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Evidence-Based Practices for Individuals with Autism Spectrum Disorders

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This presentation will:

1. Present and discuss the approaches employed by the NSP and the NPDC on ASD to identify evidence-based practices and
2. Discuss similarities and differences in these approaches

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Major findings of the National Standards Project

Hanna C. Rue, Ph.D., BCBA-D

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The National Standards Project

1. Provide straightforward information to parents, educators, and service providers that can help them make treatment decisions
2. Create an evidence-based practice guideline for ASD that address some of the limitations of previous guidelines
3. Identify critical areas in which additional research should be conducted – which is different from most guidelines!
4. Promote evidence-based practice in the treatment of ASD

Developing the conceptual model

- Expert Panel
- Conceptual reviewers
- Statistical consultant outside of ASD
- Input from autism community via conferences
- Document commentators

- Establish inclusionary & exclusionary criteria

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Background: Inclusion Criteria

- Individuals
  - under the age of 22
  - Diagnosed with Autism, Asperger's Syndrome, or Pervasive Developmental Disorder-Not Otherwise Specified
- Treatments
  - That can be implemented in or by school systems (including toddler and early childhood programs)
- Articles published in peer-reviewed journals

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Primary Exclusionary Criteria

- Biomedical with the exception of curative diets

- Infrequently occurring co-morbid conditions

- Research designs not commonly used in group and single subject research design

- Age over 21 – including articles for which results could not be isolated to this group

- Non-English journals

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Identification of articles

Method—

- Computer and hand searches
- Review of titles and abstracts, applying inclusion/exclusion criteria
- Review of selected articles, applying inclusion/exclusion criteria
- Total articles to date: 724
- Total number of studies: 775

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How were ratings developed?

Scientific Merit Rating Scale & Scoring System

1. Train reviewers

- Read coding manual
- Review article(s)
- Train to criterion: IOA ≥80%

2. Data extraction

- Trained reviewers will use Scientific Merit Rating Scale (SMRS) to review articles
- SMRS contains critical information from each article reviewed

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Variables Rated

- Quality of the research design
- Quality of the dependent measure
- Evidence of procedural accuracy
- Participant ascertainment
- Efforts to establish skill maintenance and/or generalization

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Scientific Merit Rating Scale & Strength of Evidence Classification System

3. Once all articles were coded, a SMRS score were assigned that reflects the confidence that we can place that the results are meaningful for the ASD population*

4. Once all articles were assigned a SMRS score, the scores can be aggregated to determine the strength of evidence (quality, quantity, and consistency) supporting treatments

*IOA maintained >80%

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Treatment Effects

Beneficial Treatment Effects Reported	Unknown Treatment Effects Reported	Ineffective Effects Reported	Adverse Treatment Effects Reported
Single: A functional relation is established and is replicated at least 2 times	The nature of the data do not allow for firm conclusion about whether the treatment effects are beneficial, ineffective, or adverse.	Single: A functional relation was not established and (a) results were not replicated but at least 2 replications were attempted (b) a minimum number of 5 data points were collected in baseline and treatment conditions (c) a minimum of 2 participants were included (d) a fair or good point of comparison (e.g., steady state) existed	Single: A functional relation is established and is replicated at least 2 times The treatment resulted in greater deficit or harm on the dependent variable based on a comparison to baseline conditions
ATD: Moderate or strong separation between at least 2 data series for most participants Carryover effects were minimized A minimum of 5 data points per condition		ATD No separation was reported and baseline data show a stable pattern of responding during baseline and treatment conditions for most participants	ATD Moderate or strong separation between at least 2 data series for most participants Carryover effects were minimized A minimum of 5 data points per condition Treatment conditions showed the treatment produced greater deficit or harm for most or all participants when compared to baseline
Group: statistically significant effects reported in favor of the treatment		Group: No statistically significant effects were reported with sufficient evidence an effect would likely have been found*	Group: statistically significant finding reported indicating a treatment resulted in greater deficit or harm on any of the dependent variables.
		*The criterion includes: (a) there was sufficient power to detect a small effect (b) the type I error rate was liberal, (c) no efforts were made to control for experiment-wise Type I error rate, and (d) participants were engaged in treatment.	

