Trauma-Informed Children’s System of Care
Transformation and Evaluation:
The New Jersey Story

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TODAY’S OBJECTIVES

1. Discuss why New Jersey chose to implement and evaluate the statewide trauma-informed Promising Path to Success initiative across treatment and service delivery settings within the established children's system of care.

2. Describe the use in coaching for organizational transformation of the evidence based Six Core Strategies© to Prevent Violence, Trauma and the Use of Seclusion and Restraint, with the Nurtured Heart Approach® to building inner wealth in youth, families, and professionals.

3. Explain the approach taken and results to date of an ongoing return on investment (ROI) analysis of the Promising Path to Success initiative in NJ.
Section Objective 1: Discuss why New Jersey chose to implement and evaluate the statewide trauma-informed Promising Path to Success initiative across treatment and service delivery settings within the established children's system of care.
1999
NJ wins a federal system of care grant that allowed us to develop a system of care.

2000 - 2001
NJ restructures the funding system that serves children. Through Medicaid and the contracted system administrator, children no longer need to enter the child welfare system to receive behavioral health care services.

2006
The Department of Children and Families (DCF) becomes the first cabinet-level department exclusively dedicated to children and families [P.L. 2006, Chapter 47].

2007 – 2012
The number of youth in out-of-state behavioral health care goes from more than 300 to three.*

July 2012
Intellectual/developmental disability (I/DD) services for youth and young adults under age 21 is transitioned from the Department of Human Services (DHS) Division of Developmental Disabilities to the DCF Children’s System of Care (CSOC).

May 2013
Unification of care management, under CMO, is completed statewide.

July 2013
Substance use treatment services for youth under age 18 is transitioned from DHS, Division of Mental Health and Addiction Services, to DCF/CSOC.

December 2014
Integration of Physical and Behavioral Health is piloted in Bergen and Mercer County with expected Statewide rollout.

July 2015
NJ wins a Federal SAMHSA Grant System of Care - Expansion and Sustainability

September 2019
NJ wins a 2nd consecutive Federal SAMHSA Grant System of Care - Expansion and Sustainability

*How did we do this? Careful individualized planning and the development of in-state options (based on research about what kids need) using resources that were previously going out of state.
Children’s System of Care Objectives

*Helping families to be safe, healthy and connected...*

**At Home**
Successfully living with their families and reducing the need for out-of-home treatment settings.

**In School**
Successfully attending the least restrictive and most appropriate school setting close to home.

**In the Community**
Successfully participating in the community they choose, receiving the services they need to thrive.
Why trauma informed?

• Trauma informed care is the right approach to youth services
• Staff will find coming to work more satisfying
• Healing connections between youth, families and staff will be stronger
• Youth and staff crises will likely decrease
• Unplanned transitions will likely decrease
• Transition plans to the community will likely become more sustainable, reducing returns to OOH treatment
• Participating programs will be aligned with CSOC values and be more competitive in contract awards
## System of Care Values and Principles

<table>
<thead>
<tr>
<th>Youth-Guided &amp; Family-Driven</th>
<th>Community Based</th>
<th>Culturally/Linguistically Competent Services</th>
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</thead>
<tbody>
<tr>
<td>Strength Based</td>
<td>Family Involvement</td>
<td>Individualized</td>
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<td>Unconditional Care</td>
<td>Collaborative</td>
<td>Home, School &amp; Community Based</td>
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<td>Promoting Independence</td>
<td>Cost Effective</td>
<td>Team Based</td>
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<td></td>
<td>Comprehensive</td>
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Language Is Important

Client
Case
Placement
Language Is Important

Language of CSOC
- Children, youth, young adult
- Parents, caregivers
- Treatment
- Engagement
- Transition
- Missing
- Family Time

Not the Language of CSOC
- Clients, Case, Consumer
- Mom and Dad
- Placement
- Not Motivated
- Close, Terminate
- Runaway
- Home visits
Youth Served in Care Management

- 8066 (as of 1/1/2010)
- 12,738 (as of 4/1/2018)
How do we know what we are doing is working?

• Fewer children accessing inpatient treatment
• Fewer children in institutional care
• Closure of state child psychiatric hospital and state run residential treatment centers.
• Only one youth with behavioral health challenges in an out-of-state program
• Fewer youth in detention centers—closure of 10 centers
• Youth entering system of care at younger age
• Children in out of home care have more intense needs than prior to the system of care development
Out of Home Treatment is an intervention, not the destination.
Promising Path to Success

New Jersey’s SAMSHA System of Care Expansion Grant
Promising Path to Success

A statewide initiative, developed through the support of a 4 year SAMHSA System of Care Expansion Grant, that combines the evidenced based methodology of Six Core Strategies© with the Nurtured Heart Approach® to build inner wealth in youth and families while supporting system partners in creating safer & more trauma informed environments
Goals of Promising Path to Success

✧ Strive to reduce & eliminate restraint, seclusion & coercion
✧ Reduce the percentage of youth who re-enter treatment after transitioning back to the community after an initial treatment episode
✧ Reduce the percentage of youth in the system of care who require multiple episodes of Out of Home (OOH) treatment
✧ Reduce the average length of stay for youth in OOH treatment to 9 months or less
✧ Analyze and understand the impact of each type of system involvement to aid in making resource allocation decisions
Promising Path to Success

- Six Core Strategies© (6CS)
  - OOH Coaching Component
- Nurtured Heart Approach® (NHA)
  - Full Day and Certification Trainings
- Return on Investment (ROI)
Each Phase Includes:

- Local Kick Off through the Children’s Inter Agency Coordinating Council (CIACC)
- NHA Trainings (1 day) for Out of Home Treatment Providers (OOH), Mobile Response & Stabilization Services (MRSS), Care Management Organizations (CMO), Family Support Organization (FSO) staff & other community partners
- NHA Trainings for parents & caregivers through local FSOs
- 6CS Training (2 days) for OOH, CMO, FSO, MRSS & Children’s Inter Agency Coordinating Councils (CIACC) Leadership, OOH staff, & other providers
- Coaching for OOH sites on 6CS implementation
- Trauma Informed Care and Technical Assistance Trainings for OOH staff
- NHA Trainer Certification for OOH, CMO, FSO, MRSS and Intensive In Community (IIC) trainers nominated by their programs
- NHA Superuser Group for Certified Trainers
Six Core Strategies© To Prevent Conflict and Violence: Reducing the Use of Seclusion and Restraint

