



Newborn Screening Quality Assurance Program

PROFICIENCY TESTING

Sickle Cell Disease and Other Hemoglobinopathies

Volume 19, No. 3

Panel 3

November 2009

INTRODUCTION

On October 5, 2009, 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 Hemoglobinopathy Proficiency Testing (PT) event. A total of 77 panels were mailed by overnight FedEx mail. The packages went to 52 domestic laboratories and 25 foreign laboratories. This PT report is a compilation of data reports received from 75 of the participating laboratories by the designated deadline date. There were 2 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 (Hbs) 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.

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

Specimens 39H3 and 39H4 were duplicate samples showing the presence of Bart's banding. The presence of Bart's at levels greater than or equal to 25% could indicate the possibility of hemoglobin H disease. Forty-one percent of the participants reported Bart's hemoglobin in both specimens. Since many programs do not report Bart's banding, the clinical assessment of Normal (01) was also accepted. ❖

SPOTLIGHT

The year 2010 marks the 100th anniversary since the first ever publication on 'peculiar elongated cells' (Sickle Cells) by Dr. James Herrick in 1910 in Chicago, Illinois. ❖

MEETINGS

The Centers for Disease Control and Prevention, National Center on Birth Defects and Developmental Disabilities, Division of Blood Disorders, in partnership with the Health Resources and Services Administration, the National Heart, Lung, and Blood Institute, and the American Society of Hematology is pleased to announce the **National Conference on Blood Disorders in Public Health**. Tuesday, March 9, 2010 8:00 AM - Thursday, March 11, 2010 in Atlanta, Georgia. ❖

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(c)(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: 2009 Panel: 3

Presumptive Clinical Phenotypes

	Specimen 39H1	Specimen 39H2	Specimen 39H3	Specimen 39H4	Specimen 39H5
Expected Presumptive Phenotype	FAC	FAS	FABart's	FABart's	FSA
Accepted Presumptive Phenotypes	FCA	FAS	FA FABV FBA FAV	FA FABV FBA FAV	FAS

Presumptive Clinical Assessments

	Specimen 39H1	Specimen 39H2	Specimen 39H3	Specimen 39H4	Specimen 39H5
Expected Presumptive Clinical Assessment	03	02	16	16	02
Accepted Presumptive Clinical Assessments	03	02	01 22	01 22	02 20

- 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
- 20 Assessment not listed
- 21 Unsatisfactory specimen
- 22 Unidentified variant, fast or aging band
- NE Specimen not evaluated

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Frequency Distributions

Year: 2009 Panel: 3

Phenotypes			Clinical Assessments			
Specimen Number	Hemoglobin Phenotypes	Frequency Distributions		Specimen Number	Presumptive Assessments	Frequency Distributions
39H1	FAC	71		39H1	03 Hemoglobin C carrier	75
	FCA	4				
39H2	FAS	72		39H2	02 Hemoglobin S carrier	73
	FA *	2 *			01 Normal *	2 *
	FASB	1				
39H3	FA	38		39H3	01 Normal Hemoglobin	38
	FA Bart's	29			16 Alpha – thalassemia (Bart's Hgb)	30
	FABV	2			20 Assessment not listed	1
	FBA	1			21 Unsatisfactory specimen	3
	FVA	2			22 Unidentified variant, fast, or aging band.	3
	Unsatisfactory specimen	3				
39H4	FA	39		39H4	01 Normal Hemoglobin	39
	FAB	30			16 Alpha - thalassemia (Bart's Hb)	31
	FABV	2			20 Assessment not listed	1
	FBA	1			21 Unsatisfactory specimen	1
	FVA	2			22 Unidentified variant, fast, or aging band.	3
	Unsatisfactory specimen	1				
39H5	FAS	56		39H5	02 Hemoglobin S carrier	72
	FSA	18			04 Hemoglobin SS Disease	1 *
	FASB	1			20 Assessment not listed	2

* indicates a missed phenotype or clinical 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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