Application of a PBIS Model for Educating and Supporting Individuals with an Autism Spectrum Disorder

Presented by Dr. Todd Harris and Dr. Richard Allen

Presentation Objectives

• Participants will learn about Devereux’s PBIS Autism Model, including being able to:
  – Describe the three-tier system
  – List the critical support systems that are needed
  – Describe the evaluation systems and pilot outcomes
Devereux’s Path to Improving our Autism Services

• Development of an Autism Best Practices Wiki

• Development of Devereux’s Autism Program Model
  – Providing direction and resources on the application of evidence-based practices, staff training and behavioral supervision, and family involvement/support

Evidence-Based Practices Within the Devereux Autism Program Model

• Our model includes EBPs as identified by these resources:

  – The National Standards Project (The National Autism Center, 2009) reviewed and analyzed 775 autism research articles (using approximately 45 experts in the autism field)

  – Evidence Based Practices from the National Professional Development Center on ASDs
Devereux’s Path to Improving our Autism Services

• How can we best get consistent implementation of the Autism Program Model?

• Considerations:
  – We needed a model that could be implemented in a variety of settings
  – We needed a model that is highly structured, evidence-based, and data-driven
  – We needed a model that is designed to build on-site capacity

Devereux’s Positive Behavior Interventions and Supports (D-PBIS)

• Led by Dr. Barry McCurdy, D-PBIS is a variation of School-wide Positive Behavioral Interventions and Supports (designed for school and residential settings)

• D-PBIS draws on the basic principles of applied behavior analysis and the use of data-driven decision-making to teach and encourage valued behaviors in all individuals.

• The goal of D-PBIS is to effectively address the behavioral needs of all individuals by organizing services within a multi-tiered framework.
**Tertiary Prevention**
*Individualized Support*
Students with chronic/intense problem behavior

**Secondary Prevention**
*Targeted Group Support*
Students at-risk for problem behavior

**Primary Prevention**
*Universal Support*
Students without serious problem behaviors

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**Development of the D-PBIS Autism Model**

- It was decided that the D-PBIS approach was best suited as an implementation vehicle for our autism program model since:
  - It was a highly structured data-driven approach with an established framework
  - It could be implemented in different settings
  - It was designed to build the on-site capacity
Development of the D-PBIS Autism Model

• Upon investigation, we were unable to identify a PBIS model for autism services
• We decided that we would develop our own D-PBIS Autism model
• Our first steps were to establish our three-tiered framework

D-PBIS Autism Program Expectations

• Unlike other PBIS models, our program expectations have been geared primarily towards staff
• We emphasize teaching skills in the following areas:
  – Communication
  – Socialization
  – Independence
  – Safe Behavior
**Tier 1: Universal Supports**

- **Milieu Expectations**
  - Use of ABA teaching strategies
  - High engagement levels
  - High levels of praise
  - Use of motivational systems
  - Activities and routines that are structured, age-appropriate, and functional
  - Use of visual support systems
  - Frequent learning opportunities for communication and social skills (creating need and motivation)
  - Use of errorless learning and shaping strategies
  - Instruction in natural settings

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**Tier 1: Universal Supports**

- **Other Critical Systems in Tier 1**
  - Staff training and behavioral supervision systems (modeling, coaching, feedback)
  - Family inclusion, education, and support
  - Comprehensive assessment
  - Ongoing individual progress monitoring
  - Ongoing Tier 1 fidelity data
**Tier 2: Increased Intensity and Supports**

- Informal (brief) FBA with PBSP
- Intensive and individualized training program for communication skills
- Intensive and individualized social skills training
- Increased OT support
- Community-based instruction
- Use of differential reinforcement systems
- Increased staffing

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**Tier 3: Intensive Individual Supports**

- Comprehensive FBA (or FA) with PBSP
- PBSP procedural fidelity data
- Increased staffing supports
- Structured family training plan with in-home observations and supports
- Increased progress monitoring
**Assessment of Readiness**

- Clinical Expertise and Support
- Staffing Support
- Professional Development Planning
- Performance Feedback System Use
- Visual Support and Technology Systems
- Funding
**PBIS Autism Program Supports**

• Project Staff
  – Project Consultants
    • Senior level clinical staff with extensive experience in autism, ABA, performance management, and project management
  – Autism Coaches
    • Clinical and supervisory staff with experience with autism and ABA
    • Willingness and ability (skills, time) to implement the professional development plan

**PBIS Autism Program Supports**

• Responsibilities of Autism Coaches
  – Receive training and support from the project consultants
  – Implement the professional development workshops
  – Model and coach staff on various interventions and strategies
  – Conduct structured observations, collect performance data, provide performance feedback (at least twice monthly)
  – Attend team meetings twice monthly and an Autism Coach meeting monthly
  – Follow established guidelines on delivering feedback
PBIS Autism Program Supports

• Project Committees (that all meet at least monthly)
  – Leadership Committee
  – Autism Coach Team
  – Action Team