1. Leadership toward organizational change
2. The use of data to inform practice
3. Workforce development
4. Full inclusion of individuals and families
5. The use of seclusion and restraint reduction tools, which include the environment of care and use of sensory modulation
6. Rigorous debriefing after events in which seclusion and restraint might have been used

*This is not just about Out Of Home Treatment*
The Nurtured Heart Approach® Philosophy

- Intense youth have learned that they get more connection from adults when things are going wrong (using their intensity in negative ways)
- Create new Portfolios that are energetically aligned
- Build Inner Wealth in youth
- NHA asks us to alter our lens, create first hand experiences of success, & make miracles out of molecules
Return on Investment -
Rutgers Center for State Health Policy

With support and data from Medicaid, Education, OOH providers, Juvenile Justice, Child Welfare and other system partners, we are looking to measure the impact of both the Promising Path to Success grant as well as the Children’s System of Care as a whole.
Section Objective 2:
Describe the use of coaching for organizational transformation of the evidence based Six Core Strategies© to Prevent Violence, Trauma and the Use of Seclusion and Restraint, with the Nurtured Heart Approach® to building inner wealth in youth, families, and professionals.
PPS COACHING PROCESS OVERVIEW

Intensive Initial Coaching
• 9-10 “Monthly” Meetings per OOH Site (average)
• Overview & Team Selection
• 6CS Assessment, Team Vision, Data Sources
• Action Steps, Strategies, Progress Updates
• NHA Training & other Technical Assistance
• Re-Assessment, Celebrating Successes, Transition

Follow-up Coaching
• Quarterly meetings to track continued progress & assist as needed
SIX CORE STRATEGIES© (6CS)

• **LEADERSHIP** toward organizational change
• **DATA** used to inform practice
• **RIGOROUS DEBRIEFING** following seclusion and restraint or other critical incidents
• **ENVIRONMENT OF CARE/SENSORY MODULATION** tools used to reduce the need for seclusion and restraint
• **YOUTH & FAMILIES** – full inclusion – voice & choice
• **WORKFORCE DEVELOPMENT** to support trauma informed care
LEADERSHIP – PPS COACHING TEAM

- 8 Parents (2 adoptive, with lived experience of youth behavioral health systems)
- 10 Master’s Degrees, 2 Doctorates, 5 Clinical Licenses
- Expertise in Social Work, Clinical Psychology, Psychiatric Nursing, Family Therapy, Health Education, Human Services, Public Administration
- 3 Post Grad Certificates in Traumatic Stress Studies from JRI; 4 trained in the ARC Treatment Framework
- Significant experience in SOC and Residential Treatment
- Peer Support expertise
LEADERSHIP – COACHING SITES

• Critical role of leadership
  – Agency and Site
  – Formal and Informal
• Communicating the Vision
• Supporting staff training
• Providing resources for environmental updates
• Sharing data
DATA – PPS COACHING TEAM

- Focus Groups Phase 1 Post Transition
- Coaching Surveys – Survey Monkey Post Transition
- Periodic NHA Superuser Surveys
- NHA Training Fidelity Checklist
- NHA Pre-Post Questionnaire
- NHA Observation Tool in development
DATA – COACHING SITES
Where thought goes, energy flows...

Each site team chooses key indicators such as:

• Restraints, Police Calls, Staff Callouts
• Family Contacts, Treatment Participation, Use of NHA by staff
RIGOROUS DEBRIEFING

How might we respond differently next time?

• No Blame, only opportunities for learning!
• Ways to involve youth, staff, leadership
• Reflection and learning to broaden understanding
RIGOROUS DEBRIEFING

1) Event
2) Response
3) What we know
4) What we need to know
5) Where to place focus
6) Take Away
ENIRONMENT & SENSORY

• Individualized Self-Regulation Plans
• Occupational Therapy Consultations
• Sensory Spaces & Sensory Kits
  – Creative options from Wish Lists to DIY
Regulation Plan

Things that upset me!
• Changing plans at the last minute
• Exaggerating or making things up
• Accusations
• Overhearing staff talking about me and my family

How people can tell I’m upset:
• Mean face
• Yelling, stomping and swearing
• Breaking rules

When I’m having a hard time controlling my anger please don’t do this:
• Talk about it as soon as it happens
• Talk about something over and over
• Give me negatives
• Take away privileges

Please do this:
• Give me some space and time alone
• Distract me with something I like to do like watch a video or get a drink
• Encourage me to take a walk

Things that help me to calm down when I’m upset:
• Listen to music on my headphones
• Use the rocking chair
• Use the weighted blanket

When I am feeling low or not motivated I can do these things to increase my energy:
• Open a window
• Take a shower
• Go for a walk
I can't even! I wish I could send you a pic, just walked into the living room. Daniel laying on the sofa neck wrap on holding a soothing sound machine, BP has the lights dimmed down low, JB is late on the other couch under the aucpressure mat Playing with a squishy ball, MM is sitting on the small seat with the Weighted blanket. 😂😂😂 AMEN AMEN AMEN just too funny Have a great weekend.

Wahoooooo !!!!! It works ! It really works !!!! Thanks for letting me know. I'm smiling ! You must be gitty !

Loving it!
DIY Individualized Sensory Box
YOUTH & FAMILIES – Full Inclusion

• Youth Advisory Boards
  – Rule/Handbook/Procedure Reviews, Hiring, Implementation Team Participation

• Youth & Family Surveys

• Youth & Family Peer Staff Positions

• Former Resident/Family Board Members
YOUTH & FAMILIES – Full Inclusion

• Family Engagement
  – 1st Night Calls, Positive Reach Outs, Events
  – Open Door & Phone Policies
  – Providing assistance with transportation

• Supporting Youth at Home
  – In-Home Therapy, Tracking Positives
  – Strategic plan prior to starting family time at home
  – On-call support for caregivers during family time

• Family Support/Youth Partnership Linkages
  – FSO presentations, Youth Conference planning
WORKFORCE DEVELOPMENT

Framework for Coaching with Site Teams - Six Core Strategies® 2-Day Training

• Youth & Family Panel

• Out of Home Provider Panel

• Residential Interventions for Children, Youth & Families: A Best Practice Guide (Blau, Caldwell & Lieberman)

