BC CANCER
Provincial Health Services Authority

Hereditary Cancer Update

Mainstream Testing – Who, How, When to Test

Sophie Sun and Kasmintan Schrader
BC Cancer Hereditary Cancer Program Co-Medical Directors

Sept 19 2024

We acknowledge with gratitude, that we are gathered on the traditional, ancestral and unceded territories of the Coast Salish peoples from the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Úxwumixw (Squamish), and səl̓ilw̓ətaʔɬ (Tsleil-Waututh) First Nations who have nurtured and cared for the lands and waters around us for all time. We give thanks for the opportunity to live, work and support care here

Disclosures

Sophie Sun

Consultant role – AstraZeneca, Bristol-Myers Squib, Roche

Kasmintan Schrader

Consultant role - AstraZeneca, Precision RxDx

Research funding from AstraZeneca and Merck

Medical Advisor relationship and individual stocks and stock options with Genetics Adviser

Co-Inventor on patent application for parent-of-origin determination methodology held by PHSA

Hereditary Cancer Program (HCP)

Reduce the morbidity and mortality from hereditary cancer syndromes

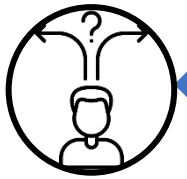
- Identify people with hereditary cancer syndromes
- Cancer risk assessment
- Provide screening and prevention recommendations
- Information to guide cancer treatment decisions
- Identify resources and supports

Genetic Counselling & Genetic Testing

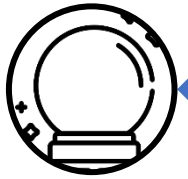
High Risk Clinic

Hereditary Cancer Follow-Up Initiative

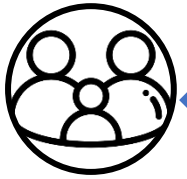
Why Test?



TREATMENT

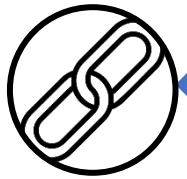


FUTURE CANCER RISK

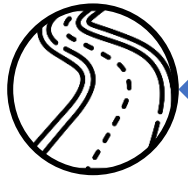


FAMILY – PREVENT CANCER

How to test?



REFER TO HCP



“MAINSTREAM”

PATIENT PAY

The Hereditary Cancer Program (HCP)

- Cancer Risk Assessment
- Screening and Prevention
- Information to Guide Treatment
- Advocacy and Support

Learn More

Hereditary Cancer Program (HCP)

BC Cancer - Screening & Prevention

Staff on site:
- Vancouver
- Abbotsford
- Victoria

Services Provided:
- Telephone
- Virtual Health
- Small # In-Person

Team:
- Medical Geneticists
- Medical/Surgical Oncologists
- Genetic Counsellors
- Genetic Counselling Assistants
- Nurse Navigators
- Nurse Practitioners
- Clerical Staff
- Research Staff
- Operations Staff

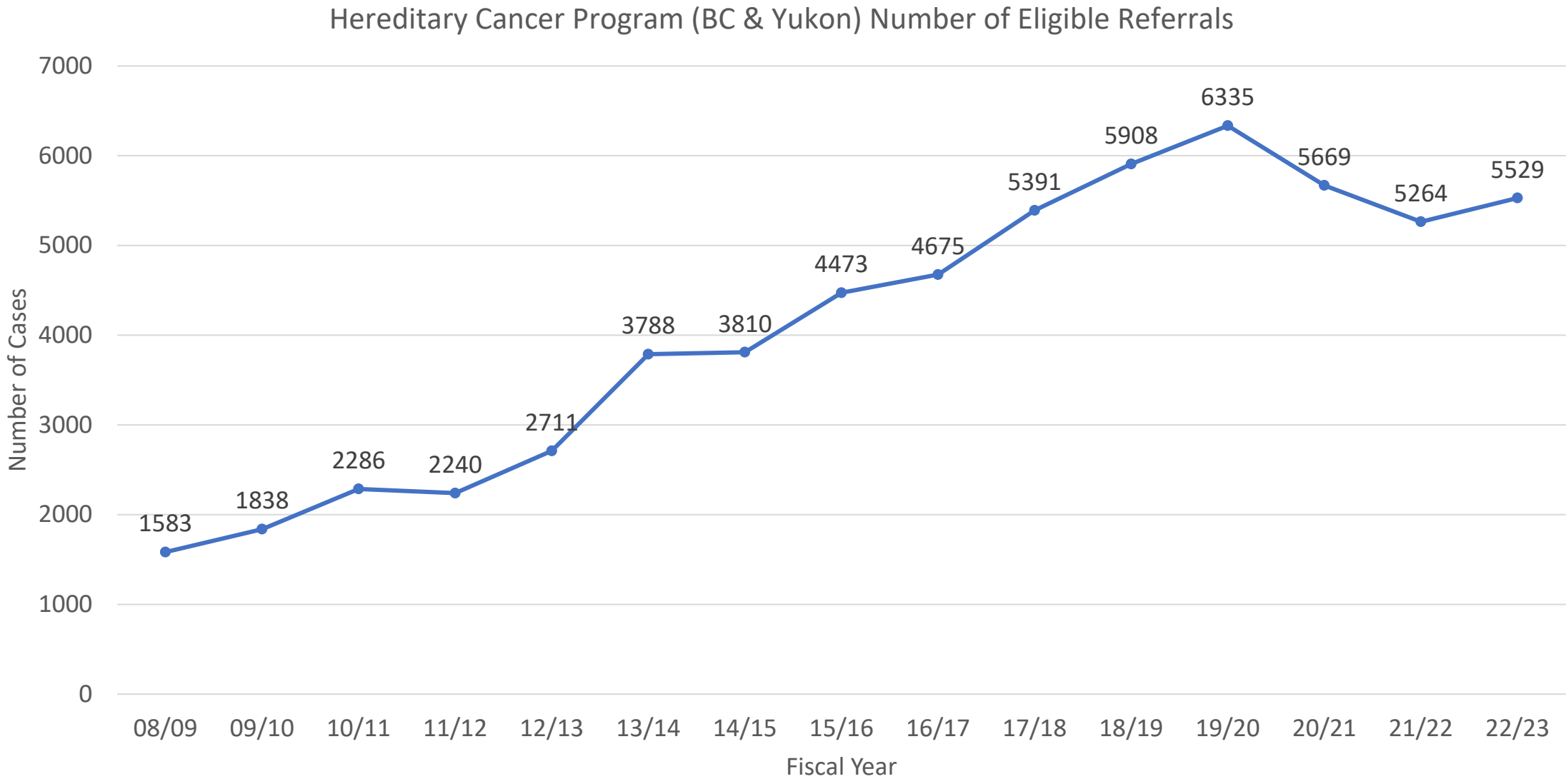
https://m.maploco.com/visited-provinces-ca/mine.php?provinces=AB-BC-YT

