Disclaimer: *This algorithm has been developed for MD Anderson using a multidisciplinary approach considering circumstances particular to MD Anderson's specific patient population, services and structure, and clinical information. This is not intended to replace the independent medical or professional judgment of physicians or other health care providers in the context of individual clinical circumstances to determine a patient's care.*

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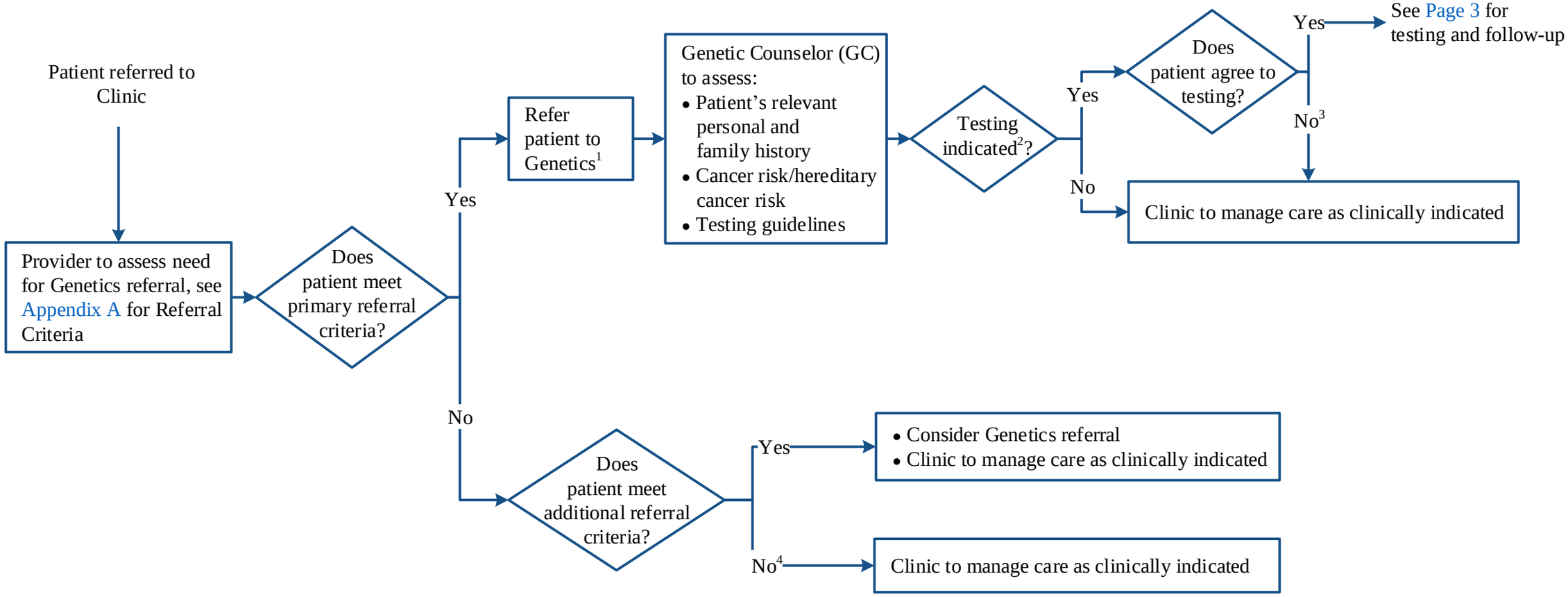
Genetic Counseling

PATIENT EVALUATION

RECOMMENDATION



[1] Provider to document in patient's electronic health record if patient declines the recommendation for genetic counseling. For an appointment or further information, call 855-384-6254 and indicate the appropriate disease center (*e.g.*, Breast Medical Oncology, Gynecology Oncology, Gastrointestinal Center).
[2] Genetic Counselor to document recommendation within the patient's electronic health record (whether testing is recommended or not)
[3] Genetic Counselor to document in patient's electronic health record if patient declines the recommendation for genetic testing
[4] Provider may document that the patient does not meet criteria for Genetics referral within the patient's electronic health record

Department of Clinical Effectiveness V2
Approved by the Executive Committee of the Medical Staff on 10/15/2019

