

# Public Health PBRN Monthly Virtual Meeting December 19, 2013

Research-in-Progress Presentation by  
Florida PBRN

DACS Study:

Preliminary STD Cost Study Findings from Florida

Lori Bilello and Bill Livingood, University of Florida, College  
of Medicine, Jacksonville

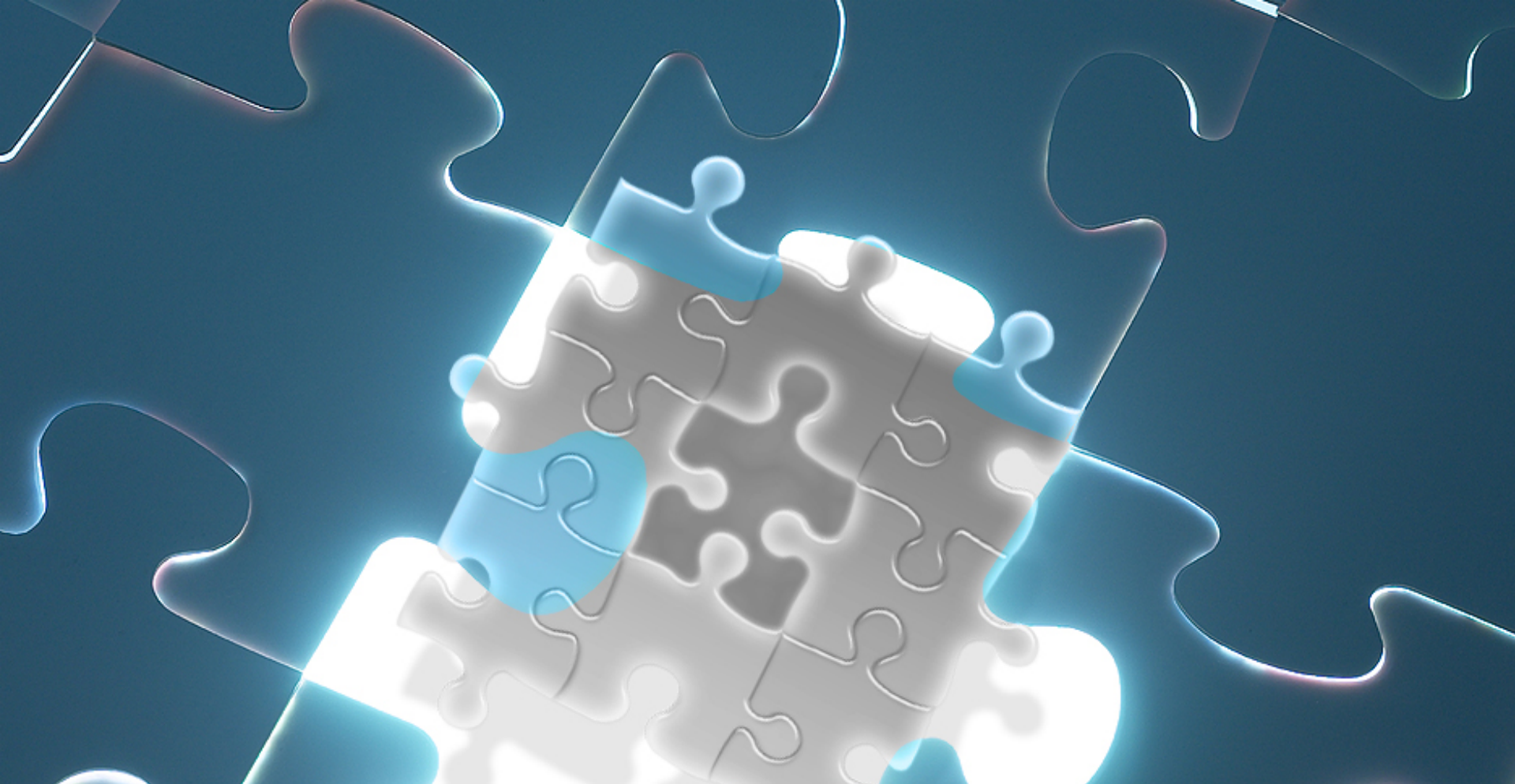
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*at the University of Kentucky College of Public Health*



