

Improving Timeliness in NBS: Lessons Learned from the COLIN Timeliness Project

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Colorado School of Public Health & NewSTEPS

Funded through cooperative agreements from Genetic Services Branch of the Health Resources and Services Administration (HRSA)

NewSTEPS: APHL (#U22MC24078 - Ojodu)

NewSTEPS360: ColoradoSPH (#UC8MC28554 - Sontag)



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What is a CoIIN?

- CoIIN stands for Collaborative Improvement and Innovation Network
- Focus is on Quality Improvement vs Quality Assurance
- Learning collaborative
 - Shared lessons learned, ideas, and resources
 - Used technology to enable collaboration
 - Held monthly group webinars and meetings



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What was the NBS Timeliness CoIN?

- 15 month Continuous Quality Improvement (CQI) project for 7 participating state NBS programs
- Teams were interdisciplinary including lab, follow-up, and hospital representative



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Goal

Improve timeliness from **time of birth to reporting out** NBS results following the ACHDNC Recommendations:

1. Presumptive positive results for time-critical conditions should immediately be reported to the child's healthcare provider and no later than 5 days of life.
2. All presumptive positive results for time sensitive conditions should be reported to the healthcare provider as soon as possible but no later than 7 days of life.
3. All NBS results should be reported within 7 days of life (the "normal" screening results).



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In order to achieve these goals:

- 1) Initial NBS specimens should be collected in the appropriate time frame for the baby's condition but no later than 48 hours after birth, and
- 2) NBS specimens should be received at the Laboratory as soon as possible; ideally within 24 hours of collection.



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Measuring Progress

Data collected monthly in aggregate by states

NewSTEPS Quality Indicator 5:

- QI-5a - Birth to specimen collection
- QI-5b - Specimen collection to receipt by lab
- QI-5c - Specimen receipt to reporting out of complete results
- QI-5d - Birth to reporting out complete results



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What Worked



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Improving Time of Collection – Hospital Piece of NBS System

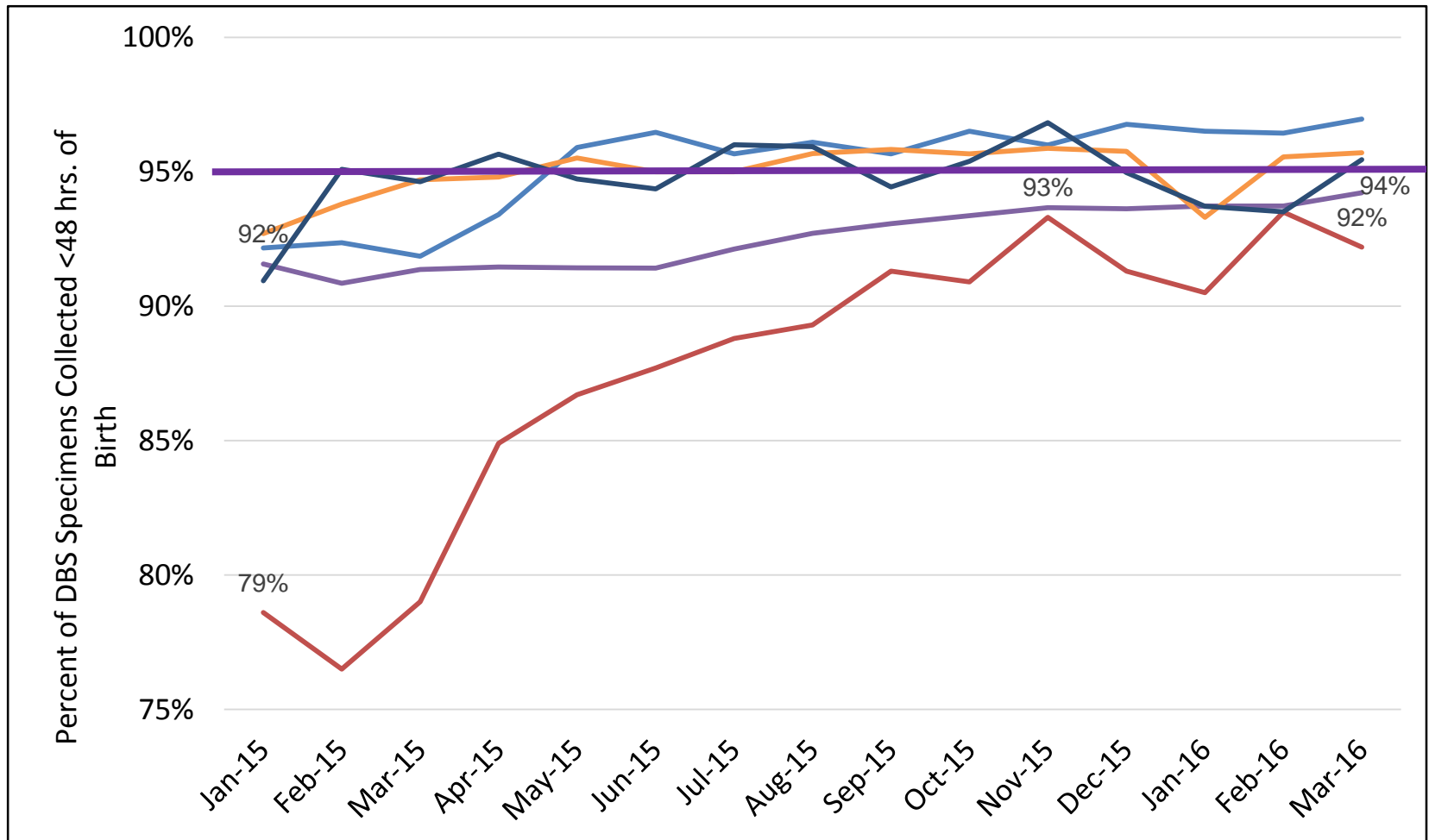


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Specimen Collection Before 48 Hours of Life

Progress of Individual CoIN States (QI 5a)



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Hospital Education

Root Cause

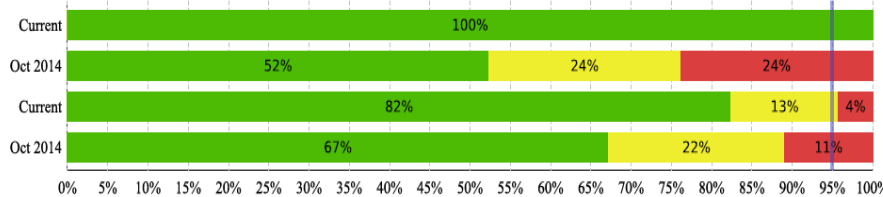
- Hospitals do not know what they are aiming for or how well they are doing