PBIS Autism Program Supports

Professional Development Workshops
– 22 total workshops divided into three audience levels (i.e., all staff; instructional staff; instructional planning staff)

Topics include:
• Introduction to Autism and AS
• Assessment Practices and Tools
• IEP/ISP Development
• Use of ABA Instructional Strategies
• Use of Visual Supports
• Teaching Communication and Social Skills
• Teaching Community Skills
• Completing FBAs and PBSPs
• Partnering with Families
**PBIS Autism Program Supports**

- Performance Management Systems
  - In-vivo modeling, coaching, and feedback/consultation
  - Individual staff goals and performance feedback on the use of ABA teaching strategies
  - Setting (e.g., a classroom) goals and performance feedback on universal (Tier 1) supports

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The individual selects a reinforce before the task is presented</td>
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<tr>
<td>2. The reward contingency is visually mediated</td>
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<tr>
<td>3. High praise rates are delivered (at least two praise statements, ratio to corrective statements is at least 4 to 1): Praise: Corrections</td>
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<tr>
<td>4. Behavior-specific praise is used at least 80% of the time. Behavior-specific praise: Non-specific praise</td>
<td></td>
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</tr>
<tr>
<td>5. Reinforcer(s) are delivered contingently (after performance requirement is met)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Reinforcer is delivered immediately (within 30 seconds upon completion of performance requirement)</td>
<td>VP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Verbal prompts were minimized (20% or less compared to NV prompts)</td>
<td>VP</td>
<td></td>
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</tr>
<tr>
<td>8. Physical prompts were delivered from behind or to the side of the individual (80% of prompts of higher) Physical prompts from behind or the side: Physical prompts not delivered that way:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Prompts were not repeated (within 10 seconds)</td>
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</tr>
<tr>
<td>10. Visual supports were used for at least 7 of the following areas: Schedule, Choice, Communication, Task Completion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. A lessor format (GT, IT, chaining, or shaping) was used correctly during instruction</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12. An error correction strategy was used when errors occurred or to prevent an error (Anticipatory Prompt or Backstep)</td>
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</tr>
</tbody>
</table>
**PBIS Autism Program Supports**

- Typical Team Meeting Agenda
  - Review of consultation notes
  - Updates on action items
  - New action items
  - Individual-specific discussions

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**Summary of Tier 1 Data Collection**

<table>
<thead>
<tr>
<th>Area</th>
<th>Desired Target Level</th>
<th>Level Observed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual System Use</td>
<td>80%</td>
<td>91%</td>
</tr>
<tr>
<td>Engagement</td>
<td>80%</td>
<td>93%</td>
</tr>
<tr>
<td>Praise Rates</td>
<td>75</td>
<td>72</td>
</tr>
<tr>
<td>Praise to Corrective Statements</td>
<td>60%</td>
<td>100%</td>
</tr>
<tr>
<td>Opportunities to Communicate</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Child-Initiated Communication</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Nonverbal Prompt Use</td>
<td>60%</td>
<td>64%</td>
</tr>
<tr>
<td>Success Rate</td>
<td>80%</td>
<td>85</td>
</tr>
<tr>
<td>Age Appropriateness</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Functionality</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

* 2 of the 5 students did not have visuals for communication, but these were scored as N/A as they were not deemed needed by the team yet.
**PBIS Autism Program Supports**

- Instructional Supports
  - Targeted Skills Across Domains
  - The Teaching Matrix
  - Prepared Lesson Plan Summaries
  - Instructional details
  - Data collection and graphing

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### D-PBIS Autism Targeted Skills

#### Expressive Communication
- Requests desired or needed items
- Requests assistance
- Requests the bathroom
- Requests a break
- Affirms items or activities
- Rejects items or activities

#### Receptive Communication
- Follows simple one-step directions
- Follows a schedule
- Waits for desired items

#### Social Skills
- Responds to greetings
- Initiates greetings
- Gains attention appropriately
- Initiates others
- Takes turns
- Indicates “please” and “thank you”

#### Self-Care
- Eats appropriately
- Wash Hands
- Brushes teeth
- Applies deodorant
- Combs hair
- Undresses self
- Dresses self

#### Domestic Skills
- Clean up materials (after chores, meals, etc.)
- Simple snack/meal preparation
- Vacuuming
- Set table
- Laundry
- Clean Floors
- Load/unload dishwasher

#### Recreation/Leisure
- Plays with toys
- Watches TV appropriately
- Listens to music using a MP3
- Uses a computer or iPad
- Plays video games/Wii
- Plays board games
- Participates in exercise routines

#### Community
- Waits in lines
- Makes single item purchases
- Uses restroom appropriately
- Orders food
- Retrieves items from a list

#### Safe Behavior
- Sits belt, crossing street and parking lot,
  privacy, personal space, responding to fire drills,
  stay with group
### Devereux Autism Systematic Instruction Plan