Strength of Evidence Classification System

Established	Emerging	Unestablished	Ineffective/Harmful
Several[1] published, peer-reviewed studies • Scientific Merit Rating Scales scores of 3, 4, or 5 • Beneficial treatment effects for a specific target May be supplemented by studies with lower scores on the Scientific Merit Rating Scale.	Few[2] published, peer-reviewed studies • Scientific Merit Rating Scale scores of 2 • Beneficial treatment effects reported for one dependent measure for a specific target These may be supplemented by studies with higher or lower scores on the Scientific Merit Rating Scale.	May or may not be based on research: • Beneficial treatment effects reported based on very poorly controlled studies (scores of 0 or 1 on the Scientific Merit Rating Scale) • Claims based on testimonials, unverified clinical observations, opinions, or speculation • Ineffective, unknown, or adverse treatment effects reported based on poorly controlled studies	Several[1] published, peer-reviewed studies • Scientific Merit Rating Scales scores of 3 • No beneficial treatment effects reported for one dependent measure for a specific target (Ineffective) OR • Adverse treatment effects reported for one dependent measure for a specific target (Harmful) Note: Ineffective treatments are indicated with an "I" and Harmful treatments are indicated with an "H"

[1]Several is defined as 2 group-design or 4 single-case design studies with a minimum of 12 participants for which there are no conflicting results or at least 3 group design or 6 single-case design studies with a minimum of 18 participants with no more than 1 study reporting conflicting results. Group and single-case design methodologies may be combined.
[2]Few is defined as a minimum of 1 group-design study or 2 single-case design studies with a minimum of 6 participants for which no conflicting results are reported*. Group and single-case design methodologies may be combined.

*Conflicting results are reported when a better or equally controlled study that is assigned a score of at least 3 reports either (a) no beneficial treatment effects or (b) adverse treatment effects.

Outcomes

Established Treatments

- Antecedent Package
- Behavioral Package
- Comprehensive Behavioral Interventions for Young Children
- Joint Attention Intervention
- Modeling
- Naturalistic Teaching Strategies

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Established Treatments

- Peer Training
- Pivotal Response Treatments
- Schedules
- Self-Management
- Story-based Interventions

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Example Table from National Standards Report

Modeling {50 studies} — **Evidence Level}** Established

Modeling {50 studies}. These interventions rely on an adult or peer providing a demonstration of the target behavior that should result in an imitation of the target behavior by the individual with ASD. Modeling can include simple and complex behaviors. This intervention is often combined with other strategies such as prompting and reinforcement. Examples include live modeling and video modeling.

Skills Increased

Academic	Communication	Higher Cognitive Functions	Interpersonal	Learning Readiness	Motor	Personal Responsibility	Placement	Play	Self-Regulation
	X	X	X			X		X	

Behaviors Decreased

Problem Behaviors	RRN	SER	General Symptoms
X		X	

Ages

0-2	3-5	6-9	10-14	15-18	19-21
	X	X	X	X	

Diagnostic Classification

AD	AS	PDD
X	X	X

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Summary Points

- Two-thirds of Established Treatments come from the behavioral literature
- Of the remaining third
  - 75% represent treatments for which research support comes predominantly from the behavioral literature; developmental psychology also influenced some of these treatments
  - One approach comes from the theory of mind perspective*

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Skills Increased

Skills Increased				
Academic	**Communication**	**Higher Cognitive Functions**	**Interpersonal**	**Learning Readiness**
Behavioral Package	Antecedent Package Behavioral Package CBTYC Joint Attention Modeling NTS Peer Training PRT	CBTYC Modeling	Antecedent Package Behavioral Package CBTYC Joint Attention Modeling NTS Peer Training PRT Self-management Story-based	Antecedent Package Behavioral Package NTS
Motor	**Personal Responsibility**	**Placement**	**Play**	**Self-Regulation**
CBTYC	Antecedent Package Behavioral Package CBTYC Modeling	CBTYC	Antecedent Package Behavioral Package CBTYC Modeling NTS Peer Training PRT	Antecedent Package Behavioral Package Schedules Self-management Story-based

Behaviors Decreased

Behaviors Decreased			
Problem Behaviors	**Restricted, Repetitive, Nonfunctional Behavior, Interests, or Activities**	**Sensory/Emotional Regulation**	**General Symptoms**
Antecedent Package Behavioral Package CBTYC Modeling Self-management	Behavioral Package Peer Training	Antecedent Package Behavioral Package Modeling	CBTYC

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Ages

Ages					
0-2	3-5	6-9	10-14	15-18	19-21
Behavioral CBTYC Joint Attention NTS	Antecedent Behavioral CBTYC Joint Attention Modeling NTS Peer Training PRT Schedules Self-management	Antecedent Behavioral CBTYC Modeling NTS Peer Training PRT Schedules Self-management Story-based	Antecedent Behavioral Modeling Peer Training Schedules Self-management Story-based	Antecedent Behavioral Modeling Self-management	Behavioral

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Diagnostic Groups

Diagnostic Classification		
Autistic Disorder	**Asperger's Syndrome**	**PDD-NOS**
Antecedent Behavioral CBTYC Joint Attention Modeling NTS Peer Training PRT Schedules Self-management Story-based	Modeling Story-based	Behavioral Package CBTYC Joint Attention Modeling NTS Peer Training