• Implementing Effective Short-Term Residential Interventions: A Building Bridges Initiative Guide
WORKFORCE DEVELOPMENT

Nurtured Heart Approach®

• Statewide 1-day trainings by Rutgers PPS Team
• Customized on site trainings in various formats
• Trainer Certification to embed expertise in all provider agencies (429 Certified Trainers across the state)
• Quarterly Regional Superuser Groups to support fidelity and collaboration
• Full-day trainings by national & international experts to inspire folks to “notch it up”, Global Summit Participation
WORKFORCE DEVELOPMENT

Technical Assistance – customized formats offered on site and regionally for residential staff

• Family Engagement
• Adverse Childhood Experiences & the Neurobiology of Trauma
• Complex Trauma, Developmental Attachment & Trauma Informed Care
• Emotional Regulation, Self-Care & Mindfulness
• Positive Behavior Supports
• Cultural & Linguistic Competence
Cultural Responsiveness refers to the ability to learn from and relate respectfully to people from your own and other cultures.

- How does this family/youth interpret behaviors?
- What expressions does this family/youth use when talking about trauma?
- Are particular behaviors cultural or not?
- How does this family/youth perceive what happens to them?
- Does this family/youth have particular ways to self-regulate?
- How does this family/youth handle stress?

Adapted from: Marta Casa, 2013
NHA as a Critical Workforce Development Component

- Creating a trauma-informed, healing environment (for physical and emotional safety) in the residential programs
- NHA as a core skill for relationship building, engagement, and co-regulation for ALL staff
- Enhanced transition away from points/levels, extrinsic rewards and punishments, to relationship-based, individualized treatment
Staff “Ah-Ha”

“Before NHA I was burnt out and didn’t know it. I was seeing the youth in terms of behaviors, not the youth themselves anymore. I forgot to see they’re children.”
Wrapping NHA around the family with system-wide implementation across all partners

PerformCare

Youth & Caregiving System

Mobile Response & Stabilization

In-Community Therapists & Behav. Assts

FSO Peer Support Partners

CMO Care Managers & Clinical Consultants
Caregiver “Ah-Ha”

“I used to think I had to discipline my kids because they HAVE to behave. Now I see that I need to be with them in a way so they will WANT to behave.”
Intentions of NHA

Building Inner Wealth™
Building New Portfolios by changing how and when we “show up”
Developing stronger connection and relationships with our children and youth
Allowing children and youth to get back on track quicker, without punitive methods
Intensity + Inner Wealth = Transformation

What it’s all about:

Our LENS

Our LANGUAGE
The NHA Core Methodology: The 3 Stands™

1. Absolutely No!
2. Absolutely Yes!
3. Absolutely Clear!
Stand 1: Absolutely No!

I refuse to energize negativity. I will not reward negativity with my energy, connection or relationship.
Brain, LOOK!

Not NOW! Can't you see I'm BUSY?!
Stand 2: Absolutely Yes!

I relentlessly create and energize success. I energize and nurture firsthand experiences of success.
Staff “Ah-Ha”

“There is no such thing as a bad day. There are 24 hours in a day. You may have a bad moment or 2 within those 24 hours. Something went right”.

Reflecting back who they really are…

**THE TRUTH OF THE MOMENT.**
NHA Recognition Statements:

- Recognitions provide vast avenues for attunement, connection, & facilitate individualized care and culture
- Always considering youth’s needs; intensity can equate to needing intense levels of connection; ask yourself, “At what level does this youth need to be seen?”
- “It’s about RELATIONSHIP NOT ATTENTION” and all healing occurs in the context of relationship
“Children do not awaken by the fear of punishment.”

Howard Glasser, NHA Founder

Stand 3: Absolutely Clear!

I set and enforce clear limits and clear consequences in an un-energized way. I will always provide a true consequence.
Stand 3 Core Belief…

• The key is NOT to try to alter the child’s thinking by how harsh, punitive, drastic a consequence is or how long and insightful and persuasive the lecture or pep-talk is…TRANSFORMATION happens by giving irrefutable first hand experiences of success in the moment.
Reset – self-regulation
Restart – welcome back, appreciate realignment with greatness
Restore – as needed, individualized natural & logical consequences
Counting down from 10-1

“hmmm…”
“ommm…”
“zzzzz…”

Deep breathing – various options

Slowly tap your thumb to each fingertip

Meditation

Progressive muscle relaxation

Stand 1 Mantra

Think about positive interactions with a child

Self-massage

Visualization

Rhythmic exercises

Engage all of your senses
The Practice of Self-Reset

When dealing with negativity…
✓ Notice urge to react strongly
✓ Notice any urge to lecture
✓ Notice any urge to try persuade
✓ Notice any urge to control

*NHA is a way of “being with,” not “doing to.”*
“Almost everything will work again if you unplug it for a few minutes, including you.”

— Anne Lamott
3 Stands in Balance

**Stand 1: Absolutely NO**
Am I refusing to give my energy to negative behavior, or inadvertently doing so?

**Stand 2: Absolutely YES**
Am I energizing moments of success? Am I giving evidence to the qualities I see? What “lens” am I using to see this youth?

**Stand 3: Absolutely CLEAR**
Am I being clear and consistent in limits/rules and consequences without energizing/”drama”? Am I maximizing use of reset for myself and others? Does the consequence feel punitive or is it restorative/natural/logical?
A Day in the Life of...

Experiential
PPS Coaching – Lessons Learned

Agency/Site Readiness for Coaching

• Value of peer sharing to inspire
• Prior orientation around “Trauma Informed”
• Leadership support and participation
PPS Coaching – Lessons Learned

Challenges:
- Pre-existing cultures & values
- Connecting staff with training
- Impact of staff turnover
- Youth in treatment far from home
- Prior staff-family interactions
PPS Coaching – Lessons Learned

What Helps:
• Team Approach
• Attending to Energy (meeting them where they are, attending to group process, getting in sync)
• Arousing Curiosity
• Individualizing the process based on local factors (census concerns, staff changes, environments, youth served)
• Repetition and coach contact with site in between meetings
• Having NHA trainers on site/on the floor
• Regular review of 6CS with implementation teams
Section Objective 3: Explain the approach taken and results to date of an ongoing return on investment (ROI) analysis of the Promising Path to Success initiative in NJ.
Acknowledgements

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    • Jaime Walkup
    • Ramesh Raghavan
• Members of the Promising Path to Success (PPS) ROI Advisory Committee
How have you demonstrated to others that your work was effective? A good investment?
OBJECTIVE 3.1

EXPLAIN THE APPROACH TAKEN FOR AN ONGOING RETURN ON INVESTMENT ANALYSIS
The Triple Aim

**BETTER CARE** Improving the individual experience of care

**IMPROVE HEALTH** Improving the health of populations

**BETTER VALUE** Reducing the per capita cost of care for populations.

What is a return on investment (ROI) analysis?