# **Preliminary STD Cost Study Findings for Florida**

**Bill Livingood, PhD  
Lori Bilello, PhD**



# Florida PBRN

- Florida formed the PH PBRN in 2010 (2<sup>nd</sup> wave)
- Participation includes county health departments, Florida Department of Health Central Office, Florida Public Health Institute, and university partners
- Originally managed by a county health department-moved to Univ. of Florida in January, 2013



# Research Team

- Bill Livingood Ph.D. and Bonnie Sorensen M.D. are the Principle Investigators.
- Lori Bilello Ph.D., Project Director and Co-I
- Jeff Harman Ph.D., Health Economist
- Stacey Shiver and Phil Street, FDOH
- Karen Chapman, M.D. and Judy Hartner, M.D. (CHD directors)
- Radley Remo, MPH – Duval CHD



# Primary Aim

- To identify the unit costs of delivering public health services (specifically STD prevention and control services), and examine the effects of variations in delivery system characteristics on costs including:
  - standardization/centralization of programs
  - centralization of IT and HR systems
  - economies of scale related to population size of CHD jurisdiction
  - local tax and other revenue support for CHD services
  - responsiveness to local community governance.

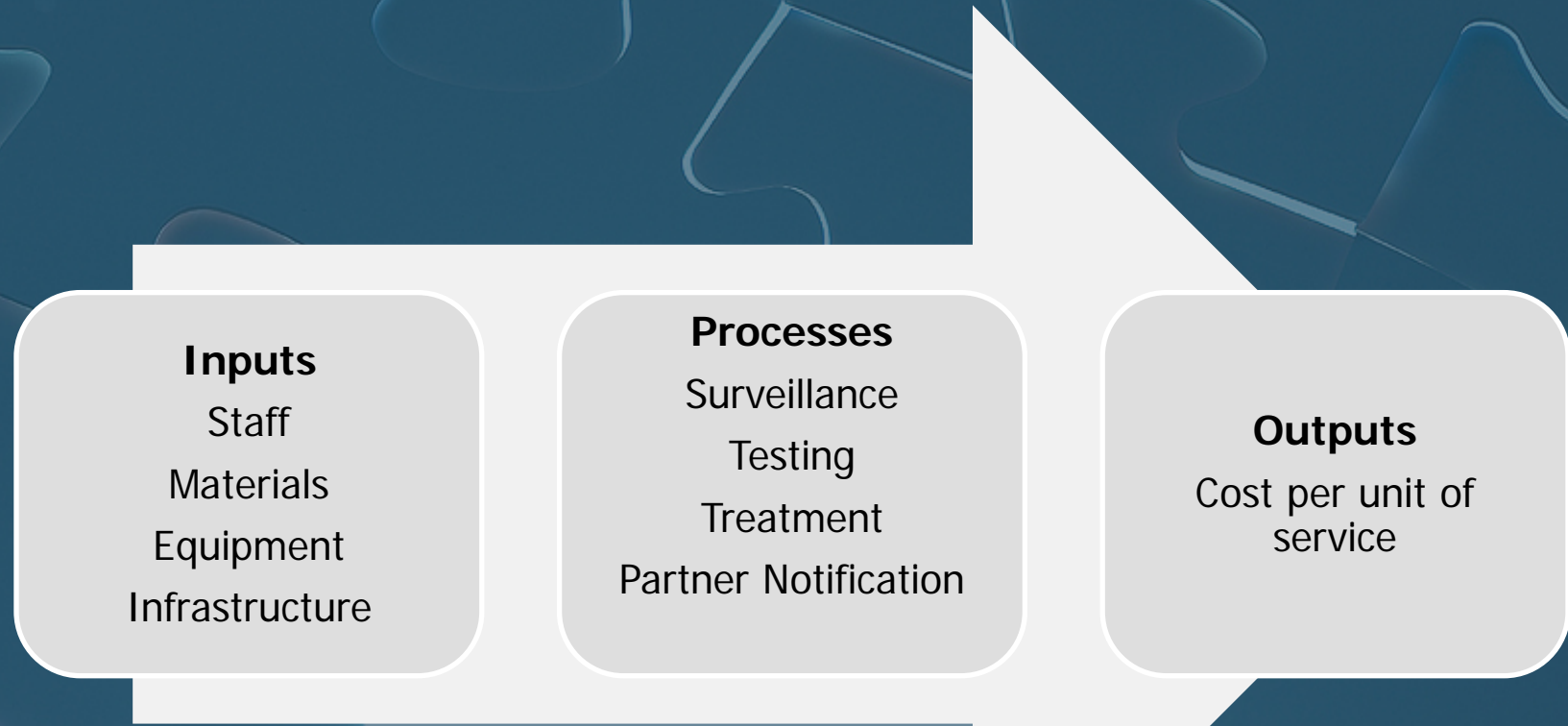