Solution

- Provide hospital reports

Time between birth and receipt of specimen by the NBS laboratory

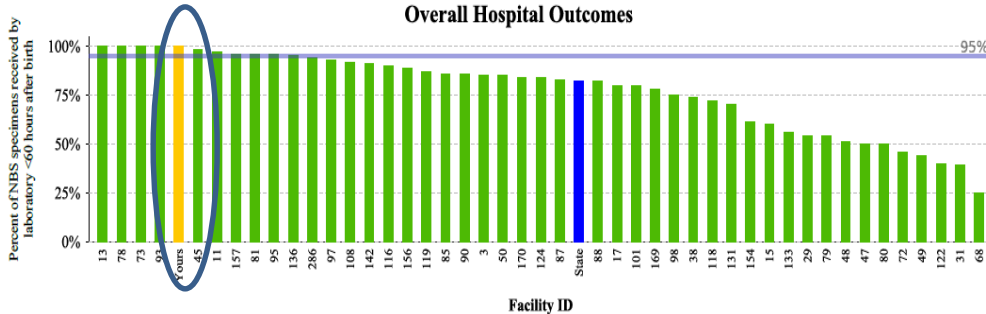
■ ≤ 60 hrs
 ■ 60.1 to 80 hrs
 ■ >80 hrs



Hospital

State

Overall Hospital Outcomes



Timeliness in Newborn Screening Report

2015-02-01 to 2015-02-28

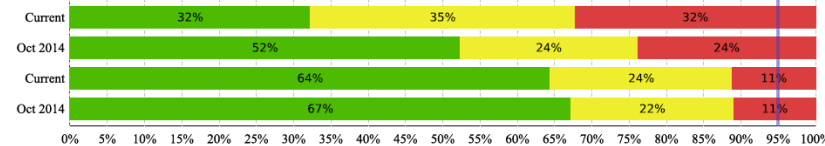
Count: 31

A project of the Iowa Collaborative Improvement & Innovation Network (CoIIN) to improve timeliness in newborn screening

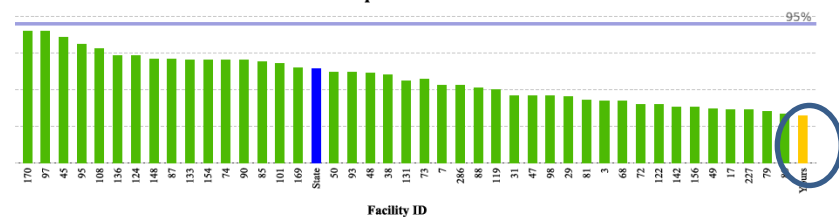
GOAL: By March 2016, 95 percent of specimens will be received by SHL within 60 hours of birth.

Time between birth and receipt of specimen by the NBS laboratory

■ ≤ 60 hrs
 ■ 60.1 to 80 hrs
 ■ >80 hrs



Overall Hospital Outcomes



State Hygienic Laboratory at The University of Iowa
Newborn Screening Laboratory
315/725-1630 Fax: 315/725-1650

<http://www.shl.uiowa.edu>

Iowa Laboratories Complex
2220 S. Ankeny Blvd, Ankeny, Iowa 50021
315/725-1600 Fax: 315/725-1642



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Hospital Education

Root Cause

- Only 36.2% recalled watching CLSI education video

Solution

- Decided to use point-of-care educational messaging



The poster features a black and white photograph of a newborn's feet. The text 'Newborn Screening' is overlaid in large red letters. A red banner at the top right contains the text 'Every Hour Counts!' and 'Timing is critical for saving babies'. A list of six bullet points provides instructions for specimen collection and handling.

Every Hour Counts!
Timing is critical for saving babies

- Collect the newborn screening specimen at **24 - 48** hours of life. Aim for **24**.
- Fill out the screening card completely, accurately, and legibly.
- Check the specimen. Is it a good specimen? If there is any doubt, recollect immediately.
- Dry the specimen horizontally for **3 - 4** hours.
- Package dried specimens **daily** for the courier – know your courier's pick-up time.
- Specimens should arrive at the newborn screening lab within **24** hours of collection.



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Improving Time from Collection to Receipt and Report Out – State NBS Program Piece of NBS System