- **Key performance measure:** Derived from comparing the cost of the investment with the return (or cost savings) of the investment.

- **Social return on investment:** Includes the social value of items that can be “monetized”

- Measures the **value of an initiative** (in dollars) that provides health, social, and education services and communicate value to stakeholders.
Why conduct a ROI for the system of care?

• Opportunities for a Return on Investment are cross-cutting
  – Disproportionate cost spending for youth who benefit from a system of care
    • EXAMPLE: For children using behavioral health services, Medicaid costs were (on average) $8,520 per year, compared with $1,729 per year. (Pires et al, 2013)
  

• Scaling up and sustaining a system of care: Cost information a critical component of “making the case” for expansion (Gruttadaro, Markey, & Duckworth, 2009).


What kinds of questions could a ROI analysis answer for you?

- How do we allocate resources given scarce resources?

- How do we demonstrate the value of our intervention in monetary and non-monetary terms?

- What value might we expect from investing in scaling up of a local demonstration or pilot?

- How do we systematically collect data on service utilization and cost as part of continuous quality improvement efforts?
What are some of the major challenges for a ROI within systems of care?

• Obtaining data from multiple sources

• Determining cost implications of changes in service utilization

• Monetizing benefits from systems of care
How is a return on investment analysis conducted?

• **Step 1: Understand What to Measure**—Includes engaging stakeholders, reviewing and refining a theory of change, and defining the analysis parameters

• **Step 2: Prepare for the ROI Analysis**—Includes determining a sample, identifying outcomes and indicators to be measured, establishing a data collection process (existing and/or new data), collecting outcome and cost data, and developing an impact map

• **Step 3: Model and Calculate the ROI**—Includes determining financial values and proxies, calculating impact, and calculating the ROI

In the case of *PPS*, a positive ROI is:

- Improved **distribution and overall reduction of expenditures** for:
  - children and families
  - youth-serving public sector agencies (e.g., Medicaid, CSOC, child welfare, juvenile justice, and education)
  - against the costs of investment (i.e., start-up and ongoing investments in the initiative.)
- **Demonstrated effectiveness** in key indicators.
- **Improved service utilization** over time and various outcomes before, during and after the implementation of 6CS and NHA.
Steps of a ROI

• **Step 1: Understand What to Measure**—Includes engaging stakeholders, reviewing and refining a theory of change, and defining the analysis parameters.

• **Step 2: Prepare for the ROI Analysis**—Includes determining a sample, identifying outcomes and indicators to be measured, establishing a data collection process (existing and/or new data), collecting outcome and cost data, and developing an impact map.

• **Step 3: Model and Calculate the ROI**—Includes determining financial values and proxies, calculating impact, and calculating the ROI.
Step 1: Understand What to Measure

**Stakeholder Engagement**
- Convene ROI Advisory Panel quarterly
- Meet with membership individually
- Receive feedback on areas including:
  - Objectives of the ROI Analysis
  - Available data sources and feasibility
  - Measurement approach
  - Dissemination approach
Step 1: PPS Primary Research Questions

**Evaluation of Effectiveness (Primary Outcomes of Interest)**

1. For children receiving Promising Path to Success (PPS) services, is there a reduction in out-of-home treatment?
2. **For children and families receiving PPS services in out-of-home treatment settings is there a reduction in seclusion and restraint episodes?**
3. For children receiving Promising Path to Success, is there improvement in behavioral and physical health outcomes?

**Evaluation of Economic Endpoints**

1. What, if any, return on investment is achieved across children and families and youth-serving public sector agencies for those counties exposed to PPS in OOH and community-based settings, as compared to comparison counties not exposed to PPS?
Overall Logic Model

**Investment (Input)**
- CSOC
- UBHC
- OOHs
- Community- & home-based programs
  - Care Management Organizations (CMOs)
  - Family Support Organizations (FSOs)
  - Mobile response and stabilization services (MRSS)

**Activities (Thruput)**

*Training activities:*
- 6 Core Strategies
- Nurtured Heart Approach

*Reach:*
- OOHs
- CMOs
- FSOs
- MRSS

**Objectives (Output)**

*Improved service delivery system*

*Improved lives of youth and family*

*Improved cost and quality of care*

*Primary Data collection on “assessing implementation variation”*

*Programmatic investment and impact*
- ROI Data Work Group: Linked dataset with Medicaid & CYBER
Logic Model for Evaluating PPS

**Input & Resources**

**CSOC:**
- Roll-out of project and ongoing coordination costs, including Human Resources

**UBHC:**
- Project Leadership and Administrative costs (HR)
- Six Coaches (HR)
- Sub-contracts with 6CS and NHA Trainers

**OOH & community-based programs (CMO, FSO, MRSS):**
- Organization characteristics (e.g. size, staffing)
- Trainees’ time to attend initial training of trainers, potential for overtime costs
- OOH treatment and community-based setting staff’s time to attend trainings, potential for overtime costs

**Activities & Outputs**

**Training activities**
- 6 Core Strategies:
  - Initial (2-day) training
  - On-going coaching and support (6 months)
- NHA:
  - Initial (5-day) training for site-based trainers
  - Ongoing (1-day) training for staff at site
  - On-going coaching and support

**Reach**
- OOH trmt settings (implementing 6CS):
  - Staff training
  - Site’s approach to adoption (selected strategies)
- Community-based programs:
  - Staff training
  - Site’s approach to adoption (selected strategies)

**Outcomes**

**Improved service delivery system**
- ↑ Home- and community-based service/support utilization
- ↓ OOH utilization (entries, re-entries, length of stay)
- ↓ Seclusion/restraint use at OOH settings
- ↓ Staff turnover at OOH settings
- ↓ Police involvement
- ↓ Entry & transition in child welfare system
- ↓ Entry in juvenile justice system

**Improved lives of youth & family**
- ↓ Behavioral, emotional, physical health problems
- ↓ Substance use
- ↓ Needs (functional outcomes)
- ↑ Strengths (functional outcomes)
- ↑ Educational performance of youth
- ↑ Successful employment as adult
- ↓ Injuries in youth

**Improved cost & quality of care**
- ↓ Hospital (incl. psych) & ED utilization
- ↓ Behavioral health expenditures (incl. psychotropic meds)
- ↓ Physical health expenditures
- ↓ Restraint/seclusion related costs
- ↓ Family/caregiver cost

* Indicates measure is primarily of relevance to analyses of 6CS and NHA’s implementation in OOH treatment settings, specifically those implementing 6CS.