Genetic Counseling

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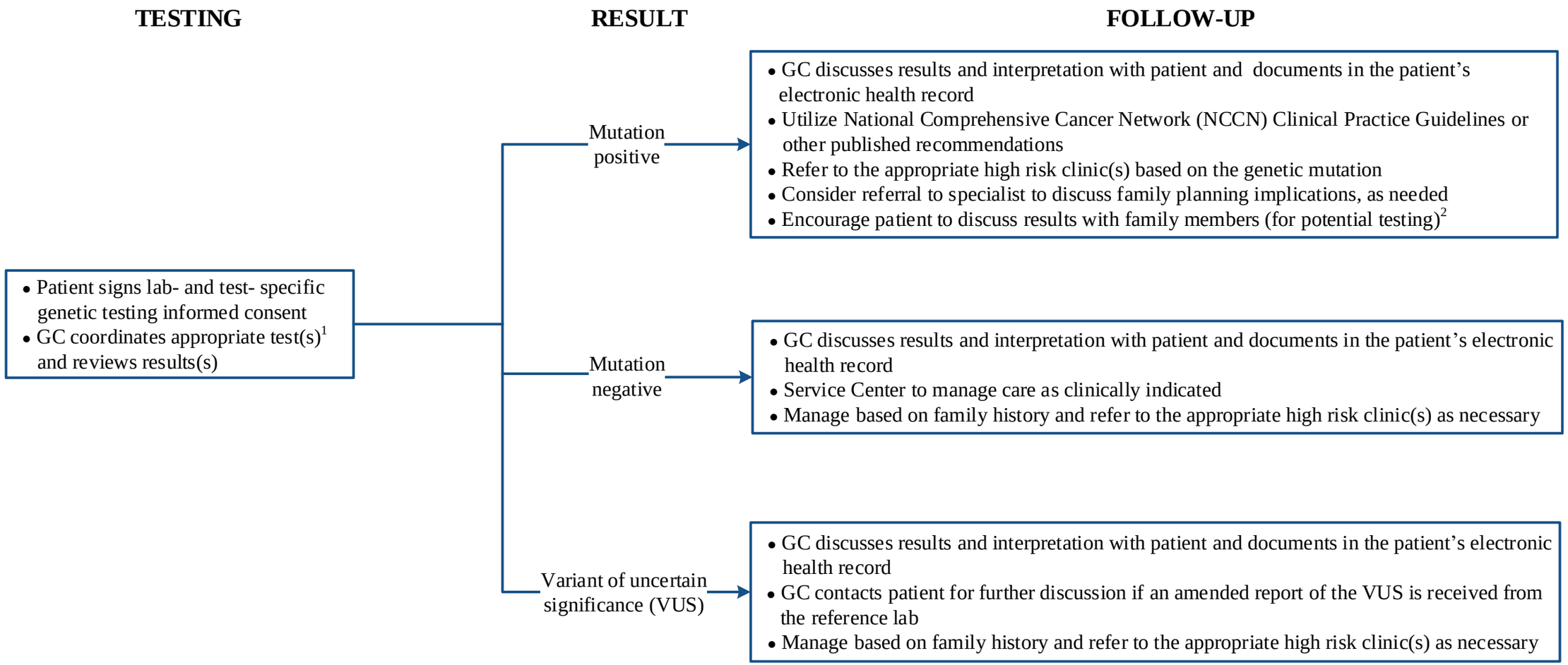

[1] In most cases peripheral blood is the preferred sample; in select cases (*e.g.*, allogeneic stem cell transplant or hematologic malignancy) a different source of DNA such as cultured fibroblasts from a skin punch biopsy is required
[2] Refer to Appendix B for Patient Education Material

APPENDIX A: Genetics Counseling Referral Criteria

	Primary Referral Criteria	Additional Referral Criteria
Breast	• Patient with a personal history of breast cancer diagnosed at ≤ 50 years of age • Patient with a personal history of TRIPLE NEGATIVE breast cancer diagnosed at ≤ 60 years of age • Patient with two breast primaries when first breast cancer is diagnosed ≤ 50 years of age • Patient with a personal history of breast cancer diagnosed at any age, and one or more of the following: ◦ Personal history of ovarian cancer or pancreatic cancer ◦ Family history of ovarian cancer ◦ Family history of breast cancer diagnosed at ≤ 50 years of age ◦ Family history of male breast cancer ◦ Family[1] history of ≥ 2 relatives diagnosed with breast cancer at any age ◦ Family history of metastatic or high grade (Gleason score ≥ 7) prostate cancer ◦ Family history of pancreatic cancer ◦ Family history of thyroid cancer, endometrial cancer, and/or dermatologic manifestations of Cowden syndrome ◦ Family history of sarcoma, adrenocortical cancer, brain tumors, leukemia or lymphoma ◦ Ashkenazi Jewish ancestry • Any male patient with a personal history of breast cancer • Any member of a family with a known mutation • Metastatic breast cancer patient considering targeted therapy based on genetic test results (*i.e.*, PARP inhibitors) • Patient with BRCA1/2 pathogenic or likely pathogenic variant detected on tumor profiling on any tumor type in absence of germline pathogenic/likely pathogenic variant analysis	Patients that do not meet Primary Referral Criteria, but have a personal history of breast cancer and there is a strong clinical suspicion for hereditary cancer (*i.e.*, strong family history of early onset pancreatic cancer, prostate cancer, or melanoma)

