Prostate Cancer Genomic Testing (M218.1/R444.2)
Patient Information sheet

Prostate cancer occurs in around 1 in 8 men in the UK population. Cancer occurs by chance in most people. Around 10% of men with prostate cancer carry a variant in a cancer gene (also sometimes called a gene change or gene alteration) that gives an increased chance of developing of prostate cancer.

Why am I being offered this test?
Your specialist has offered to arrange testing for you because you have been diagnosed with prostate cancer. This test will look for variants in the *BRCA1* and *BRCA2* genes, that are associated with an increased chance of developing prostate, breast and ovarian cancer. Identifying whether you have an alteration in one of these genes in your tumour cells only or an inherited alteration in one of these genes may mean that there are different treatment options available to you. The result of this test may also give information about your chance of developing another cancer in the future.

If you have previously had genetic testing and been confirmed to carry a *BRCA* gene alteration, you do not require this test. Please inform your specialist if you think you have had testing in the past.

How is testing being arranged?
Your specialist will discuss the testing with you, including the possible outcomes, which are outlined below. Testing will either be performed on your prostate tumour tissue or blood sample, but occasionally both will be tested.

What are the possible results from testing?

- **A BRCA variant is identified in your tumour tissue**
  Your oncologist will discuss what treatment options may be available to you because of this result.

  Testing on your blood sample may be initiated to determine whether the *BRCA* variant is only present in your tumour or whether the variant is a germline (inherited) variant. This testing is not necessary when the variant is only present at a low level in the tumour, as this suggests the variant is acquired and not inherited. If the variant is only present in your tumour tissue, your chance of developing other *BRCA* related tumours in the future is not increased and your relatives are not at risk of carrying the same *BRCA* variant.

  If the BRCA variant is found to only be present in your tumour tissue you do not require a referral to the Clinical Genetics Service unless you have a significant personal and/or family history of breast, ovarian, pancreatic, or prostate cancer. If you have a family history of cancer you should discuss with your specialist whether a referral to Clinical Genetics is indicated.

- **A BRCA variant is identified in your blood (germline)**
  This testing will be performed if a *BRCA* variant is identified in your tumour tissue or if testing on your tumour tissue was unsuccessful. If a germline *BRCA* variant is identified this confirms that you have a genetic predisposition and potentially have an increased chance of developing further associated tumours. If testing shows that you have a germline gene variant, your specialist will refer you to the Clinical Genetics service. You will be offered an appointment within a few weeks to discuss what this result means regarding your future risk and the options that you may want to consider to manage this risk. At an appointment you will be asked for details of your family history, and the options for your family members will be discussed.

- **No BRCA variants detected**
  If your test does not identify any variants in the *BRCA* genes, this does not mean that you do not carry an inherited gene variant that could be associated with an increased risk of cancer. If you do not have a family history of prostate, breast or ovarian cancer, there is not usually an increased risk for close relatives and a referral to Clinical Genetics is not needed. However, if you were diagnosed with prostate cancer under the age of 60 or have Ashkenazi Jewish ancestry or a family history of breast, ovarian or prostate cancer you may be eligible for further genetic testing and your specialist can refer you to the Clinical Genetics service.

Does the testing have implications for my family?
If you are found to carry a germline *BRCA* gene variant it is possible that some of your relatives may carry the same gene variant and they will have the option of being tested. Relatives who carry the same gene variant will be offered personalised information about what risk management options, such as screening or risk-reducing surgery, are available to them.

Where can I find more information?
If you have questions regarding genetic testing, you can discuss them with your specialist or you can contact the All Wales Medical Genomics Service.

South East Wales (Cardiff) – 02921 834000
South West Wales (Swansea) – 01792 285972
North Wales (Wrexham) - 03000 858 477

For more information please visit our website:

https://medicalgenomicswales.co.uk/