinical Context Domains

Target User	Primary Care Provider
Patient	Adult
Priority	Routine unless otherwise identified
Specialty	Primary Care
Location	Outpatient

[End Clinical Context.]

1.2. Knowledge Artifacts

[Begin Knowledge Artifacts.]

This section describes the CDS knowledge artifacts that are part of the Gastroenterology: Colorectal Cancer Risk group, and include:

A Composite/Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

- High-level, encompassing artifact
- Relies upon the documentation template and order set artifacts

An Event-Condition-Action (ECA) Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART

- Rule logic that describes the behavior of the consult
- Actions may include activating documentation templates or order sets

A Documentation Template Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

- Documents the information provided by the referring provider
- Includes logic for appropriate display of documentation sections

Order Sets: Gastroenterology: Colorectal Cancer Risk – Average Risk Screening, Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma, Iron Deficiency, Rectal Bleeding or Positive Screening Test, Fecal Immunochemical Test (FIT), Personal History of Colon Cancer or Polyp, Inflammatory Bowel Disease, Other Issues KNARTs

- Orderable items associated with a consult request
- Includes logic for appropriate display of the order set

[End Knowledge Artifacts.]

Chapter 2. Composite/Consult Request: Colorectal Cancer Risk

[Begin Composite/Consult Request: Colorectal Cancer Risk.]

2.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

2.2. Consult Request

[Begin Consult Request.]

[Section Selection Prompt: Only applicable for consult order to an outside facility.]

[Section Selection Prompt: To determine appropriate Gastroenterology Colorectal Cancer Risk, please provide the following information.]

Reason for Consult: Colorectal Cancer Risk Assessment

Consult Specialty: Gastroenterology

[Section Prompt: Goal of Consult.]

[Section Selection Behavior: Required. Select one.]

Return to primary care provider (PCP) for therapy

Start treatment and return to PCP for follow up and maintenance

Start treatment, monitor for effect and when on stable therapy return to PCP

Treat as long as necessary (or indefinitely)

Priority: Routine unless otherwise specified

<obtain> Referring Physician

<obtain> Referring Physician Contact Information

[Technical Note: Activate Documentation Template.]

[End Consult Request.]

[End Composite/Consult Request: Colorectal Cancer Risk.]

Chapter 3. Event Condition Action (ECA) Rule: Colorectal Cancer Risk

[Begin Event Condition Acton (ECA) Rule: Colorectal Cancer Risk.]

3.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

3.2. Event Condition Action (ECA) Rule: Colorectal Cancer Screening, Diagnostics and Surveillance – General

[Begin Event Condition Action (ECA) Rule: Colorectal Cancer Screening, Diagnostics and Surveillance – General.]

Event

[Begin Event.]

1. Any access of the patient record
2. System run on routine frequency

[Technical Note: These events apply to all subbranches.]

[End Event.]

Conditions

[Begin Conditions.]

Include adult outpatients who meet any of the following criteria:

1. Have a first-degree family member with a history of colorectal cancer or advanced adenoma
2. Have a family or personal history of Lynch Syndrome or familial colorectal cancer syndrome type X
3. Have a personal history of colorectal cancer or advanced adenoma
4. Are age >= 50.

Exclude patients who meet any of the following criteria:

1. Who have had a total colectomy
2. Are receiving hospice or end-of-life care
3. Have a documented decision to stop colorectal cancer screening

4. Are age >= 85 years.

[Technical Note: The decision to stop screening can be documented in the documentation template-consult request.]

[Technical Note: Additional criteria are included in the specific sub-branches.]

[End Conditions.]

Actions

[Begin Actions.]

[Technical note: The actions are determined in the subbranches.]

[End Actions.]

[End Event Condition Action (ECA) Rule: Colorectal Cancer Screening, Diagnostics and Surveillance – General.]

3.3. Colorectal Cancer Screening: Average Risk

[Begin Colorectal Cancer Screening: Average Risk.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

Include adult outpatients aged >= 50 years who have not had any of the following:

1. Flexible sigmoidoscopy within 5 years
2. Colonoscopy within 10 years
3. Computed tomography colonography within 5 years
4. Guaiac-based fecal occult blood test with high test sensitivity for cancer within 1 year
5. Fecal immunochemical test (FIT) with high test sensitivity for cancer within 1 year
6. FIT-Stool Deoxyribonucleic Acid (DNA) testing within 3 years

Exclude patients who meet any of the following criteria:

1. Have any first-degree relative diagnosed with colorectal cancer or advanced adenoma
2. Have a personal history of colorectal cancer or other colorectal neoplasia
3. Are known to have Lynch syndrome or have a first-degree relative with Lynch Syndrome
4. Have a family history of familial colorectal cancer syndrome type X

5. Have a personal history of inflammatory bowel disease

6. Had a positive result on the most recent imaging colorectal cancer screening test (double-contrast barium enema or computed tomography colonography) and have not had a follow-up colonoscopy

7. Had an abnormal result on the most recent flexible colonoscopy colorectal cancer screening and have not had a follow-up colonoscopy

8. Had a positive result on the most recent stool-based colorectal cancer screening test (guaiac-based fecal occult blood test, fecal immunochemical test, or stool DNA test) and have not had a follow-up colonoscopy

9. Had a finding of inadequate bowel prep on most recent colonoscopy.

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colorectal cancer screening candidate

2. Open Documentation Template/Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk - Average Risk Screening KNART

4. Make sure guideline recommendations are available to care team

[End Actions.]

[End Colorectal Cancer Screening: Average Risk.]

3.4. Colorectal Cancer Screening: Colorectal Cancer or Advanced Adenoma Diagnosed in Multiple First-Degree Relatives or in One First-Degree Relative before Age 60 Years, Familial Colorectal Cancer Syndrome Type X, or Lynch Syndrome

[Begin Colorectal Cancer Screening: Colorectal Cancer or Advanced Adenoma Diagnosed in Multiple First-Degree Relatives or in One First-Degree Relative before Age 60 Years, Familial Colorectal Cancer Syndrome type X, or Lynch Syndrome.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Notes: Include adult outpatients who have never had a colonoscopy, who did not receive a colonoscopy within the timeframe specified for re-scoping, or do not have a set timeframe for re-scoping who meet at least one of the following criteria]:

1. Have a family history of familial colorectal cancer syndrome type X and are at or older than the age 10 years younger than the age at diagnosis of the youngest diagnosed relative.

2. Have Lynch Syndrome or have a first-degree relative with Lynch Syndrome and are at or older than the patient's documented screening start age; if the screening start ages is not documented, use the age 5 years younger than the age at diagnosis of the youngest diagnosed relative or age 20 years whichever is youngest.

3. Have two or more first-degree relatives diagnosed with colorectal cancer or advanced adenomas and are at or older than the age 10 years younger than the age at diagnosis of the youngest diagnosed relative or age >=40 years, whichever is youngest.

4. Have one first-degree relative diagnosed with colorectal cancer or advanced adenoma at age < 60 years and are at or older than the age 10 years younger than the age at diagnosis of the affected relative or are >= 40 years, whichever is youngest.

[Technical Note: Providers have the option of documenting the screening start age for patients with a personal or family history of Lynch Syndrome in the documentation template-consult request form.]

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate

2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk – Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma KNART

4. Make sure guideline recommendations are available to care team.

[End Actions.]

[End Colorectal Cancer Screening: Colorectal Cancer or Advanced Adenoma Diagnosed in Multiple First-Degree Relatives or in One First-Degree Relative before Age 60 Years, Family Colon Cancer Syndrome X, or Lynch Syndrome.]

3.5. Colorectal Cancer Screening: One First-Degree Relative Diagnosed with Colorectal Cancer or Advanced Adenoma at Age 60 Years or Older

[Begin Colorectal Cancer Screening: One First-Degree Relative Diagnosed with Colorectal Cancer or Advanced Adenoma at Age 60 Years or Older.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Note: Include adult outpatients aged >= 40 years with exactly one first-degree relative diagnosed with colorectal cancer or advanced adenoma if the affected relative was diagnosed at age >= 60 years and the patient has not had any of the following:]

1. Flexible sigmoidoscopy within 5 years
2. Colonoscopy within 10 years
3. Computed tomography colonography within 5 years
4. Guaiac-based fecal occult blood test with high test sensitivity for cancer within 1 year
5. Fecal immunochemical test (FIT) with high test sensitivity for cancer within 1 year
6. FIT-Stool DNA testing within 3 years.

Exclude patients who meet any of the following criteria:

1. Have multiple first-degree relatives diagnosed with colorectal cancer or advanced adenoma
2. Have one first-degree relative diagnosed with colorectal cancer or advanced adenoma at age < 60 years
3. Have a personal history of colorectal cancer or other colorectal neoplasia
4. Are known to have Lynch syndrome or have a first-degree relative with Lynch Syndrome
5. Have a family history of familial colorectal cancer syndrome type X
6. Have a personal history of inflammatory bowel disease
7. Had an abnormal result on the most recent imaging colorectal cancer screening test (double-contrast barium enema or computed tomography colonography) and have not had a follow-up colonoscopy
8. Had a positive result on the most recent flexible colonoscopy colorectal cancer screening and have not had a follow-up colonoscopy
9. Had a positive result on the most recent stool colorectal cancer screening test (guaiac-based fecal occult blood test, fecal immunochemical test, or stool DNA test) and have not had a follow-up colonoscopy
10. Had a finding of inadequate bowel prep on most recent colonoscopy.

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colorectal cancer screening candidate
2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART
3. Open Order Set: Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma KNART
4. Open Order Set: Fecal Immunochemical Test (FIT)

5. Make sure guideline recommendations are available to care team.

[End Actions.]

[End One First-Degree Relative Diagnosed with Colorectal Cancer or Advanced Adenoma at Age 60 Years or Older.]

3.6. Colorectal Cancer Screening: Repeat Colonoscopy Indicated

[Begin Colorectal Cancer Screening: Repeat Colonoscopy Indicated.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begins Conditions.]

[Technical Note: Include adult outpatients whose most recent colorectal cancer screening colonoscopy results indicated that the bowel prep was inadequate where either the timeframe specified for rescoping the patient has been exceeded or no timeframe for rescoping the patient was indicated.]

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate

2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk – Other Issues

4. Make sure guideline recommendations are available to care team.

[End Actions.]

[End Colorectal Cancer Screening: Repeat Colonoscopy Indicated.]

3.7. Colorectal Cancer Diagnosis: Positive Imaging or Endoscopy Screening Test

[Begin Colorectal Cancer Diagnosis: Positive Imaging or Endoscopy Screening Test.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Note: Include adult outpatients who meet the following criteria:]

1. Most recent colorectal cancer screening imaging tests (double-contrast barium enema or computed tomography colonography) were positive and no follow-up colonoscopy completed

2. Most recent flexible sigmoidoscopy colorectal cancer screening tests were positive, and no follow-up colonoscopy completed

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate

2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk – Rectal Bleeding or Positive Screening Test

4. Make sure guideline recommendations are available to care team.

[End Actions.]

[End Colorectal Cancer Diagnosis: Positive Imaging or Endoscopy Screening Test.]

3.8. Colorectal Cancer Diagnosis: Positive Colorectal Cancer Screening Stool Test

[Begin Colorectal Cancer Diagnosis: Positive Colorectal Cancer Screening Stool Test.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Note: Include adult outpatients who meet the following criteria:]

1. Most recent colorectal cancer screening stool-based tests (guaiac-based fecal occult blood test, fecal immunochemical test, or stool DNA test) were positive who have not yet had a follow-up colonoscopy

2. Significant lower gastrointestinal bleeding with a procedure request for colonoscopy per provider documentation with the requested colonoscopy not yet received.

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate
2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART
3. Open Order Set: Gastroenterology: Colorectal Cancer – Rectal Bleeding or Positive Screening Test
4. Make sure guideline recommendations are available to care team.

[End Colorectal Cancer Diagnosis: Positive Colorectal Cancer Screening Stool Test.]

3.9. Colorectal Cancer Surveillance: Personal History of Colon Cancer or Polyp

[Begin Colorectal Cancer Surveillance: Personal History of Colon Cancer or Polyp.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Note: Include adult outpatients who meet the following criteria and either the timeframe specified for rescoping the patient has been exceeded or no timeframe for rescoping the patient was set:]

1. No repeat colonoscopy after piecemeal removal of a polyp > 15 mm in size where the polyp is either flat or sessile and either serrated or adenomatous
2. No repeat colonoscopy after recent colonoscopy with findings of colorectal neoplasia:

    [Technical Note: Include the following in a table with the appropriate timeframes.]

    a. > 10 adenomas

    b. 3–10 adenomas < 10 mm in size

    c. >= 1 adenoma with villous features

    d. >= 1 adenoma with high-grade dysplasia

    e. no adenomas on first surveillance colonoscopy follow-up of prior finding of high-risk adenoma

    f. no adenomas on first surveillance colonoscopy follow-up of prior finding of low-risk adenoma

    g. >= 1 tubular adenoma >= 10 mm in size

h. 1–2 tubular adenomas < 10 mm in size with inadequate bowel preparation

i. 1–2 tubular adenomas < 10 mm in size with no cecal intubation

j. 1–2 tubular adenomas < 10 mm in size on first surveillance colonoscopy follow-up of prior finding of adenomas

k. no polyps >= 10 mm with 1–2 tubular adenomas with low-grade dysplasia and/or >= 1 serrated polyp without cytological dysplasia

l. >= 1 sessile serrated polyp that either is >= 10 mm in size or has cytological dysplasia

m. distal hyperplastic polyps < 10 mm in size

3. No 1-Year Follow-Up Colonoscopy after Colorectal Cancer Resection Clearing

4. No 3-Year Surveillance Colonoscopy after First Follow-Up for Colorectal Cancer Resection

5. No 5-Year Surveillance Colonoscopy after Second Follow-Up for Colorectal Cancer Resection

6. No repeat colonoscopy within 5 years of most recent ongoing colorectal cancer surveillance colonoscopy, providing the patient record does not indicate that surveillance colonoscopy should be discontinued.

[Technical Note: Providers have the option of indicating that post-resection surveillance should be discontinued in the documentation template—consult request.]

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate

2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk– Personal history of colon cancer or polyp KNART

4. Make sure guideline recommendations are available to care team.

[End Actions.]

[End Colorectal Cancer Surveillance: Personal History of Colon Cancer or Polyp.]

3.10. Colorectal Cancer Surveillance: Inflammatory Bowel Disease

[Begin Colorectal Cancer Surveillance: Inflammatory Bowel Disease.]

Events

[Begin Events.]

[Technical Note: Events are addressed in the main branch of the rule.]

[End Events.]

Conditions

[Begin Conditions.]

[Technical Note: Include adult outpatients diagnosed with inflammatory bowel disease who have never had a colonoscopy and are at or older than the documented surveillance start age (see section 4.14 of the documentation template) or who did not receive a colonoscopy within the timeframe specified for rescoping or did not have a timeframe for rescoping set. If a surveillance start age has not been set, use the age at diagnosis plus 8 years as the surveillance start age.]

[Technical Note: Providers have the option of setting the surveillance start age in the documentation template-consult request form.]

[End Conditions.]

Actions

[Begin Actions.]

1. Identify the patient as a colonoscopy candidate

2. Open Documentation Template—Consult Request: Gastroenterology: Colorectal Cancer Risk KNART

3. Open Order Set: Gastroenterology: Colorectal Cancer Risk Inflammatory Bowel Disease Surveillance KNART

4. Make sure guideline recommendations are available to care team.

[End Actions.]

