Competency training and evidence Form: facilitating germline genomic testing in Breast Cancer

NHS South West Genomic Medicine Service

The NMC “Standards for Competence” state that nurses are “responsible and accountable for keeping their knowledge and skills up to date through continued professional development”. These competencies are for experienced nurses, who already have advanced communication skill, and wish to learn to conduct mainstream testing within their area of practice for breast cancer patients. Nurses should have completed a local or nationally recognised consent training course and be fit to consent patients for genomic testing.

The competency framework was developed by Carpenter-Clawson et al., (2023) https://doi.org/10.3389/fgene.2023.1125599. The work was commissioned by NHSE national Genomics Education Programme (Previously Health Education England). These competencies align with the genomics competency framework developed by the Genomics Education Programme and are deliberately clear and simple to complete. They can be adapted to meet different needs and working environments, both geographical and professional.

Each competency (in grey) has specific sub competencies specific to breast cancer beneath it.
Each sub-competency needs to be signed off by your trainer or other competent professional when it has been met. Several competencies should be assessed face to face, by observing you demonstrating the required skill or in discussion with your trainer.
The Signposting / Comments section provides guidance for where you can gain knowledge to help you meet the competency.
Note: genomics is rapidly evolving and information on external links may become outdated. Check your knowledge with your trainer or clinical genetics.
It may be helpful to plan to be assessed at various ‘touch points’ to sign off sub competencies as you meet them: -

- After completing the theoretical knowledge-based learning.
- Following a discussion and observation of a genetic counsellor (GC) or competent mainstreaming nurse carrying out a germline testing appointment.
- After being observed by a GC or competent nurse mainstreaming a patient for germline testing.

Your completed competencies should be signed off by your trainer.

Remember, mainstreaming is a fluid skill, if you have not practised it in a while, you may no longer be competent.

This framework can be revisited at any time, any colleague who is competent at mainstreaming can reassess you.

Start date:		**Trainee Name:**		**Position:**	
Trainer(s):					
Assessed and signed by:				**Date:**	

Competency		Completion Date	Signposting/Comments
1	**Demonstrate an understanding of the basic scientific concepts of inheritance, genetics and genomics**		
	Describe what genes are, how they are inherited, and what a gene variant is.		• Genomics 101: Inheriting Genomic Information - Genomics Education Programme (hee.nhs.uk) • We all have 'the breast cancer gene' - Genomics Education Programme (hee.nhs.uk) • Genomics in Medical Specialties: Oncology - Inherited Risk -Genomics Education Programme (hee.nhs.uk) • Autosomal dominant inheritance - Genomics Education Programme (hee.nhs.uk) • UKCGG leaflets and guidelines - Cancer Genetics Group
	Describe autosomal dominant inheritance and the chance of a gene variant being present in different relatives.		
	Demonstrate an understanding of the high and moderate risk genes tested for in breast cancer. Describe these risk levels appropriately.		
	Identify where to find up to date information about breast cancer predisposition genes.		
	Demonstrate an understanding of how these genes impact on cancer risks for: Adults versus children, Men versus women, Different organs (e.g., breast, ovary, prostate)		
	Date discussed with trainer:		**E-signature/initials of trainer:**

2	**Demonstrate an understanding of the difference between a germline and somatic gene and the clinical implications associated with germline or somatic variants**		
	Describe the difference between somatic and germline DNA.		• Constitutional (germline) vs somatic (tumour) variants — Knowledge Hub (hee.nhs.uk) • Let's Talk About... Genomic Testing on Vimeo • SWGLH Inherited Cancer Testing Services | North Bristol NHS Trust (nbt.nhs.uk) • GeNotes: Genomic notes for clinicians | GEP | NHS England (hee.nhs.uk)
	Describe why the results of germline and somatic tests may differ. Explain the significance of a germline and somatic variants for: Your patient's current care; your patient's future cancer risk; their relatives.		
	Know which samples are used for each test and where to find the appropriate test guidance.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

