NHS
Central & South
Genomic Laboratory Hub

May 2021

To all users of the Genomic Medicine Service for Rare Disease indications

Re: Change of technology to Whole Genome Sequencing (WGS) for specific rare disease clinical indications in the National Genomic Test Directory (NGTD).

We are writing to make you aware that there will be a change in the use of sequencing technology at the Central and South Genomic Laboratory Hub (GLH) from 1st July 2021. This applies prospectively to any of the rare disease indications listed at the end of this communication. Testing will be carried out by whole genome sequence analysis as per the National Genomic Test Directory. The NGTD can be found at https://www.england.nhs.uk/publication/national-genomic-test-directories/

We will ask that you submit the test request, appropriate paperwork and samples according to the NHSE Whole Genome Sequencing requirements. The regional Clinical Genetics services have been undertaking a program of engagement and training. If you need further support or have not been contacted please get in touch with your local clinical genetics service directly via the usual telephone number or email address.

Any blood samples taken for these indications from 1st July 2021 will have DNA extracted and banked until the correct paperwork has been received.

Points to note:-

- The initial target turnaround time for WGS sequencing and reporting is **12 weeks** from receipt of **all** required samples and paperwork at the Central and South GLH, however as this service is embedded this turnaround time may not be achieved immediately.
- WGS in this context is the *technology* used to sequence the genetic code, not the analysis method. The analysis currently relies on bioinformatic application of the gene panel(s) linked to the clinical indication; hence this is **not** an 'agnostic' trio genome.
- **This is not a "rapid" service**. The South West GLH is commissioned to provide the rapid Whole Exome Sequencing service for the indication R14 – Acutely unwell children with a likely monogenic disorder and R21 – Fetal anomalies with a likely genetic cause – rapid testing is commissioned separately through the Central and South GLH. If a rapid test is clinically required, you should discuss this with your local Clinical Genetics service.
- For the majority of paediatric WGS clinical indications in the NGTD, it is expected that the referring clinician will submit a **trio of parents and proband**. We understand there are exceptions e.g. looked after child, deceased parent and in these instances testing can still be offered for the child alone or with one parent.
- For adult onset conditions we appreciate that a trio may not be possible in all cases. However, we would counsel that in many instances a trio submission will provide the most complete data analysis and better outcomes for your patient.
- Most indications listed below are analysed and reported by clinical scientists at the Central and South GLH, however a few are specialist tests which will be reported by other GLHs.

- Single gene analysis for conditions covered by a relevant WGS indication will no longer be provided except in exceptional circumstances. You should discuss these requests with a member of the GLH laboratory leadership team.

If you require further information or training in how to order the test and take consent for Whole Genome Sequencing, please get in touch with your regional genetics service in either Birmingham, Oxford or Southampton.

For specific WGS-related questions such as choice of panel, please contact bwc.centralsouthGLH@nhs.net

Please do not hesitate to contact us if you have any questions about this change of technology.

Yours sincerely,

Dr Edward Blair
Consultant Clinical Geneticist
Medical Director, Central & South GLH

Clinical indication ID	Clinical Indication
R89	Ultra-rare and atypical monogenic disorders - Clinical Genetics Only
R27	Congenital malformation and dysmorphism syndromes
R100	Rare syndromic craniosynostosis or isolated multisuture synostosis
R104	Skeletal dysplasia
R109	Childhood onset leukodystrophy
R143	Neonatal diabetes
R193	Cystic renal disease
R29	Intellectual disability – microarray, fragile X and sequencing
R381	Other rare neuromuscular disorders
R54	Hereditary ataxia with onset in adulthood
R55	Hereditary ataxia with onset in childhood
R59	Early onset or syndromic epilepsy
R61	Childhood onset hereditary spastic paraplegia
R69	Hypotonic infant with a likely central cause
R83	Arthrogryposis
R84	Cerebellar anomalies
R85	Holoprosencephaly - NOT chromosomal
R86	Hydrocephalus
R87	Cerebral malformation
R88	Severe microcephaly
R98	Likely inborn error of metabolism