Referrals to HCP

Referral Form

- **Referral Criteria**
  - Focus resources on those families more likely to have hereditary cancer
  - High demand for services with related waitlist – working to reduce this
  - Any health care provider or patient can refer to the HCP
  - If people don't know their family history, we can often still meet with them
  - Family history form not required if patient meets criteria on their own

Increasing Demand



Patient Harm

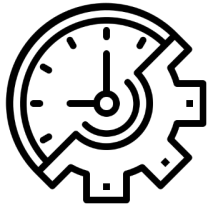
- Missed opportunities to incorporate genetic test results into treatment plans
- Increased rate of patients lost to follow-up
- Increased patient/family anxiety
- Patient death while waiting for an appointment
- Inequitable
- Diagnoses of preventable cancers

Bringing testing into the 'Mainstream'

Oncology Clinic-Based Hereditary Cancer Genetic Testing in a Population-Based Health Care System

by Matthew Richardson [1], Hae Jung Min [2], Quan Hong [2], Katie Compton [2], Sze Wing Mung [2], Zoe Lohn [2], Jennifer Nuk [2], Mary McCullum [2], Cheryl Portigal-Todd [2], Aly Karsan [3], Dean Regier [4,5], Lori A. Brotto [6], Sophie Sun [2,7,8,*] and Kasmintan A. Schrader [2,9,10,*]

Cancers **2020**, *12*(2), 338; **https://doi.org/10.3390/cancers12020338**



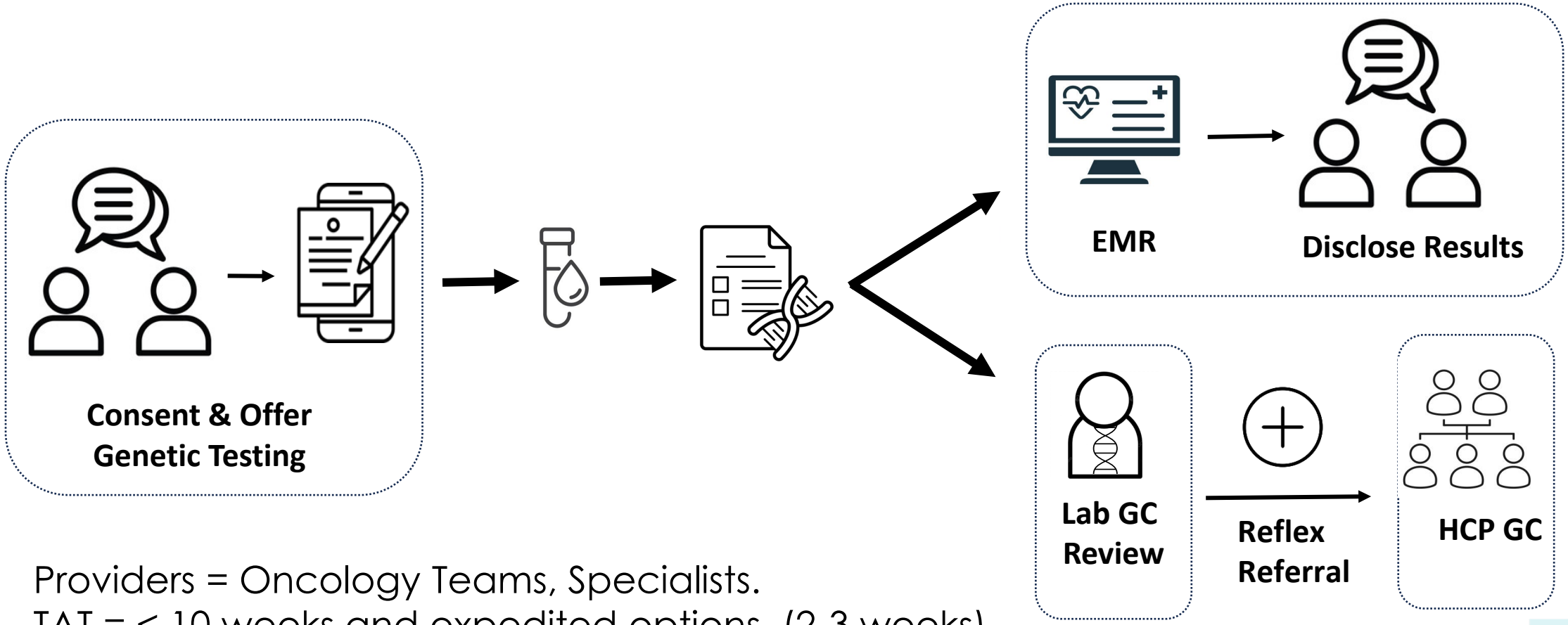
Mainstream 2.0 launched in 2022

Time to Results

Acceptable Patients

Acceptable Providers

Mainstreaming Process



Providers = Oncology Teams, Specialists.
TAT = < 10 weeks and expedited options (2-3 weeks)
GT Lab = CGL (84 genes) or Ambry (72 genes)

Hereditary Cancer Program (HCP)

BC CANCER

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Menu

Health Professionals / Clinical Resources / Hereditary Cancer

SHARE A A

Hereditary Cancer

The Hereditary Cancer Program (HCP) provides genetic counselling and genetic testing for BC/Yukon residents who may have inherited an increased risk for certain types of cancer. Similar services are available across Canada and in other countries.

This section provides direction about HCP referrals, information and resources for health professionals to use when discussing hereditary cancer assessment with your patients/families.

Some patients with a personal history of cancer are eligible for "mainstreamed" hereditary cancer testing. You can order the testing and disclose results to your patient without a referral. You can find more information in the "**Resources**" tab below.

Have a patient in the High Risk Clinic? Learn about your role in their care.

Referral | Syndromes | Resources

People are encouraged to review their personal and/or family history with a health care provider to clarify whether HCP referral is indicated.