[End Colorectal Cancer Surveillance: Inflammatory Bowel Disease]

[End Event Condition Acton (ECA) Rule: Colorectal Cancer Risk]

Chapter 4. Documentation Template/ Consult Request: Colorectal Cancer Risk

[Begin Documentation Template: Colorectal Cancer Risk.]

[Technical Note: This documentation template/consult request should be made available for clinical providers caring for patients meeting the criteria for any branch of ECA Rule KNART and at provider request.]

4.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

4.2. Reason for Presentation

[Begin Reason for Presentation.]

[Section Prompt: Reason for Presentation.]

[Technical Note: This section should be made available for all clinical users of this documentation template/consult request.]

<obtain> Chief Complaint

<obtain> Additional Details

[End Reason for Presentation.]

4.3. Reason for Consult

[Begin Reason for Consult.]

[Section Prompt: Reason for Consult.]

[Section Selection Behavior: Any or none. Optional.]

[Technical Note: This section should be made available for all clinical users of this documentation template/consult request.]

<obtain> Age (Years)

Positive Finding on Most Recent Stool Test

Abnormal Finding on Most Recent Colorectal Imaging

Abnormal Finding on Most Recent Flexible Sigmoidoscopy

Abnormal Finding on Most Recent Colonoscopy

Personal History of Colorectal Polyp

Personal History of Colorectal Cancer

Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma

Inflammatory Bowel Disease

Gastrointestinal Bleeding

Iron Deficiency Anemia

<obtain> Additional Details

[Technical Note: Although iron deficiency anemia has been intentionally omitted from ECA Rule: Gastroenterology: Colorectal Cancer Risk, it may be a symptom of colon cancer. It must be considered in combination with other clinical factors, such as unintentional weight loss, changes in bowel habits, visible blood in the stool, and recent hemoglobin lab test results.]

[Section Prompt: Iron deficiency anemia may be a symptom of colon cancer. It must be considered in combination with other clinical factors, such as unintentional weight loss, changes in bowel habits, visible blood in the stool, and recent hemoglobin lab test results.]

[End Reason for Consult.]

4.4. Colorectal Cancer Screening History: Average Risk Patients

[Begin Colorectal Cancer Screening: Average Risk.]

[Technical Note: This section should be made available for clinical providers caring for patients without any risk factors selected in Section 4.3 - Reason for Consult and for clinical providers caring for patients meeting criteria for the Average Risk Screening branch of the ECA Rule Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

[Section Prompt: Test Results]

Guaiac-Based Fecal Occult Blood Test

<obtain> Date

Fecal Immunochemical Test

<obtain> Date

Stool DNA Test

<obtain> Date

Double-Contrast Barium Enema

<obtain> Date

Computed Tomography (CT) Colonography

<obtain> Date

Flexible Sigmoidoscopy

<obtain> Date

Colonoscopy

<obtain> Date

No Prior Screening

<obtain> Additional Details

[End Colorectal Cancer Screening: Average Risk.]

4.5. Colorectal Cancer Diagnostics History: Positive Stool Test

[Begin Colorectal Cancer Screening Diagnostics: Follow-up Positive Stool Test.]

[Technical Note: This section should be made available only if Positive Finding on Most Recent Stool Test was selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the Positive Colorectal Cancer Screening Stool Tests branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

[Section Prompt: Stool Screening Test Results]

Guaiac-Based Fecal Occult Blood Test

<obtain> Date

Fecal Immunochemical Test

<obtain> Date

Stool DNA Test

<obtain> Date

<obtain> Additional Details

[End Colorectal Cancer Screening Diagnostics: Follow-up Positive Stool Test.]

4.6. Colorectal Cancer Diagnostics History: Positive Imaging Screening Test

[Begin Colorectal Cancer Diagnostics: Positive Imaging Screening Test.]

[Section Prompt: Positive Imaging Screening Test Results]

[Technical Note: This section should be made available only if Abnormal Finding on Most Recent Colorectal Imaging was selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the Positive Imaging or Endoscopy Screening Test branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

[Link: Links should be attached automatically.]

[Section Selection Behavior: Any or none. Optional]

Double-Contrast Barium Enema

<obtain> Date

<obtain> Adequacy of Bowel Preparation

Adequate

Inadequate

[Link: Link to Full Report and Images.]

Computed Tomography

<obtain> Date

<obtain> Adequacy of Bowel Preparation

Adequate

Inadequate

[Link to Full Report and Images.]

<obtain> Additional Details

[End Colorectal Cancer Diagnostics: Positive Imaging Screening Test.]

4.7. Colorectal Cancer Evaluation History: Abnormal Flexible Sigmoidoscopy

[Begin Follow-up Abnormal Flexible Sigmoidoscopy.]

[Section Prompt: Follow-up Abnormal Flexible Sigmoidoscopy.]

[Technical Note: This section should be made available only if Abnormal Finding on Most Recent Flexible Sigmoidoscopy was selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the Colorectal Cancer Diagnosis: Positive Imaging or Endoscopy Screening Test branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

[Link: Links should be attached automatically.]

Flexible Sigmoidoscopy

<obtain> Date

<obtain> Adequacy of Bowel Preparation

Adequate

Inadequate

[Link to Full Report and Images.]

<obtain> Additional Details

[End Follow-up Abnormal Flexible Sigmoidoscopy.]

4.8. Colorectal Cancer Evaluation History: Abnormal Colonoscopy

[Begin Follow-up Abnormal Colonoscopy.]

[Section Prompt: Follow-up Abnormal Colonoscopy]

[Technical Note: This section should be made available only if Abnormal Finding on Most Recent Colonoscopy was selected in the Section 4.3 - Reason for Consult or if the patient meets criteria for the Colorectal Cancer Diagnosis: Positive Imaging or Endoscopy Screening Test branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

Most Recent Colonoscopy

<obtain> Date

[Link: Link to Full Report and Images.]

[Section Prompt: If the Colonoscopy Report Is Not Available, please provide as much Information as possible regarding key findings, including: Adequacy of Bowel Preparation, Depth of Insertion, Any Abnormalities (e.g., Polyps or Masses), and Any Sedation Requirements for Patient.]

<obtain> Additional Details

[End Follow-up Abnormal Colonoscopy.]

4.9. Personal History of Colorectal Polyp

[Begin Personal History of Colorectal Polyp.]

[Section Prompt: Personal History of Colorectal Polyp.]

[Technical Note: This section should be made available only if Personal History of Colorectal Polyp was selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the: Personal History of Cancer or Polyp branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

[Link: Links should be attached automatically.]

[Technical Note: The following form components should be provided as auto populated information for all exams in this section, to be displayed only if the information is available and can be used to auto populate these fields for the given exam:]

1. No Polyps
2. Hyperplastic Polyps < 10 mm in Rectum or Sigmoid
3. >= 1 and =< 2 Tubular Adenomas < 10 mm
4. >= 1 and =< 10 Tubular Adenomas
5. > 10 Adenomas
6. >= 1 Tubular Adenomas >= 10 mm
7. >= 1 Villous Adenomas
8. Adenoma with High-Grade Dysplasia
9. Serrated Lesions
    a. >= 1 Sessile Serrated Polyp < 10 mm without Dysplasia
    b. >= 1 Sessile Serrated Polyp >= 10 mm
    c. Sessile Serrated Polyp with Dysplasia
    d. Traditional Serrated Adenoma
10. Serrated Polyposis Syndrome.

[Technical Note: Users should not be prompted to complete these form components manually; they should appear only if they are auto populated with existing information. These form components are derived from Table 1 in Lieberman 2012, which should be cited if the form components are displayed.]

[Section Prompt: Baseline Pathology.]

<obtain> Date

[Link: Link to Full Report and Images.]

<obtain> Additional Details

[Section Prompt: Baseline Polypectomy.]

<obtain> Date

<obtain> Additional Details

[Section Prompt: Baseline Colonoscopy.]

<obtain> Date

[Link: Link to Full Report and Images.]

[Section Prompt: First Surveillance Colonoscopy Performed?]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: Second Surveillance Colonoscopy Preformed?]

[Technical Note: Second Surveillance Colonoscopy question should be displayed only if the answer to the First Surveillance Colonoscopy Performed is yes.]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: Surveillance Completed?]

[Technical Note: Surveillance Completed question should be displayed only if the answer to Second Surveillance Colonoscopy Performed is yes.]

Yes

<obtain> Additional Details

No

[End Personal History of Colorectal Polyp.]

4.10. Personal History of Colorectal Cancer

[Begin Personal History of Colorectal Cancer.]

[Section Prompt: Follow-up Personal History of Colorectal Cancer.]

[Technical Note: This section should be made available only if Personal History of Colorectal Cancer is selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the Colorectal Cancer Screening: Personal History of Cancer or Polyp branch of ECA Rule: Gastroenterology: Colorectal Cancer Screening, Diagnostics, and Surveillance KNART.]

<obtain> Diagnosis

<obtain> Date of Diagnosis

[Section Prompt: Colorectal Cancer Resection Performed?]

Yes

<obtain> Date

No

[Section Prompt: Colorectal Cancer Resection Clearing Colonoscopy Performed?]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: First Follow-up Colonoscopy Performed?]

[Section Prompt: Recommended surveillance interval: Follow-Up Colonoscopy at 1 Year after Colorectal Cancer Resection Clearing.]

[Technical Note: First Follow-up Colonoscopy question should be displayed only if the answer to Colorectal Cancer Resection Clearing Colonoscopy Performed is yes.]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: Second Surveillance Colonoscopy Performed?]

[Section Prompt: Recommended surveillance interval: Follow-up Colonoscopy at 3 Years after First Surveillance Colonoscopy for Colorectal Cancer Resection.]

[Technical Note: Second Surveillance Colonoscopy question should be displayed only if the answer to First Follow-up Colonoscopy Performed is yes.]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: Third Surveillance Colonoscopy Performed?]

[Section Prompt: Recommended surveillance interval: Follow-up Colonoscopy at 5 Years after Second Surveillance Colonoscopy for Colorectal Cancer Resection.]

[Technical Note: Third Surveillance Completed question should be displayed only if the answer to Second Year Surveillance Colonoscopy Performed is yes.]

Yes

<obtain> Date

[Link: Link to Full Report and Images.]

No

[Section Prompt: Subsequent Surveillance Completed?]

[Section Prompt: Recommended surveillance interval: Follow-Up Colonoscopy at 5 Years after Third Surveillance Colonoscopy for Colorectal Cancer Resection.]

[Technical Note: Subsequent Surveillance Completed question should be displayed only if the answer to Third Surveillance Colonoscopy Performed is yes.]

Yes

<obtain> date

[Link: Link to Full Report and Images]

[Technical Note: include date and links for all subsequent surveillance colonoscopies.]

No

[Section Prompt: Surveillance Completed?]

[Technical Note: Surveillance Completed question should be displayed only if the answer to Third Surveillance Colonoscopy Performed? is Yes.]

Yes

No

<obtain> Additional Details

[End Personal History of Colorectal Cancer.]

4.11. - Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma

[Begin Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma.]

[Technical Note: This section should be made available only if Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma is selected in Section 4.3 - Reason for Consult Risk Assessment section or if the patient meets criteria for the Colorectal Cancer Screening: Colorectal Cancer or Advanced Adenoma Diagnosed in Multiple First-Degree Relatives or in One First-Degree Relative before Age 60 Years, Family Colon Cancer Syndrome X, or Lynch Syndrome branch or the Colorectal Cancer Screening: One First-Degree Relative Diagnosed with Colorectal Cancer or Advanced Adenoma at Age 60 Years or Older branch of the ECA Rule: Gastroenterology: Colorectal Cancer Risk KNART.]

[Technical Note: Please include a citation for Table 5 in Rex 2017 and for Table 10 in Giardiello 2014, which are the sources of the form components in this section.]

[Section Prompt: Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma?]

Patient Personal or Family History of Lynch Syndrome?

<obtain> Youngest Age at Diagnosis of Youngest Affected individual (Years)

<obtain> Screening Start Age (Years) for this patient.

[Technical Note: Display “Screening Start Age (Years)” if “Youngest Age at Diagnosis (Years)” is >= 25.]

Family History of Colon Cancer Syndrome Type X?

<obtain> Youngest Age at Diagnosis of Youngest Affected Individual (Years)

[Section Prompt: One First-Degree Relative Diagnosed with Colorectal Cancer or Advanced Adenoma?]

<obtain> Age at Diagnosis (Years)

Multiple First-Degree Relatives Diagnosed with Colorectal Cancer or Advanced Adenoma

<obtain> Youngest Age at Diagnosis of Youngest Affected Individual (Years)

<obtain> Additional Details

[End Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma.]

4.12. Inflammatory Bowel Disease

[Begin Inflammatory Bowel Disease.]

[Technical Note: This section should be made available only if Inflammatory Bowel Disease was selected in Section 4.3 - Reason for Consult or if the patient meets criteria for the Colorectal Cancer Screening: Inflammatory Bowel Disease branch of ECA Rule: Gastroenterology: Colorectal Cancer Risk KNART.]

[Link: Links should be attached automatically.]

[Technical Note: The Diagnosis field below should be auto populated with either “ulcerative colitis” or “Crohn’s disease” if that information is available for the patient.]

<obtain> Diagnosis

<obtain> Date of Diagnosis

<obtain> Date of most recent colonoscopy

[Link: Link to Full Report and Images.]

[Technical Note: The following form components should be provided as auto populated information, to be displayed only if the information is available and can be used to auto populate these fields:

[Section Prompt: Was Inflammatory Bowel Disease (IBD) dysplasia found on colonoscopy?]

No dysplasia

Low grade dysplasia

High grade dysplasia

[Section Prompt: Were polyps found on the most recent colonoscopy?]

No Polyps

Hyperplastic Polyps < 10 mm in Rectum or Sigmoid

>= 1 and =< 2 Tubular Adenomas < 10 mm

>= 1 and =< 10 Tubular Adenomas

> 10 Adenomas

>= 1 Tubular Adenomas >= 10 mm

>= 1 Villous Adenoma

Adenoma with High-Grade Dysplasia

Serrated Lesions

>= 1 Sessile Serrated Polyp < 10 mm without Dysplasia

>= 1 Sessile Serrated Polyp >= 10 mm

Sessile Serrated Polyp with Dysplasia

Traditional Serrated Adenoma

Serrated Polyposis Syndrome.

[Technical Note: Users should not be prompted to complete the form components above manually; they should appear only if they are auto populated with existing information. These form components are derived from Table 1 in Lieberman 2012, which should be cited if the form components are displayed.]

[Section Prompt: Surveillance Start Age]

<obtain> Surveillance Start Age (Years)

<obtain> Additional Details

[End Inflammatory Bowel Disease.]

4.13. Additional Pertinent History

[Begin Pertinent History]

4.13.1. Signs and Symptoms

[Begin Signs and Symptoms.]

[Section Prompt: Signs and Symptoms.]

[Section Selection Behavior: Any or None. Optional.]

Unintentional Weight Loss

Change in Bowel Habits

Visible Blood in Stool

Significant Lower Tract Bleeding

Minor Lower Tract Bleeding

Occult Blood

Abdominal Pain

Anemia

<obtain> Additional Details

[End Signs and Symptoms.]

4.13.2. Diagnostic Procedures

[Begin Diagnostic Procedures]

[Section Prompt: Prior Colonoscopies?]

