Genetic Laboratory Network

Background

The UKHCDO GLN was formed in 2002, arising out of the UKHCDO Genetic Working Party (UKHCDO GWP), with the aim of improving collaboration between laboratories and of ensuring quality and equity of service across the U.K. The network currently comprises 13 laboratories, 12 across the UK plus Dublin, involved in the molecular genetic analysis of haemophilia and other inherited bleeding and thrombotic disorders (many of the laboratories are also involved in other areas as well).

Representatives of the Network attend meetings of the UKHCDO Genetics Working Party.

Meetings

The UKHCDO GLN holds bi-annual meetings. The GLN met on 28 November 2019 in Edinburgh and we held our first virtual meeting on 03 June 2020. The next meeting is scheduled to be another virtual meeting in November 2020.

Chair & Secretary

Megan Sutherland and Catriona Keenan continue in their roles as Chair and Secretary, respectively.

Current activities

1. NHS England genetic laboratory re-designation exercise In August 2018 the tenders for the provision of genetics services across England were awarded. The NHS England genomic test directory now specifies which disorders and gene targets will be investigated under this new service model and by which methodologies they should be performed (https://www.england.nhs.uk/publication/national-genomic-test-directories/). The 'Specialist Haematology' service, including the investigation of bleeding and thrombotic disorders, is to be provided by four entities. An expert group representing the four service providers and NHS England have agreed the content of relevant gene panels for Next Generation Sequencing investigation, including a 'Bleeding and Platelet Disorders' panel and a 'Thrombophilia' panel. This will represent a major change in genomic service configuration within England and was scheduled to "go-live" in April 2020. However due to current National budgetary NHS restrictions we are still awaiting National and Local agreement to implement.
2. Laboratory Audit - ISO 15189: Laboratories in the Network are accredited by the United Kingdom Accreditation Service (UKAS). Laboratories are required to adhere to ISO 15189 quality standards. The GLN continues to share examples of good practice, practical advice and knowledge as the inspection process is applied to member laboratories. The Network has implemented an informal sample exchange scheme between members of the GLN for disorders and methodologies that are not provided for by UK NEQAS. All laboratories continue to participate in the inspection process cycle.

3. National Haemophilia Database (NHD) Genetics Portal: The NHD Genetics Portal allows members of the GLN to upload genetic variant data for patients they have investigated into the patient's record on the NHD. The Genetics Portal is used by members of the GLN to see if a variant they have found has been reported by other centres, thereby providing evidence for pathogenicity calculations of genetic variation. During these searches the patient details are not shown. Members are also able to search for patients to confirm which centre they are registered at, and if a genetic variant has been reported, prior to contact for release of relevant details if appropriate (no further information regarding the variant is made available at this time).

4. Bleeding Disorder Genetic Analysis Best Practice Guidelines: The UK Best Practice Guidelines for genetic analysis of Haemophilia A, Haemophilia B and VWD are in the process of being reviewed and updated in accordance with the NHS England genomic test directory and associated changes in service re-designation (see item 1). The classification of genetic variation will also be considered and implemented in the guidelines. Working groups have been assigned to each of the guidelines to be produced – those for VWD, and a combined BPG for haemophilia A and B. In addition, a working group has been established to produce a BPG for the genetic investigation of rare bleeding disorders.

5. UK NEQAS Genetics of Heritable Bleeding and Thrombotic Disorders scheme: The UK NEQAS Genetics of Heritable Bleeding and Thrombotic Disorders EQA scheme was expanded in 2019 to include the analysis of heritable thrombotic disorders, in line with the published NHS England genomic test directory. The scheme now provides four EQA exercises per year, two of these are the traditional 'wet' exercises which always include analysis of one of *F8*, *F9* or *VWF*. The two new additional 'paper' exercises provide a clinical scenario and genetic variant for a patient which are to be interpreted by the participants and a report produced. The paper exercises aim to expand the scope of gene targets for interpretation to include rare bleeding and thrombotic disorders. A further EQA requirement for the analysis of MLPA data has been identified by the GLN in response to UKAS findings. The UK NEQAS paper exercises are to be expanded from October 2020 to include analysis of MLPA data and to provide an interpretative report for the clinical scenario. The results for each round of the scheme are reviewed and discussed at the following GLN meeting and any relevant comments fed back to the steering group.

6. Participation in other groups: Representatives of the Network input to the UKHCDO GWP. A representative of the Network is a member of the World Federation of Hemophilia Laboratory Science committee.

7. General: At each of the GLN meetings there is an open forum to discuss scientific and technical issues, a main focus this year has been on the approach to classification of rare or novel variants with reference to the current ACMG variant classification guidelines, and the sharing of this information throughout the network. With the increasing availability of service provision and gene panels for very rare heritable bleeding and thrombotic disorders, the sharing of knowledge and expertise will become an essential mechanism for the interpretation of previously uncharacterised genetic variants.

Megan Sutherland,
Chair, UKHCDO Genetic Laboratory Network
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