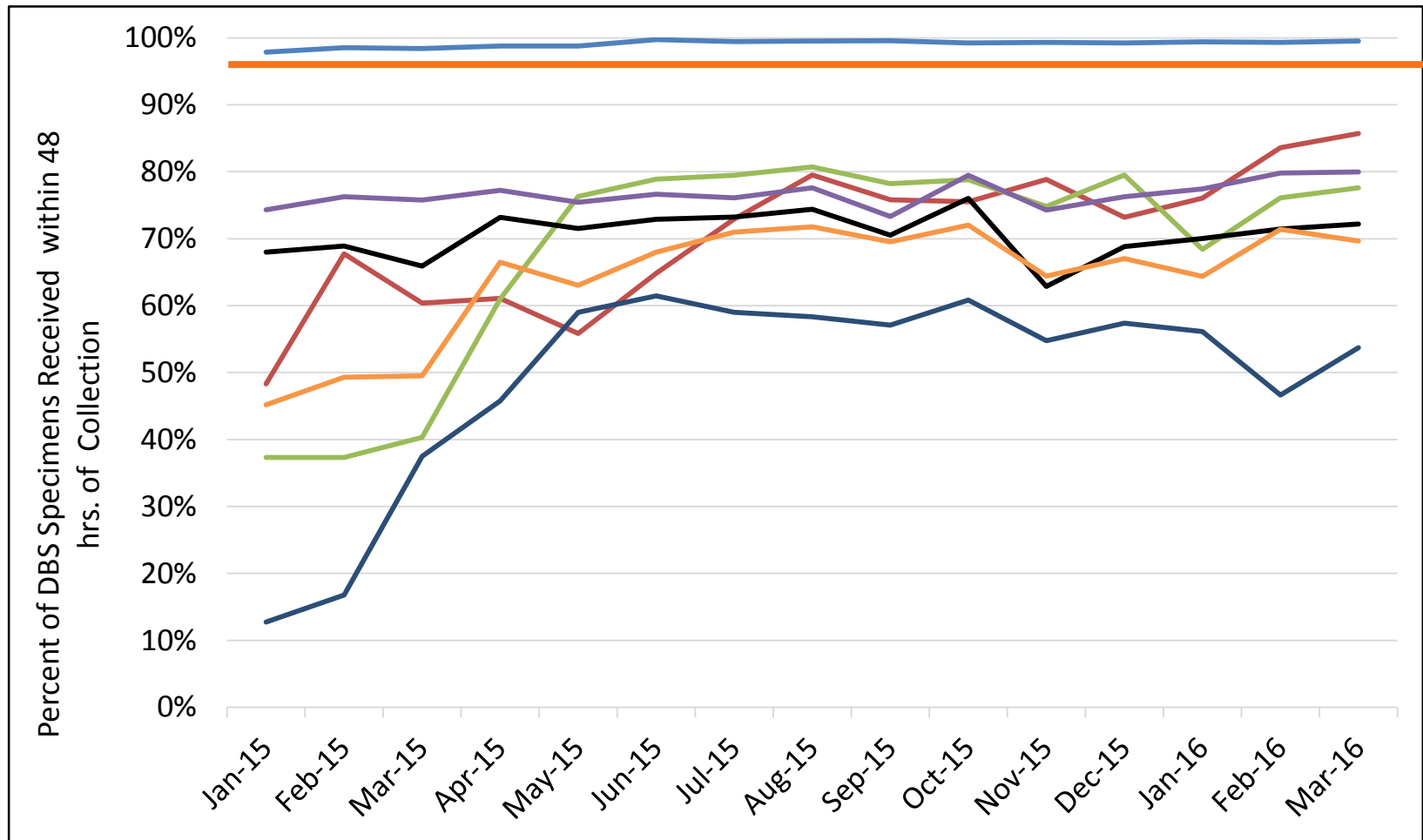


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Specimens Received within 48 hours of Collection

Progress of Individual COLIN States (Q1 5b)



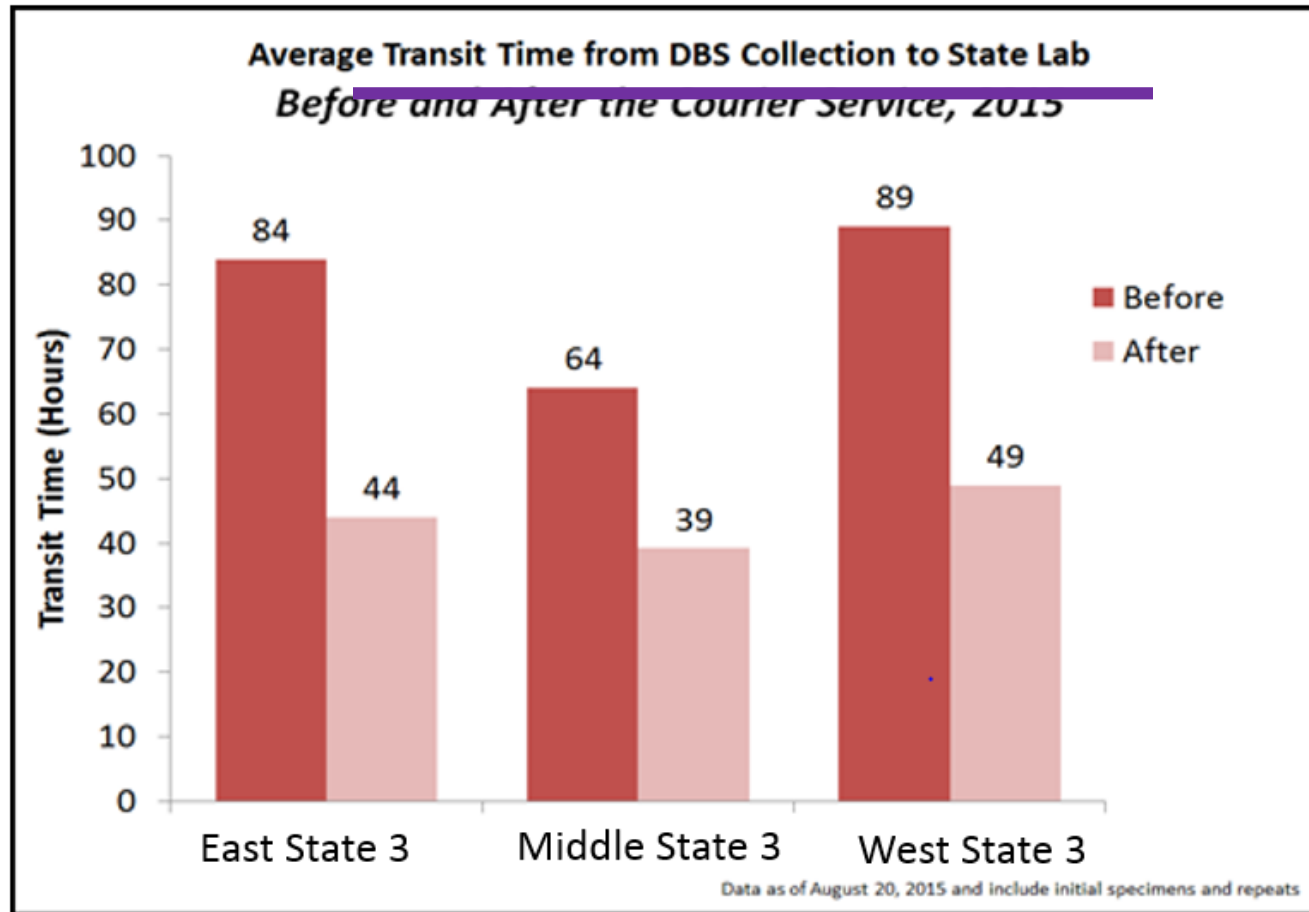
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Use or Increase Courier Systems

There is a plateau
in % of specimens
received within 48
hours of collection

Creating a
Courier System is
not a Silver
Bullet.