# Why Unit Cost of STI Services?

- STD prevention and control programs are among the most highly reported local public health services/surveillance data
- Surveillance data is well established and standardized (CDC methodology)
- Service provided by every county in the state
- Strong finance and service data systems to support service delivery
- Florida has high AND increasing rates of STDs – major public health issue!



# Overall Cost Model





# Data Sources

## Secondary Data

- Financial Information Reporting System (FIRS) – expenditure data
- Employee Activity Report System (EARS) – employee time allocation per cost center or activity.
- Patient Reporting Investigation Surveillance Manager (PRISM) – case management and surveillance tracking system for STDs





# Preliminary Analysis

- Examined county specific STD expenditures and disease rates
- County specific funding for STD services and all health department funding including local tax dollars
- County demographic characteristics



# Range of STD reported costs (2011)

	<b>Cost per service</b>	<b>Cost per client</b>	<b>Cost per visit</b>
State rate	\$47.59	\$259.07	\$157.56
County Median	\$47.10	\$181.15	\$119.40
Lowest level	\$0.84	\$1.81	\$1.43
Highest level	\$121.72	\$462.12	\$293.69
20 percentile	\$21.83	\$71.26	\$1.43
80 percentile	\$76.48	376.92	\$226.93
Duval County	\$21.83	\$176.68	\$89.89