**Communication - Requesting Help**

<table>
<thead>
<tr>
<th>Student:</th>
<th>Date Implemented:</th>
</tr>
</thead>
</table>

**Behavioral Target:** When needed, student will request help using a full sentence.

**Reinforcement Strategy:** Social Reinforcement, Natural Reinforcement (Receiving Assistance)

**Prompting Procedure:** Delayed text prompt, constant (2-second pause)

**Environmental Cue:** Anytime student requires assistance and is motivated to receive help.

**Lesson Format:** Use an Incidental Teaching format - plan for repeated opportunities to request help.

**Additional Reinforcement:** Differentially reinforce initiating request using a sentence.

**Error Correction:** If student uses one word, "help", staff will show the text prompt of requesting help using a sentence. "I want help please!"

**Additional Implementation Details:** Best to teach using situations that are highly motivating.

**Data Collection:** Minimum data points per week: 3 times daily.
**PBIS Autism Program Supports**

- **Staff Acknowledgement Systems**
  - Ongoing positive performance feedback
    - Verbally, public and private
    - In writing, through consult notes, letters of recognition, and emails
    - Through the use of data (graphs, tables)
  - Performance Rewards
    - For meeting individual performance goals
    - For meeting team goals
D-PBIS Autism Pilot

• The pilot occurred at a Devereux Center which includes a school and residential care in Pennsylvania
• The Center serves approximately 120 individuals with autism
• These individuals are at the center typically due to challenging behaviors that could not be safely managed in other settings

D-PBIS Autism Pilot

• Three classrooms were selected for inclusion
  – Baseline data were collected in September 2014, and the model began in October 2014

• A residential program on campus was selected where many of the school participants lived
  – Baseline data were collected in December 2014 and January 2015, and the model began in February 2015
Monthly Tier 1 Intervention Fidelity Data - data has been collected on the following measures:

- Engagement and instruction levels
- Use of visual support strategies
  - Reinforcement
  - Schedule/Choices
  - Communication
- Social skills
- Opportunities to communicate (adult- versus child-initiated)
- Praise rates and praise-to-corrective statement ratios
- Success (i.e., error rates) during instruction
- Nonverbal to verbal prompt levels
- Age-appropriateness and functionality of activities

### D-PBIS Autism Pilot

<table>
<thead>
<tr>
<th>Target</th>
<th>Desired Target Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visual System Use</td>
<td>80%</td>
</tr>
<tr>
<td>Engagement</td>
<td>80%</td>
</tr>
<tr>
<td>Praise Rates</td>
<td>15</td>
</tr>
<tr>
<td>Praise-to-Corrective Statements</td>
<td>80%</td>
</tr>
<tr>
<td>Total Opportunities to Communicate</td>
<td>20</td>
</tr>
<tr>
<td>Child-Initiated Communication</td>
<td>7</td>
</tr>
<tr>
<td>Nonverbal Prompt Use</td>
<td>80%</td>
</tr>
<tr>
<td>Success Rates</td>
<td>80%</td>
</tr>
<tr>
<td>Age-Appropriateness</td>
<td>3</td>
</tr>
<tr>
<td>Functionality</td>
<td>3</td>
</tr>
</tbody>
</table>
### D-PBIS Autism Pilot Data

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The D-PBIS Autism model has helped our program more effectively teach new behaviors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>2. The D-PBIS Autism model has helped our program more effectively reduce/manage interfering behaviors</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3.8</td>
</tr>
<tr>
<td>3. The workshop trainings and related materials are helpful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>4. The coaching and performance feedback are helpful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>5. The coaching and performance feedback systems are acceptable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>6. The Autism Coaches are knowledgeable and helpful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.4</td>
</tr>
<tr>
<td>7. The Project Consultants are knowledgeable and supportive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.7</td>
</tr>
<tr>
<td>8. My supervisors are supporting me in implementing the D-PBIS Autism Model</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3.9</td>
</tr>
<tr>
<td>9. The staff acknowledgement program is helpful/acceptable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td>10. I would recommend the D-PBIS Autism model to other professionals in the field</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>4.4</td>
</tr>
</tbody>
</table>
**D-PBIS Autism Pilot**

• Conclusions
  – Application of the D-PBIS Autism Model has led to substantial increases in performance indicators in the participating classrooms through the first two quarters
  
  – Staff have found the model effective and acceptable, and would recommend the model to others in the field

**D-PBIS Autism Pilot**

• What have we learned so far?
  – The Autism Coaches are one of the critical elements to success; they need to have specific skills and available time
  – Support from the top-down is very important
  – Staff must be included and be active participants in planning and developing materials
  – Visual supports and other materials need to be replenished often
**D-PBIS Autism Pilot**

• Our Next Steps
  – We need to analyze the data on behaviors targeted for reduction
  – We need to evaluate how to best scale up our model and while ensuring sustainability
  – We need to plan for replication in other centers as well as in other agencies

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**Questions?**