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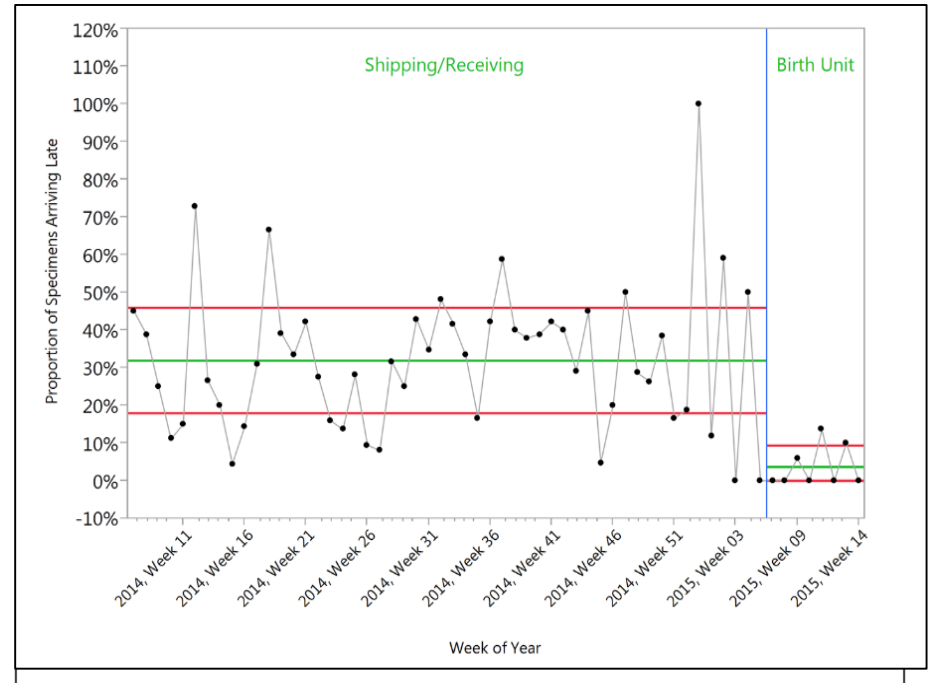
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Courier Systems Need to Be Monitored

Root Cause

- Courier contracts not followed
- Hard for hospital staff to get specimens ready in time for the courier

Solutions



This image was created by David Lafalme.



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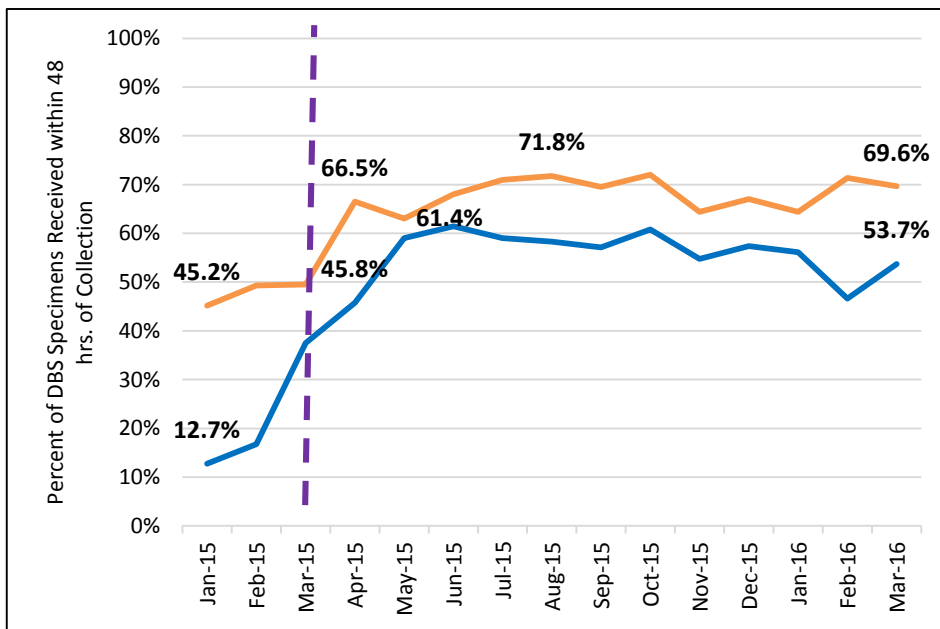
Increasing Laboratory Hours to Receive and Test Specimens Is Important

Root Cause

- Laboratories only open 5 days a week to receive or process specimens

Solutions

- Increase the number of days the laboratory is open and processing specimens to 6 days a week

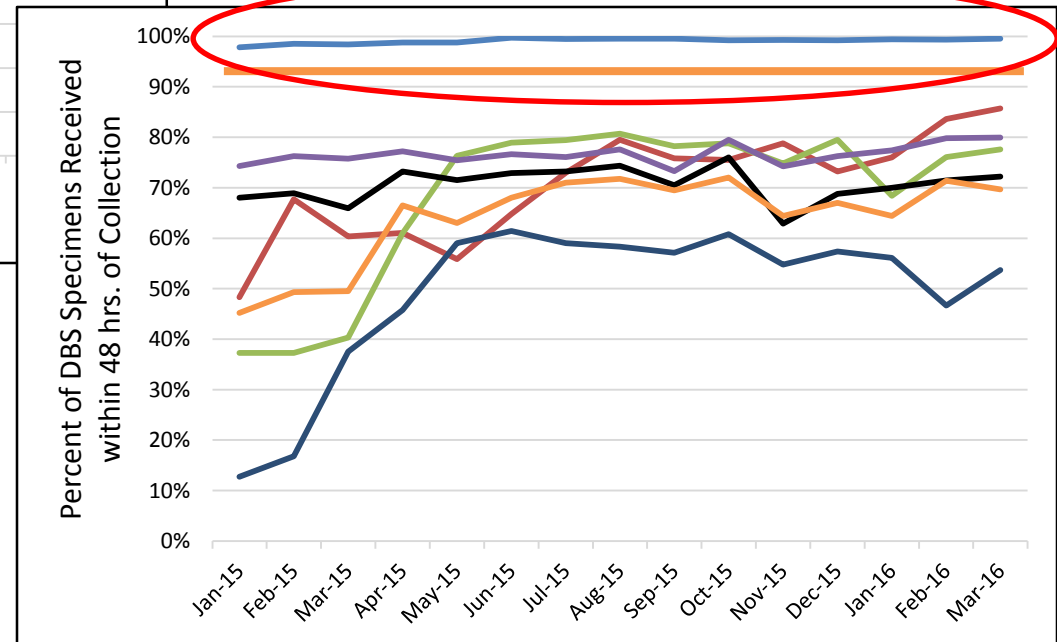
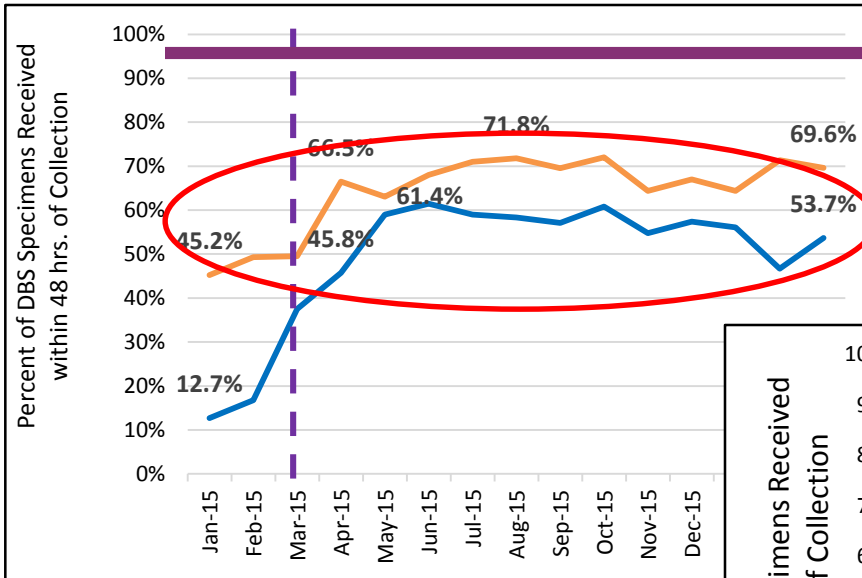