[1] Family history should be all on the same side of the family (*i.e.*, either maternal **or** paternal) and includes first, second, and third-degree relatives

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APPENDIX A: Genetics Counseling Referral Criteria - continued

	Primary Referral Criteria	Additional Referral Criteria
Gastrointestinal	Patients with any of the following: • Prior tumor studies suggestive of hereditary nonpolyposis colorectal cancer (HNPCC) syndrome (MSI-high and/or loss of staining for any mismatch repair protein by IHC), regardless of tumor type ◦ If loss of MLH1/PMS2, no evidence of MLH1 methylation and/or no somatic BRAF mutation (in primary colorectal tumors) • Colorectal adenocarcinoma diagnosed at < 50 years of age • Colorectal adenocarcinoma diagnosed at any age **and** first- or second-degree relative with any HNPCC-related cancers[1], diagnosed at < 50 years of age • Colorectal adenocarcinoma, regardless of age **and** one or more of the following in his/her personal history: ◦ Synchronous or metachronous colorectal cancer ◦ HNPCC-related cancers[1] • Multiple (> 10) adenomas on a single colonoscopy or > 20 lifetime cumulative adenomas • Hamartomatous polyps, any number, occurring at any age • Diffuse gastric adenocarcinoma (linitis plastica) diagnosed at or under 40 years of age • Diffuse gastric adenocarcinoma (linitis plastica) regardless of age **and** a first- or second-degree relative with gastric cancer or lobular breast cancer. • Pancreatic adenocarcinoma • Family history of a known mutation for a cancer predisposition syndrome • Somatic test results concerning for a germline mutation	Patients with any of the following: • Colorectal cancer diagnosed at any age **and** first- or second-degree relative with any HNPCC-related cancer[1] • Multiple (> 5) adenomas on a single colonoscopy at < 50 years of age • Unusual polyp burden (young age at diagnosis, histology, number)

[1] HNPPC-related cancers include: colorectal, endometrial, ovarian, gastric, pancreas, ureter and renal pelvis, biliary tract, brain, small intestinal cancers and sebaceous gland adenomas and keratoacanthomas (per revised Bethesda guidelines, Umar *et al*, JNCI 2004)

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APPENDIX A: Genetics Counseling Referral Criteria - continued

	Primary Referral Criteria	Additional Referral Criteria
Gynecologic	Patients with any of the following: • High grade non-mucinous epithelial ovarian cancer, including primary peritoneal cancer and fallopian tube cancer • Endometrial cancer, and one or more of the following: ◦ Personal history of colorectal cancer, regardless of age ◦ First-degree relative with colorectal or endometrial cancer at any age ◦ Any family history of colorectal or endometrial cancer diagnosed at < 50 years of age ◦ Microsatellite instability (MSI)/immunohistochemistry (IHC) suggestive of Lynch syndrome • Family history of a known mutation for a cancer predisposition syndrome	Patients with any of the following: • Do not meet Primary Referral Criteria, but have a significant family history of cancer • Patient diagnosed with endometrial cancer at < 50 years of age may be considered for referral at the clinician's discretion particularly if known endometrial cancer risk factors (*e.g.*, obesity) are absent • Endometrial cancer plus personal or family history of follicular thyroid cancer, breast cancer, and/or dermatologic manifestations of Cowden syndrome

APPENDIX B: Patient Education Material

Hereditary Breast and Ovarian Cancer Syndrome
https://www.mdanderson.org/patient-education/Genetics/Hereditary-Breast-and-Ovarian-Cancer-Syndrome_docx_pe.pdf

Lynch Syndrome: Hereditary Nonpolyposis Colorectal Cancer Syndrome (HNPCC)
https://www.mdanderson.org/patient-education/Genetics/Lynch-Syndrome-(HNPCC)_docx_pe.pdf

Cancer Genetics Overview
https://www.mdanderson.org/patient-education/Genetics/Cancer-Genetics-Overview_docx_pe.pdf

Genetic Counseling
https://www.mdanderson.org/patient-education/Genetics/Genetic-Counseling_docx_pe.pdf

Genetic Discrimination Laws
https://www.mdanderson.org/patient-education/Genetics/Genetic-Discrimination-Laws_docx_pe.pdf

Family History: Gathering Information About Cancer
https://www.mdanderson.org/patient-education/Genetics/Family-History-Gathering-Information-About-Cancer_docx_pe.pdf

Familial Adenomatous Polyposis (FAP)
https://www.mdanderson.org/patient-education/Genetics/Familial-Adenomatous-Polyposis-(FAP)_docx_pe.pdf

SUGGESTED READINGS

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