

## The Department of Vermont Health Access Medical Policy

**Subject: Colon Cancer (Non-Polyposis Colorectal) Genetic Screening/Testing**

**Last Review:** June 6, 2016

**Revision 3:**

**Revision 2:**

**Revision 1:**

**Original Effective:** August 26, 2015

### Description of Service or Procedure

Lynch Syndrome is often referred to as hereditary nonpolyposis colorectal cancer (HNPCC). It is the most common form of hereditary colon cancer. The genes that have been associated with HNPCC are called MLH1, MSH2, MSH6, and PMS2. Everyone has two copies of these genes; one they inherit from their father and one they inherit from their mother. Individuals who have a mutation in one copy of these genes can pass it on to future generations. If a parent has a mutation in one of these genes, each one of his/her children has a 50% chance of inheriting the gene mutation and a 50% chance of inheriting the copy of the gene without the mutation. There is an elevated risk of early-onset colorectal cancer (CRC) and increased lifetime risk for other cancers of the endometrium, ovarian, stomach, pancreatic, small intestine, hepatobiliary system, kidney, ureter, ovary, and renal pelvis.

### Disclaimer

Coverage is limited to that outlined in Medicaid Rule that pertains to the beneficiary's aid category. Prior Authorization (PA) is only valid if the beneficiary is eligible for the applicable item or service on the date of service.

### Medicaid Rule

[7102.2](#) Prior Authorization Determination

[7103](#) Medical Necessity

Medicaid Rules can be found at <http://humanservices.vermont.gov/on-line-rules>



## Coverage Position

---

Colon cancer genetic screening may be covered for beneficiaries:

- When the colon cancer genetic screening is prescribed by a licensed medical provider, specializing in genetics, enrolled in the Vermont Medicaid program, operating within their scope of practice in accordance with Vermont State Practice Act, who is knowledgeable in the use of colon cancer genetic screening and counseling and who provides medical care to the beneficiary AND
- When the clinical guidelines below are met.

## Coverage Criteria

---

The Department of Vermont Health Access (DVHA) considers genetic testing for hereditary non-polyposis colorectal cancer (HNPCC) (MLH1, MLH2, MSH6, PMS2) medically necessary to establish a molecular diagnosis of an inheritable disease when all of the following are met:

1. Beneficiary meets the revised Bethesda or Amsterdam II criteria (see criteria below).
2. Beneficiary is diagnosed with endometrial cancer before age 50; *or* has a 1<sup>st</sup> or 2<sup>nd</sup> degree relative with a disease confirmed to be caused by HNPCC mutation.
3. Beneficiary with stage II colon cancer.
4. Proper pre-test and post-test counseling should be done by an individual with expertise in genetics.

Family members of individuals with colorectal cancer found through genetic testing to have Lynch syndrome can benefit by:

1. Undergoing genetic testing to learn if they are also at increased genetic risk of lynch syndrome. and
2. Having earlier and more frequent screening, which can prevent colorectal cancer, if the person is at increased genetic risk.

### Revised Bethesda Guidelines

1. CRC diagnosed in a patient who is less than age 50; OR
2. Presence of synchronous (at the same time) or metachronous (at another time *i.e.*- a *re-occurrence of*) CRC or other Lynch syndrome-associated tumors, regardless of age; OR
3. CRC with high microsatellite instability histology diagnosed in a patient less than 60 years old; OR
4. CRC diagnosed in one or more first- degree relatives with a Lynch syndrome-associated tumor, with one of the cancers being diagnosed before age 50; OR
5. CRC diagnosed in two or more first degree or second-degree relatives with Lynch syndrome-associated tumors, regardless of age.

### Amsterdam II (ACII) Guidelines

There are at least three relatives with colorectal cancer or other HNPCC-related cancers (endometrium, stomach, renal, ureter, biliary, small intestine), one of whom is a first-degree relative of the other two; and

1. At least two successive generations are affected; and
2. CRC has been detected before the age of 50 in one of the relatives; and
3. One should be a first-degree relative of the other two: and
4. Familial adenomatous polyposis (FAP) should be excluded in cases of CRC; and

5. Tumors should be verified by pathologic examination.

### **Type of service or procedure not covered (this list may not be all inclusive)**

Colon cancer genetic screening does not cover:

1. Genetic testing for all other gene mutations for Lynch syndrome or colorectal cancer.
2. In general, genetic testing for HNPCC is not recommended for at-risk individuals younger than age 18 years. Guidelines established jointly by the American College of Medical Genetics and the American Society of Human Genetics state that predictive genetic testing should only be performed in individuals younger than age 18 years when it will affect their medical management.