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Big Boost But Not THE Silver Bullet

Iowa's lab is open **7 days**
a week, **24 hours** a day



Iowa was the only state to meet our goal of 95% of specimens received within 48 hours collection



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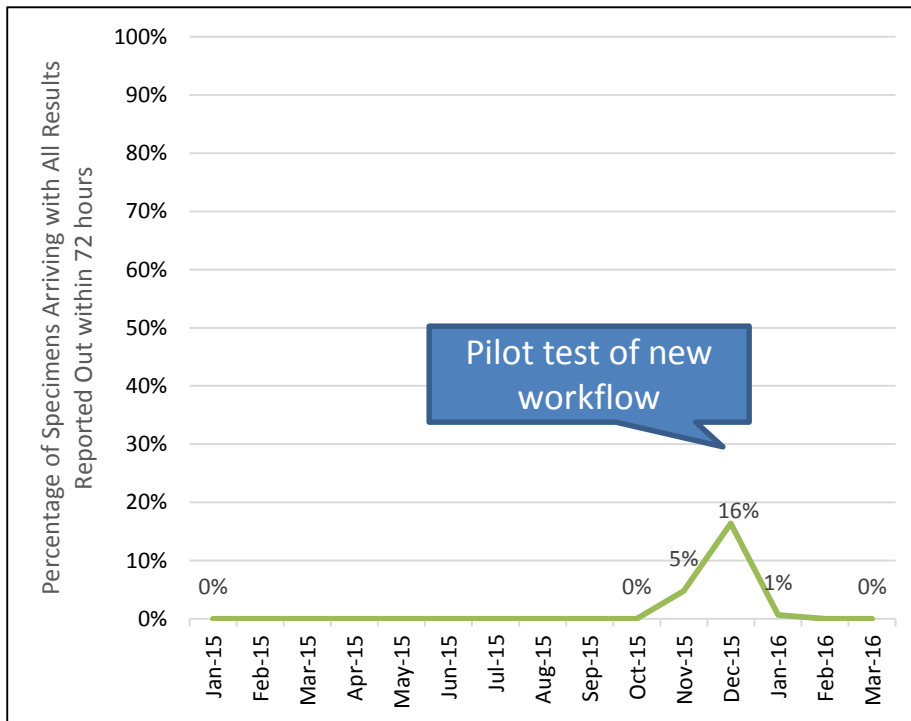
Think Through Staffing and Workflow

Root Cause

- Staffing does not match when courier delivers samples

Solutions

- Change lab operating hours
 - After CoIIN staff now come in closer to when first courier arrives and leaves after afternoon courier arrives.



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What Are We Doing Now?



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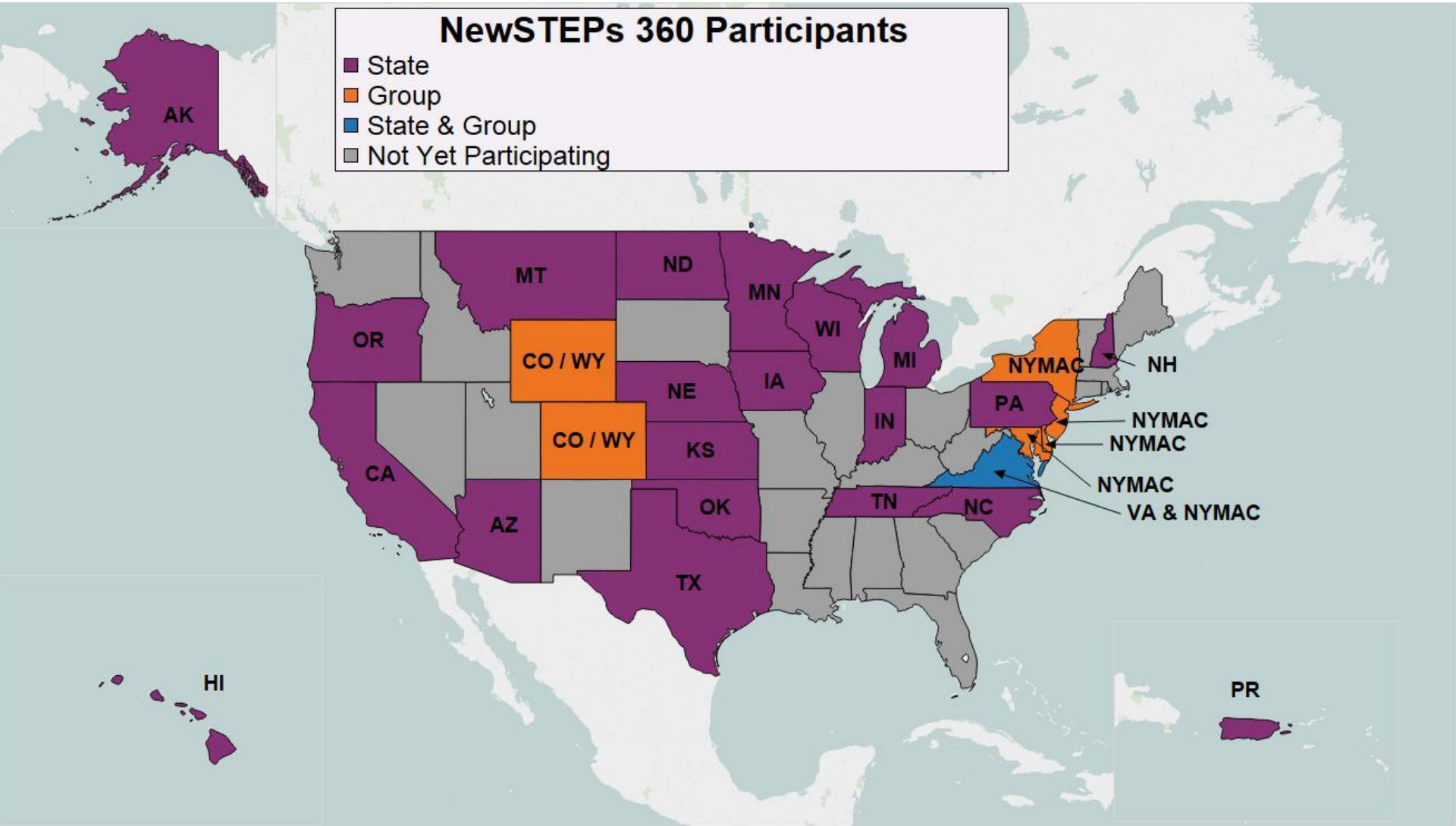
New**STEPS**