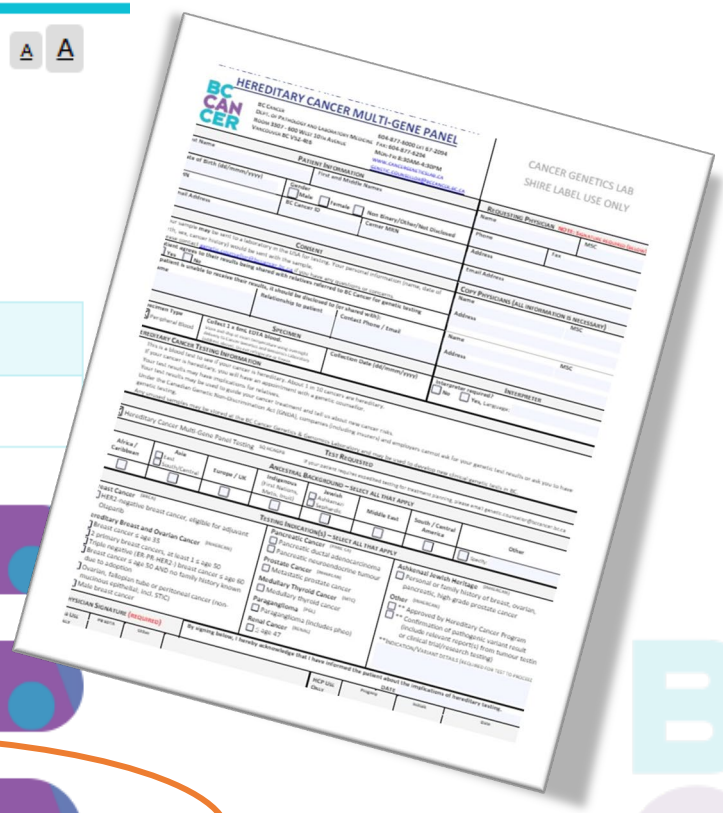
In this section

- Hereditary Cancer
- High Risk Clinic

Download the Hereditary Cancer Program Referral form >

Download the Urgent DNA Storage Requisition >

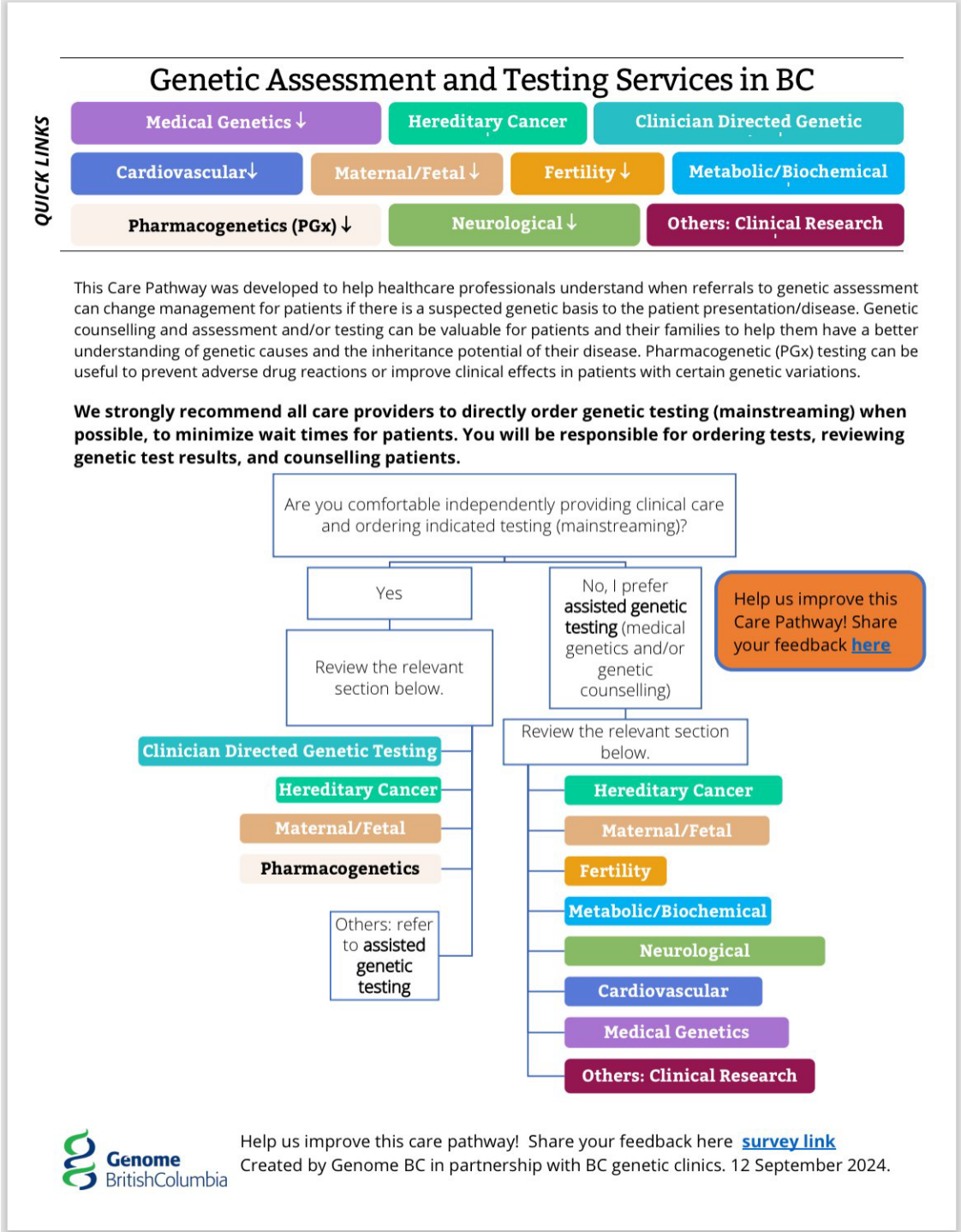
Mainstreamed Genetic Testing: Information and Requisition Download >



NOW ON PATHWAYS BC

Genetic Clinics listings with estimated wait times & advice options

Expanding Clinician Tools & Patient Info to support the use of genetics in your practice



Genetic Assessment and Testing Services in BC

QUICK LINKS

Medical Genetics ↓ | Hereditary Cancer | Clinician Directed Genetic
Cardiovascular ↓ | Maternal/Fetal ↓ | Fertility ↓ | Metabolic/Biochemical
Pharmacogenetics (PGx) ↓ | Neurological ↓ | Others: Clinical Research

This Care Pathway was developed to help healthcare professionals understand when referrals to genetic assessment can change management for patients if there is a suspected genetic basis to the patient presentation/disease. Genetic counselling and assessment and/or testing can be valuable for patients and their families to help them have a better understanding of genetic causes and the inheritance potential of their disease. Pharmacogenetic (PGx) testing can be useful to prevent adverse drug reactions or improve clinical effects in patients with certain genetic variations.

We strongly recommend all care providers to directly order genetic testing (mainstreaming) when possible, to minimize wait times for patients. You will be responsible for ordering tests, reviewing genetic test results, and counselling patients.

Are you comfortable independently providing clinical care and ordering indicated testing (mainstreaming)?