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Emerging Treatments

- The vast majority (22) of educational and behavioral treatments fall into the Emerging Treatments category
  - Augmentative and Alternative Communication Device
  - Cognitive Behavioral Intervention Package
  - Developmental Relationship-based Treatment
  - Exercise
  - Exposure Package
  - Imitation-based Interaction

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Emerging Treatments

- Initiation Training
- Language Training (Production)
- Language Training (Production & Understanding)
- Massage/Touch Therapy
- Multi-component Package
- Music Therapy
- Peer-mediated Instructional Arrangement
- PECS
- Reductive Package
- Scripting
- Sign Instruction
- Social Communication Intervention
- Social Skills Package
- Structured Teaching
- Technology-based Treatment
- Theory of Mind Training

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Unestablished Treatments

- Only five treatments for which research has been conducted fall into our Unestablished category
  - Academic Interventions
  - Auditory Integration Training
  - Facilitated Communication*
  - Gluten- and Casein-Free Diet*
  - Sensory Integrative Package
  - Many additional treatments for which no studies have been published may fall into this category

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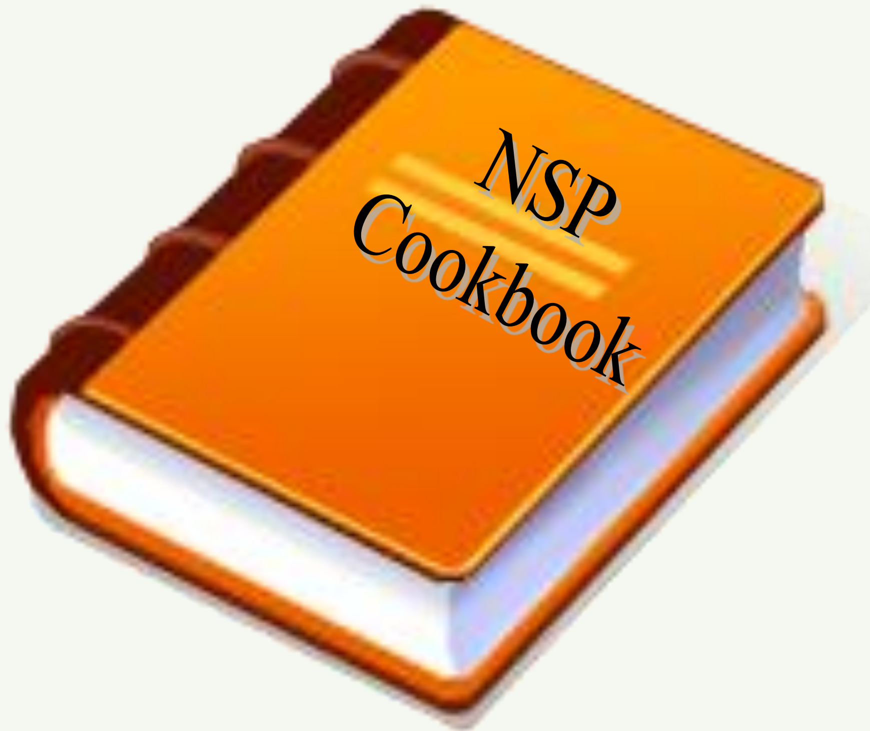
Treatment Selection



Recipe: Selecting Treatments

- 1 cup of treatment outcomes
- ½ cup of treatment targets
- 3 oz. age
- 6 oz. diagnostic classification

Treatment selection should not follow the cookbook method!

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Defining Evidence-Based Practice

- Evidence-based practice involves the integration of research findings with
  - Professional judgment and data-based clinical decision-making
  - Values and preferences of families
  - Assessment and Improvement of the capacity of the delivery system to implement the intervention with a high degree of procedural accuracy

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Conclusion

- Providing appropriate care begins with understanding which treatments have evidence of effectiveness
- Treatment selection is complicated and requires not only an understanding of research findings, but considerations of professional judgment, values and preferences of families, and capacity.

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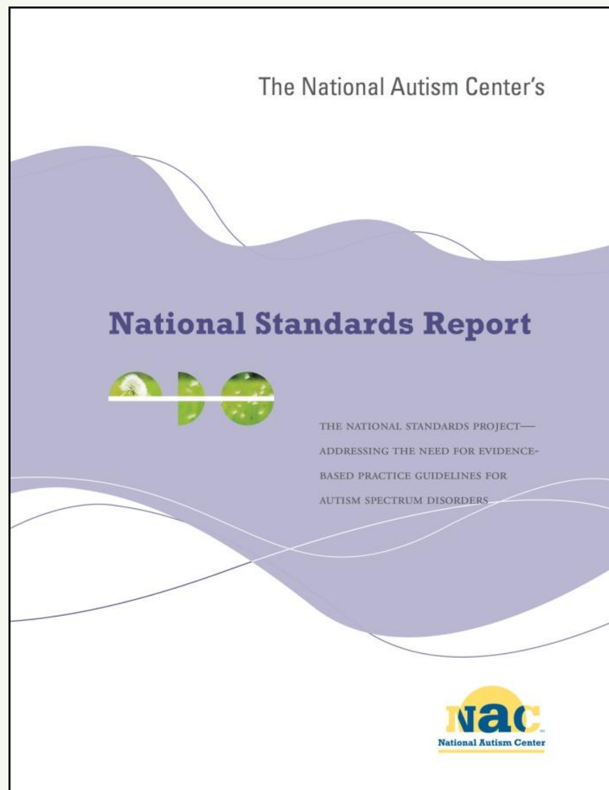