3	**Describe the local genomic services available and how to refer patients**		
	Describe which GMSA you are part of and where your Genetics Laboratory and Clinical Genetics services are based.		• NHS Royal Devon | Peninsula Clinical Genetics • Clinical Genetics Service (uhbristol.nhs.uk) • Genomics Laboratory Hubs and Genomic Medicine Alliances • SWGLH Inherited Cancer Testing Services | North Bristol NHS Trust(nbt.nhs.uk)
	Describe your local Clinical Genetics referral process and how you would refer into it.		
	Identify the local contacts you would use to seek advice from the laboratory and Clinical Genetics.		
	Understand where to access the genomic test request form and complete this appropriately.		
	Understand the sample requirements and process for sending these to the local genomics laboratory.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

4	**Demonstrate the ability to carry out appropriate risk assessments to identify patients that might be at higher risk of an inherited cancer gene.**		
	Draw a three-generation family tree using appropriate symbols and annotation, including ages, diagnoses and relationships.		• Taking and drawing a family history - Genomics Education Programme (hee.nhs.uk) • Genomics 101: Taking and Drawing a Genetic Family History - Genomics Education Programme (hee.nhs.uk)
	Demonstrate an understanding of the terms ‘first-degree’, ‘second-degree’ and ‘third-degree’ relatives.		
	Understand the family history features that suggest a genetic cause for cancer, as opposed to population incidence		
	Apply knowledge about inheritance mechanisms to the family tree, identifying who else might be at risk if a variant were found in your patient.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

5	**Conduct a comprehensive family history exercise to understand potential high risk for inherited conditions**		
	Draw a three-generation family tree using appropriate symbols and annotation, including ages, diagnoses and relationships.		• Taking and drawing a family history - Genomics Education Programme (hee.nhs.uk) • Genomics 101: Taking and Drawing a Genetic Family History - Genomics Education Programme (hee.nhs.uk)
	Demonstrate an understanding of the terms ‘first-degree’, ‘second-degree’ and ‘third-degree’ relatives.		
	Understand the family history features that suggest a genetic cause for cancer, as opposed to population incidence		
	Apply knowledge about inheritance mechanisms to the family tree, identifying who else might be at risk if a variant were found in your patient.		
	Evidence counselling a patient for a germline test, using a non-directive approach.		• Facilitating Genomic Testing: Introduction to Offering Genomic Tests - Genomics Education Programme (hee.nhs.uk) • Facilitating Genomic Testing: Discussing Diagnostic Germline Genomic Tests - Genomics Education Programme (hee.nhs.uk) • Let's Talk About... Possible Results - Genomics Education Programme (hee.nhs.uk) • Consent and Confidentiality Guidance (uhs.nhs.uk) • SWGLH Inherited Cancer Testing Services | North Bristol NHS Trust(nbt.nhs.uk)
	Describe the implications of declining or delaying a test.		
	Demonstrate familiarity with the mainstreaming consent form, including options for DNA storage, NOK and delayed testing.		
	Describe an appropriate timeline for results.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

6	**Understand the wider roles and services offered by local clinical genetics teams**		
	Demonstrate the delivery of different test results, clearly conveying the implications for the patient and their family.		• Let's Talk About... Possible Results - Genomics Education Programme (hee.nhs.uk) • Genomic-Testing-Infographic w-title (hee.nhs.uk) • BReast CAncer Genes and me - YouTube
	Demonstrate appropriate written communication of test results.		
	Understand the relevance of family history for patients who have received a negative germline test result.		
	Describe which patients need to be seen by Clinical Genetics following mainstream testing. And those who may need assessment prior to testing.		• The Association of Genetic Nurses and Counsellors - AGNC • Jnetics | Improving the prevention and management of Jewish genetic disorders in the UK – Improving the prevention and management of Jewish genetic disorders in the UK • Breast Cancer Now | The research and support charity • Not Just BRCA (@notjustbrca) • Instagram photos and videos
	Arrange referral to Clinical Genetics, identifying the appropriate patient and family information.		
	Explain the role of a genetic counsellor and describe what patients can expect from a referral to Clinical Genetics, including timeline and family support.		
	Describe where you would signpost patients and their families who are looking for additional support and information.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