** Indicates measures is primarily of relevance to analyses of NHA’s implementation in community-based settings.
### Step 2: Prepare for the ROI Analysis

#### INPUT
- Estimate start-up and investment for PPS.
- Assess variation in PPS implementation across programs, settings, and phases.

#### THRUPUT
- Assess variation in PPS implementation.
- Estimate implementation costs.
- Analyze costs across systems of Care (OOH, FSO, and CMOs).

#### OUTPUT
- Evaluate effectiveness and estimate post-implementation savings.
- Measure outcomes of PPS implementation.
- Document review.
- Primary data collection: Key informant interviews.
- Secondary data collection and analysis: Investment and Impact Tool.
- Secondary data analysis: Medicaid-CYBER linked dataset.
- Secondary data analysis: NJ SPIRIT, FACTS.
Data Collection Approach for Assessing (1) Implementation Variation and (2) Investment/Costs and Impact at OOH

- **UBHC Lead Coach Interviews** on program implementation.
- **Obtain agency/program representative contact information to discuss impact and investment**
- **Agency and program key informants** on program implementation.
- **Agency and program informative contact** attend webinar to review investment and impact data collection tool.
- **Agency and program contacts** complete data collection tool

Customize data collection tool to accommodate agency/program

Make arrangements and process completed tool at Rutgers CSHP

Note: Leadership in FSOs and CMOs are also being interviewed at the close of respective phases to assess implementation approach and investment and impact.
### Input & Resources

#### Start-up and Initial Investment (Input)

**CSOC:**
- Roll-out of project and ongoing coordination costs, including Human Resources

**UBHC:**
- Implementation start-up costs and staff training.
- Project Leadership and Administrative costs (HR)
- Six Coaches (HR)
- Sub-contracts with 6CS and NHA Trainers

**ROI:**
- Data use agreements and datasets
- Meetings of ROI Stakeholder Advisory Group
- Software programs and data infrastructure.

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<th>CSOC</th>
<th>UBHC BRTI 2-day 6CS Leadership Trainings</th>
<th>UBHC BRTI 5-day NHA Certification Training Intensives (CTI)</th>
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<td></td>
<td>• Human Resources and Related Systems Investments</td>
<td>• UBHC Training Costs</td>
<td>• UBHC Training Costs (e.g., facility, trainers, etc)</td>
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<td></td>
<td>• OOH agency/program attendees’ opportunity costs</td>
<td>• OOH program attendees opportunity costs</td>
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<td>• FSO agency/program attendees opportunity costs</td>
<td>• FSO program attendee opportunity costs</td>
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<td></td>
<td>• CMO agency/program attendees opportunity costs</td>
<td>• CMO agency program attendees opportunity costs</td>
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<tr>
<td></td>
<td>• Cost for ROI evaluation</td>
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</tbody>
</table>

**CSOC**
- Human Resources and Related Systems Investments

**UBHC BRTI 2-day 6CS Leadership Trainings**
- UBHC Training Costs
- OOH agency/program attendees’ opportunity costs
- FSO agency/program attendees opportunity costs
- CMO agency/program attendees opportunity costs

**UBHC BRTI 5-day NHA Certification Training Intensives (CTI)**
- UBHC Training Costs (e.g., facility, trainers, etc)
- OOH program attendees opportunity costs
- FSO program attendee opportunity costs
- CMO agency program attendees opportunity costs

**ROI**
- Cost for ROI evaluation
Investigating Implementation Variation: Domains for PPS Implementation at OOH Treatment Program, CMO, and FSO

6 Core Strategies (6CS) Implementation:
- UBHC BRTI 2-day 6CS training
- 6CS Implementation Team Composition (OOH only)
- 6CS Implementation Team Meetings (OOH only)
- 6CS prioritized (OOH only)

Nurtured Heart Approach Implementation
- 5-Day Certification Training Intensive (CTI)
- Attendance at super-user meetings
- Initial NHA Training of staff at program
- Booster NHA Training of staff at program

Activities & Outputs

Training activities
- 6 Core Strategies:
  - Initial (2-day) training
  - On-going coaching and support (6 months)
- OOH trtmt settings (implementing 6CS):
  - # Staff trained
  - Site’s approach to adoption (selected strategies)

Reach
- NHA:
  - Initial (5-day) training for site-based trainers
  - Ongoing (1-day) training for staff at site
  - On-going coaching and support
- FSO and CMO programmatic investment and fiscal impact:
  - # Staff trained
  - Site’s approach to adoption (selected strategies)
### Implementation Summary Sheet

| TABLE 1: RELEVANT PRIOR INITIATIVES AT PROGRAM |
| TABLE 2: UBHC TRAININGS FOR 6CS AND NHA TRAINERS |
| TABLE 3: CHARACTERISTICS OF IMPLEMENTATION TEAM MEETINGS FOR 6CS |
| TABLE 4: 6CS IMPLEMENTATION APPROACH: PRIORITIZED STRATEGIES |
| TABLE 5: NHA IMPLEMENTATION APPROACH: |
| TABLE 6: OTHER TRAININGS PROVIDED TO SUPPORT PPS IMPLEMENTATION AT PROGRAM |
| TABLE 7: PROGRAM CHARACTERISTICS |
| TABLE 8: AGENCY CHARACTERISTICS (If Applicable) |
| TABLE 9: YOUTH, FAMILY, AND STAFF ENGAGEMENT |

