Laboratory Medicine & Pathobiology
UNIVERSITY OF TORONTO

Defining and reporting on critical values in genetics

Recommendations from the UofT LMP Quality Council

February 2022

As part of an initiative to harmonize critical value reporting across genetic laboratories in the Greater Toronto Area (GTA), we sent a survey of 11 questions via email to genetic laboratory directors in Ontario in July 2019 and also September to October 2019 since there was a paucity of data for critical values in genetics.

Based on the data, the Council formulated proposed guidelines that were circulated to individuals from Ontario genetic laboratory centres and respondents of the survey in November 2021, who supplied feedback.

We recommend all genetic laboratories consider implementing these guidelines into their critical value reporting.

Please supply any feedback on the guidelines or their implementation to Dr. Elaine Goh.

The report has also been published in the Journal of Applied Laboratory Medicine Goh ES, Stavropoulos DJ and Adeli K. 2021

Defining and Reporting on Critical Values in Genetics: A Laboratory Survey

You can read about the project in a news story:

Lab tests that impact lives: harmonizing critical values

Critical patient type

- Prenatal
- Newborn
- Oncology or
- Expedited by the ordering physician

Critical results

- Cytogenetics: Prenatal abnormal rapid aneuploidy testing or microarray findings
- Molecular: Unexpected results, and pathogenic variants in prenatal setting (Indeterminate results taken off after feedback from Ontario genetic laboratory centres).

Reporting process

- Insufficient or incorrectly labelled samples: Do not limit to reporting via mail
- Critical results: Suggest in addition to routine process to either also call, email and/or fax the ordering provider.

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This document was developed by the Harmonization of critical values across the GTA hospitals Working Group of the Quality Council, Department of Laboratory Medicine and Pathobiology, University of Toronto.