RARE DISEASE PROGRAMME EXPEDITED RESULTS POLICY

100,000 Genomes Project

Version 1.0
11th December 2015

Programme	Main	**Document Record ID Key**	
Sub Programme	N/A	N/A	
Board member responsible	Mark Caulfield	**Status**	FINAL
Programme Director	Tom Fowler	**Version**	V1.0
Document Owner	Tom Fowler	**Version Date**	11/12/2015
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Version Control

Version	Date	Amendment History
V1.0	11/12/2015	Final for circulation

Reviewers

This document must be reviewed by the following:

Name	Title / Responsibility	Date	Version
Tom Fowler	Director of the Office of the Chief Scientist	11/12/2015	V1.0

Approvals

This document must be approved by the following:

Name	Title / Responsibility	Date	Version
Mark Caulfield	Chief Scientific Officer (Tom Fowler approved on behalf of Chief Scientific Officer)	11/12/2015	V1.0
Tom Fowler	Director of Public Health	11/12/2015	V1.0
Augusto Rendon	Director of Informatics	11/12/2015	V1.0

Rare disease programme expedited results policy

Background

All participants recruited to the 100,000 genomes project rare disease programme could potentially benefit from the results of their genome sequence, and all would wish to receive their results as quickly as possible to allow them and their clinicians to consider how to act on the information. The maximum benefits both across the project and for the long-term transformation of the NHS are likely to be achieved by focusing on developing a robust pipeline that analyses *all* genomes as quickly as possible, without compromising accuracy or efficiency. This is central to delivering a nationwide programme, ensuring equity of access, and leading in the development and application of 'best practice' for genomic medicine. Nonetheless, there may be very rare circumstances in which the clinical scenario warrants an expedited analysis to be performed on a single case, potentially at the expense of other cases. The clinical scenario where this might apply, as well as the response from Genomics England, is outlined below.

Prerequisites for analysis

To have a clinical case considered for expedited analysis, the following criteria must be met:

- The patient's condition is very severe and/or life-threatening
- The patient's treatment is very likely to be informed and improved as a direct result of genome sequencing
- A timely diagnosis would substantially and definably improve patient clinical outcomes
- The patient's condition is plausibly monogenic (judged by a clinical geneticist within Genomics England)
- All possible genetic testing within the NHS has been done
- All clinical data have been completed by the clinical team (at a minimum: level 4 disease category/ies and pedigree)
- The relevant gene panel(s) have been reviewed and agreed in advance with the referring clinician
- The referring clinician believes that value of genome sequencing to this patient is sufficiently important and urgent that it should be analysed at the expense of others patients

A member of the Genomics England science team will discuss expedited requests with the clinician and within the team. Requests should be sent to chiefscientist@genomicsengland.co.uk

Genomics England Process

Together with the referring clinician, the Genomics England Executive Management Team (with input from the science team regarding resource implications) will decide whether an expedited analysis is:

- **warranted** from the clinical context; and
- **possible** from the sample status (i.e. all family members have completed sequencing on the same version of the Illumina pipeline, all family members have undergone and passed genetic checks).

If an expedited analysis is deemed appropriate and possible, the patient/family will be added to the next batch of sequences to be sent to a clinical interpretation partner for analysis. In addition, *if there is sufficient bandwidth within the GEL science team,* an 'interim' analysis may be performed and any Tier 1 or 2 variants communicated to the pilot site/GMC with an assurance that the family will receive the standard full analysis in due course.