Yes → Review the relevant section below.
- Clinician Directed Genetic Testing
- Hereditary Cancer
- Maternal/Fetal
- Pharmacogenetics
- Others: refer to assisted genetic testing

No, I prefer assisted genetic testing (medical genetics and/or genetic counselling) → Review the relevant section below.
- Hereditary Cancer
- Maternal/Fetal
- Fertility
- Metabolic/Biochemical
- Neurological
- Cardiovascular
- Medical Genetics
- Others: Clinical Research

Help us improve this Care Pathway! Share your feedback here

Genome BritishColumbia

Help us improve this care pathway! Share your feedback here survey link
Created by Genome BC in partnership with BC genetic clinics. 12 September 2024.

Genetic Assessment and Testing Services Care Pathway

Highlights genetic testing available to be ordered directly by care providers

- Constitutional Genetic tests
- Prenatal Genetic tests
- Hereditary Cancer
- Guidelines & funding available for genetic testing outside of BC

Navigate the referral process Provincial Medical GeneticsSpecialty clinics offering assessment and testing

Help us improve this Care Pathway!
Share your feedback here

Hereditary Cancer

*You can direct order genetic testing (mainstreaming) for **hereditary breast, ovarian, pancreatic, prostate, medullary thyroid, paraganglioma or renal cancer** for patients whose family history meets the criteria – see clinic page below.*

Mainstreamed Hereditary Cancer Testing Clinic

1. Review the clinician process:
    a. Mainstreaming Orientation
    b. Provider Checklist
2. Review genetic testing information with the patient:
    a. Hereditary Cancer Genetic Testing Patient Information Sheet
    b. Patient information video
3. Fill the requisition form (Genetics and Genomics Lab – Hereditary Cancer Multi-Gene Panel) that patients can bring to any laboratory
    a. http://cancergeneticslab.ca/requisitions/
    b. If you use CERNER, enter the "Hereditary Cancer Genetics Panel" order code to note for other providers that you have ordered testing. You will still need to give the requisition to the patient
4. (optional) Request advice from a genetic counsellor:
    a. Contact the BC Cancer Hereditary Cancer Program or request advice using the callback request

Referral to Genetic Testing and Counselling

1. Does the patient have: cancer in >1 generation, family member with early onset of cancer (<50), family members having more than 1 type of cancer, or rare cancers?
    a. Review the referral criteria and consider referral to **BC Cancer Hereditary Cancer Program**
    b. If you are still unsure if your patient meets the referral criteria, contact the BC Cancer Hereditary Cancer Program or request advice using the callback request
2. If you have a **pediatric cancer patient**, please refer to **medical genetics**

BC CANCER
Provincial Health Services Authority

When and who to test

Hereditary Cancer Program (HCP)

Who is eligible for mainstream genetic testing?

Requisition

TEST REQUESTED

☒ Hereditary Cancer Multi-Gene Panel Testing SQ HCAGPB

If your patient requires expedited testing for treatment planning, please email genetic.counsellor@bccancer.bc.ca

ANCESTRAL BACKGROUND – SELECT ALL THAT APPLY

Africa / Caribbean	Asia	Europe / UK	Indigenous (First Nations, Metis, Inuit)	Jewish	Middle East	South / Central America	Other
☐	☐ East ☐ South/Central	☐	☐	☐ Ashkenazi ☐ Sephardic	☐	☐	☐ Specify:

TESTING INDICATION(S) – SELECT ALL THAT APPLY

Breast Cancer (BRCA)
- ☐ HER2-negative breast cancer, eligible for adjuvant Olaparib

Hereditary Breast and Ovarian Cancer (INHERCAN)
- ☐ Breast cancer ≤ age 35
- ☐ 2 primary breast cancers, at least 1 ≤ age 50
- ☐ Triple negative (ER-PR-HER2-) breast cancer ≤ age 60
- ☐ Breast cancer ≤ age 50 AND no family history known due to adoption
- ☐ Ovarian, fallopian tube or peritoneal cancer (non-mucinous epithelial; incl. STIC)
- ☐ Male breast cancer

Pancreatic Cancer (PANC CA)
- ☐ Pancreatic ductal adenocarcinoma
- ☐ Pancreatic neuroendocrine tumour

Prostate Cancer (INHERCAN)
- ☐ Metastatic prostate cancer

Medullary Thyroid Cancer (MTC)
- ☐ Medullary thyroid cancer

Paraganglioma (PGL)
- ☐ Paraganglioma (includes pheo)

Renal Cancer (RENAL)
- ☐ ≤ age 47

Ashkenazi Jewish Heritage (INHERCAN)
- ☐ Personal or family history of breast, ovarian, pancreatic, high-grade prostate cancer

Other (INHERCAN)
- ☐ ** Approved by Hereditary Cancer Program
- ☐ ** Confirmation of pathogenic variant result (include relevant report(s) from tumour testing or clinical trial/research testing)

**INDICATION/VARIANT DETAILS (REQUIRED FOR TEST TO PROCEED):

PHYSICIAN SIGNATURE (REQUIRED)

By signing below, I hereby acknowledge that I have informed the patient about the implications of hereditary testing.

DATE

LAB USE ONLY	PB EDTA	Other		HCP USE ONLY	Progeny	Initials	Date

The personal information collected on this form is collected under the authority of the Personal Information Protection Act. The personal information is used to provide medical services requested on this requisition. The information collected is used for quality assurance, management and disclosed to healthcare practitioners involved in providing care or when

HCP Mainstream Test Requisition

CANCER GENETICS AND GENOMICS LABORATORY
HEREDITARY CANCER MULTI-GENE PANEL

BC CANCER
DEPT. OF PATHOLOGY AND LABORATORY MEDICINE
ROOM 3307 - 600 WEST 10TH AVENUE
VANCOUVER BC V5Z-4E6

604-877-6000 EXT 67-2094
FAX: 604-877-6294
MON-FRI 8:30AM-4:30PM
WWW.CANCERGENETICSLAB.CA
GENETIC.COUNSELLOR@BCCANCER.BC.CA

CANCER GENETICS LAB

SHIRE LABEL USE ONLY

PATIENT INFORMATION

Last Name	First and Middle Names	
Date of Birth (dd/mmm/yyyy)	Gender ☐ Male ☐ Female ☐ Non Binary/Other/Not Disclosed	
PHN	BC Cancer ID	Cerner MRN
Email Address		

REQUESTING PHYSICIAN NOTE: SIGNATURE REQUIRED (BELOW)

Name	MSC
Phone	Fax
Address	
Email Address	

CONSENT

Your sample **may** be sent to a laboratory in the USA for testing. Your personal information (name, date of birth, sex, cancer history) would be sent with the sample.
Please contact genetic.counsellor@bccancer.bc.ca if you have any questions or concerns.