# Range of Total County Tax support

## Per capita support Low Income

\$5.89

\$7.75

\$0.00

\$49.98

\$2.92

State rate

State Median

Lowest level

Highest level

Duval County

## Per capita support Total Population

\$1.94

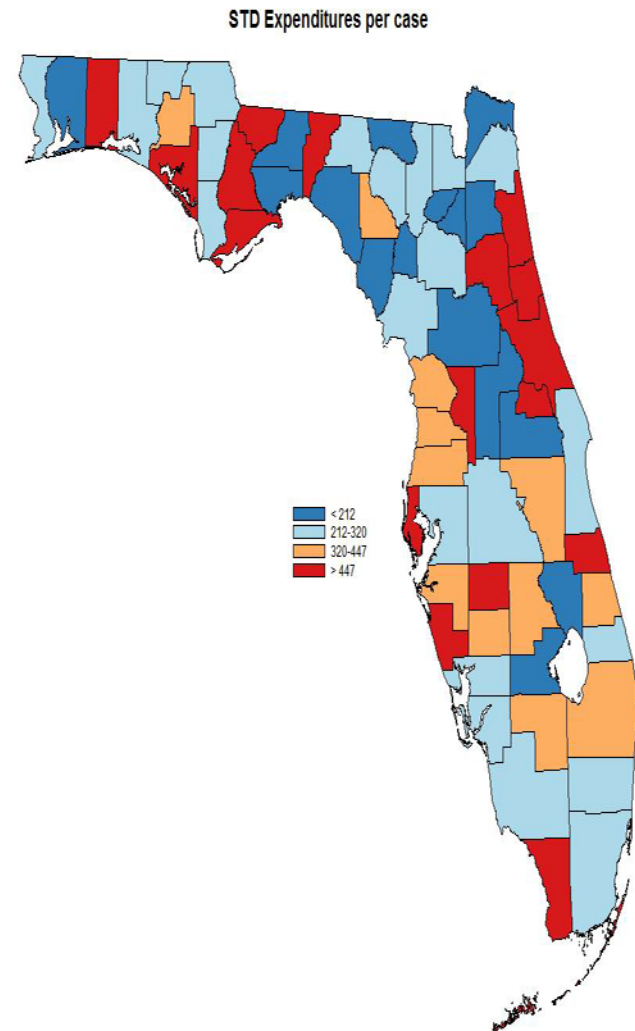
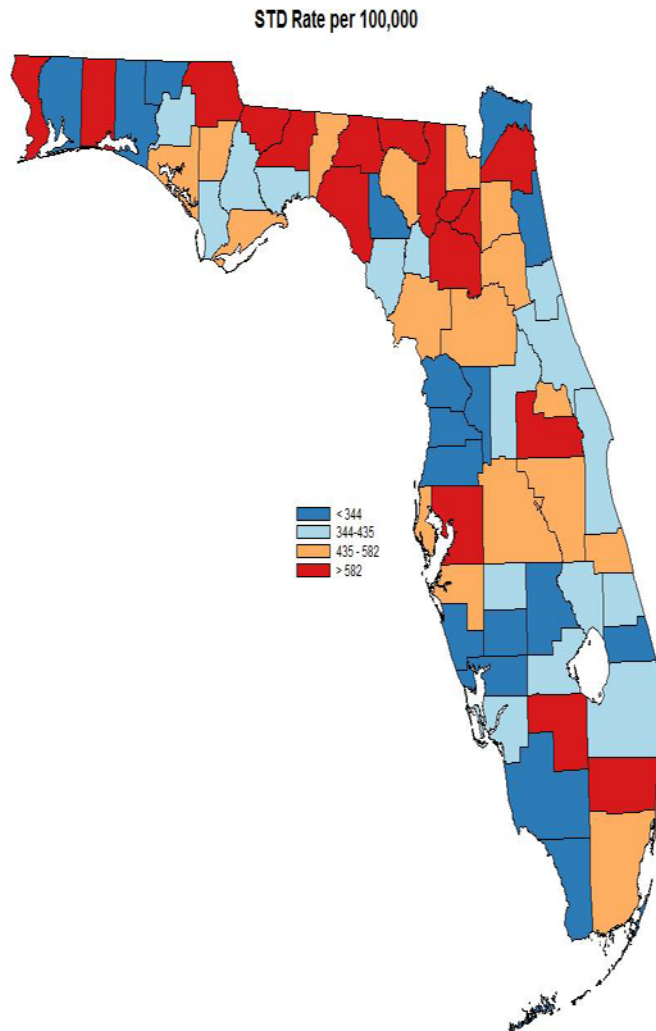
\$2.92