A Partnership between The Colorado School of Public Health
and The Association of Public Health Laboratories™

NewSTEPS 360 Participants

- State
- Group
- State & Group
- Not Yet Participating



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NewSTEPs and NewSTEPs 360 Team

Jelili Ojodu

Sikha Singh

Thalia Wood

Careema Yusuf

Guisou Zarbalian

Funke Akinsola

Sari Edelman

Marci Sontag

Yvonne Kellar-Guenther

Joshua Miller

Sarah McKasson

Ruthanne Salisbury

Laura Russell

Louise Guiliano



Thank you to our amazing **COLIN** **Teams!**

Arizona

California

Colorado/Wyoming

Iowa

New Hampshire

Tennessee

Texas

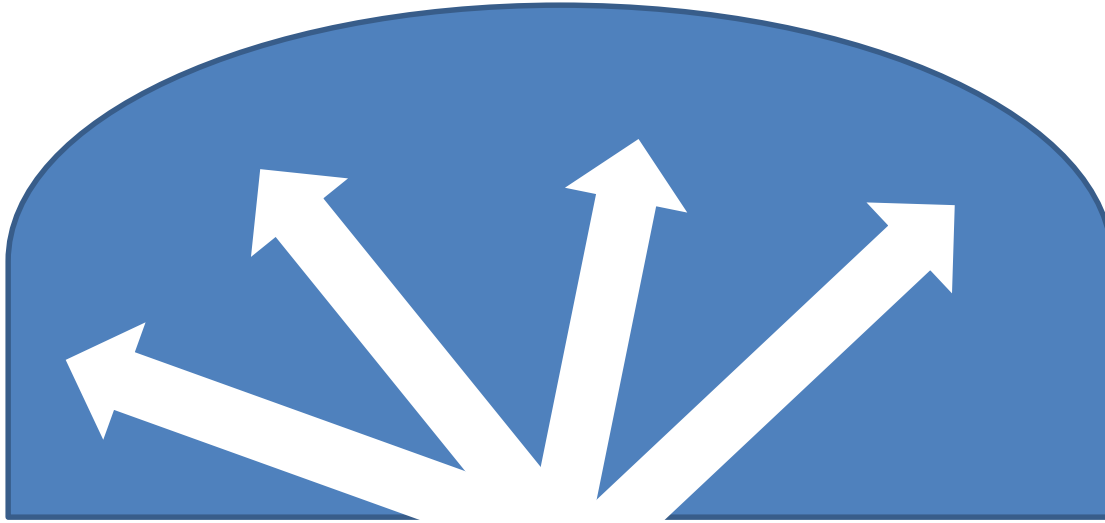
Questions?



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Impact of CoIN Activities



- All 7 states made progress in at least 1 timeliness Quality Indicators.

