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 and met on 28 November 2018 in Nottingham and 16 May 2019 in Manchester. The next meeting is scheduled for November 2019 in Edinburgh.

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. The 'Specialist Haematology' service, including the investigation of bleeding and thrombotic disorders, is to be provided by four entities and planning/implementation is underway. An expert group representing the four service providers and NHS England are agreeing the content of relevant gene panels for Next Generation Sequencing investigation, including a 'Bleeding and Platelet Disorders' panel and a 'Thrombophilia' panel. This represents a major change in genomic service configuration within England and is expected to be implemented in April 2020.
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 have now successfully undergone the initial UKAS inspection process with the follow-up surveillance visit process now underway.
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 Best Practice Guidelines for genetic analysis of Haemophilia A, Haemophilia B and VWD will be reviewed 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.

5. **UK NEQAS Genetics of Heritable Bleeding and Thrombotic Disorders scheme:** In the UKHCDO 2017-2018 report for the GLN, we described the need for further disorders to be included in the scope of the UK NEQAS EQA scheme, in line with the published NHS England genomic test directory. The UK NEQAS Genetics of Heritable Bleeding and Thrombotic Disorders EQA scheme was expanded in 2019 to include the analysis of heritable thrombotic disorders. The scheme now provides four EQA exercises per year, two of these are the traditional 'wet' exercises which always include analysis of either *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. The results for each round of the scheme are reviewed and discussed at the following network 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.

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, 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
October 2019