

# Newborn Screening Quality Assurance Program

**PROFICIENCY TESTING**

**TREC  
Quarterly Report**

Volume 3, No. 4

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## INTRODUCTION

This report is the Quarterly summary of all data reported within the specified data-reporting period for the Quarter 4, 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 October 23, 2013, a panel of five unknown DBS specimens was distributed to seventeen 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 413R1, 413R2, 413R3, 413R4, and 413R5).

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 seventeen participants. Two false-positive and no false negative assessments were reported. False positive misclassifications, which are a cost-benefit issue and a credibility factor for follow-up programs, should be monitored and kept as low as possible.

The Newborn Screening Quality Assurance Program will ship next Quarter's pilot PT specimens for TREC on January 13, 2014. ❖

## ACKNOWLEDGMENTS

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

**CDC/APHL**

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This program is cosponsored by the Centers for Disease Control and Prevention (CDC)  
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NEWBORN SCREENING QUALITY ASSURANCE PROGRAM

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

Quarter 4 – December 2013

FREQUENCY OF REPORTED CLINICAL ASSESSMENTS

<b>Specimen Number</b>	<b>No follow-up required (Screen Negative)</b>	<b>Follow-up required</b>
413R1	17	0
413R2	0	17
413R3	0	17
413R4	17	0
413R5	15	2

LABORATORY METHODS

<b>Method</b>	<b>Number of Laboratories</b>
63 Real Time PCR	17
Other	0

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SPECIMEN CERTIFICATION

<b>Specimen Number</b>	<b>No follow-up required (Screen Negative)</b>	<b>Follow-up required</b>	<b>Specimen Description</b>
413R1	1		Normal specimen; medium TREC level, reference gene level within standard reference range
413R2		2	Blood with 'buffy-coat' removed - TREC and reference gene levels both below standard reference range.
413R3		2	SCID-like specimen; low or no TREC, reference gene level within standard reference range
413R4	1		Normal specimen; medium TREC level, reference gene level within standard reference range
413R5	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**.

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