\$0.00

\$13.10

\$0.91

# Florida STD rates and cost per reported case



# STD Rate and STD Expenditure per case

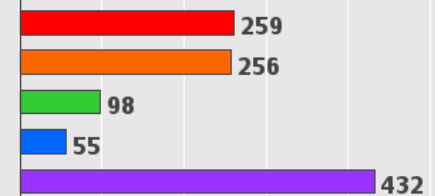
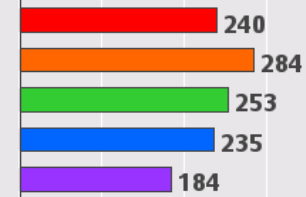
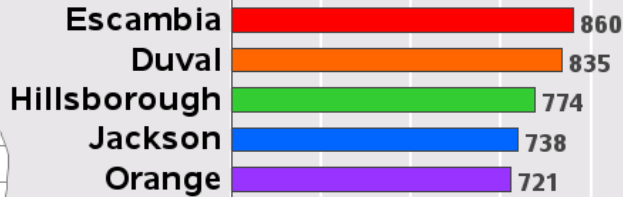
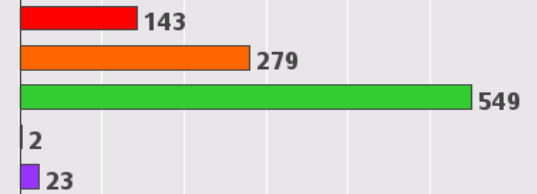
STD rate per 100,000

## STD Rate

## Cost per case

100 300 500 700 900 1100

0 100 200 300 400 500



# STD Rate and Population Density by county

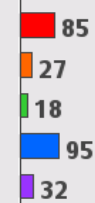
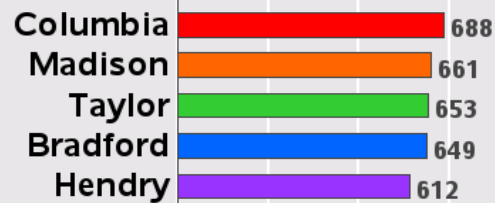
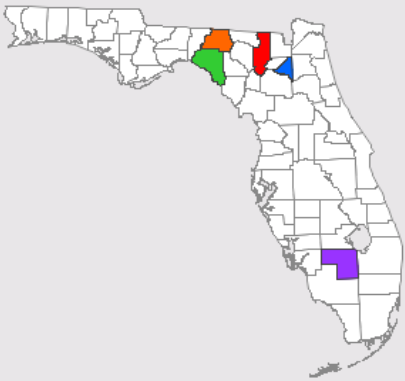
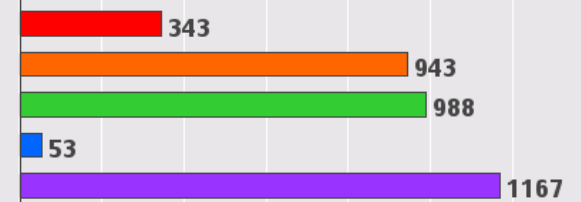
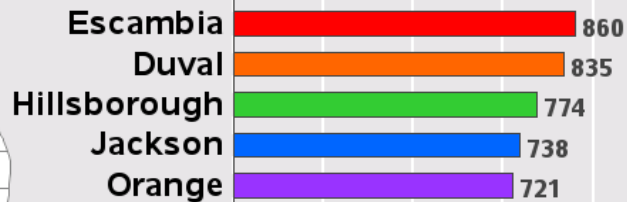
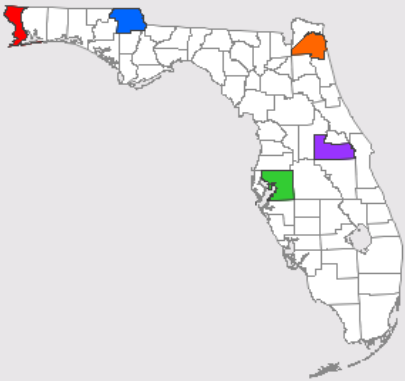
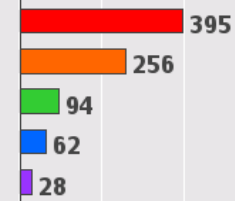
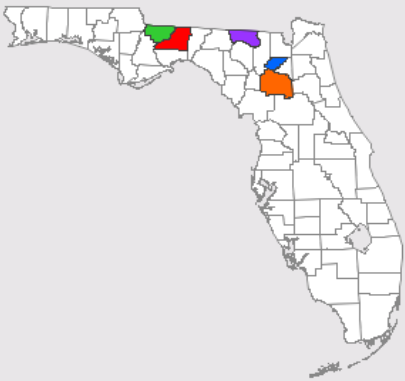
STD rate per 100,000 and Population density/sq mile