[Technical Note: All prior colonoscopies should be provided automatically, with the date and a link for each colonoscopy.]

<obtain> Date

[Link: Link to Full Report and Images]

[Section Prompt: Prior Esophagogastroduodenoscopies?]

[Technical Note: All prior esophagogastroduodenoscopies should be provided automatically, with the date and a link for each esophagogastroduodenoscopy.]

<obtain> Date

[Link: Link to Full Report and Images]

Other Diagnostic Procedures

<obtain> Additional Details

[End Diagnostic Procedures.]

4.13.3. Medical History

[Begin Medical History.]

[Link: Links should be attached automatically.]

[Technical Note: This section should be auto populated if the information is available for the patient.]

<obtain> Relevant Medical History

[Link: Link to Full Detail in Patient Record]

[End Medical History.]

4.13.4. Surgical History

[Begin Surgical History.]

[Link: Links should be attached automatically.]

[Technical Note: This section should be auto populated if the information is available for the patient.]

<obtain> Relevant Surgical History

[Link: Link to Full Detail in Patient Record]

[End Surgical History.]

4.13.5. Medications

[Begin Medications.]

[Link: Links should be attached automatically.]

[Technical Note: This section should be auto populated if the information is available for the patient.]

<obtain> Current Medication List

[Link: Link to Full Detail in Patient Record]

[End Medications.]

4.13.6. Laboratory Test Results

[Begin Laboratory Test Results]

[Technical Note: The most recent lab results should be auto populated for the tests below.]

<obtain> Complete Blood Count

<obtain> Date

<obtain> Iron

<obtain> Date

<obtain> Ferritin

<obtain> Date

<obtain> Total Iron Binding Capacity

<obtain> Date

[Link: Links should be attached automatically.]

[Link: Link to Full Detail in Patient Record for each lab test result above]

[End Laboratory Test Results.]

[End Pertinent History.]

4.14 Plan

[Begin Plan.]

[Section Prompt: Plan, including tests, referrals, screening intervals, and screening start and discontinuation age as applicable, discussed with and agreed to by patient.]

Refer for Colonoscopy

<obtain> Screening Interval (Years)

[Technical Note: Screening Interval should be displayed for all patients who have started screening, except those who have stopped screening, are of average risk, or with exactly one first-degree relative diagnosed with colorectal cancer or advanced adenoma at age >= 60 years.]

[Technical Note: Screening interval may be set or updated during the consult.]

<obtain> Surveillance Start Age (Years)

[Technical Note: Surveillance Start Age should only be available for those who have inflammatory bowel disease who have not had their first colonoscopy. If a Surveillance Start Age has already been determined, it should be auto populated, and the provider should be able to edit the field.]

Stop Screening for patients aged >= 75 years

[Technical Note: Show Stop Screening option only for patients aged >= 75 years.]

Gastroenterology Consult

<obtain> Details

Other

<obtain> Description

Plan discussed with and agreed to by the patient

<obtain>Date

<obtain>Other pertinent plan details

[End Plan.]

[End Documentation Template: Colorectal Cancer Risk.]

Chapter 5. Screening Order Sets: Colorectal Risk

[Begin Screening Order Sets: Gastroenterology: Colorectal Risk.]

5.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

5.2. Order Set: Colorectal Cancer Risk – Average Risk Screening

[Begin Order Set: Average Risk Screening.]

5.2.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

5.2.2. Consults and Referrals

[Begin Consults and Referrals.]

Referral Gastroenterology evaluate for colonoscopy (routine)

[End Consults and Referrals.]

5.2.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

Colonoscopy screening education (routine)

Bowel prep for colonoscopy screening education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Average Risk Screening.]

5.3. Order Set: Colorectal Cancer Risk - Family History of Colon Cancer, Colon Cancer Syndrome, or Advanced Adenoma

[Begin Order Set: Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma.]

5.3.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

5.3.2. Consults and Referrals

[Begin Consults and Referrals.]

[Technical Note: This section should be available for all patients.]

Referral Gastroenterology evaluate colorectal cancer risk (routine)

[End Consults and Referrals.]

5.3.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

[Technical Note: This section should be available for all patients.]

Colorectal cancer screening and surveillance education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Family History of Colon Cancer, Colon Cancer Syndrome or Advanced Adenoma.]

[End Screening Order Sets: Gastroenterology: Colorectal Risk.]

Chapter 6. Diagnostic Order Sets: Colorectal Cancer Risk

[Begin Diagnostic Order Set: Gastroenterology: Colorectal Risk.]

6.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

6.2. Order Set: Colorectal Cancer Risk – Iron Deficiency

[Begin Order Set: Colorectal Cancer Risk – Iron Deficiency.]

6.2.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

6.2.2. Laboratory Tests

[Begin Laboratory Tests.]

[Technical Note: Display only if no lab results for these tests are seen within the system for the last two months.]

Complete blood count 1 time (routine)

Iron 1 time (routine)

Ferritin 1 time (routine)

Total iron binding capacity 1 time (routine)

[End Laboratory Tests.]

6.2.3. Consults and Referrals

[Begin Consults and Referrals.]

Referral Gastroenterology evaluate iron deficiency (routine)

[End Consults and Referrals.]

6.2.4. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

Colorectal cancer testing education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Gastroenterology: Colorectal Cancer Risk – Iron Deficiency.]

6.3. Order Set: Colorectal Cancer Risk – Rectal Bleeding or Positive Screening Test

[Begin Order Set: Colorectal Cancer Risk – Rectal Bleeding or Positive Screening Test.]

6.3.1 Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

6.3.2 Consults and Referrals

[Begin Consults and Referrals.]

Referral Gastroenterology evaluate for colonoscopy (routine)

[End Consults and Referrals.]

6.3.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

Diagnostic Colonoscopy education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Colorectal Cancer Risk – Rectal Bleeding or Positive Screening Test.]

6.4. Order Set: Colorectal Cancer Risk – Fecal Immunochemical Test (FIT)

[Begin Order Set: Colorectal Cancer Risk – Fecal Immunochemical Test (FIT).]

6.4.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

6.4.2. Laboratory Tests

[Begin Laboratory Tests.]

Fecal immunochemical test 1 time (routine)

[End Laboratory Tests.]

6.4.3. Consults and Referrals

[Begin Consults and Referrals.]

Referral to gastroenterology to evaluate colorectal cancer risk (routine)

[End Consults and Referrals.]

6.4.4. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

Colorectal cancer screening education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Colorectal Cancer Risk – Fecal Immunochemical Test (FIT).]

[End Diagnostic Order Set: Colorectal Risk.]

Chapter 7. Surveillance Order Sets: Colorectal Cancer Risk

[Begin Surveillance Order Sets: Colorectal Risk.]

7.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

7.2. Order Set: Colorectal Cancer Risk – Personal History of Colon Cancer or Polyp

[Begin Order Set: Colorectal Cancer Risk – Personal History of Colon Cancer or Polyp.]

7.2.1 Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

7.2.2. Consults and Referrals

[Begin Consults and Referrals.]

[Technical Note: This section should be available for all patients.]

Referral gastroenterology evaluate for colonoscopy and treatment (routine)

[End Consults and Referrals.]

7.2.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

[Technical Note: This section should be available for all patients.]

Colorectal cancer surveillance education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Gastroenterology: Colorectal Cancer Risk – Personal History of Colon Cancer or Polyp.]

7.3. Order Set: Colorectal Cancer Risk – Inflammatory Bowel Disease

[Begin Order Set: Colorectal Cancer Risk – Inflammatory Bowel Disease.]

7.3.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

7.3.2. Consults and Referrals

[Begin Consults and Referrals.]

[Technical Note: This section should be available for all patients.]

Referral gastroenterology evaluate for colonoscopy and treatment (routine)

[End Consults and Referrals.]

7.3.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

[Technical Note: This section should be available for all patients.]

Colonoscopy education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Colorectal Cancer Risk – Inflammatory Bowel Disease.]

7.4. Order Set: Colorectal Cancer Risk – Other Issues

[Begin Order Set: Colorectal Cancer Risk – Other Issues.]

7.4.1. Knowledge Narrative

[Begin Knowledge Narrative.]

[See Clinical Context in Chapter 1.]

[End Knowledge Narrative.]

7.4.2. Consults and Referrals

[Begin Consults and Referrals.]

[Technical Note: This section should be available for all patients.]

Referral gastroenterology evaluate for colonoscopy and treatment (routine)

[End Consults and Referrals.]

7.4.3. Patient and Caregiver Education

[Begin Patient and Caregiver Education.]

[Technical Note: This section should be available for all patients.]

Colonoscopy education (routine)

Bowel prep for colonoscopy education (routine)

[End Patient and Caregiver Education.]

[End Order Set: Colorectal Cancer Risk – Other Issues.]

[End Surveillance Order Sets: Colorectal Risk.]

Bibliography/Evidence

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```
  ---- Begin: 691 CRS NEEDS SURV COLONOSCOPY (FI(34)=RT(636)) --------------
              Finding Type: REMINDER TERM
       Use in Resolution Logic: OR
           Beginning Date/Time: T-10Y
                Found Text: Colorectal Screening reminder is turned
                            off.Pt's 'surveillance' reminder has been
                            turned on
                Mapped Findings: HF.CRS-NEEDS COLONOSCOPY IN 3YRS
            Health Factor Category: COLON CA-SCREENING HF

                Mapped Findings: HF.CRS-NEEDS COLONOSCOPY IN 1YR
            Health Factor Category: COLON CA-SCREENING HF

                Mapped Findings: HF.CRS-NEEDS COLONOSCOPY IN 2YRS
            Health Factor Category: COLON CA-SCREENING HF

                Mapped Findings: HF.CRS-NEEDS COLONOSCOPY IN 5YRS
            Health Factor Category: COLON CA-SCREENING HF

  ---- End: 691 CRS NEEDS SURV COLONOSCOPY --------------------------------

 Function Findings:

  ---- Begin: FF(1)-------------------------------------------------------
              Function String: MRD(29)>MRD(5,12,34,14,11,30,2)
      Expanded Function String:
       MRD(691 CRS DECLINED)>MRD(691 CRS COLONOSCOPY PREV DONE,
       691 CRS GI CONSULT PENDING,691 CRS NEEDS SURV COLONOSCOPY,
       691 CRS OCCULT BLOOD TEST ORDERS,691 CRS SCREENING DONE,
       691 TR CRS FLEXSIG/SIGMOID/BARIUM/V.COLO PREV DONE,
       691 TR CRS RESOLVING HFs)
           Match Frequency/Age: 6 months for all ages
                Rank Frequency: 5
                 Found Text: Patient previously declined, freq changed to
                             q6 months
  ---- End: FF(1) ---------------------------------------------------------


  ---- Begin: FF(2)-------------------------------------------------------
              Function String: MRD(1)>MRD(4)
      Expanded Function String:
       MRD(VA-PROGRESS NOTE)>MRD(XYZ 691 CSP 577 CONFIRM - CRS RE-ENABLE)
           Match Frequency/Age: 10 years for all ages
       Use in Resolution Logic: OR
  ---- End: FF(2) ---------------------------------------------------------



Default PATIENT COHORT LOGIC to see if the Reminder applies to a patient:
 (SEX)&(AGE)&'FI(3)

Expanded Patient Cohort Logic:
 (SEX)&(AGE)&'FI(691 CRS EXCLUSION-HX OF CA)

Customized RESOLUTION LOGIC defines findings that resolve the Reminder:
 FI(8)!FI(5)!FI(14)!FI(30)!FI(2)!(FI(1)&FF(2))

Expanded Resolution Logic:
 FI(FIT)!FI(691 CRS COLONOSCOPY PREV DONE)!
 FI(691 CRS OCCULT BLOOD TEST ORDERS)!
 FI(691 TR CRS FLEXSIG/SIGMOID/BARIUM/V.COLO PREV DONE)!
 FI(691 TR CRS RESOLVING HFs)!(FI(VA-PROGRESS NOTE)&FF(2))
```

Appendix A. Existing Sample VA Artifacts

Figures 2-4 for the GI Colorectal Cancer Risk – Personal history of colon cancer or polyp – Order Sets are from the Portland VAMC

Figure A.2. GI Colonoscopy Request Menu

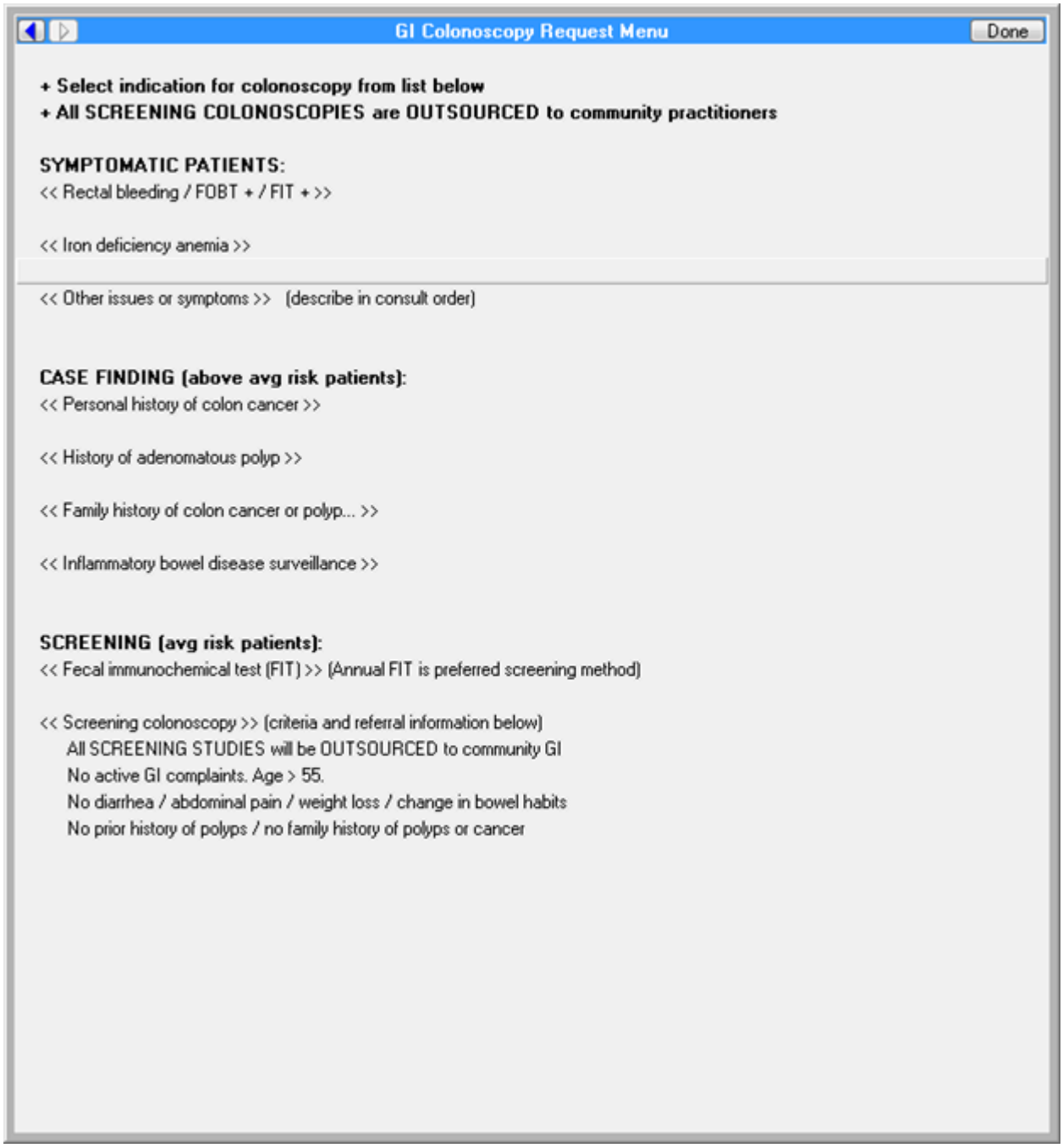


Figure A.3. Reason for Request: GI Clinic – Colonoscopy Outpt

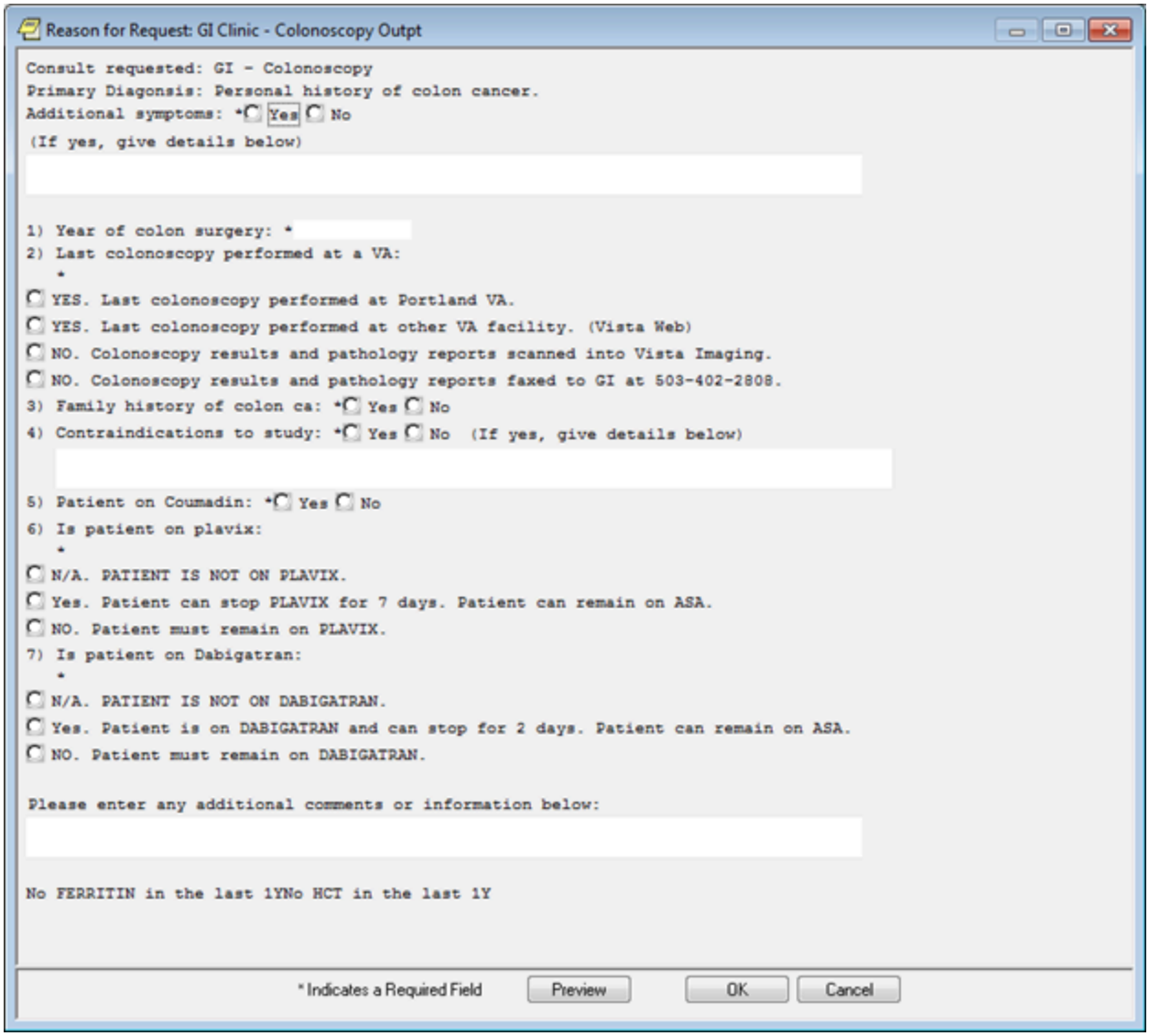
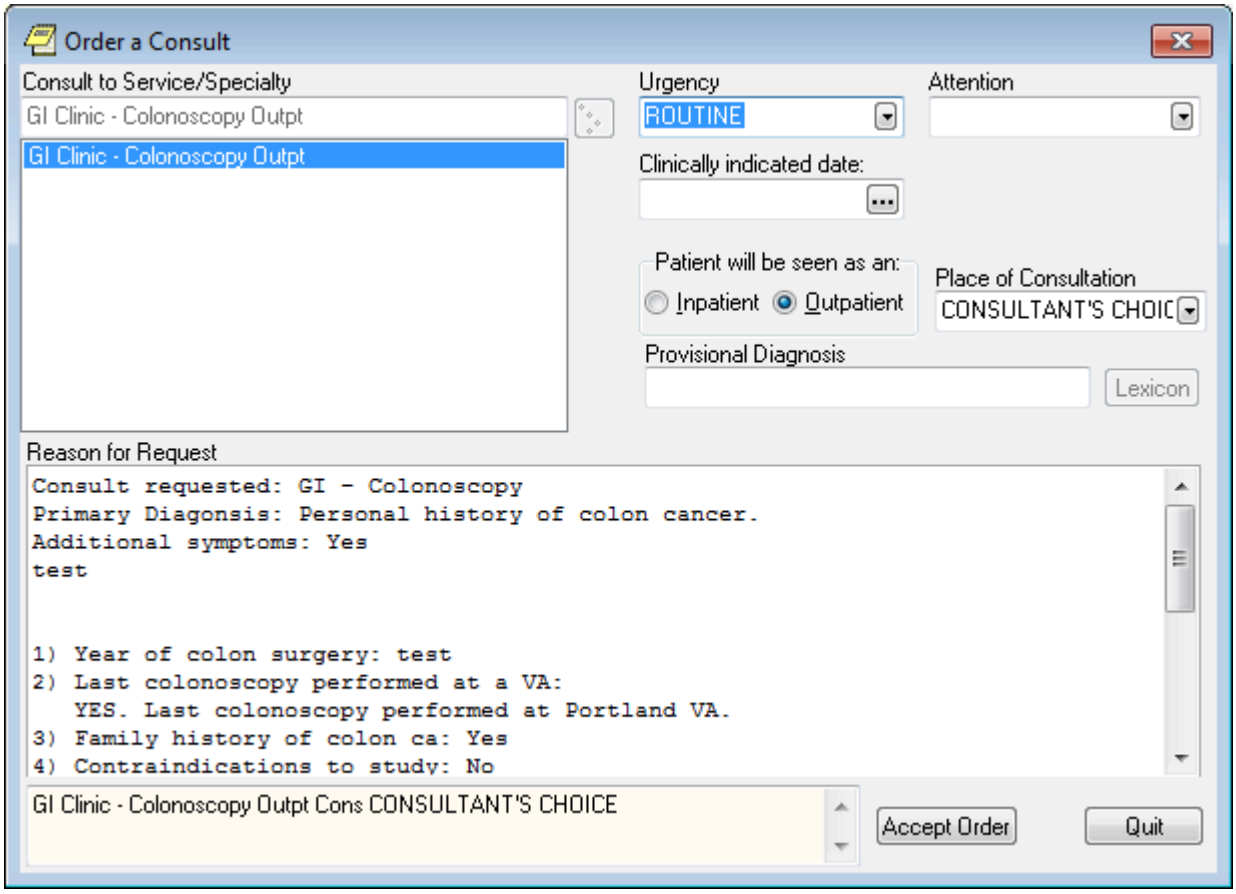


Figure A.4. Order a Consult



Figures 5-7 for the GI Colorectal Cancer Risk – Family history of colon cancer, colon cancer syndrome, or advanced adenoma – Order Sets are from the Portland VAMC