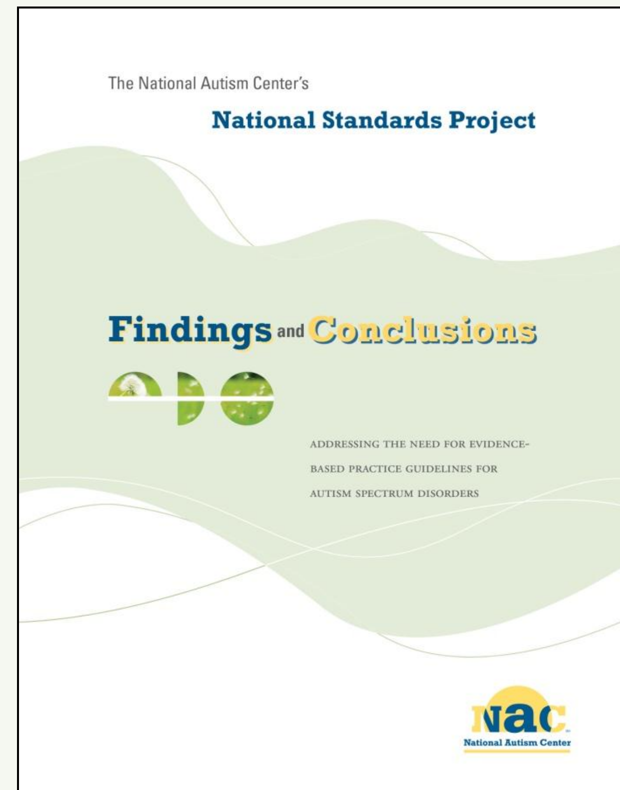

Download free at www.nationalautismcenter.org

Conclusion

- Our results are only the beginning
- Capacity building is essential. Many systemic barriers within and across organizations can undermine the delivery of evidence-based practices
- The future of autism treatment requires leadership from the research, training, and practitioner communities

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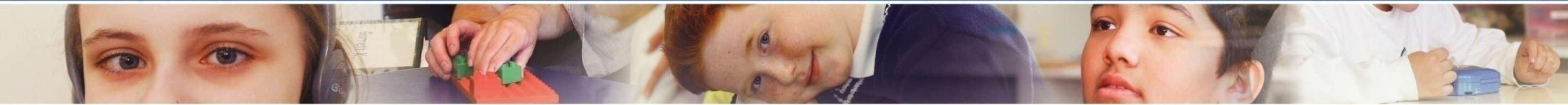

For more information:

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National Professional Development Center on Autism Spectrum Disorders

A multi-university center to promote use of evidence-based practice for children and adolescents with autism spectrum disorders

FPG Child Development Institute, University of North Carolina at Chapel Hill; M.I.N.D. Institute, University of California at Davis Medical Center; Waisman Center, University of Wisconsin at Madison

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Evidence-based intervention practices for students with ASD and resources for implementing the practices with fidelity

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What Do We Mean By Practice? Focused Interventions vs Comprehensive Models

- Focused interventions are procedures that promote individual skills or learning within a specific skill area.

- Comprehensive models are multi-component programs designed to positively and systematically affect the lives of children with ASD and their families

What Counts As Evidence?

What Counts As Evidence?

- Peer-reviewed, refereed journal articles
  - Report research
  - Clearly identified children (birth to 22) with ASD and/or families were participants
  - Published between 1997-2007
- Methodologies
  - Experimental Group Designs
  - Quasi experimental designs
  - Single subject designs

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For Article to Be Acceptable

- For Group Design
  - Met criteria established by Gersten, Fuchs, Compton, Coyne, Greenwood, & Innocenti (2005)
- For Single Case Design
  - Met criteria established by Horner, Carr, Halle, McGee, Odom, & Wolery (2005)

Criteria for Evidence-Based Practices for Focused Interventions (NPDC-ASD)

- Two high quality randomized experimental group design or quasi-experimental group designs that rule out selectivity and other threats to internal validity
- Five high quality single subject design
  - Each study has at least three demonstrations of experimental control
  - At least three different researchers in different locations

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Criteria for Evidence-Based Practices for Focused Interventions (NPDC-ASD)

- