



**BC Cancer Agency**

CARE + RESEARCH

*An agency of the Provincial Health Services Authority*

# Hereditary Cancer Program Update

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## Who we are

Hello everyone,

We are excited to launch a newsletter to provide important updates about the Hereditary Cancer Program (HCP). The HCP provides hereditary cancer genetic counselling and genetic testing to patients and families across B.C. and the Yukon. We also identify those at risk of a hereditary cancer and provide cancer screening and prevention advice and education.

### Our clinical team:

Co-Medical Directors: Intan Schrader (medical geneticist) and Sophie Sun (medical oncologist)

Medical geneticist : Gudrun Aubertin

Nurse educator: Mary McCullum

Clinical coordinator: Jennifer Nuk

Genetic counsellors (VCC): Mary-Jill Asrat, Kristin Binnington, Carol Cremin, Zoe Lohn, Tammy Petersen, Cheryl Portigal-Todd, Jenna Scott, Jennifer Thompson

Genetic counsellors (AC): Angela Bedard, Nili Heidary, Allison Mindlin, Ruth Thomas

High-Risk Clinic (VCC): Rona Cheifetz (medical lead) and Marco Gnoato (nurse practitioner)

### How to contact us:

[www.bccancer.bc.ca/screening/health-professionals/hereditary](http://www.bccancer.bc.ca/screening/health-professionals/hereditary)

HCP Abbotsford office: 604-851-4710 local 645236

HCP Vancouver office: 604-877-6000 local 672198

Questions about potential referrals: [mmccullum@bccancer.bc.ca](mailto:mmccullum@bccancer.bc.ca)

## How to Refer

Current HCP Referral Criteria for the two most common hereditary cancer syndromes, Hereditary Breast and/or Ovarian Cancer and Lynch syndrome are below and here: [HCP referral form](#)

### Hereditary Breast and/or Ovarian Cancer

Personal history of:

- breast cancer  $\leq$  age 35
- breast cancer  $\leq$  age 50 AND no family history known due to adoption
- “triple negative” (ER- PR- HER2-) breast cancer  $\leq$  age 60
- more than 1 primary breast cancer, at least 1  $\leq$  age 50
- non-mucinous epithelial ovarian cancer at any age
- both breast and ovarian cancer
- Ashkenazi Jewish heritage and breast or ovarian cancer

Family history of 1 or more of the following:

- a close relative with personal history as above
- Ashkenazi Jewish heritage and 1 or more relatives with breast cancer and/or ovarian cancer
- 1 ovarian cancer and 1 breast cancer in close female relatives
- 1 male breast cancer and another family member with breast cancer or ovarian cancer
- 2 or more ovarian cancers in close relatives
- 2 breast cancers in close female relatives, both  $\leq$  age 50
- 3 or more breast cancers in close female relatives, with at least 1  $\leq$  age

### Lynch Syndrome

Personal history of:

- colorectal cancer  $\leq$  age 40
- colorectal cancer  $\leq$  age 50 AND no family history known due to adoption
- a Lynch syndrome related cancer at any age with IHC-deficient/MSI-H result (report required)
- 2 Lynch syndrome related cancers, with at least 1 colorectal cancer and a cancer  $\leq$  age 50

Family history that includes:

- a close relative with personal history as above, OR
- 2 first degree relatives with a Lynch syndrome related cancer, both  $\leq$  age 50 and including at least 1 colorectal cancer, OR
- 3 or more Lynch syndrome related cancers, involving more than 1 generation, with at least 1 colorectal cancer and at least 1  $\leq$  age 50

(Lynch syndrome related cancers include: colorectal, endometrial, ovarian, gastric, small bowel, hepatobiliary, pancreatic, kidney, ureter, brain tumours, sebaceous gland adenomas, or pathologically-confirmed colorectal adenoma  $\leq$  age 40)

## HCP Wait Times

We are actively looking at ways to reduce wait times for HCP appointments and testing. We triage all referrals to ensure that patients requiring urgent genetic assessment and testing for treatment are seen sooner if needed. If you have a patient who is currently waiting to be seen and if you feel they should be seen sooner, please contact the HCP. Also, if your patient is in poor health status, please remember to bank DNA using this [form](#), or contact us at the HCP.

## How we test

The HCP currently uses multigene panels for genetic testing of affected individuals ages 19 and over who meet testing criteria for at least one syndrome on the panel. Most of our testing is using the 17-gene hereditary cancer panel at the Cancer Genetics Laboratory (CGL):

