Newborn Screening
Quality Assurance Program

PROFICIENCY TESTING

TREC
Quarterly Report

Volume 3, No. 1 February 2013

INTRODUCTION

This report is the Quarterly summary of all data reported within the specified data-reporting period for the Quarter 1, 2013, pilot proficiency testing (PT) program for T-cell receptor excision circle (TREC) analysis in dried-blood spots (DBS) to detect severe combined immunodeficiency (SCID). The attached tables provide the certification profiles for the distributed specimens, the verification of your reported data, and the summary of reported categorical results. We distribute this PT report to all participants, state laboratory directors, and program colleagues by request.

On January 1, 2013, a panel of five unknown DBS specimens was distributed to fourteen laboratories in the United States to analyze TREC content in peripheral blood.

PARTICIPANT RESULTS

This panel consisted of five DBS specimens prepared from human blood, including cord blood from unaffected individuals and modified adult blood depleted of mononuclear cells or leukocytes (specimens 113R1, 113R2, 113R3, 113R4, and 113R5).

Evaluations are based on the source of specimen and previously established consensus categorical results from core laboratories. All laboratories used laboratory-developed tests. We requested only qualitative, categorical results: 'No follow-up required (Screen Negative)' or 'Follow-up required' on each specimen since quantitative results vary significantly between laboratories using different test methods and calibrators.

We processed data from fourteen participants. No false-positive and no false negative assessments were reported.

The Newborn Screening Quality Assurance Program will ship next Quarter's pilot PT specimens for TREC on April 1, 2013.❖

ACKNOWLEDGMENTS

We would like to thank Barbara Waters-Pick (Duke University Medical Center) for the supply of umbilical cord blood.❖

CDC/APHL

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

Direct inquiries to:
Centers for Disease Control and Prevention (CDC)
4770 Buford Highway, NE, MS/F43
Atlanta, GA 30341-3724

Phone: 770-488-7945
FAX: 770-488-4255
E-mail: JMei@cdc.gov

Editor: Joanne Mei
Production: Irene Williams
Connie Singleton

CDC
Centers for Disease Control and Prevention

NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

T-CELL RECEPTOR EXCISION CIRCLE (TREC) ANALYSIS IN DRIED-BLOOD SPOTS

Quarter 1– JANAURY 2013

FREQUENCY OF REPORTED CLINICAL ASSESSMENTS

Specimen Number	**No follow-up required (Screen Negative)**	**Follow-up required**
113R1	14	0
113R2	0	14
113R3	0	14
113R4	14	0
113R5	14	0

LABORATORY METHODS

Method	**Number of Laboratories**
63 Real Time PCR	14
Other	0

NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

T-CELL RECEPTOR EXCISION CIRCLE (TREC) ANALYSIS IN DRIED-BLOOD SPOTS

Quarter 1– JANAURY 2013

SPECIMEN CERTIFICATION

Specimen Number	**No follow-up required (Screen Negative)**	**Follow-up required**	**Specimen Description**
113R1	1		Normal specimen; medium TREC level, reference gene level within standard reference range
113R2		2	SCID-like specimen; low or no TREC, reference gene level within standard reference range.
113R3		2	Blood with 'buffy-coat' removed - TREC and reference gene levels both below standard reference range.
113R4	1		Normal specimen; below average TREC level, reference gene level within standard reference range
113R5	1		Normal specimen; below average TREC level, reference gene level within standard reference range

1 = No follow-up required (Screen Negative)
2 = Follow-up required

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.**

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
ATLANTA, GA 30341

Director
Thomas R. Frieden, M.D., M.P.H.
Director
National Center for Environmental Health
Christopher J. Portier, Ph.D.
Director
Division of Laboratory Sciences
James L. Pirkle, M.D., Ph.D.
Chief
Newborn Screening and Molecular Biology Branch
Carla Cuthbert, Ph.D.

Contributors:
Barbara W. Adam
Dana Chafin
Paul Dantonio
Victor R. De Jesus, Ph.D.
Marie C. Earley, Ph.D.
Sharon Flores
Elizabeth M. Hall
Christopher Haynes, Ph.D.
Kevin Lanza
Francis Lee, Ph.D.
Lixia Li, Ph.D.
Timothy Lim, Ph.D.
Daniel Mandel, Ph.D.
Joanne Mei, Ph.D.
Nancy Meredith
Tracey Myers
Kelsey Sheard
Jennifer Taylor, Ph.D.
Robert Vogt, Ph.D.
Irene Williams
Golriz Yazdanpanah
Hui Zhou, Ph.D.
Sherri Zobel

Production:
Sarah Brown
Felicia Manning
Connie Singleton

ASSOCIATION OF PUBLIC HEALTH LABORATORIES
SILVER SPRING, MD 20910

President
Charles Brokopp, Dr. P.H., M.P.H.
Chairman, Newborn Screening and Genetics in Public Health Committee
Susan M. Tanksley, Ph.D.
Chairman, Newborn Screening Quality Assurance Quality Control Subcommittee
Patrick Hopkin, B.S.

INQUIRIES TO:

Joanne Mei, Editor • Centers for Disease Control and Prevention (CDC)
Newborn Screening Quality Assurance Program • Mailstop F-43
4770 Buford Highway, N.E. • Atlanta, GA 30341-3724
Phone (770) 488-4582 • FAX (770) 488-4255 • E-mail: JMei@cdc.gov