Patient agrees to their results being shared with relatives referred to BC Cancer for genetic testing
☐ Yes ☐ No

If patient is unable to receive their results, it should be disclosed to (or shared with):

Name	Relationship to patient	Contact Phone / Email

COPY PHYSICIANS (ALL INFORMATION IS NECESSARY)

Name	MSC
Address	
Name	MSC
Address	

HCP Mainstream Test Requisition

CONSENT
Your sample **may** be sent to a laboratory in the USA for testing. Your personal information (name, date of birth, sex, cancer history) would be sent with the sample. Please contact genetic.counsellor@bccancer.bc.ca if you have any questions or concerns.
Patient agrees to their results being shared with relatives referred to BC Cancer for genetic testing ☐ **Yes** ☐ **No**
If patient is unable to receive their results, it should be disclosed to (or shared with):

Name	Relationship to patient	Contact Phone / Email

SPECIMEN			INTERPRETER
Specimen Type ☒ Peripheral Blood	**Collect 1 x 6mL EDTA blood.** Store and ship at room temperature using overnight delivery to Cancer Genetics and Genomics Laboratory (address above). Do not refrigerate or freeze.	**Collection Date (dd/mmm/yyyy)**	**Interpreter required?** ☐ **Yes** Language: ☐ **No**

Hereditary Cancer Testing

Considerations:

- Understanding a factor in my personal / family history of cancer
- Learn of other cancer risks, screening and prevention
- Information may be used for my current care
- Help my family, ie. give options
- Increased worry
- Strained family relationships

HCP Mainstream Test Requisition

HEREDITARY CANCER TESTING INFORMATION

- This is a blood test to see if your cancer is hereditary. About 1 in 10 cancers are hereditary.
- If your cancer is hereditary, you will have an appointment with a genetic counsellor.
- Your test results may have implications for relatives.
- Your test results may be used to guide your cancer treatment and tell us about new cancer risks.
- Under the Canadian Genetic Non-Discrimination Act (GNDA), companies (including insurers) and employers cannot ask for your genetic test results or ask you to have genetic testing.
- Any unused samples may be stored at the BC Cancer Genetics & Genomics Laboratory and may be used to develop new clinical genetic tests in BC.

TEST REQUESTED

☒ Hereditary Cancer Multi-Gene Panel Testing SQ HCAGPB

If your patient requires expedited testing for treatment planning, please email genetic.counsellor@bccancer.bc.ca

ANCESTRAL BACKGROUND – SELECT ALL THAT APPLY

Africa / Caribbean	Asia ☐ East ☐ South/Central	Europe / UK	Indigenous (First Nations, Metis, Inuit)	Jewish ☐ Ashkenazi ☐ Sephardic	Middle East	South / Central America	Other
☐	☐	☐	☐	☐	☐	☐	☐ Specify:

Hereditary Cancer Program (HCP)

Mainstream testing numbers

- ~ 300 + samples per month
- > 1000s Genetic Test Results Reported
- ~12% Positive Rate (~3% recessive/low-penetrant)
- ~25% VUS Rate
  - <2% Result in referral to HCP
- Indication: M-Prostate >> Breast > Pancreatic > Ovarian

Clinician Feedback

'YES, sign me up!'

'Enables access to timely genetic testing for patients (speed of results)'

'Process is straightforward & easy and convenient for patient and ordering providers'

Shifting genetic counselling to after test result for some optimizes genetic services to focus on:

- Result interpretation, follow-up support for families, cascade testing in relatives
- Psychotherapeutic genetic counselling to those who need it most
- Mainstream genetic testing increases efficiency and reduces wait times

Genetic test results available to patients, their providers and their families faster.

Resources

BC Cancer Genetics and Genomics Lab Website:

- ❑ Indications
- ❑ Requisition
- ❑ Process Checklist
- ❑ Patient Information Sheets:
  - Pre-Test
  - Positive Result
  - Negative Result (includes VUS)

Resources

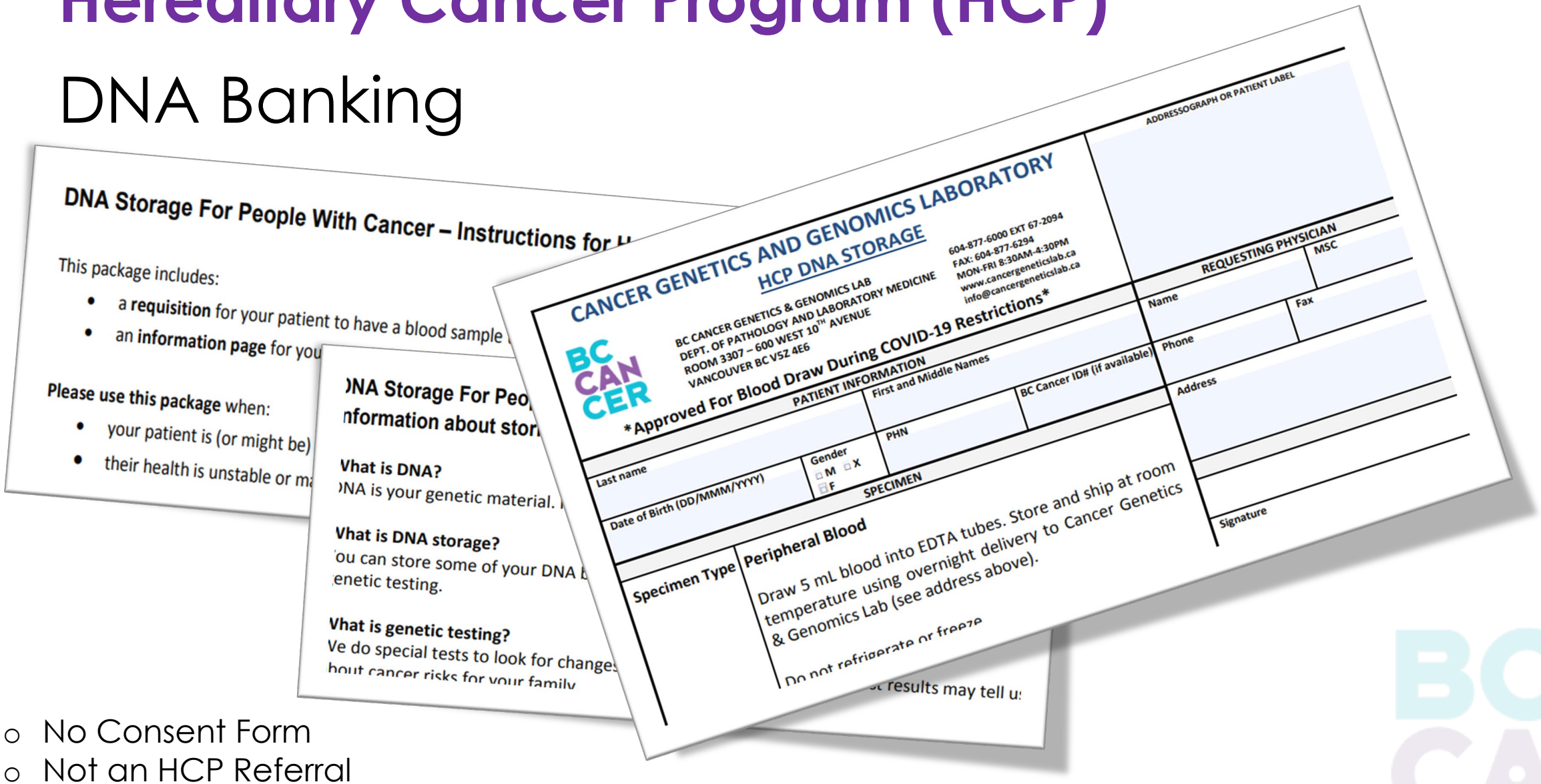
Hereditary Cancer Program Website:

- ❑Patient video and information sheets
- ❑Clinician slide deck

genetic.counsellor@bccancer.bc.ca

Hereditary Cancer Program (HCP)

DNA Banking



- No Consent Form
- Not an HCP Referral

Hereditary Cancer Program (HCP)

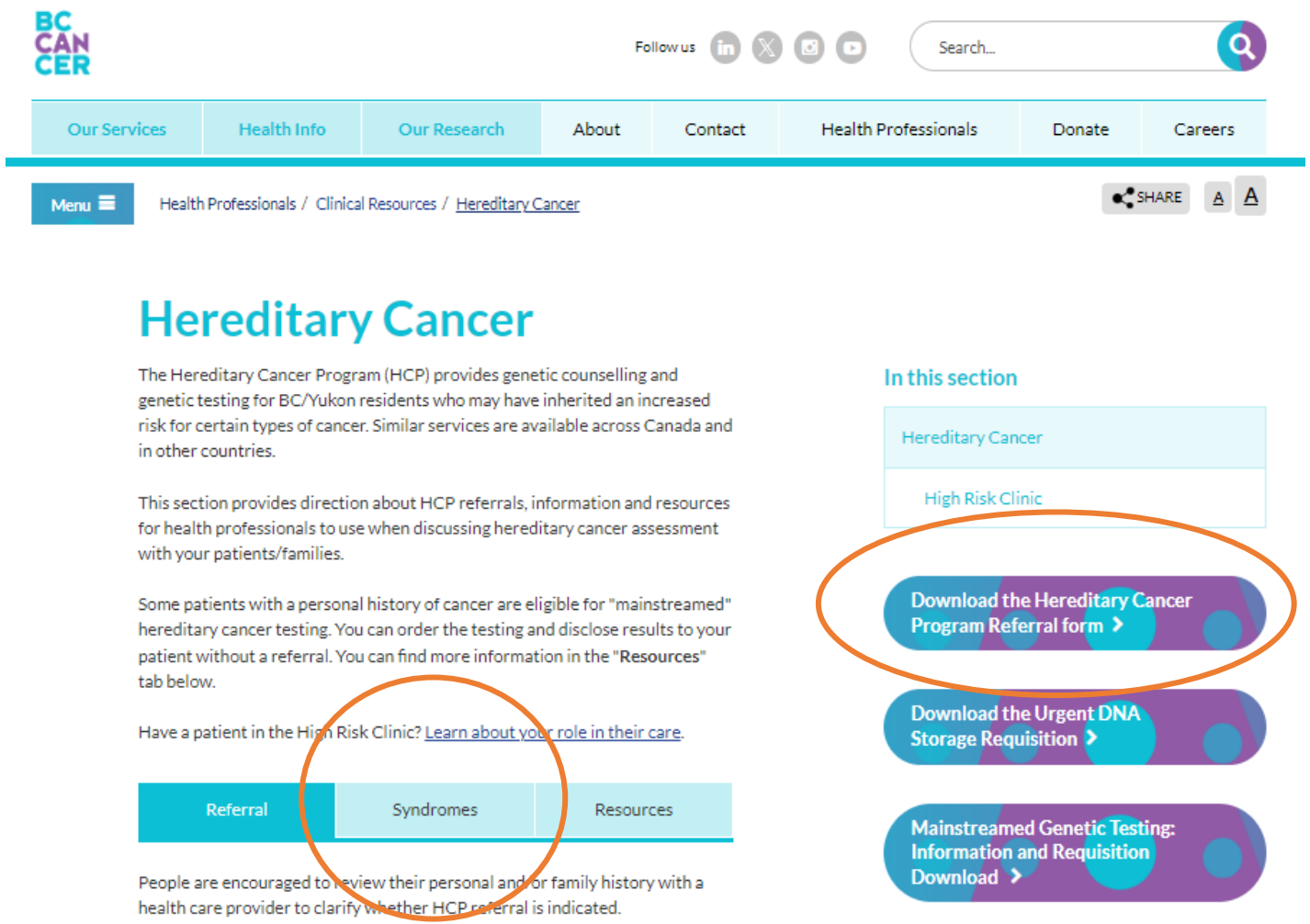
When to Refer

- Criteria on website
- Patient outside criteria – OK to refer
- Any health care provider or patient can refer
- It is OK if people do not know their full family history
- Family history form not required if patient meets criteria on their own

High demand for services – working to reduce waitlist

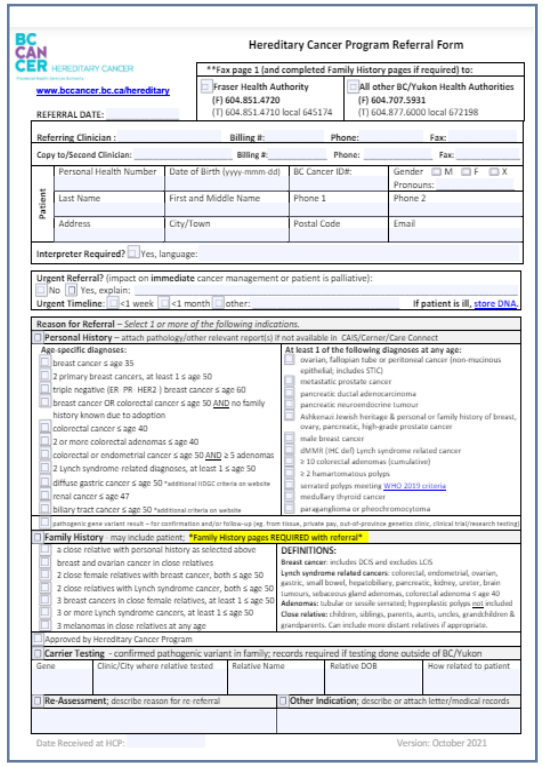
Hereditary Cancer Program (HCP)

Who to refer



Hereditary Cancer Program (HCP)