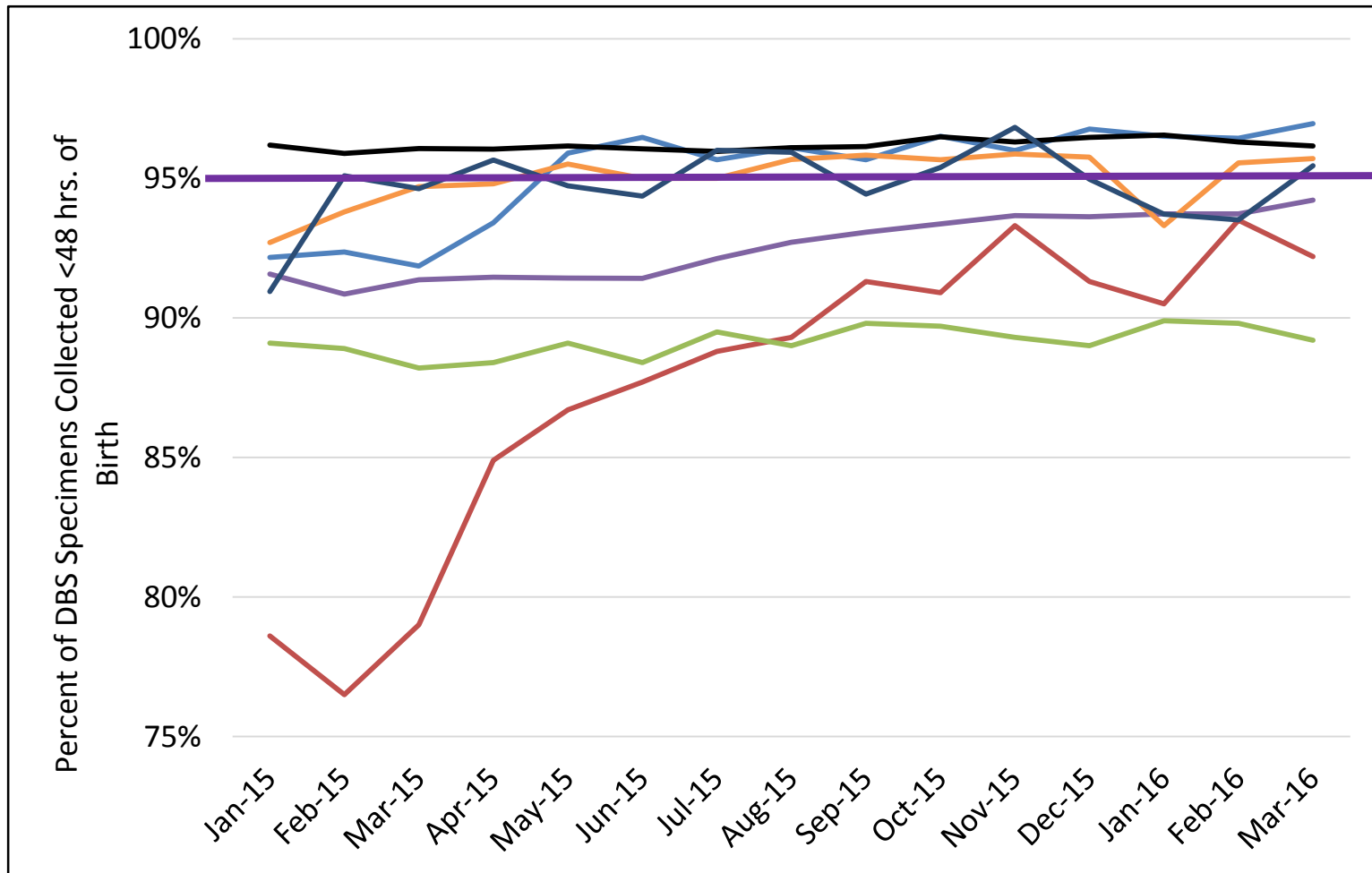


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Specimen Collection Before 48 Hours of Life

Progress of Individual CoIN States (QI 5a)

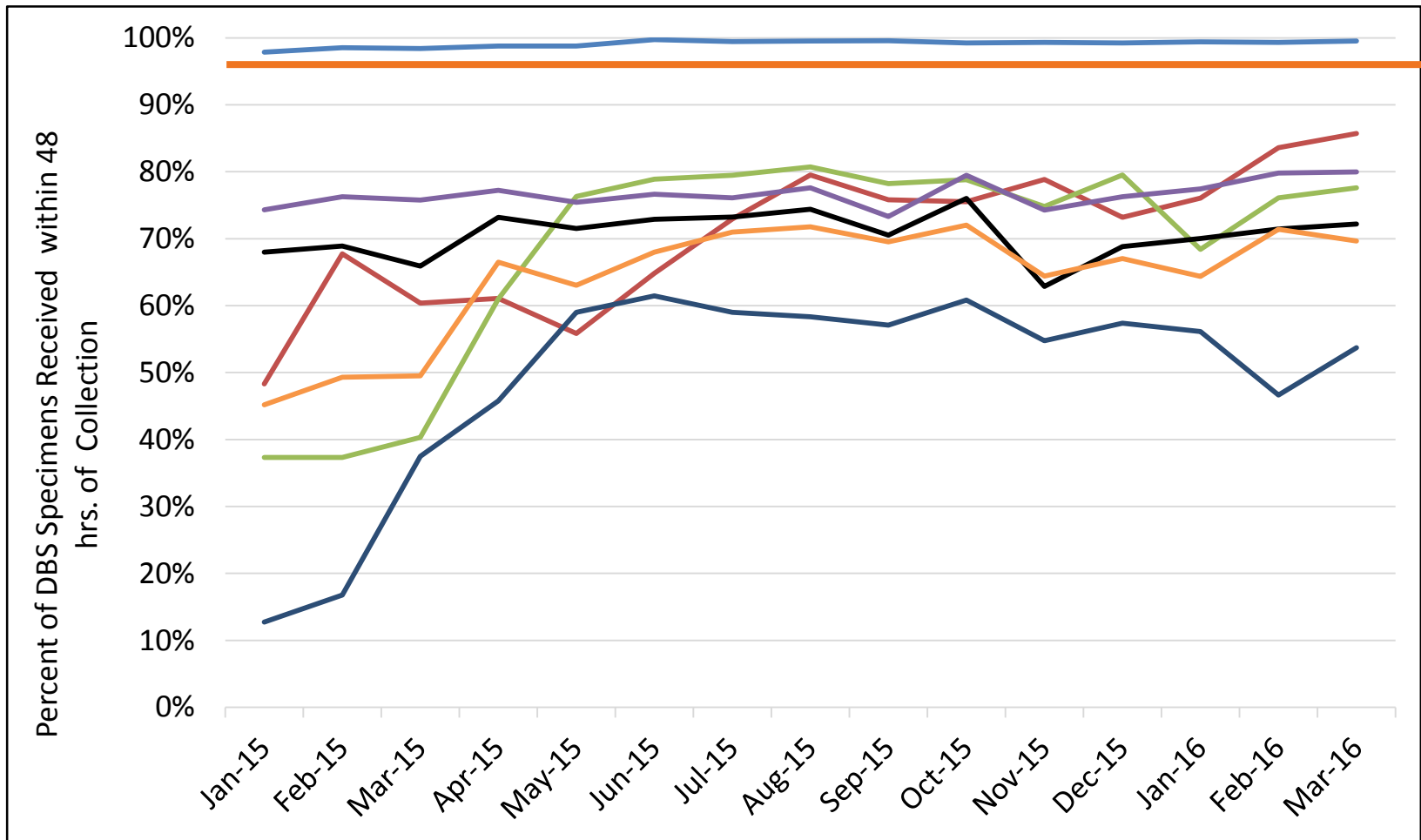


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Specimens Received within 48 hours of Collection