#### TABLE 8: AGENCY CHARACTERISTICS (If Applicable)

<table>
<thead>
<tr>
<th>Agency Characteristic</th>
<th>Value</th>
<th>Notes</th>
<th>Reference (participant or resource when applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affiliated Agency</td>
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<tr>
<td>Presence of Agency-Wide Quality Improvement Team, at time</td>
<td></td>
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<td></td>
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<tr>
<td>Presence of Agency-Wide Trainers, at time of PPS initiation</td>
<td></td>
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<td></td>
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<tr>
<td>Size of Overseeing Agency (number of treatment programs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>statewide), at time of PPS initiation</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number of staff employed by agency; please specify in FTEs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Presence of agency-level board?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Investigating Implementation Variation: Exposure Variables

**Domains**

- Trainings (UBHC BRTI 2-day 6CS, NHA 5-day CTI)
- 6CS Implementation Team Composition
- 6CS Implementation Team Meetings
- 6CS Prioritized
- NHA Implementation Approach

**Exposure Variables (Examples)**

- Participation in trainings provided by UBHC: [Agency-and program-level leadership, direct care staff, leadership only, direct care staff only]
- Participation in implementation team: [Agency-and program-level leadership, direct care staff, leadership only, direct care staff only]
- Proportion of total team in attendance, average number of meetings during implementation, proportion of meetings in person/virtually
- Total and individual strategies prioritized
- Percent of total staff trained [90-100%; 75-89%; less than 75%]; Length of initial training sessions; Number of total training sessions; Presence of booster trainings; Training incorporated into new employee orientation
Promising Path to Success ROI Advisory Panel: EXAMPLE (1)

Table 1. Measures for Program Variation in PPS Implementation

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
<th>Year Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>6Cs Implementation: UBNR RBT1-2 by 6Cs training</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Agency-level leadership attendance</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Agency CEO/Executive leadership attendance</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Program-level leadership attendance</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Program-level direct care staff attendance</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>6Cs Implementation: Team Composition</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Agency-level leadership in implementation team</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Program-level leadership in implementation team</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Program-level direct care staff in implementation team</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Work in implementation team</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>6Cs Implementation: Team Meetings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion of total implementation team membership in attendance</td>
<td>Percentage of total team</td>
<td></td>
</tr>
<tr>
<td>Average number of implementation meetings during PPS implementation</td>
<td>Number</td>
<td></td>
</tr>
<tr>
<td>Proportion of implementation meetings in person during PPS implementation</td>
<td>% of total meetings conducted in person</td>
<td></td>
</tr>
<tr>
<td>Proportion of total meetings by conference call/virtual during PPS implementation</td>
<td>% of total meetings conducted virtually/b by telephone</td>
<td></td>
</tr>
<tr>
<td>6Cs prioritized</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total number of strategies prioritized during PPS implementation</td>
<td>5-6</td>
<td></td>
</tr>
<tr>
<td>Leadership context organizational change</td>
<td>Ta/Ta</td>
<td></td>
</tr>
<tr>
<td>Using data in decision process</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Workforce development</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Executive and regional initiatives</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Inclusion of youth and family members</td>
<td>Yes/Ta</td>
<td></td>
</tr>
<tr>
<td>Executive status</td>
<td>Ta/Ta</td>
<td></td>
</tr>
</tbody>
</table>

NHA obsession:

Domain: 2-Day CTT or UBNR or other?

- Agency-level leadership attendance
- Agency-level specialized trainings
- Program-level leadership attendance
- Program-level direct care staff attendance
- Attendance at major user meetings
- Required and/or user group attendance of NHA training
- Initial NHA training

**Variations in length of initial NHA training sessions**
- Yes/Ta
- If all variations, length of initial NHA training sessions (in hours)

**Percent of total training in NHA Training**
- Number
- Duration of total training sessions
- N/A
- Days

*Responsibilities established by committee; prior initiatives only if consistent with PPS's objectives.
What do we need you to inform? In Table 1, we list proposed measures and respective values to document variation in PPS implementation. We would request that you review the measures and values and respond to the following questions:

- From your perspective, are there any measures missing that might influence whether PPS is effective and/or cost-effective? If so, which ones?

<table>
<thead>
<tr>
<th>Initial NHA training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Variation in length of initial NHA training session</td>
<td>Yes/No</td>
</tr>
<tr>
<td>If no variation, length of Initial NHA Training sessions (in hours)</td>
<td>Numeric</td>
</tr>
<tr>
<td>If variation, range in length of Initial NHA Training sessions (in hours)</td>
<td>Numeric</td>
</tr>
<tr>
<td>Percent of total staff trained in NHA Training</td>
<td>Numeric</td>
</tr>
<tr>
<td>Number of total training sessions</td>
<td>Numeric</td>
</tr>
<tr>
<td>Are there booster sessions for NHA Training</td>
<td>Yes/No</td>
</tr>
<tr>
<td>Is NHA Training incorporated into new staff training</td>
<td>Yes/No</td>
</tr>
</tbody>
</table>
Investigating Implementation Variation:

Sample includes key informants from:
– UBHC BRTI Lead Coaches
– OOH treatment agency/program-level staff
– Family Support Organizations
– Care Management Organizations

PHASE 1, Participants Interviewed: n=27
PHASE 2, Participants Interviewed, n=35
PHASE 3, ongoing
<table>
<thead>
<tr>
<th>Activities</th>
<th>Associated costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>UBHC BRTI 2-day 6CS Leadership Trainings</td>
<td>UBHC Training Costs (e.g., facility, trainers, etc)</td>
</tr>
<tr>
<td></td>
<td>OOH agency/program attendees’ opportunity costs</td>
</tr>
<tr>
<td></td>
<td>FSO agency/program attendees opportunity costs</td>
</tr>
<tr>
<td></td>
<td>CMO agency/program attendees opportunity costs</td>
</tr>
<tr>
<td>UBHC BRTI 5-day NHA Certification Training Intensives (CTI)</td>
<td>UBHC Training Costs (e.g., facility, trainers, etc)</td>
</tr>
<tr>
<td></td>
<td>OOH program attendees opportunity costs</td>
</tr>
<tr>
<td></td>
<td>FSO program attendee opportunity costs</td>
</tr>
<tr>
<td></td>
<td>CMO agency program attendees opportunity costs</td>
</tr>
<tr>
<td>Site-specific initial NHA staff training</td>
<td>UBHC Coaches</td>
</tr>
<tr>
<td></td>
<td>OOH agency/program trainers and attendees opportunity costs</td>
</tr>
<tr>
<td>Ongoing 6CS implementation team meetings</td>
<td>Agency/program staffs’ opportunity costs</td>
</tr>
<tr>
<td>Ongoing NHA training</td>
<td>UBHC Coaches or Trained agency/program staff</td>
</tr>
<tr>
<td></td>
<td>Agency/program attendees opportunity costs</td>
</tr>
<tr>
<td>Investment in environment of care</td>
<td>Investment in sensory modulation, soothing rooms, etc.</td>
</tr>
</tbody>
</table>
Objective 3.2.