How to Refer



Hereditary Cancer Program Referral Form

www.bccancer.bc.ca/hereditary

**Fax page 1 (and completed Family History pages if required) to:

Fraser Health Authority
(F) 604.851.4720
(T) 604.851.4710 local 645174

All other BC/Yukon Health Authorities
(F) 604.707.5931
(T) 604.877.6000 local 672198

REFERRAL DATE:

Referring Clinician : Billing #: Phone: Fax:

Copy to/Second Clinician: Billing #: Phone: Fax:

Patient

Personal Health Number	Date of Birth (yyyy-mmm-dd)	BC Cancer ID#:	Gender ☐ M ☐ F ☐ X Pronouns:
Last Name	First and Middle Name	Phone 1	Phone 2
Address	City/Town	Postal Code	Email

Interpreter Required? ☐ Yes, language:

Urgent Referral? (impact on **immediate** cancer management or patient is palliative):
☐ No ☐ Yes, explain:
Urgent Timeline: ☐ <1 week ☐ <1 month ☐ other: If patient is ill, store DNA

Reason for Referral – *Select 1 or more of the following indications.*

☐ Personal History – attach pathology/other relevant report(s) if not available in CAIS/Cerner/Care Connect

Age-specific diagnoses:
- ☐ breast cancer ≤ age 35
- ☐ 2 primary breast cancers, at least 1 ≤ age 50
- ☐ triple negative (ER- PR- HER2-) breast cancer ≤ age 60
- ☐ breast cancer OR colorectal cancer ≤ age 50 AND no family history known due to adoption
- ☐ colorectal cancer ≤ age 40
- ☐ 2 or more colorectal adenomas ≤ age 40
- ☐ colorectal or endometrial cancer ≤ age 50 AND ≥ 5 adenomas
- ☐ 2 Lynch syndrome related diagnoses, at least 1 ≤ age 50
- ☐ diffuse gastric cancer ≤ age 50 *additional HDGC criteria on website
- ☐ renal cancer ≤ age 47
- ☐ biliary tract cancer ≤ age 50 *additional criteria on website

At least 1 of the following diagnoses at any age:
- ☐ ovarian, fallopian tube or peritoneal cancer (non-mucinous epithelial; includes STIC)
- ☐ metastatic prostate cancer
- ☐ pancreatic ductal adenocarcinoma
- ☐ pancreatic neuroendocrine tumour
- ☐ Ashkenazi Jewish heritage & personal or family history of breast, ovary, pancreatic, high-grade prostate cancer
- ☐ male breast cancer
- ☐ dMMR (IHC def) Lynch syndrome related cancer
- ☐ ≥ 10 colorectal adenomas (cumulative)
- ☐ ≥ 2 hamartomatous polyps
- ☐ serrated polyps meeting WHO 2019 criteria
- ☐ medullary thyroid cancer
- ☐ paraganglioma or pheochromocytoma

☐ pathogenic gene variant result – for confirmation and/or follow-up (eg. from tissue, private pay, out-of-province genetics clinic, clinical trial/research testing)

☐ Family History may include patient; *Family History pages REQUIRED with referral*

- ☐ a close relative with personal history as selected above
- ☐ breast and ovarian cancer in close relatives
- ☐ 2 close female relatives with breast cancer, both ≤ age 50
- ☐ 2 close relatives with Lynch syndrome cancer, both ≤ age 50
- ☐ 3 breast cancers in close female relatives, at least 1 ≤ age 50
- ☐ 3 or more Lynch syndrome cancers, at least 1 ≤ age 50
- ☐ 3 melanomas in close relatives at any age

DEFINITIONS:
Breast cancer: includes DCIS and excludes LCIS
Lynch syndrome related cancers: colorectal, endometrial, ovarian, gastric, small bowel, hepatobiliary, pancreatic, kidney, ureter, brain tumours, sebaceous gland adenomas, colorectal adenoma ≤ age 40
Adenomas: tubular or sessile serrated; hyperplastic polyps not included
Close relative: children, siblings, parents, aunts, uncles, grandchildren & grandparents. Can include more distant relatives if appropriate.

☐ Approved by Hereditary Cancer Program

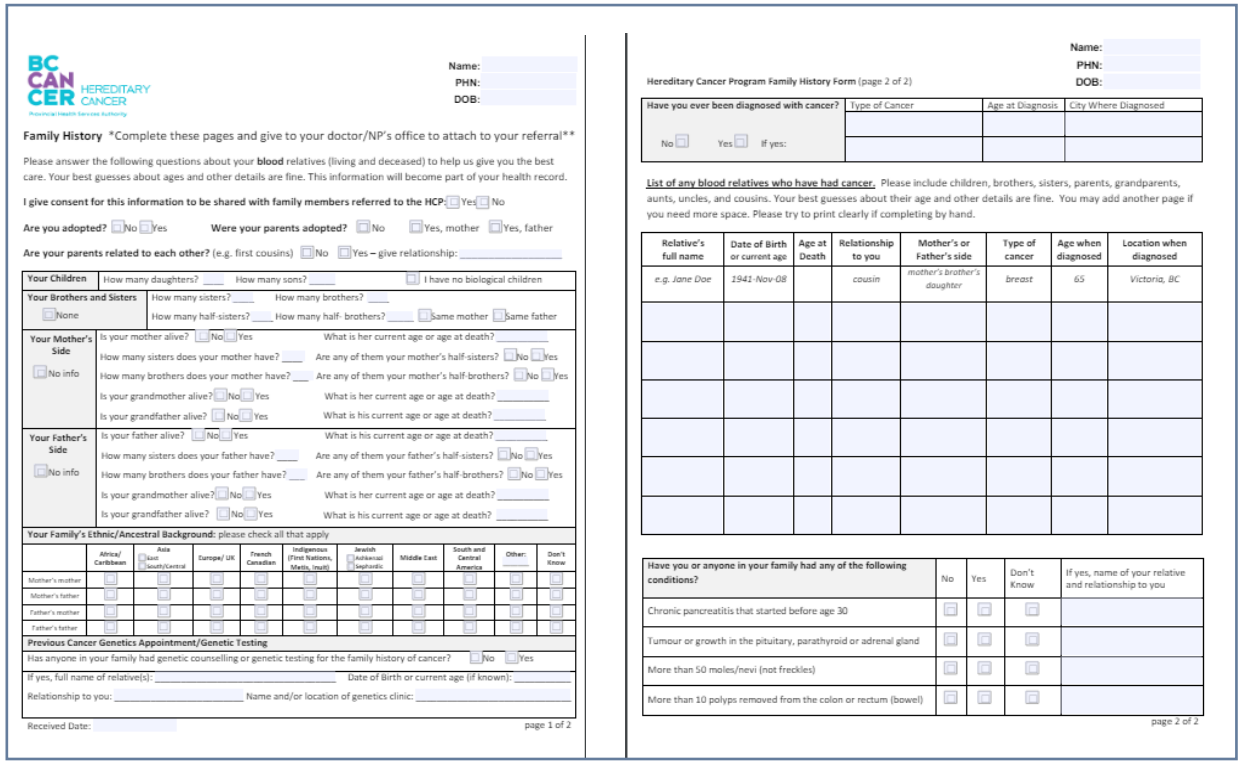
☐ Carrier Testing - confirmed pathogenic variant in family; records required if testing done outside of BC/Yukon