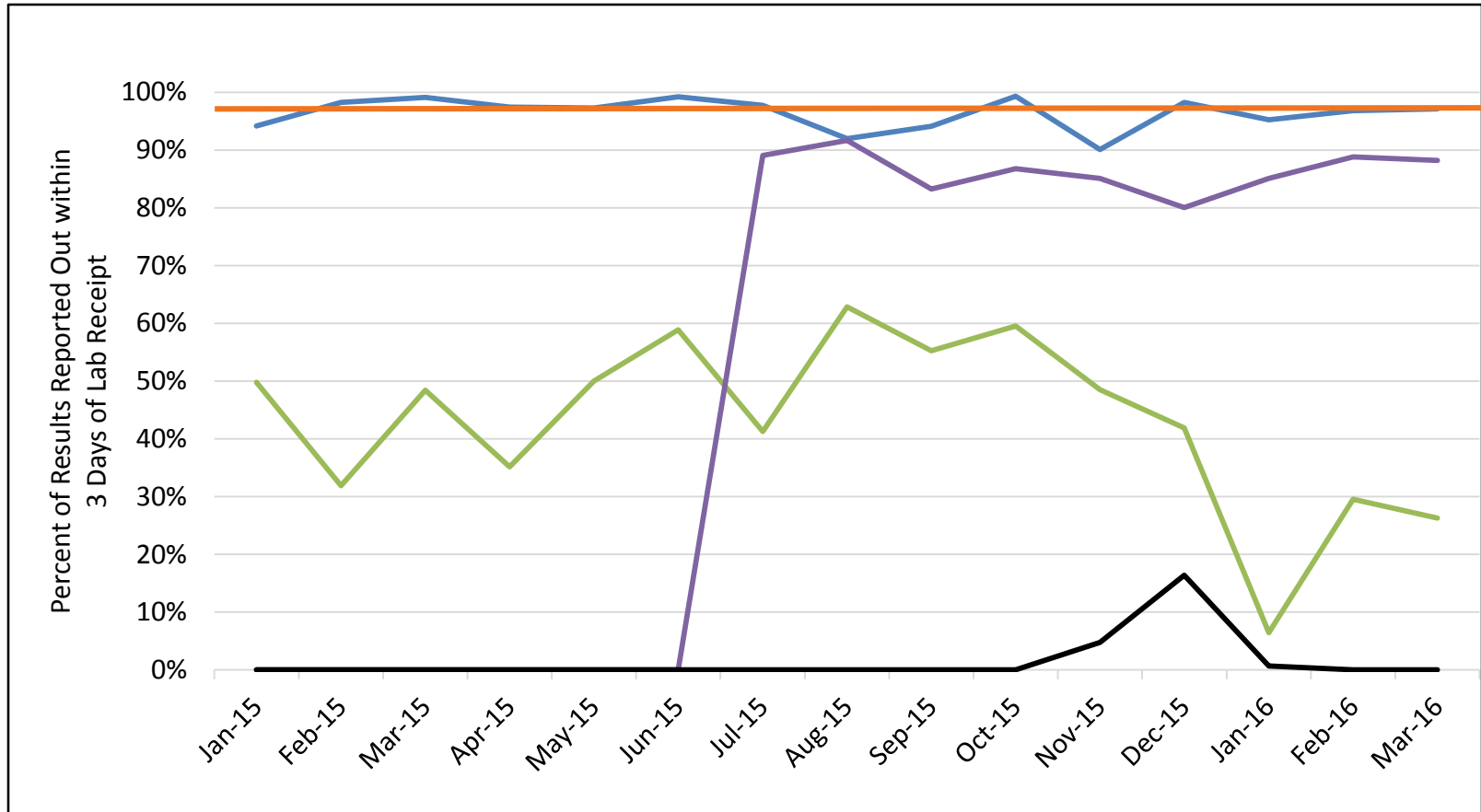
Progress of Individual COLIN States (Q1 5b)



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Results Reported Out within 3 Days of Receipt Progress of Individual COLIN States (QI 5c)

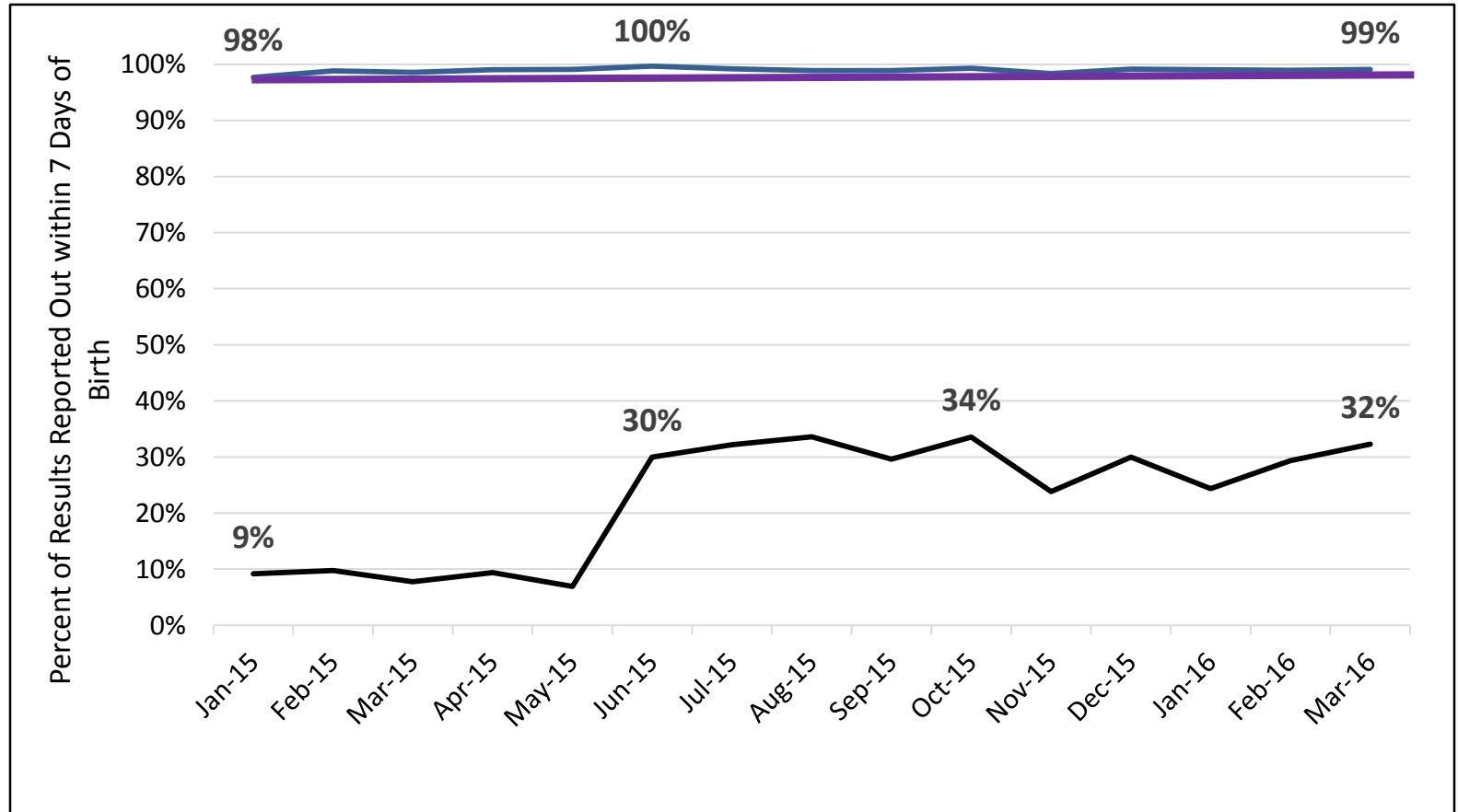


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Results Reported Out within 7 Days of Birth

Progress of Group (N=2*) (Q1 5d)



**Only 2 states could provide this data*



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