Gene (17 genes)	Syndrome
<i>BRCA1</i>	Hereditary breast and ovarian cancer syndrome
<i>BRCA2</i>	
<i>PALB2</i>	Hereditary breast and pancreatic cancer
<i>TP53</i>	Li Fraumeni syndrome
<i>PTEN</i>	PTEN Hamartoma Tumour Syndrome (Cowden syndrome)
<i>CDH1</i>	Hereditary diffuse gastric and lobular breast cancer
<i>MLH1</i>	Lynch syndrome
<i>MSH2</i>	Lynch syndrome
<i>MSH6</i>	Lynch syndrome
<i>PMS2</i>	Lynch syndrome
<i>MUTYH</i>	MutYH-Associated Polyposis (MAP)
<i>APC</i>	Familial Adenomatous Polyposis (FAP)
<i>POLE</i>	Hereditary colorectal cancer and colonic polyposis
<i>POLD1</i>	Hereditary colorectal and uterine cancer; colonic polyposis
<i>STK11</i>	Peutz-Jeghers syndrome
<i>SMAD4</i>	Juvenile polyposis syndrome

## Oncology clinic-based genetic testing (GENONC)

The HCP has introduced a new process whereby oncology clinicians can consent certain individuals for *BRCA1* and *BRCA2* genetic testing (GENONC). Results are returned by the HCP team. About 30 clinicians have been activated for GENONC testing and 170 patients have been tested through this streamlined process over the last year.

The current criteria for GENONC testing eligibility are:

- non-mucinous ovarian cancer
- invasive breast cancer diagnosed at age 35 or younger
- triple negative breast cancer diagnosed at age 60 or younger

We will soon be expanding the criteria to include:

- invasive breast cancer diagnosed at age 50 or younger and adopted
- personal history of more than 1 breast cancer, at least 1 under 50

Please contact us if you would like to be activated to provide GENONC testing:

[ssun@bccancer.bc.ca](mailto:ssun@bccancer.bc.ca) and [ischrader@bccancer.bc.ca](mailto:ischrader@bccancer.bc.ca)

**\*\*\*\*\*IMPORTANT\*\*\*\*\***

**For those who are already activated for GENONC testing, we are no longer providing GENONC patient education sessions on Thursday mornings at the BCCA Vancouver Centre.**

## Genetic Test Reports

\*\*\*\*\*IMPORTANT\*\*\*\*\*

**We are removing the current 6-week embargo on Cancer Genetic Laboratory genetic test reports.**

Every mutation report will soon be available in the BCCA electronic chart at the time of reporting.

**The responsibility to return the result to the patient remains with the HCP.**

If you choose to discuss the result with your patient, please understand the following:

- HCP may not have disclosed the result to the patient yet
- The patient may have questions regarding residual cancer risks or cancer risk reduction advice for themselves or family members
- The HCP will be able to address these questions at the time of a genetic test results appointment
- In the event you are disclosing the result to the patient, please emphasize the importance of discussing their result in more detail with the HCP

## Private Pay Genetic Testing

**Private pay genetic testing is available.**

There are many commercial labs across North America that now provide private pay hereditary cancer genetic testing with a physician's referral. Private pay companies mostly use multigene panel testing.

If you arrange private pay genetic testing for a patient, please understand the following:

- Variants of uncertain significance (VUS) are common, especially with multi-gene panels
- If genetic testing identifies a hereditary cancer gene mutation, the HCP will provide appointments about the clinical implications of the result for the tested person and their family members.
- Relatives are eligible for expedited HCP genetic counselling and publicly-funded genetic testing when a gene mutation has been confirmed in a family.

\*\*\*\*\*IMPORTANT\*\*\*\*\*

**Please ensure all individuals meeting HCP referral criteria are referred, regardless of research or private pay genetic testing results.**

## What to do with a clinical or research tumour result?

The HCP can see patients and families with possible high-risk hereditary mutations identified through tumour or research sequencing (eg. Oncopanel or POG) on an urgent basis if required.

**The current referral process for physicians is as follows:**

1. Inform patient or patient designee of result.
2. Complete [HCP referral form](#) and include mutation report.
3. Organize [DNA banking](#).

## HCP Research: Familial Pancreatic Cancer Program

Through the HCP, a research program has been created specifically for patients with inherited forms of pancreatic cancer.

**The Familial Pancreatic Cancer Program (FPCP)** was established June 2016 for the purpose of:

- furthering the understanding of the causes of pancreatic cancer
- evaluating the contribution of genetic factors
- referring high-risk populations for potential early detection service

The FPCP aims to determine the benefit of currently available screening methods and is actively involved in the development of an investigational pancreatic cancer screening protocol.

All patients with a diagnosis of PDAC (pancreatic ductal adenocarcinoma) are eligible for a referral to the FPCP regardless of family history.

For any FPCP questions, please contact Carol Cremin: [ccremin@bccancer.bc.ca](mailto:ccremin@bccancer.bc.ca)

## Upcoming Events

**Lynch Syndrome Education Day (LSED), October 14<sup>th</sup>, 2017.**

This is a half day, patient education event for individuals with Lynch syndrome, their families and caregivers, funded by the BC Cancer Foundation. To provide support to patients and give opportunities to connect with other patients, this program will address the following:

- Updates on Cancer Screening, Surgery, and Treatment
- Wellness and Prevention
- Advances in the treatment of Lynch Syndrome
- Available support programs

For any questions, please contact Hae Jung Min: [hae.min@bccancer.bc.ca](mailto:hae.min@bccancer.bc.ca)