Figure A.5. Colonoscopy Screening for Family Hx

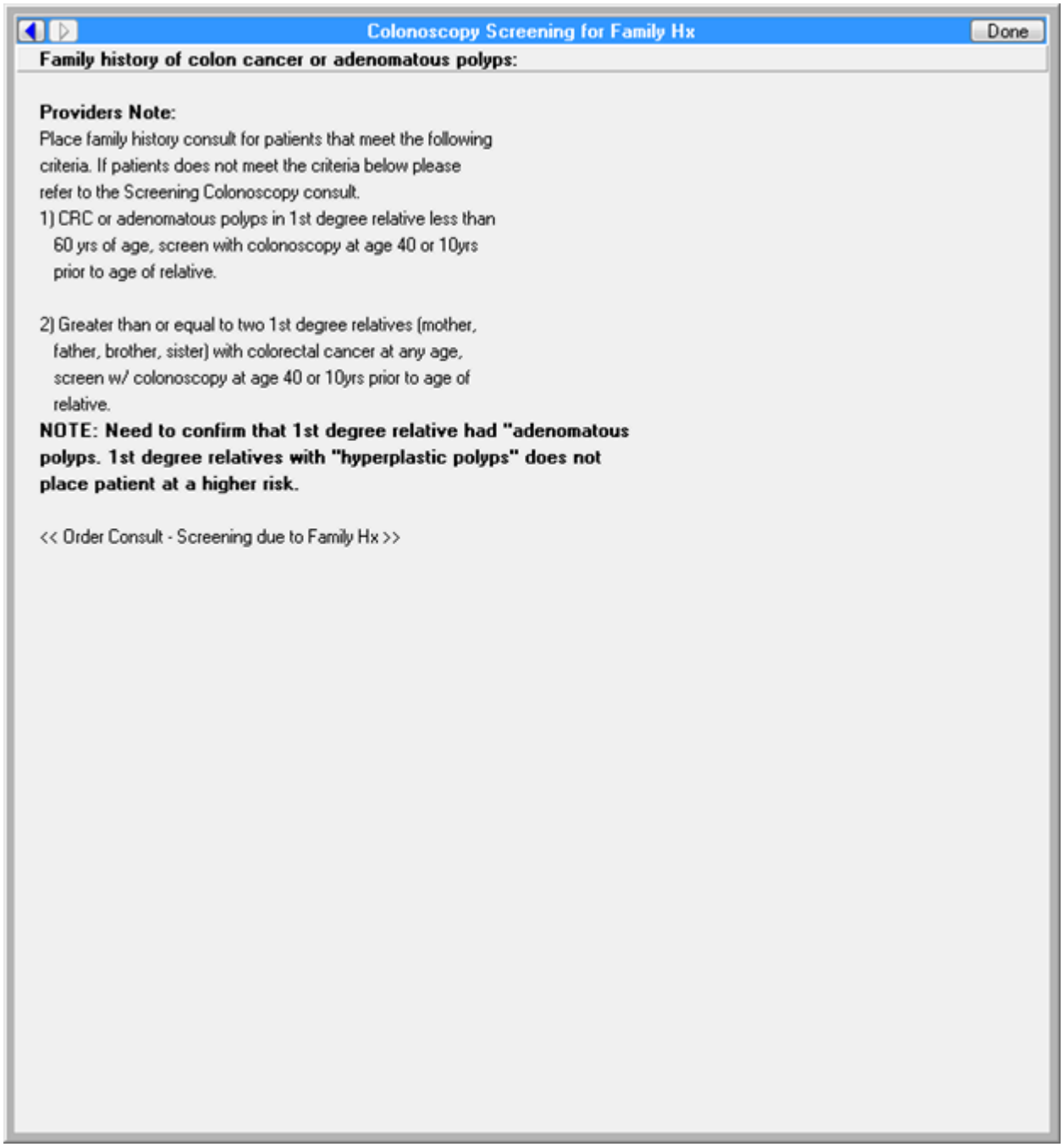


Figure A.6. GI Clinic - Colonoscopy Outpt

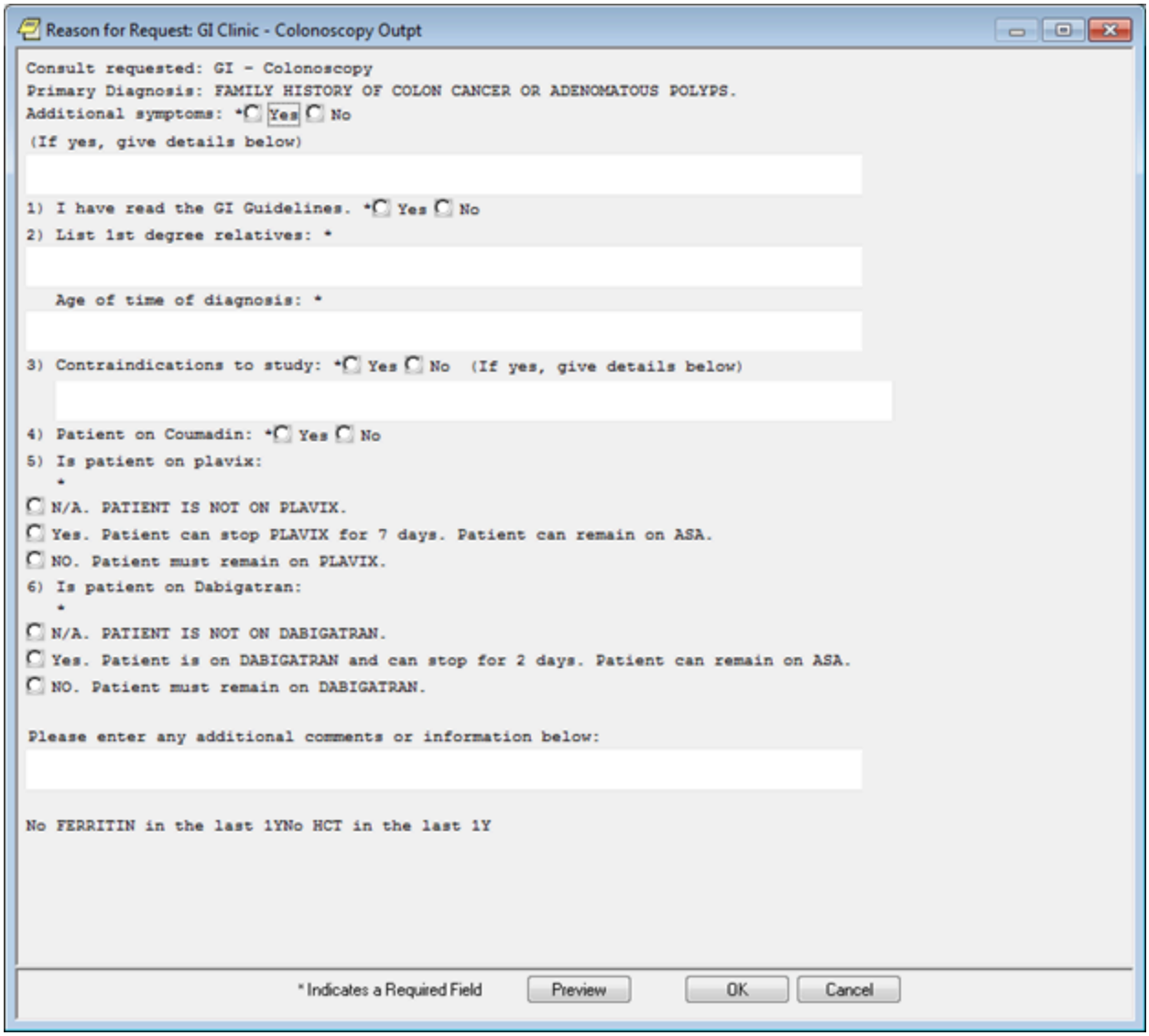
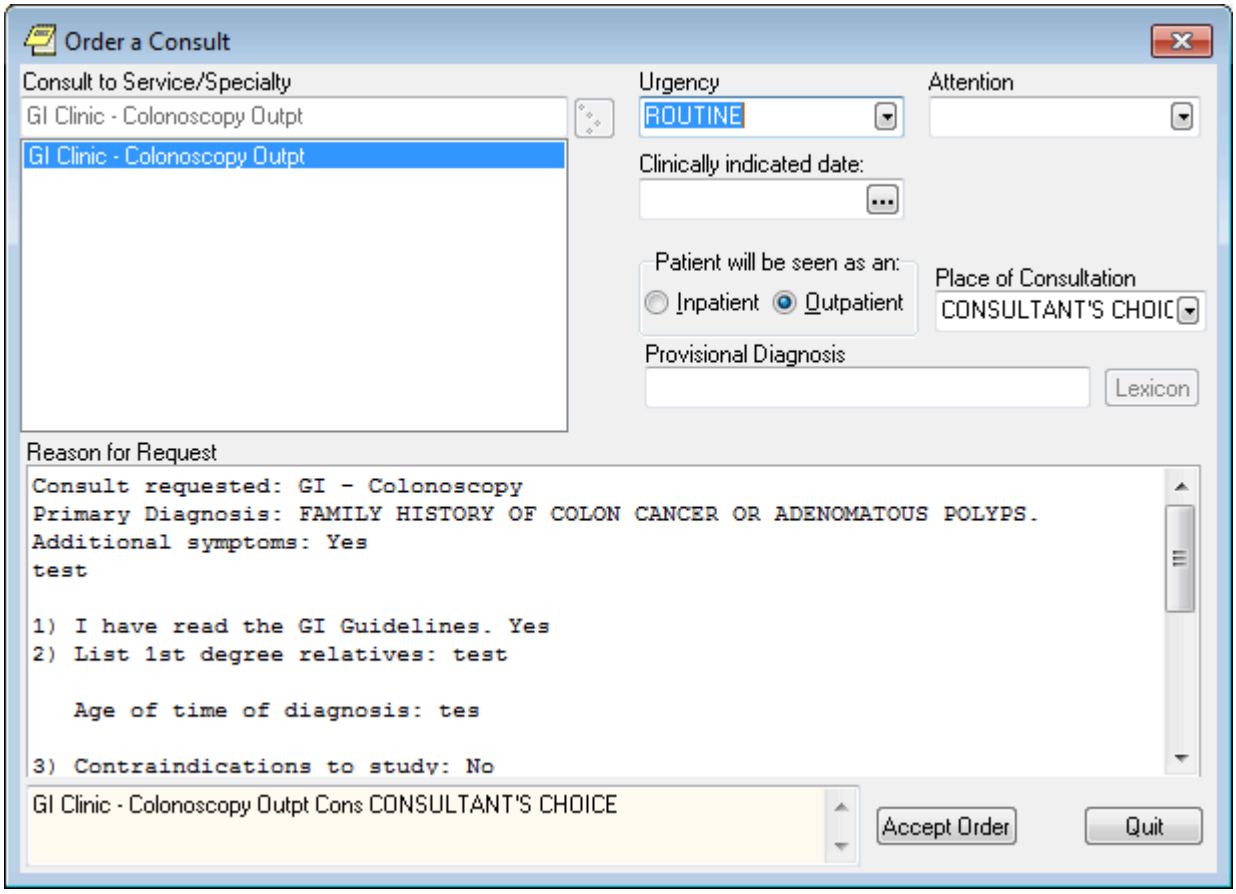


Figure A.7. Order a Consult



Figures 8-9 for the GI Colorectal Cancer Risk – Inflammatory bowel disease – Order Sets are from the Portland VAMC

Figure A.8. GI Clinic - Colonoscopy Outpt

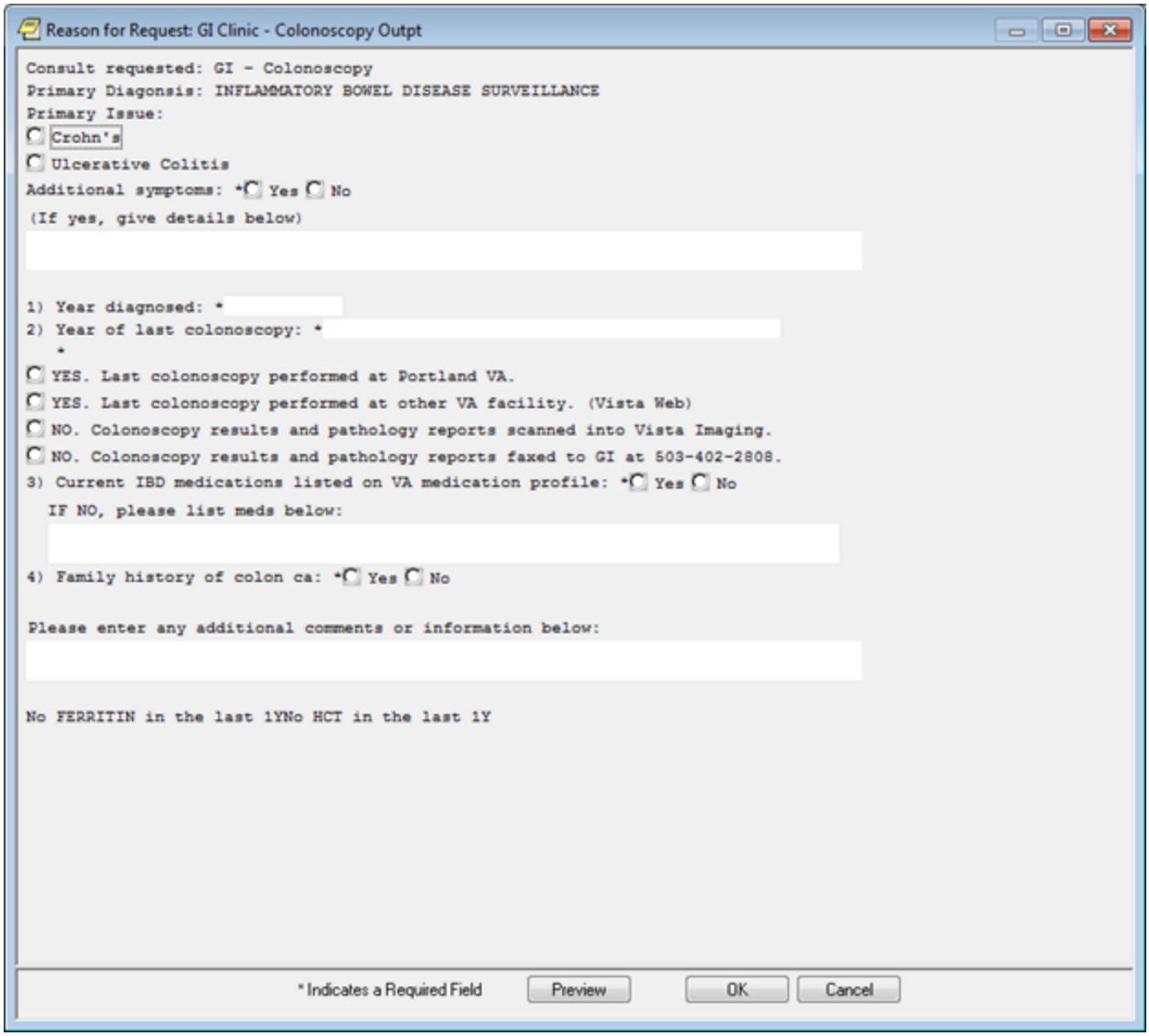
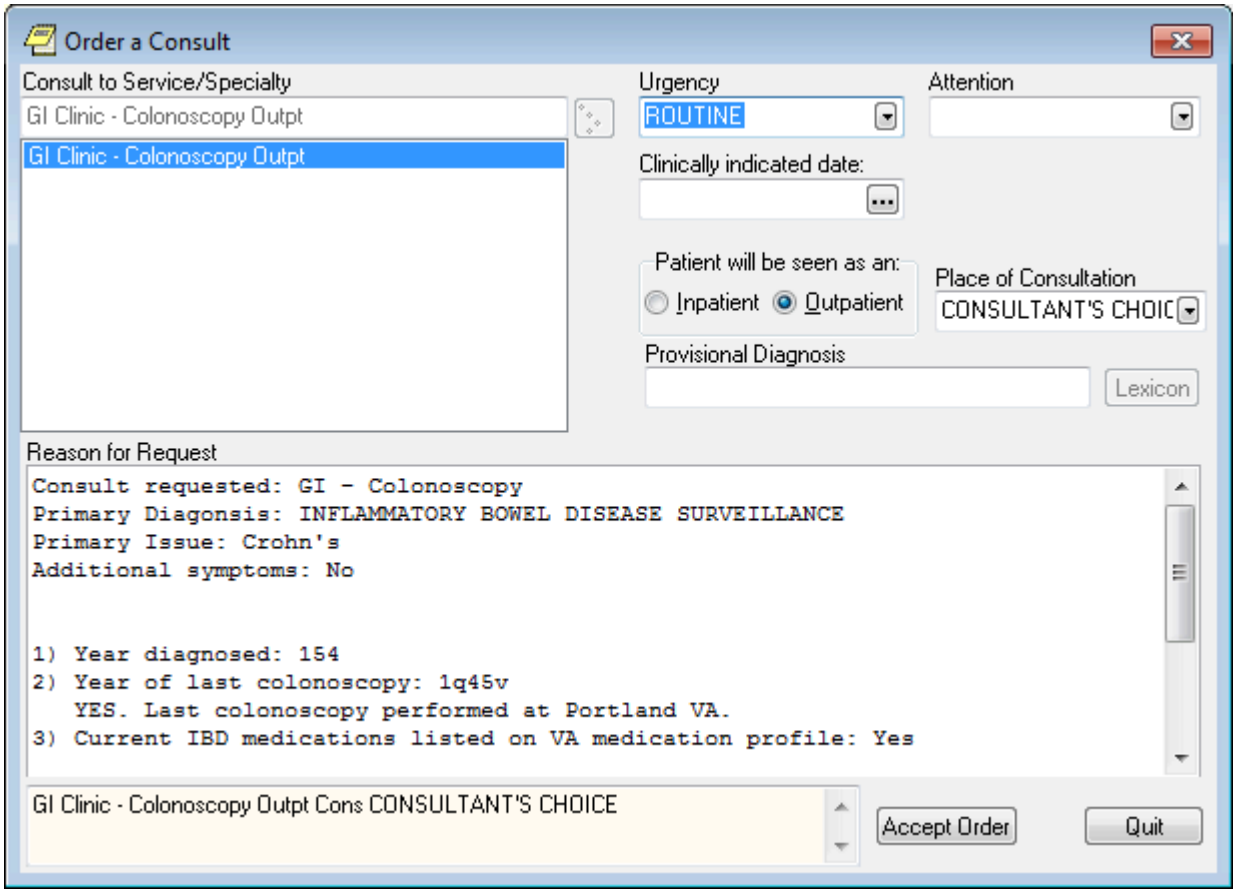


Figure A.9. Order a Consult



Figures 10-11 for the GI Colorectal Cancer Risk – Iron deficiency – Order Sets are from the Portland VAMC

Figure A.10. Reason for Request: GI Clinic - Colonoscopy Outpt

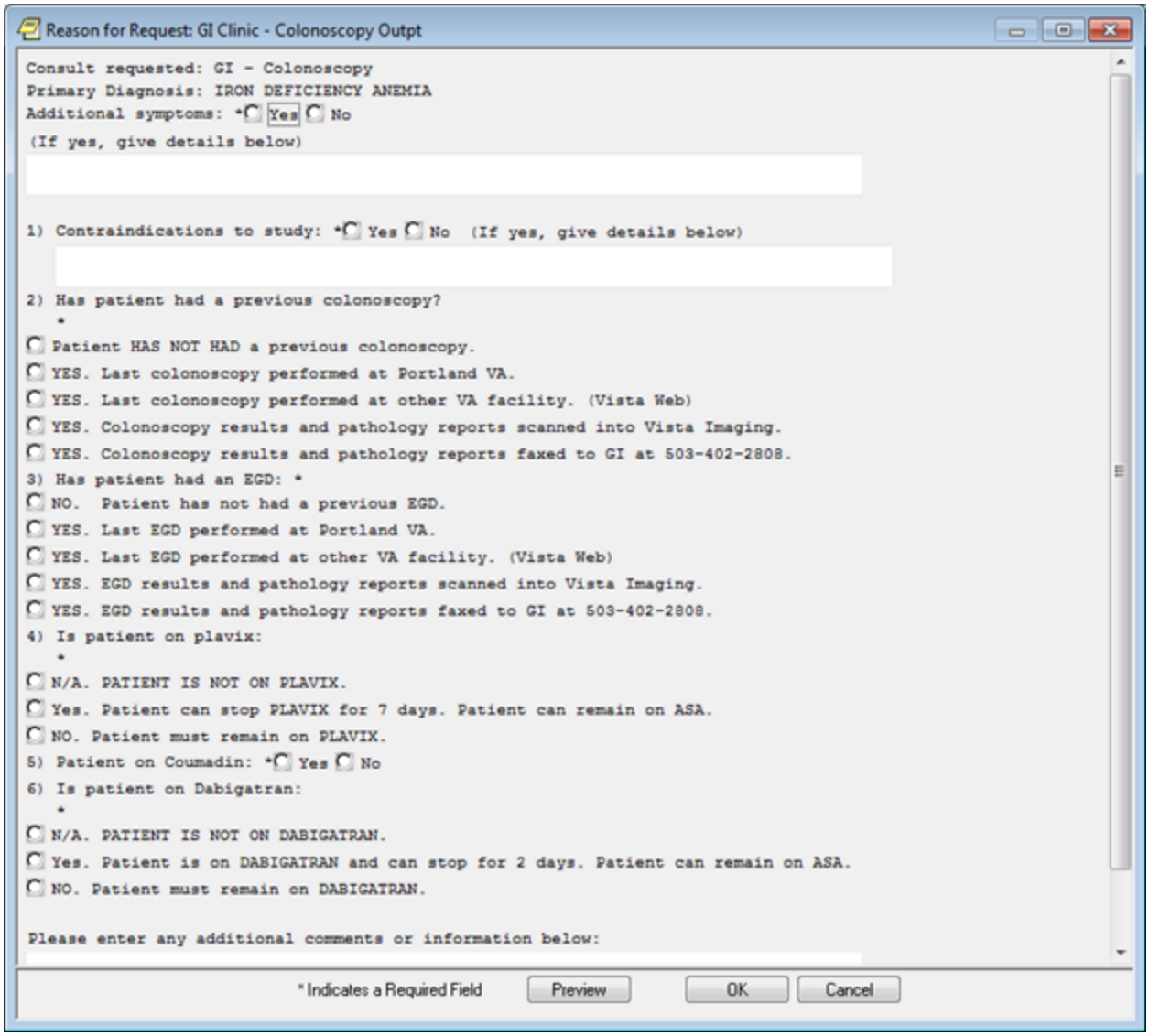
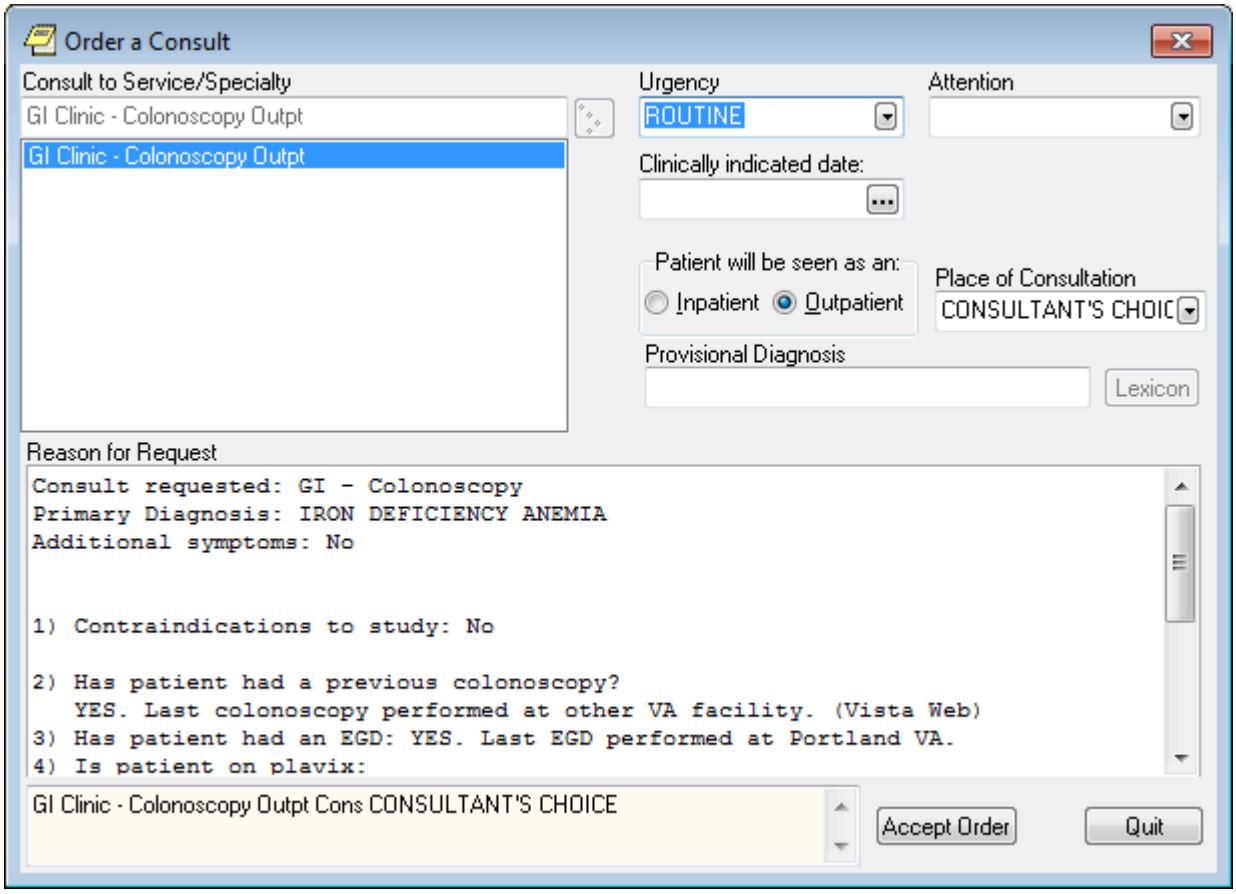


Figure A.11. Order a Consult