## STD Rate

## Pop Density

100 300 500 700 900 1100

0 200 400 600 800 1000 1200





# Preliminary Regression Analysis

Outcome variable – STD cost per case (by county)

## Predictors

- County characteristics:
  - Population density
  - STD rates
  - % below 200% poverty
  - % nonwhite
  - % 24 or under
- CHD characteristics
  - Additional funding from county government



# Results

Best subset selection method was performed to assess the best predictive model

R-square = 0.1348

Only 2 variables were found to be significant

Variable	Coefficient	P value
STD rate	-0.21	0.063
Health Care Tax per Capita	13.20	0.055





# Discussion

- Highest STD rates in rural Florida counties
- Wide variability in costs for STD services across the state
- Wide variability in discretionary or local tax funding for county health departments
- Implications for implementing micro cost studies



# Next Steps

## 1) Refine 2<sup>o</sup> analysis to:

- Provide additional clarification and consistency of measures used to calculate services, cases, and visits;
- identify preliminary purposeful sample of CHDs reflecting major variations in service delivery.

## 2) Survey all CHDs to:

- clarify variation in service delivery
- verify or fill in gaps from 2<sup>o</sup> data analysis
- Confirm purposeful sample of CHDs

## 3) Interview key informants of Purposeful Sample to discuss and clarify findings



# Variation in Approach to Cost Analysis

- Start with micro cost analysis with small sample based on convenience or pre-identified characteristics and generalize to larger body;
- Start with macro analysis of larger group and drill down to explain differences (dependent on valid established data reporting systems).

# Other Meeting Agenda Items

## PBRN Research Updates

- MPROVE Projects: Data analysis
- DACS Projects
- Cost Estimation Workgroup

## Dissemination Opportunities

- *Frontiers*
- **Keeneland Conference and PBRN Grantee Meeting-abstracts due January 7**  
<http://www.publichealthsystems.org/keeneland-2014.aspx>
- **NACCHO- abstracts due Dec 23** <http://www.nacchoannual.org/abstract-submission-preview/abstract-submission-instructions/>
- **AcademyHealth ARM-abstracts due Jan 16**  
<http://academyhealth.org/content.cfm?ItemNumber=842&navItemNumber=1996>
- **AcademyHealth PHSR IG-abstracts due Feb 14**  
<http://www.academyhealth.org/Communities/Communities.cfm?ItemNumber=12336&navItemNumber=2035>
- **APHA-abstracts due Feb 10-14** <https://apha.confex.com/apha/142am/oasys.epl>
- **AJPH Call for Papers: Advances in Public Health Services and Systems Research. Due March 10**

## Funding Opportunities

- Quick Strikes
- PPRA NOI
- RWJF: HCFO
- CDC
- AHRQ

# Other Meeting Agenda Items

## Announcements

- AJPM special issue



# Other Meeting Agenda Items

## Other discussion items

- Renewal/Authorization

## Administration

- Membership roster
- Products
- Bibliography
- Presentation Schedule for 2014

January 16 Tennessee PBRN

February 21 Nebraska PBRN

March 21 North Carolina PBRN

May 15 New York PBRN

June 19 California PBRN

July 17 Connecticut PBRN

August 21 Ohio PBRN

September 18 Colorado PBRN

October 16 New Jersey PBRN

November 20 Washington PBRN

December 18 New Hampshire PBRN

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