7	**Understand the national genomic test directory and its potential relevance for your patients and practice**		
	Demonstrate knowledge of the National Genomic Test Directory (NGTD) and relevant test codes for your specialty.		• NHS England » National genomic test directory • SWGLH Inherited Cancer Testing Services | North Bristol NHS Trust(nbt.nhs.uk) • Manchester (Evans) score — Knowledge Hub (hee.nhs.uk) • QGenome.co.uk • Quick Start Guide (canrisk.org)
	Assess patient eligibility for testing according to current NGTD criteria, understanding of the significance of age, pathology, ethnicity and family or personal history of relevant cancers.		
	Demonstrate awareness of the Manchester Scoring system. If utilising this in assessments, demonstrate the ability to do so appropriately, including when to adjust for pathology.		
	If utilising CanRisk, demonstrate competent use following training by a specialist family history assessor or clinical genetics.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

8	**Understand the targeted therapies available for patients**		
	Explain where to find the relevant guidelines for prescribing precision (test to treat) medicines in those with a pathogenic genetic variant.		• PARP inhibitors — Knowledge Hub (hee.nhs.uk) • Final draft guidance | Olaparib for adjuvant treatment of BRCA mutation-positive HER2-negative high-risk early breast cancer after chemotherapy | Guidance | NICE
	Demonstrate an understanding of which breast cancers respond to targeted therapies.		
	Date discussed with trainer:		**E-signature/initials of trainer:**

9	**Understand the broad mechanism of action of targeted therapies**		
	Demonstrate an understanding of how targeted therapies work for which breast cancer.		• PARP inhibitors — Knowledge Hub (hee.nhs.uk) • Final draft guidance | Olaparib for adjuvant treatment of BRCA mutation-positive HER2-negative high-risk early breast cancer after chemotherapy | Guidance | NICE
	Date discussed with trainer:		**E-signature/initials of trainer:**

10	**Understand how genomic data can be used in the context of patient prognosis**		
	Demonstrate awareness of how the genetic result influences a patient's future cancer risk and what interventions are available to manage this.		• Very High Risk Breast Cancer Screening - Cancer Genetics Group (ukcgg.org) • UKCGG leaflets and guidelines - Cancer Genetics Group • Tools and resources | Familial breast cancer: classification, care and managing breast cancer and related risks in people with a family history of breast cancer | Guidance | NICE
	Date discussed with trainer:		**E-signature/initials of trainer:**

11	Understand how genetic data can be used in the context of prevention and earlier diagnosis		
	When counselling, describe the 3 possible (germline) results that a patient may receive and what this means for: Your patient's current care; your patient's future cancer risk and management; their family's care.		• Let's Talk About... Possible Results - Genomics Education Programme (hee.nhs.uk)
	Date discussed with trainer:		**E-signature/initials of trainer:**

12	Understanding how genomic data is analysed and the potential implications of the analysis process on the outcome on patient management		
	Describe how samples and data may be used, stored and accessed. Appreciate the implications of this for patients and families.		• Consent and Confidentiality Guidance (uhs.nhs.uk)
	Date discussed with trainer:		**E-signature/initials of trainer:**

13	Understand the wider, legal, social and ethical considerations of genetic testing for patients		
	Demonstrate knowledge and understanding of possible ethical scenarios, such as nondisclosure of results to relatives. Identify who to seek advice from in such situations.		• Consent and Confidentiality Guidance (uhs.nhs.uk) • Direct-to-consumer constitutional (germline) genomic testing — Knowledge Hub (hee.nhs.uk) • Direct-to-Consumer Genomic Testing: Science and Technology Committee Report - AGNC • Genomics Conversation: Ethics and Data with Professor Anneke Lucassen - Genomics Education Programme (hee.nhs.uk) • Counselling the code: genomic testing and insurance - Genomics Education Programme (hee.nhs.uk)
	Demonstrate an awareness of the differences in direct-to-consumer genomic testing, versus NHS testing.		
	Understand the difference between diagnostic and predictive genetic tests and the relevance of this for insurance.		
	Demonstrate an understanding of the psychosocial impact of genetic testing on the individual and on their wider family dynamics.		• Alison's Story: BRCA Gene (youtube.com) • Preimplantation genetic testing — Knowledge Hub (hee.nhs.uk)
	Demonstrate awareness of family planning options in genetic conditions, including prenatal testing and preimplantation genetic testing.		
	Understand the potential psychosocial impact of treatment on identity, sexuality and relationships.		
	Date discussed with trainer:		**E-signature/initials of trainer:**