Figures 12-13 for the GI Colorectal Cancer Risk – Rectal bleeding, or positive screening test– Order Sets are from the Portland VAMC

Figure A.12. GI Clinic - Colonoscopy Outpt

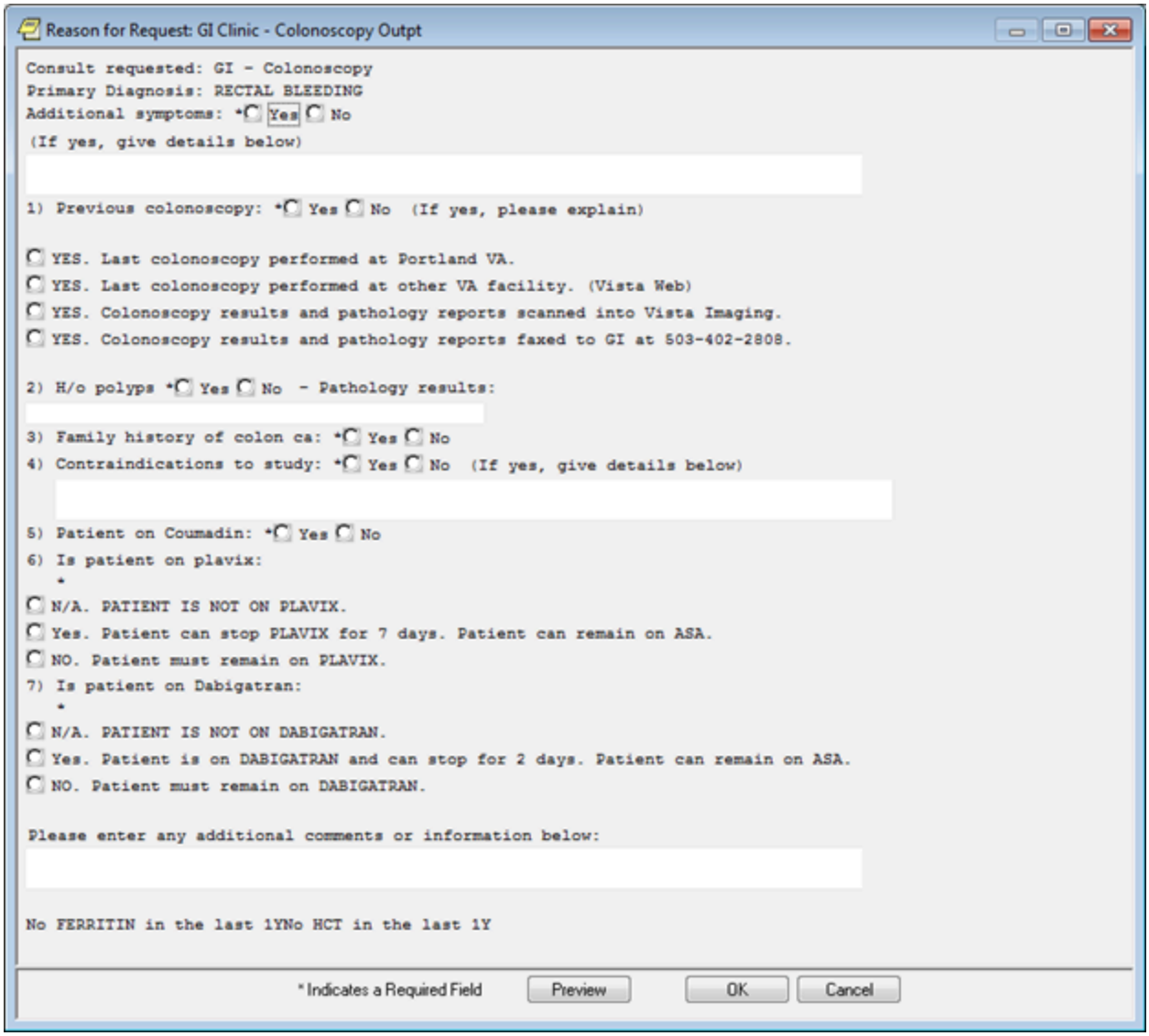
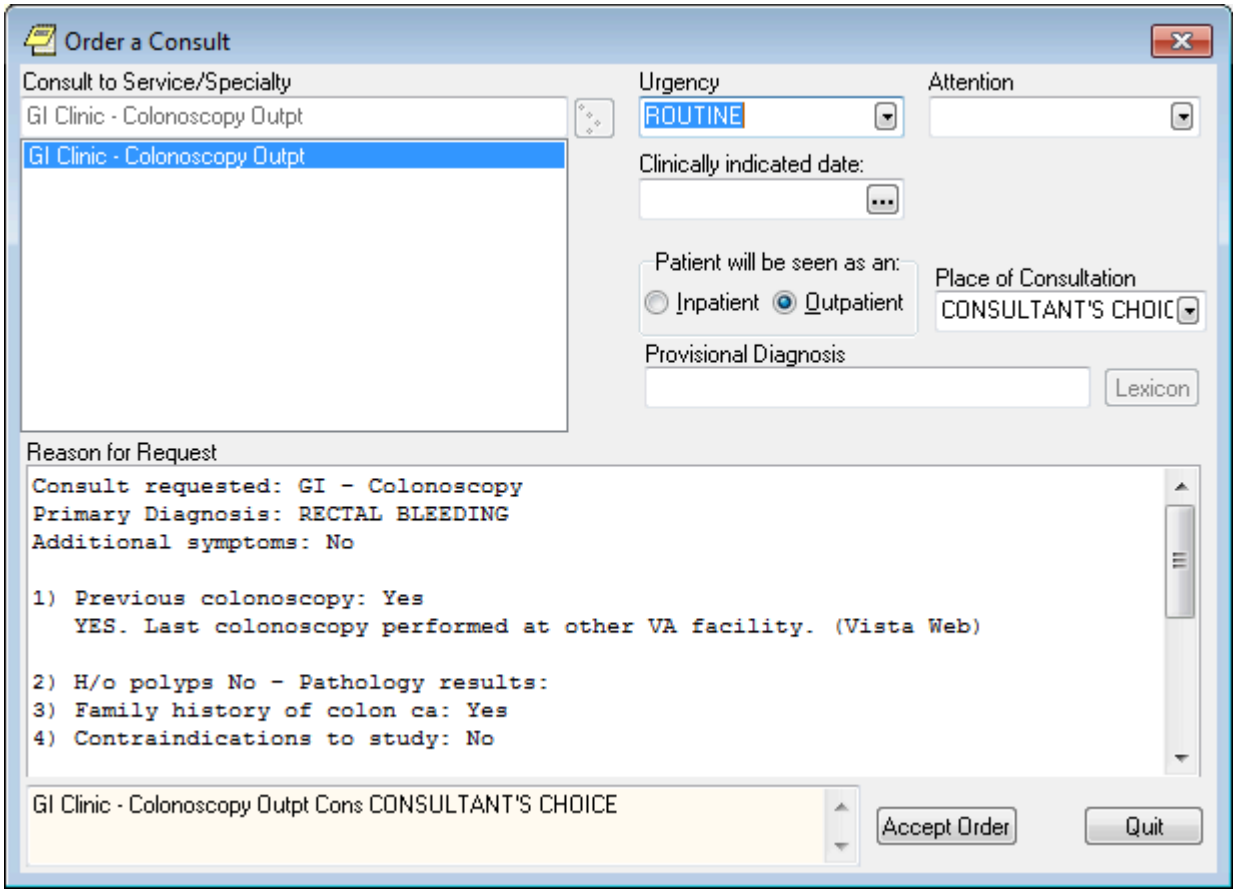


Figure A.13. Order a Consult



Figures 14-16 for the GI Colorectal Cancer Risk – Other Issues– Order Sets are from the Portland VAMC

Figure A.14. Reason for Request: GI Clinic - Colonoscopy Output

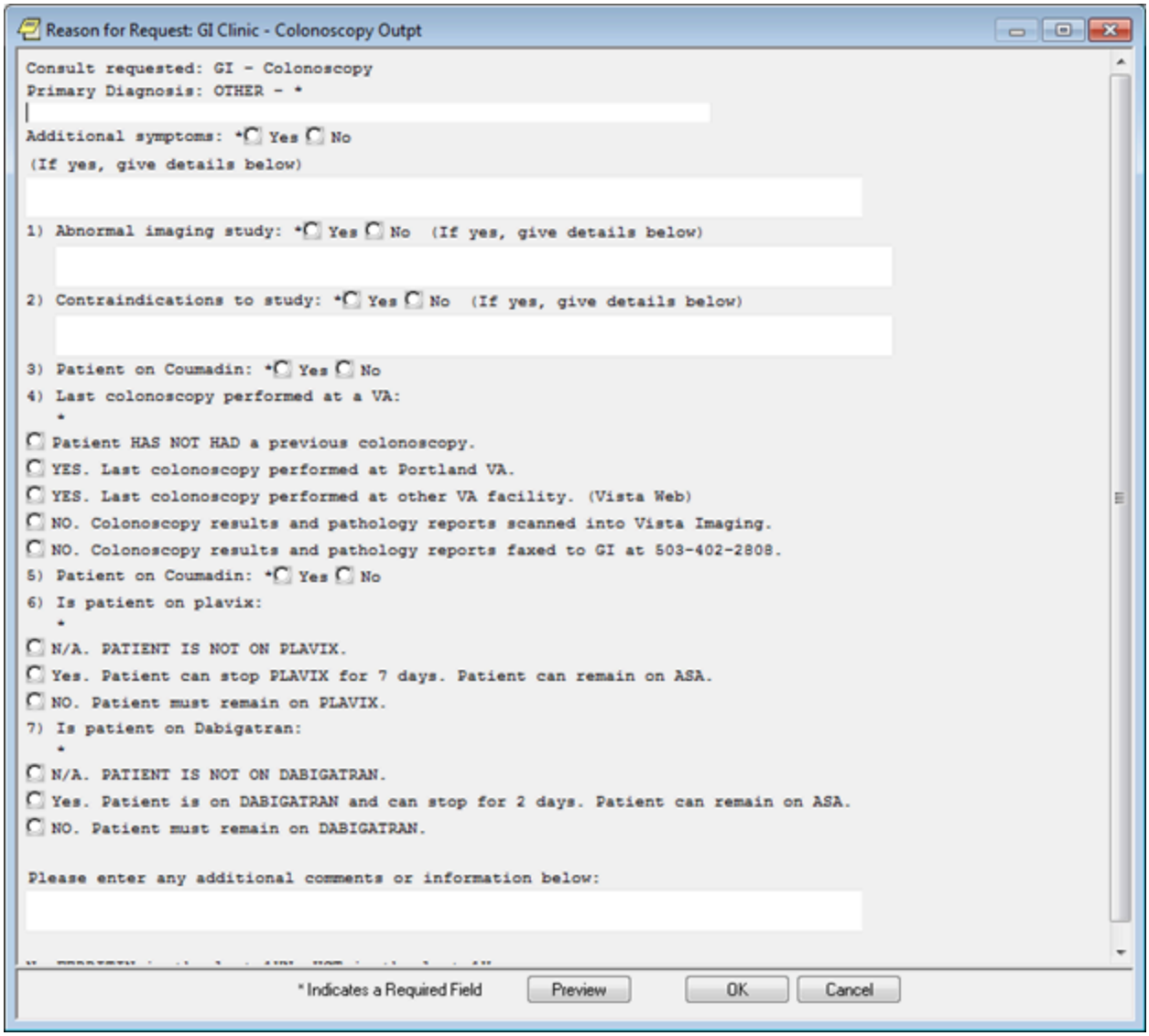


Figure A.15. Reason for Request GI Clinic - Colonoscopy Output

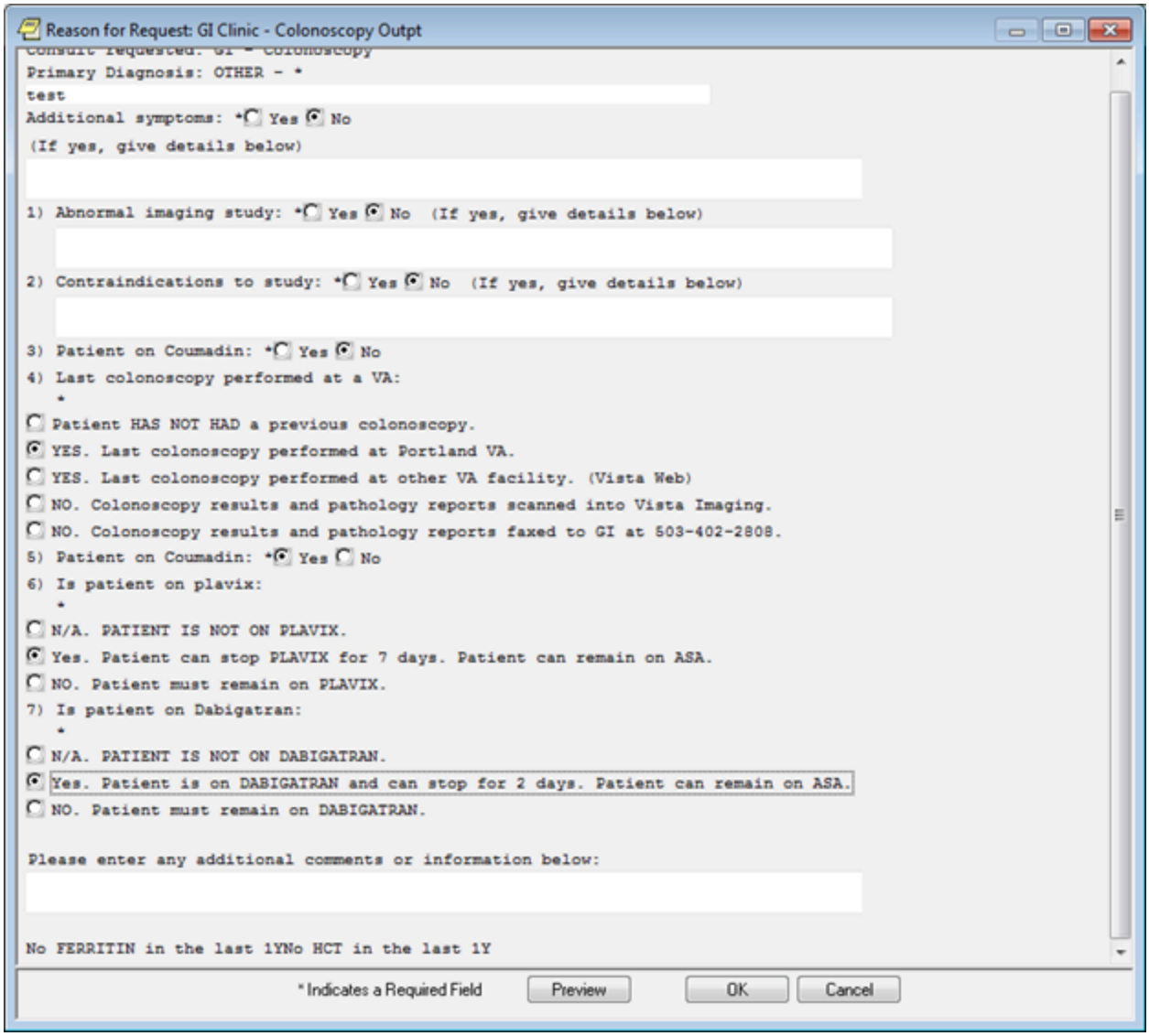
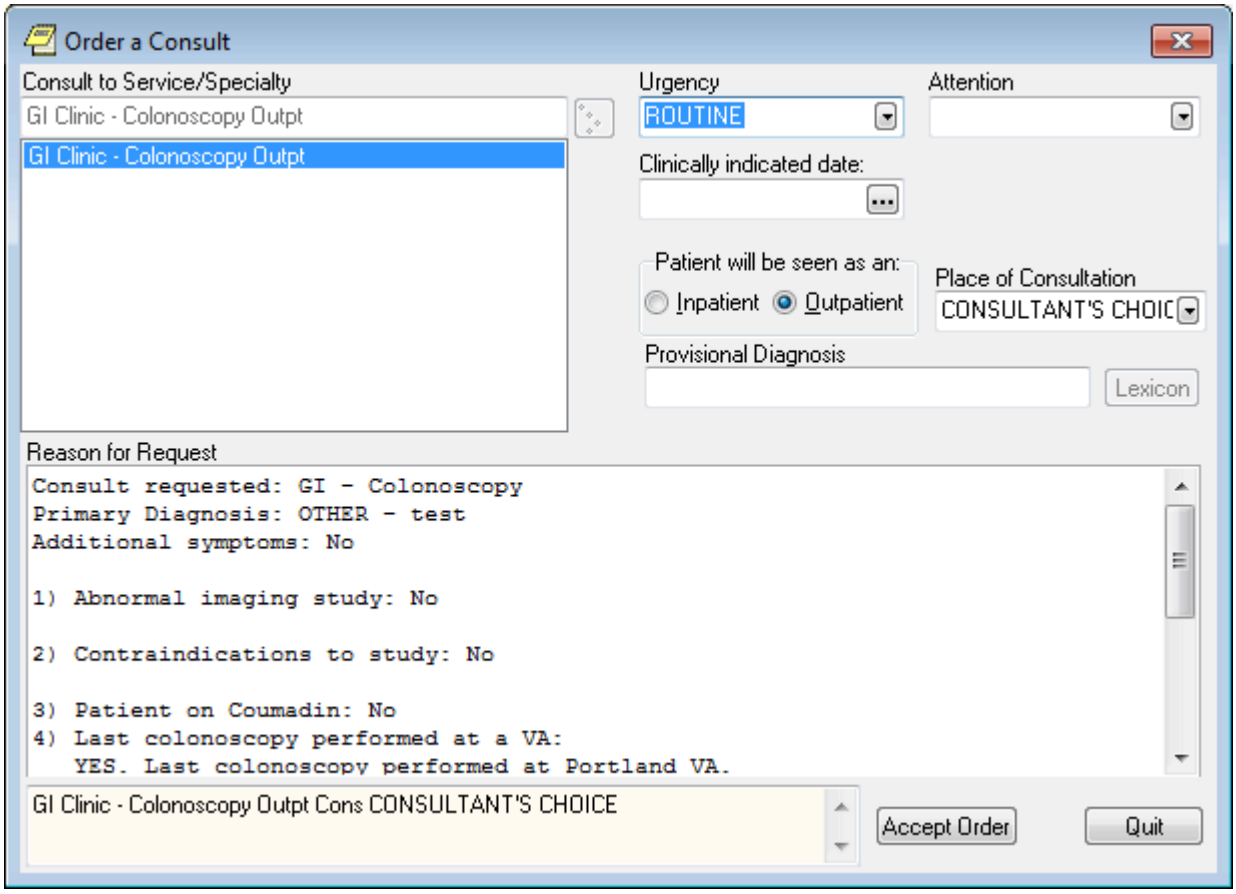


Figure A.16. Order a Consult



Figures 17-21 for the GI Colorectal Cancer Risk – Average risk screening– Order Sets are from the Portland VAMC

Figure A.17. GI Colonoscopy Request Menu

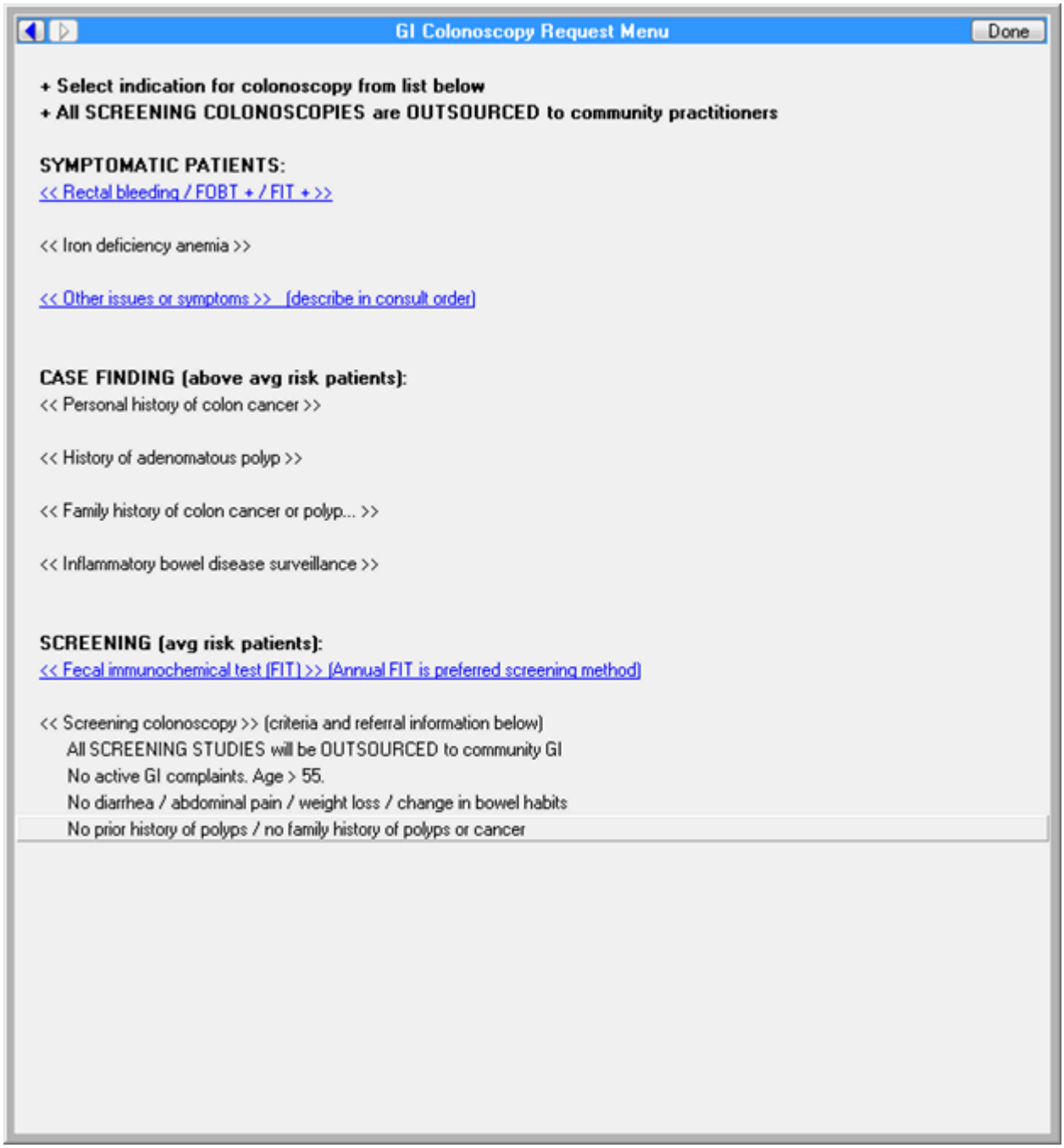


Figure A.18. Template CHOICE-FIRST screening colonoscopy

