



Newborn Screening Quality Assurance Program

PROFICIENCY TESTING

Sickle Cell Disease and Other Hemoglobinopathies

Volume 20, No. 3

Panel 3

November 2010

INTRODUCTION

On October 4, 2010, we distributed five dried-blood-spot (DBS) specimens prepared from umbilical cord bloods to all active participants for the Panel 3 Sickle Cell Disease and Hemoglobinopathies Proficiency Testing (PT) event. A total of 77 panels were mailed by overnight FedEx mail. The packages went to 50 domestic laboratories and 27 foreign laboratories. This PT report is a compilation of data reports received from 73 of the participating laboratories by the designated deadline date. There were 4 laboratories that did not report this quarter. We distribute this quarterly report to all participants, state laboratory directors, and to program colleagues by request.

We requested that participants assay all survey specimens by the analytical schemes they routinely use and report for each specimen the presumptive phenotype, the presumptive clinical assessment, and any other clinical classifications that they deem consistent with their analytic results and program operations. ❖

PARTICIPANTS' RESULTS

The certification report listing hemoglobins (Hb) by phenotype and their presumptive clinical assessments appears on page 2.

The frequency distribution of reported presumptive phenotypes and clinical assessments appears on page 3. There were four phenotype errors and two clinical assessment errors this panel.

The individual data verification for each laboratory with evaluation comments appears on page 4.

We will continue to ship three PT panels this year for Hemoglobinopathies, therefore, the next shipment for the Hemoglobinopathy PT program will be on January 10, 2011. ❖

MEETINGS AND TRAINING

November 22-27, 2010, Fourth International Congress 2010 Sickle Cell Disease International Organization sponsored by The Sickle Cell Disease International Organization in collaboration with Centre for Genetic Diseases & Molecular Biology Department of Biochemistry, Pt. J.N.M. Medical College, Raipur (C.G.) INDIA.

Feb 23-25, 2011 Hollywood FL - 5th Annual Sickle Cell Disease Research and Educational Symposium and Annual National Scientific Meeting - Westin Diplomat Resort and Spa, Hollywood FL.

Hemoglobin Disorders Training Course: Laboratory Diagnosis and Clinical Management.

April 1-2, 2011 - Brussels, Belgium

ACKNOWLEDGMENTS

The specimens for this survey were prepared from umbilical cord blood samples supplied by Cleveland Cord Blood Center, Cleveland, Ohio. They are an independent not-for-profit 501©3 organization that accepts donated cord blood for clinical use. ❖

CDC/APHL

This program is cosponsored by the Centers for Disease Control and Prevention (CDC) and the Association of Public Health Laboratories (APHL).

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**Newborn Screening Quality Assurance Program
Sickle Cell Disease and Other Hemoglobinopathies**

Specimen and Lab Certification

Year: 2010 Panel: 3

Presumptive Clinical Phenotypes

| | Specimen 30H1 | Specimen 30H2 | Specimen 30H3 | Specimen 30H4 | Specimen 30H5 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Expected Presumptive Phenotype | FA | FAS | FA | FA | FAC |
| Accepted Presumptive Phenotypes | FA | FAS | FA | FA | FAC |

Presumptive Clinical Assessments

| | Specimen 30H1 | Specimen 30H2 | Specimen 30H3 | Specimen 30H4 | Specimen 30H5 |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Expected Presumptive Clinical Assessment | 01 | 02 | 01 | 01 | 03 |
| Accepted Presumptive Clinical Assessments | 01, 22 | 02, 22 | 01, 22 | 01, 22 | 03, 22 |

- 01 Normal--no abnormal Hb found
- 02 Hemoglobin S carrier
- 03 Hemoglobin C carrier
- 04 Hemoglobin SS disease (Sickle cell anemia)
- 05 Hemoglobin SC disease
- 06 Hemoglobin SD disease
- 08 Hemoglobin D carrier
- 09 Hemoglobin E carrier
- 12 Hemoglobin SE disease
- 16 Alpha-thalassemia (Bart's Hb)
- 18 Hemoglobin EE disease
- 21 Unsatisfactory sample. Specimen not evaluated (NE)
- 22 Unidentified variant, fast or aging band

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Sickle Cell Disease and Other Hemoglobinopathies**

Frequency Distributions

Year: 2010 Panel: 3

| Phenotypes | | | Clinical Assessments | | |
|-----------------|-----------------------|-------------------------|----------------------|--|-------------------------|
| Specimen Number | Hemoglobin Phenotypes | Frequency Distributions | Specimen Number | Presumptive Assessments | Frequency Distributions |
| 30H1 | FA | 72 | 30H1 | 01 Normal Hemoglobin 16 Alpha-thalassemia (Bart's HGB) | 72 |
| | FAB | 1* | | | 1* |
| 30H2 | FAS | 72 | 30H2 | 02 Hemoglobin S carrier | 73 |
| | FAS + Barts | 1* | | | |
| 30H3 | FA | 71 | 30H3 | 01 Normal Hemoglobin 16 Alpha-thalassemia (Bart's HGB) | 72 |
| | FAB | 1* | | | 1* |
| 30H4 | FA | 72 | 30H4 | 01 Normal Hemoglobin | 73 |
| 30H5 | FAC | 72 | 30H5 | 03 Hemoglobin C carrier | 73 |
| | FAC+ Barts | 1* | | | |

Note: An astrick (*) denotes a missed phenotype and or assessment.

This **NEWBORN SCREENING QUALITY ASSURANCE PROGRAM** report is an internal publication distributed to program participants and selected program colleagues. The laboratory quality assurance program is a project cosponsored by the **Centers for Disease Control and Prevention (CDC)** and the **Association of Public Health Laboratories**.

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