Gene	Clinic/City where relative tested	Relative Name	Relative DOB	How related to patient

☐ Re-Assessment; describe reason for re-referral

☐ Other Indication; describe or attach letter/medical records

Date Received at HCP: Version: October 2021



BC CANCER HEREDITARY CANCER Provincial Health Services Authority

Name:
PHN:
DOB:

Family History *Complete these pages and give to your doctor/NP's office to attach to your referral**

Please answer the following questions about your **blood** relatives (living and deceased) to help us give you the best care. Your best guesses about ages and other details are fine. This information will become part of your health record.

I give consent for this information to be shared with family members referred to the HCP: ☐ Yes ☐ No

Are you adopted? ☐ No ☐ Yes **Were your parents adopted?** ☐ No ☐ Yes, mother ☐ Yes, father

Are your parents related to each other? (e.g. first cousins) ☐ No ☐ Yes – give relationship:

Your Children How many daughters? ____ How many sons? ____ ☐ I have no biological children

Your Brothers and Sisters ☐ None
How many sisters? ____ How many brothers? ____
How many half-sisters? ____ How many half- brothers? ____ ☐ Same mother ☐ Same father

Your Mother's Side ☐ No info
Is your mother alive? ☐ No ☐ Yes What is her current age or age at death? ____
How many sisters does your mother have? ____ Are any of them your mother's half-sisters? ☐ No ☐ Yes
How many brothers does your mother have? ____ Are any of them your mother's half-brothers? ☐ No ☐ Yes
Is your grandmother alive? ☐ No ☐ Yes What is her current age or age at death? ____
Is your grandfather alive? ☐ No ☐ Yes What is his current age or age at death? ____

Your Father's Side ☐ No info
Is your father alive? ☐ No ☐ Yes What is his current age or age at death? ____
How many sisters does your father have? ____ Are any of them your father's half-sisters? ☐ No ☐ Yes
How many brothers does your father have? ____ Are any of them your father's half-brothers? ☐ No ☐ Yes
Is your grandmother alive? ☐ No ☐ Yes What is her current age or age at death? ____
Is your grandfather alive? ☐ No ☐ Yes What is his current age or age at death? ____

Your Family's Ethnic/Ancestral Background: please check all that apply

	Africa/ Caribbean	Asia (East South/Central)	Europe/ UK	French Canadian	Indigenous (First Nations, Metis, Inuit)	Jewish (Ashkenazi Sephardic)	Middle East	South and Central America	Other: ____	Don't Know
Mother's mother	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Mother's father	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Father's mother	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Father's father	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

Previous Cancer Genetics Appointment/Genetic Testing

Has anyone in your family had genetic counselling or genetic testing for the family history of cancer? ☐ No ☐ Yes

If yes, full name of relative(s): Date of Birth or current age (if known):

Relationship to you: Name and/or location of genetics clinic:

Received Date: page 1 of 2

Name:
PHN:
DOB:

Hereditary Cancer Program Family History Form (page 2 of 2)

Have you ever been diagnosed with cancer?	Type of Cancer	Age at Diagnosis	City Where Diagnosed
No ☐ Yes ☐ If yes:			

List of any blood relatives who have had cancer. Please include children, brothers, sisters, parents, grandparents, aunts, uncles, and cousins. Your best guesses about their age and other details are fine. You may add another page if you need more space. Please try to print clearly if completing by hand.

Relative's full name	Date of Birth or current age	Age at Death	Relationship to you	Mother's or Father's side	Type of cancer	Age when diagnosed	Location when diagnosed
e.g. Jane Doe	*1941-Nov-08*		*cousin*	*mother's brother's daughter*	*breast*	*65*	*Victoria, BC*

Have you or anyone in your family had any of the following conditions?	No	Yes	Don't Know	If yes, name of your relative and relationship to you
Chronic pancreatitis that started before age 30	☐	☐	☐	
Tumour or growth in the pituitary, parathyroid or adrenal gland	☐	☐	☐	
More than 50 moles/nevi (not freckles)	☐	☐	☐	
More than 10 polyps removed from the colon or rectum (bowel)	☐	☐	☐	

page 2 of 2

Page 1 = Provider

Page 2 & 3 = Patient

Resources

High Risk Clinic

Team:

- Physician
- Nurse Practitioners
- Nurses

Referrals:

- Genetic Counsellor disclosing (+) result
- GP if Pt discharged from oncology care and has breast tissue
- Pt new to GP practice with variant identified outside of BC

Hereditary Cancer Program (HCP)

High Risk Clinic

Eligibility

- Not under the care of an oncologist
- People with breasts and a mutation in a gene associated with > 25% lifetime risk for breast cancer (ie, BRCA1/2, ATM, CHEK2, CDH1, PALB2).
- People with Li Fraumeni syndrome (*TP53*), a syndrome associated with an increased risk of many different cancers.
- People with breasts between ages 30 to 50 with Neurofibromatosis 1 because of increased breast cancer risk.

Hereditary Cancer Program (HCP)

High Risk Clinic

- Physical Exam
- Screening management for breast cancer: MRI & Mammograms
- Medication for cancer risk reduction
- Prophylactic surgery referral
- Yearly follow-up appointments

Primary care provider for new problems in between visits (like a breast lump or pain or discharge).

Private Pay Testing

Not eligible or do not want to wait for testing
Important to choose appropriate lab to ensure accurate results

- **Invitae:** www.invitae.com/en/cancer
  - requires physician order; $349USD
- **Screen Project:** www.womensresearch.ca/active-studies/the-screen-project-study/
- **Color** https://home.color.com/orders/shipping?sku=hereditary%2030($260 USD)

If positive, important to refer to HCP for information & ongoing support support (surveillance and prevention; family member testing)

Invitae

Color

Screen Project

Summary

Hereditary cancer genetic test results can help with:

- Treatment decisions
- Clarifying future cancer risk for a patient and/or their family

Shifting genetic counselling to after test result for some optimizes genetic services to focus on:

- Result interpretation, follow-up support for families, cascade testing in relatives
- Psychotherapeutic genetic counselling to those who need it most
- **Mainstream genetic testing increases efficiency, equitability, and reduces wait times**

Genetic test results available to patients, their providers and their families faster.

Who we are

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Hereditary Cancer Program (HCP)

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