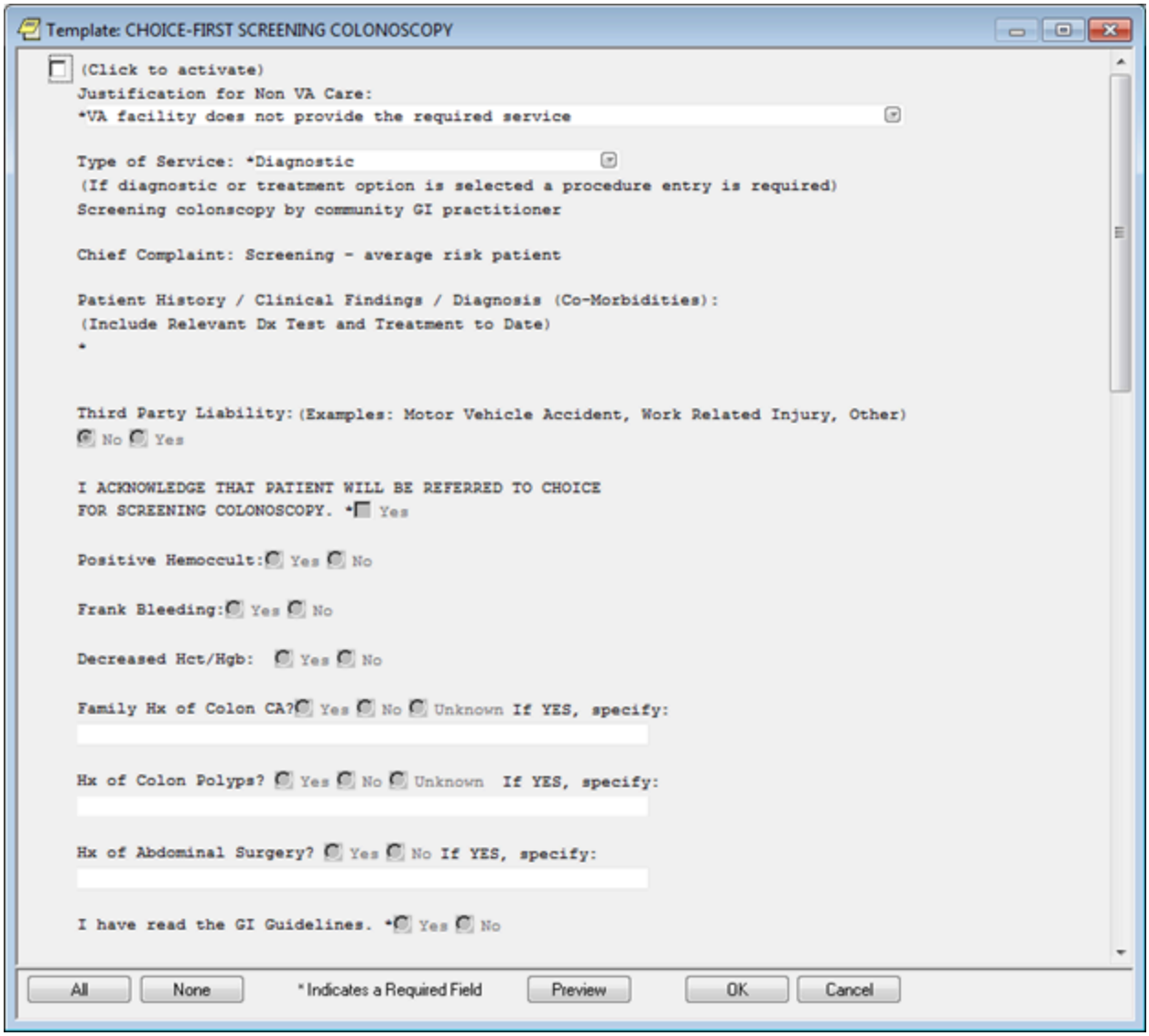


Figure A.19. CHOICE-FIRST screening colonoscopy

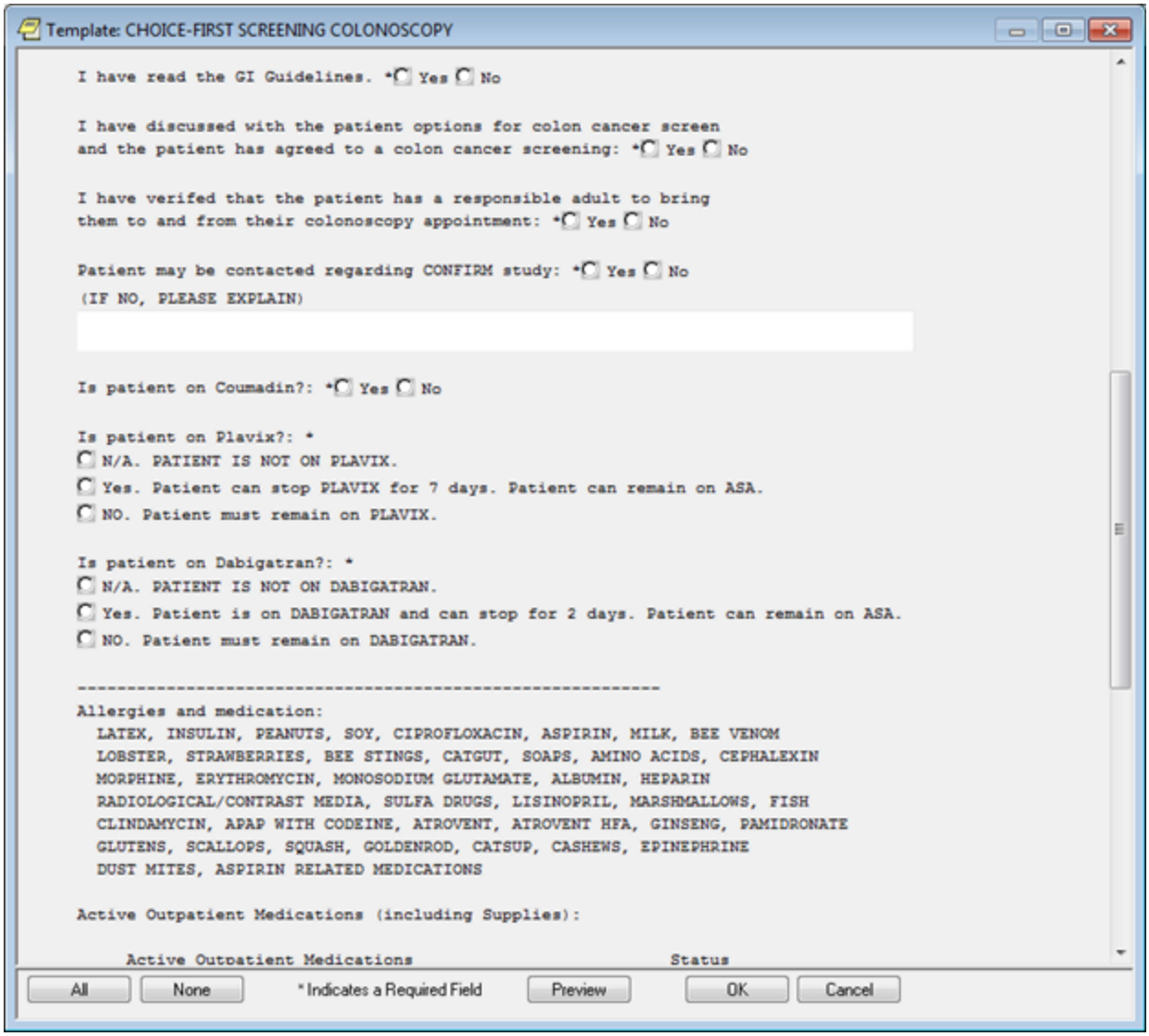


Figure A.20. CHOICE-FIRST screening colonoscopy

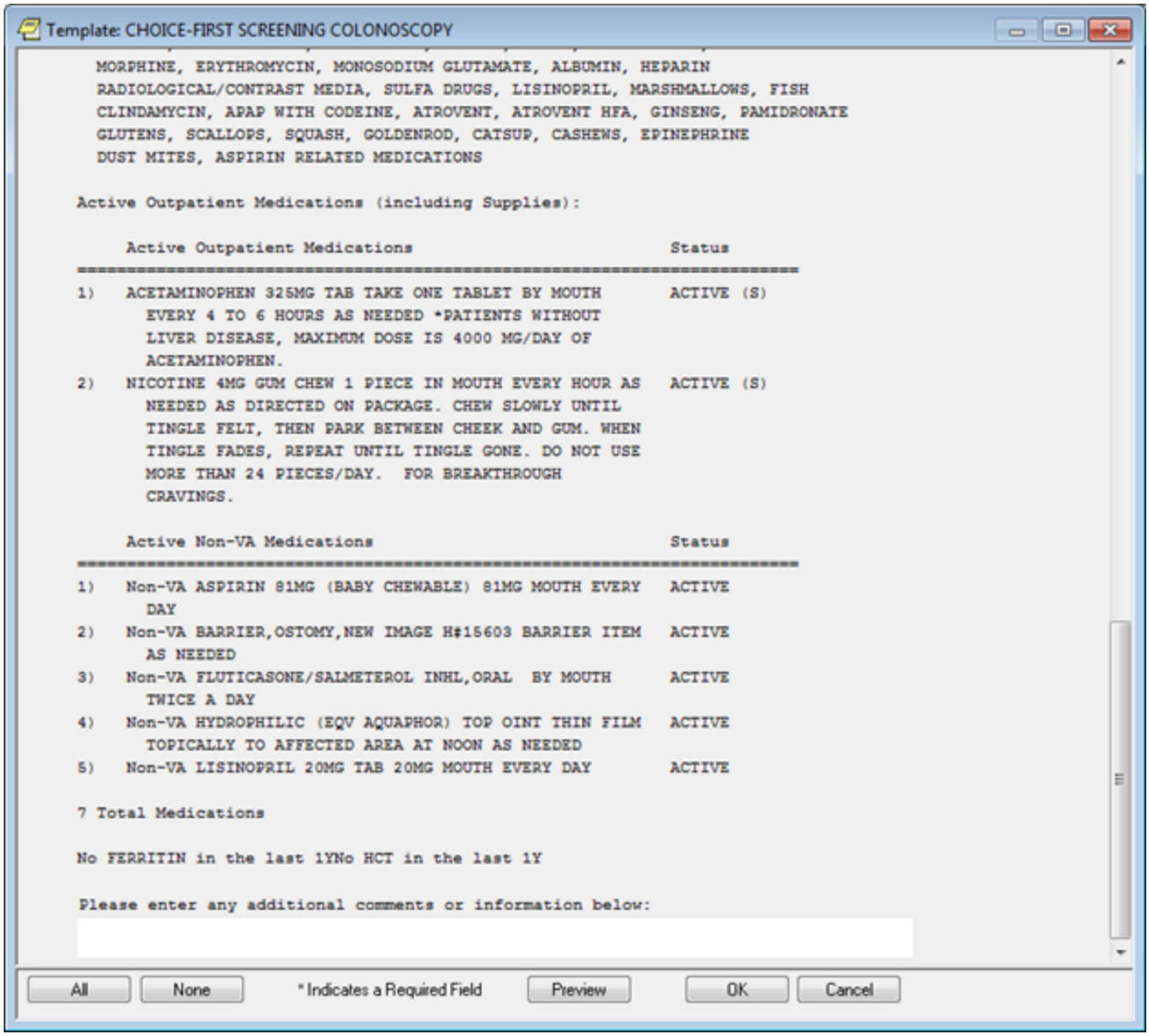


Figure A.21. Order a Consult

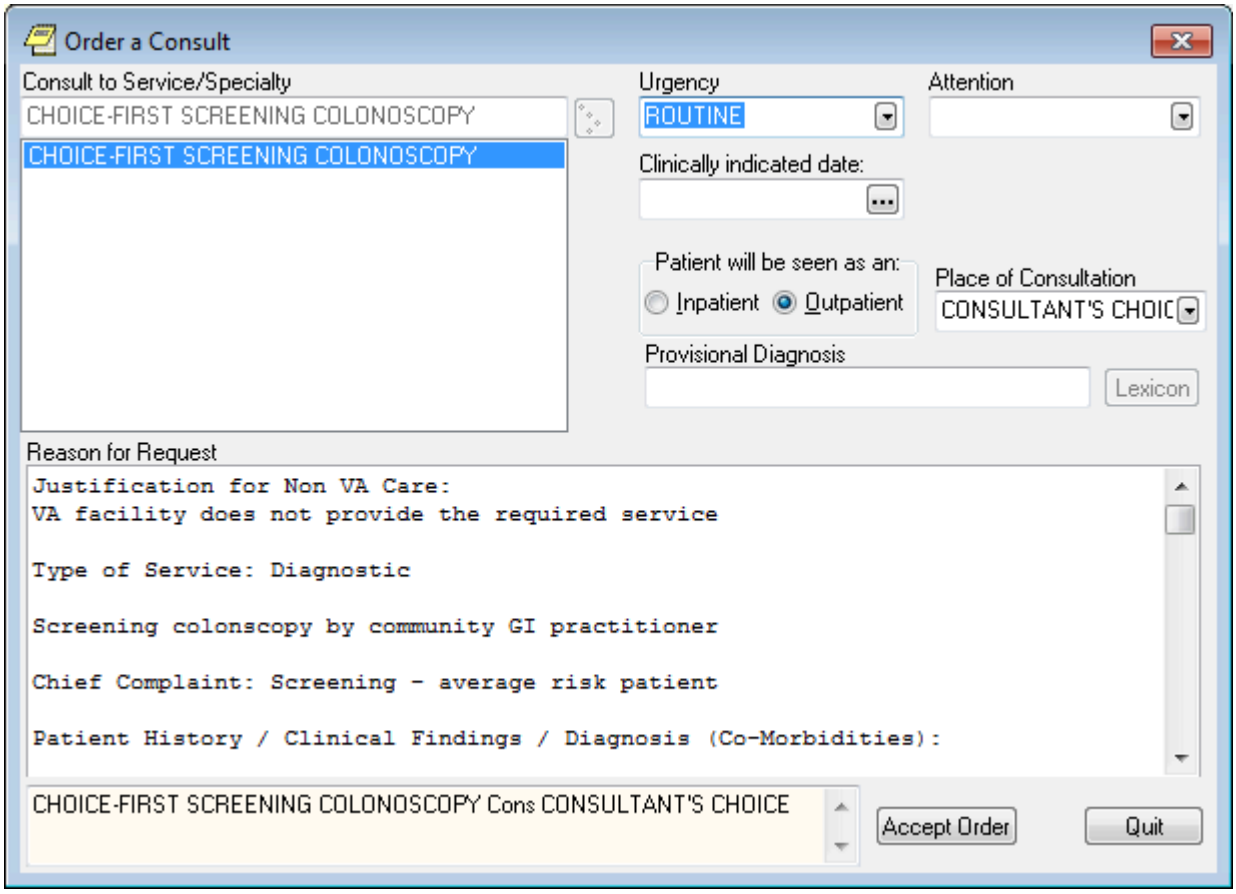
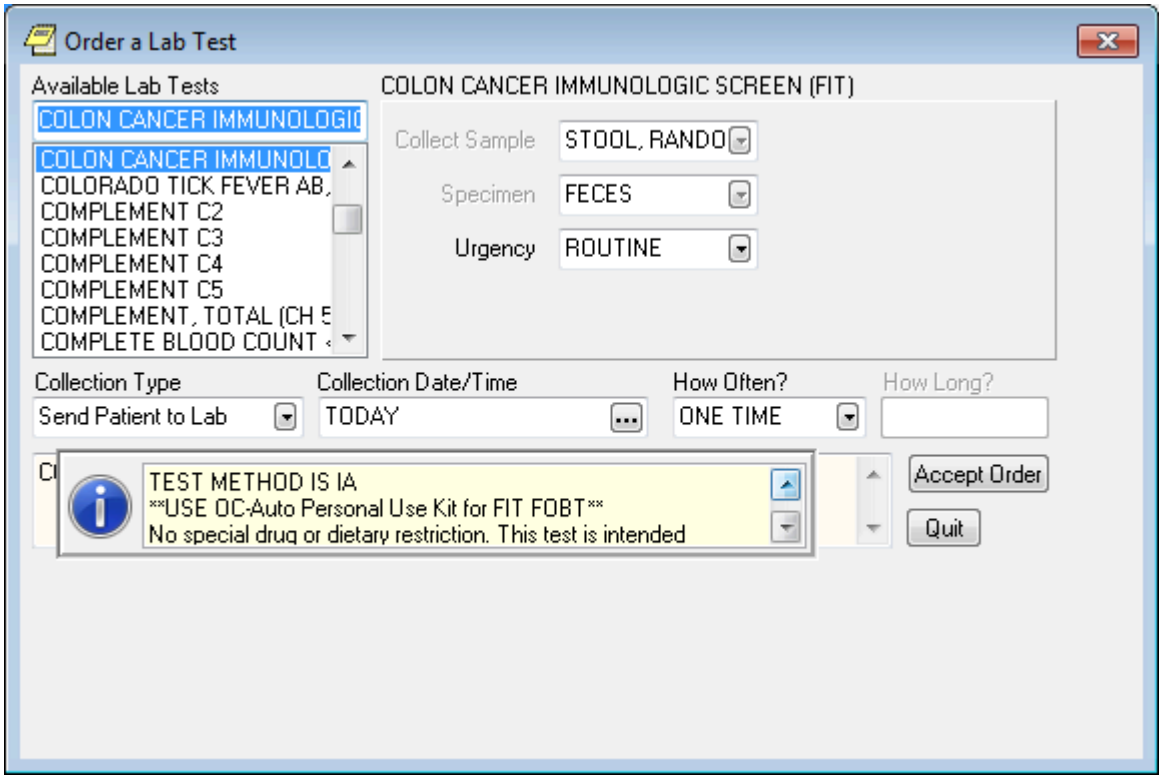


Figure 22 is for the GI Colorectal Cancer Risk – Fecal Immunochemical Test (FIT)– Order Sets are from the Portland VAMC

Figure A.22. Order a Lab Test



TEST METHOD IS IA **USE OC-Auto Personal Use Kit for FIT FOBT** No special drug or dietary restriction. This test is intended only for the detection of hemoglobin in feces. Patients with the following conditions should not be considered for testing, as these conditions may interfere with test results: Bleeding hemorrhoids Menstrual bleeding Constipation bleeding Urinary bleeding Once the bleeding has ceased, collection may occur and testing can be performed. Testing will be routinely performed Monday through Friday 8am to 3:30 pm. If fecal occult blood testing is needed outside of these hours, submit guaiac occult blood card or send fresh

Appendix B. Acronyms/Abbreviations

CCWP	**Clinical Content White Paper**
CCWP	Clinical Content White Paper
CDS	Clinical Decision Support
CT	Computed Tomography
DNA	Deoxyribonucleic Acid
ECA	Event Condition Action
FIT	Fecal Immunochemical Test
GI	Gastroenterology
HL7	Health Level 7
IBD	Inflammatory Bowel Disease
KBS	Knowledge Based Systems
KNART	Knowledge Artifact
OIIG	Office of Informatics and Information Governance
PCP	Primary Care Provider
SME	Subject Matter Expert
TO	Task Order
VA	Department of Veterans Affairs
VAMC	VA Medical Center