PROVIDE PRELIMINARY RESULTS OF PPS ON OUT-OF-HOME TREATMENT SETTINGS IN PHASE 1
Data Source: Impact and Investment Tool (OOH Treatment Programs)

- **UBHC Lead Coach Interviews** on program implementation.
- Obtain agency/program representative contact information to discuss impact and investment.
- **Agency and program key informants** on program implementation.
- **Agency and program informative contact** attend webinar to review investment and impact data collection tool.
- Customize data collection tool to accommodate agency/program.
- **Agency and program contacts** complete data collection tool.
- Make arrangements and process completed tool at Rutgers CSHP.
Data Sources: Impact and Investment Tool (OOH Treatment Programs)

- Incidence of s&r / enrollee-year
- Duration of s&r

- Decreased use of seclusion & restraint (s&r)

- Hypothesized to result in:
  - Injuries among youths
  - Injuries among staff
  - Police involvement
  - Property destruction
  - Direct care staff instability
    - Missed days
    - Missed hours
    - Turnover

- Increased use of trauma-sensitive care

- Training costs
- PPS (6CS + NHA) implementation
- Staff time
- Environment of care

- Savings from workflow improvements
- Medical expenditures
- Liability payouts
- Workers comp
- Facility expenditures: infrastructure, human resources

- Other youth outcome

Investment
Impact
Monetized
Requested directly from OOH
Data Source: Impact and Investment Tool (OOH Treatment Programs) Programmatic Short- and Long-Term Impact
**Data Source:** Impact and Investment Tool (OOH Treatment Programs) Tracking Programmatic Variation in Data Collection

**Site-specific Tracking form**

**Dashboard**

<table>
<thead>
<tr>
<th>Site</th>
<th>Specific Tracking form</th>
<th>Dashboard</th>
<th>Feed</th>
<th>Policy</th>
<th>Attachment</th>
<th>Changes</th>
<th>Site</th>
<th>Specific Tracking form</th>
<th>Dashboard</th>
<th>Feed</th>
<th>Policy</th>
<th>Attachment</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site 1</td>
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<td>Site 2</td>
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<td>Site 3</td>
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</table>

**Tab 2.0**

<table>
<thead>
<tr>
<th>Program</th>
<th>Definiton</th>
<th>Benefits - Physical</th>
<th>Benefits - Mechanical</th>
<th>Benefits - Drug</th>
<th>Definiton</th>
<th>Benefits - Other</th>
<th>Policy</th>
<th>Site</th>
<th>Specific Tracking form</th>
<th>Dashboard</th>
<th>Feed</th>
<th>Policy</th>
<th>Attachment</th>
<th>Changes</th>
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<td>Site 1</td>
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<td>Site 2</td>
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<td>Site 3</td>
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**Tab 3.0**

<table>
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<th>Benefits - Drug</th>
<th>Definiton</th>
<th>Benefits - Other</th>
<th>Policy</th>
<th>Site</th>
<th>Specific Tracking form</th>
<th>Dashboard</th>
<th>Feed</th>
<th>Policy</th>
<th>Attachment</th>
<th>Changes</th>
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<tbody>
<tr>
<td>Site 1</td>
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<td>Site 2</td>
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<td>Site 3</td>
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</tbody>
</table>
EXAMPLE:

• Received measure of:
  – Physical restraint from 2011-2017 in monthly process control charts from xx programs underneath one agency
  – Physical restraint from 2011-2017 from one implementing program
## Outcomes

### Improved service delivery system
- Home- and community-based service/support utilization
- OOH utilization (entries, re-entries, length of stay)
- **Seclusion/restraint use at OOH settings**
- Staff turnover at OOH settings
- Police involvement
- Entry & transition in child welfare system
- Entry in juvenile justice system

### Improved lives of youth & family
- Behavioral, emotional, physical health problems
- Substance use
- Needs (functional outcomes)
- **Strengths (functional outcomes)**
- Educational performance of youth
- Successful employment as adult
- Injuries in youth

### Improved cost & quality of care
- Hospital (incl. psych) & ED utilization
- Behavioral health expenditures (incl. psychotropic meds)
- Physical health expenditures
- Restraint/seclusion related costs
- Family/caregiver cost
# Outcomes: Improved Service Delivery System

<table>
<thead>
<tr>
<th>Domain</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased utilization of home-based services/support**</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Increased utilization of community-based services/supports**</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased OOH utilization: entries</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased OOH utilization: re-entries</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased OOH utilization: length of stays</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased use of seclusion or restraint: # episodes*</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased use of seclusion or restraint: duration*</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased staff turnover at OOH</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased police involvement*</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased entry / transition into child welfare system</td>
<td>SPIRIT, unlinked</td>
</tr>
<tr>
<td>Decreased entry / re-entry into juvenile justice system</td>
<td>FACTS, unlinked/ CYBER</td>
</tr>
</tbody>
</table>
Outcomes: Improved Lives of Youth & Family

<table>
<thead>
<tr>
<th>Domain</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreased behavioral and emotional health problems (including re-traumatization)</td>
<td>CYBER</td>
</tr>
<tr>
<td>Decreased physical health problems</td>
<td>CYBER</td>
</tr>
<tr>
<td>Decreased substance use</td>
<td>CYBER</td>
</tr>
<tr>
<td>Decreased needs (functional outcomes)</td>
<td>CYBER</td>
</tr>
<tr>
<td>Increased strengths (functional outcomes)</td>
<td>CYBER</td>
</tr>
<tr>
<td>Improved educational performance of youth (e.g., academic achievement; school attendance; school behavior)</td>
<td>CYBER</td>
</tr>
<tr>
<td>Decreased incidence of injuries in youth due to restraint techniques</td>
<td>OOH</td>
</tr>
</tbody>
</table>
## Outcomes: Improved Costs & Quality