### **References**

American College of Medical Genetics/American Society of Human Genetics (ACMG/ASHG). (2000). Joint Test and Technology Transfer Committee. Genetic testing for colon cancer: Joint statement of the American College of Medical Genetics and American Society of Human Genetics. *Genetics in Medicine*, 2(6). Retrieved May 26, 2016, from: [https://www.acmg.net/StaticContent/StaticPages/Colon\\_Cancer.pdf](https://www.acmg.net/StaticContent/StaticPages/Colon_Cancer.pdf)

Rubenstein, J., Enns, R., Heidlebaugh, J., Barkun, A., and the Clinical Guidelines Committee. (2015). American Gastroenterological Association Institute Guideline on the Diagnosis and Management of Lynch syndrome. *Gastroenterology*, 149. Retrieved on May 26, 2016, from: <http://www.gastrojournal.org/article/S0016-5085%2815%2901031-8/pdf>

Arnold, K. (2004). Revised guidelines published for testing for hereditary type of colorectal cancer. *Journal of the National Cancer Institute*, 96(4). Retrieved May, 26, 2016 from: <http://jnci.oxfordjournals.org/content/96/4/247.2.full>

Center for Disease Control and Prevention (CDC) (2015). Genetic testing for hereditary colorectal cancer. *Office of Public Health Genomics*. Retrieved May 26, 2016, from: <http://www.cdc.gov/features/lynchsndrome/>

Genetics Home Reference (2013). Your Guide to Understanding Genetic Conditions. Lynch syndrome. *Conditions*. Retrieved May 26, 2016, from: <http://ghr.nlm.nih.gov/condition/lynch-syndrome>

Hayes, Inc. Medical Technology Directory. *Genetic Test Evaluation Overview*. Landsdale, PA: Hayes, Inc.; December 2014.

Hayes, Inc. Medical Technology Directory. *Genetic Testing for Susceptibility to Hereditary Nonpolyposis*. Landsdale, PA: Hayes, Inc.; January 2008.

Hegde, M., Ferber, M., Mao, R., Samowitz, W., & Ganguly, A. (2014). ACMG technical standards and guidelines for genetic testing for inherited colorectal cancer (Lynch syndrome, familial adenomatous polyposis, and MYH-associated polyposis). *American College of Medical Genetics and Genomics*, 16(1). Retrieved may 26, 2016, from: <http://www.nature.com/gim/journal/v16/n1/pdf/gim2013166a.pdf>

Landsbergen, K.M., Prins, J.B., Brunner, H.G., Kraaimaat, F.W., & Hoogerbrugge, N. (2009). Genetic testing for Lynch syndrome in the first year of colorectal cancer: a review of the psychological impact. *Familial Cancer*, 8. Retrieved May 26, 2016, from:

[http://download.springer.com/static/pdf/479/art%253A10.1007%252Fs10689-009-9239-7.pdf?originUrl=http%3A%2F%2Flink.springer.com%2Farticle%2F10.1007%2Fs10689-009-9239-7&token2=exp=1433183416~acl=%2Fstatic%2Fpdf%2F479%2Fart%25253A10.1007%25252Fs10689-009-9239-7.pdf%3ForiginUrl%3Dhttp%253A%252F%252Flink.springer.com%252Farticle%252F10.1007%252Fs10689-009-9239-7\\*~hmac=e6ba7f5aad3a6d90c344caf841bbb77a18340eb281cb229a99c5b46abcb4946a](http://download.springer.com/static/pdf/479/art%253A10.1007%252Fs10689-009-9239-7.pdf?originUrl=http%3A%2F%2Flink.springer.com%2Farticle%2F10.1007%2Fs10689-009-9239-7&token2=exp=1433183416~acl=%2Fstatic%2Fpdf%2F479%2Fart%25253A10.1007%25252Fs10689-009-9239-7.pdf%3ForiginUrl%3Dhttp%253A%252F%252Flink.springer.com%252Farticle%252F10.1007%252Fs10689-009-9239-7*~hmac=e6ba7f5aad3a6d90c344caf841bbb77a18340eb281cb229a99c5b46abcb4946a)

National Comprehensive Cancer Network (NCCN) (2015). NCCN Clinical Practice Guidelines in Oncology. Genetic/familial high-risk assessment: Colorectal. Version 2.2015. Retrieved May 26, 2016, from: [https://www.nccn.org/professionals/physician\\_gls/pdf/genetics\\_colon.pdf](https://www.nccn.org/professionals/physician_gls/pdf/genetics_colon.pdf)

Winawer, S., Classen, M., Lambert, R., Fried, M., Dite, P., Goh, K.L. et al. Colorectal cancer screening. *International Digestive Cancer Institute*. Retrieved May 26, 2016, from: [http://www.worldgastroenterology.org/assets/downloads/en/pdf/guidelines/06\\_colorectal\\_cancer\\_screening.pdf](http://www.worldgastroenterology.org/assets/downloads/en/pdf/guidelines/06_colorectal_cancer_screening.pdf)

*This document has been classified as public information.*