Scheme 5B – Interpretative HFE Genotyping and Hereditary Haemochromatosis

General Comments Scenarios 3 and 4 /2019 **Distributed January 2020**

Scenario 3

Paula McClure, female, DOB 20/08/1974 (NHS number 123 124 1254)
Address: 2 Main Street, Jamestown
Referral from GP, Dr Jane Emmings, Jamestown Health Centre, 1 The Avenue, Jamestown.
Paula's husband has been diagnosed with hereditary haemochromatosis (C282Y homozygous).
She has requested genetic testing and wishes to know the significance for their children.
Paula is:
C282Y heterozygous
H63D heterozygous

In this scenario the patient is known to be heterozygous for the C282Y and H63D mutations. Reports must state that the patient is heterozygous and has a low risk of developing significant iron overload in absence of other risk factors. Measurement of iron indices and regular monitoring should be advised. The patient should be referred to a specialist if iron parameters are raised.

Please note that CY/HD nomenclature is not advised.

Information on testing for other family members should advise that there is a 50% risk that children will be homozygous for C282Y - 50% risk of cmpd heterozygosity. Advise should be given to screen adult children (>16 years of age).

A total of 14 penalty points were awarded for this scenario.

Number of Penalty Points	Number of Participants (n=19)
0	11
1	6
2	1
6	1

Scenario 4

James McKellan, male, DOB 13/02/1981 (NHS number 321 322 5314)
Address: 10 Back Lane, Listholm
Referral from GP, family history of haemochromatosis. The GP is Dr Roderick Smith, Listholm Village Surgery, Aspen Road, Listholm.
James is:
C282Y homozygous
H63D not detected

In this scenario the patient known to be homozygous for the C282Y mutation and the report must state this. Whilst mentioning the patient has an increased risk of developing iron overload HH it should not state that the patient has HH.

It is advisable to mention that if there is currently no evidence of iron overload then measurement of iron indices and regular monitoring should be advised. The patient should be referred to a specialist if iron parameters are raised.

Please note that YY/HH nomenclature is not advised.

A number of reports contained inadequate advice about family screening. It is advisable to mention advise testing of first degree adult relatives.

A total of 5 penalty points were awarded for this scenario.

Number of Penalty Points	Number of Participants (n=19)
0	15
1	3
2	1

Report Comment
Some of the reports were excellent. These were the ones that:

1. Summarised the information provided
2. Explained what the risks were to family members and who needed to be screened and why
3. What further biochemical tests were needed and what actions would need to be taken regarding monitoring and referral to an expert
4. These reports also used the correct HGVS nomenclature

It is important to consider that when a report is being written the person receiving the report will probably not be an expert in haemochromatosis and this may be the first time that they have had to deal with a patient with haemochromatosis. It is also key in writing a report that there should be sufficient information for the patient to understand the implications for his or her relatives as it may be them who are explaining why other family members may need to have a blood or genetic test.

The nomenclature used should be consistent throughout the report. HGVS-based nomenclature is preferable - C282Y or p.(Cys282Tyr) are the terms that are clearly understood by requestors, and most likely to be used in relevant literature or guidelines. The use of YY, HD based nomenclature etc. should be avoided – or if used, an explanatory footnote is advised. As genetic reports, these should ideally include a description of the variant at nucleotide level and the reference sequence – this information could potentially be included in a footnote so that the message of the report is clear and concise.