<table>
<thead>
<tr>
<th>Domain</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quality of Care</strong></td>
<td></td>
</tr>
<tr>
<td>Decreased hospital (including psych) admissions</td>
<td>Medicaid</td>
</tr>
<tr>
<td>Decreased ED visits</td>
<td>Medicaid</td>
</tr>
<tr>
<td>Decreased behavioral health expenditures (short- and long-term)</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased use of psychotropic meds</td>
<td>Medicaid</td>
</tr>
<tr>
<td>Decreased physical health expenditures (short- and long-term)</td>
<td>Medicaid, CYBER</td>
</tr>
<tr>
<td>Decreased seclusion/restraint related costs: Human resource burden</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased seclusion/restraint related costs: Staff injuries and related expenditures</td>
<td>OOH</td>
</tr>
<tr>
<td>Decreased risk of facility liability payout</td>
<td>OOH</td>
</tr>
<tr>
<td><strong>Medicaid/Children’s Systems of Care Spending</strong></td>
<td></td>
</tr>
<tr>
<td>Mean raw spending and total enrollment adjusted spending</td>
<td>Medicaid/CYBER</td>
</tr>
<tr>
<td>Mean spending for inpatient hospital, outpatient, physician, home health, pharmacy, mobile spending and other service utilization</td>
<td>Medicaid/CYBER</td>
</tr>
<tr>
<td>Mean spending on mental health related pharmacy (e.g. psychotropic medication) and psychiatric inpatient and outpatient</td>
<td>Medicaid</td>
</tr>
</tbody>
</table>
Motivating Research Questions:

1. What is the trend (marginal/population-average) in the rate of physical restraint usage during the pre-intervention period (July 2012-December 2015) among out-of-home treatment programs exposed to PPS and comparison group programs?

2. Does Promising Path to Success reduce the rate of physical restraint usage among exposed programs compared to programs that did not receive PPS?
Study Methods

Data Sources:
1. Semi-structured interviews conducted with Coaches from the Rutgers Behavioral Research Training Institute and out-of-home treatment program staff to identify program characteristics and implementation approach.

2. A NJ OOH Treatment Agency provided monthly reports on crisis hold counts (i.e. physical restraint episodes) from July 2012-May 2017 for programs that operate under them.
Study Methods Cont.

**STUDY DESIGN**

Exposed

- 2012
- 2015
- 2016: PPS Implemented
- 2017

Comparison

- Analysis 1: Assess trends in pre-PPS period

- Analysis 2: Assess impact of PPS
Measures of Interest

- **Exposure of interest**: binary variable indicating exposure to PPS (coded 0 for “comparison” and 1 for “exposed”)

- **Exposure group**: 2 programs within agency that received PPS in Jan 2016

- **Comparison group**: 9 programs within agency that did not receive PPS

- **Outcome measure**: Crisis hold counts/month (i.e. rate of physical restraint episodes)

- **Other covariates**: Gender, age, no. beds (in order to control for the varying sizes of the programs), treatment intensity offered by the program, and binary indicator for intervention period (coded 0 for “pre-” and 1 for “post-”)
Statistical Approach

- To answer both research questions, we used negative binomial regression to model crisis hold counts/month and GEE method with working exchangeable correlation structure (adjusting for gender, age group, no. beds, and treatment intensity).

- To answer question 2, we utilized a difference-in-difference estimation approach to assess the impact of PPS on the rate of crisis hold counts among the exposed programs compared to the comparison programs.
### Main Results

<table>
<thead>
<tr>
<th></th>
<th>Exposed to PPS</th>
<th>Not Exposed to PPS</th>
<th>(D_{in-D}^{a,b})</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Expected number of physical restraint episodes/month (n=464)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>1.282</td>
<td>2.927</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>0.518</td>
<td>2.952</td>
<td></td>
</tr>
<tr>
<td>Post - Pre</td>
<td>-0.764</td>
<td>0.025</td>
<td>-0.914&lt;sup&gt;c&lt;/sup&gt;</td>
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<tr>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expected number of police calls/month (n=464)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>0.434</td>
<td>0.183</td>
<td></td>
</tr>
<tr>
<td>Post</td>
<td>0.147</td>
<td>0.516</td>
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</tr>
<tr>
<td>Post - Pre</td>
<td>-0.287</td>
<td>0.333</td>
<td>-2.119&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
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</tr>
<tr>
<td><strong>Expected number of combined staff &amp; youth injuries/month (n=464)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre</td>
<td>2.992</td>
<td>3.223</td>
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</tr>
<tr>
<td>Post</td>
<td>5.324</td>
<td>3.171</td>
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<tr>
<td>Post - Pre</td>
<td>2.332</td>
<td>-0.052</td>
<td>0.593</td>
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<td><strong>Expected number of staff sick hours/month (n=452)</strong></td>
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</tr>
<tr>
<td>Pre</td>
<td>4.897</td>
<td>5.116</td>
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</tr>
<tr>
<td>Post</td>
<td>5.397</td>
<td>5.67</td>
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<tr>
<td>Post - Pre</td>
<td>0.5</td>
<td>0.534</td>
<td>-0.006</td>
</tr>
</tbody>
</table>

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[Diagram showing mean predicted count over 24 months pre-PPS and post-PPS for different categories.]
Associated Cost Savings

• Cost associated with reduction of physical restraint (adjusted to 2017 dollars) was estimated at $509.07 based on previously published literature (LeBel & Goldstein, 2005).

• Our study estimated 95 averted restraints across 2 programs (based on comparison group restraint incidence adjusted for size).

• Resulting cost saving of $48,361 in the 24 months following implementation of Phase 1.
Summary

• Return on Investment Analyses are generally partial economic evaluations, not full economic evaluations.

• Critical to be clear about the decision point needing to be informed and the appropriate research question to answer it.

• Return on Investment studies can hold multiple methodological approaches and should be based on purpose of analysis, availability of data, and resources available.

• Multiple resources exist to inform your work in return on investment, see resources listed on handout.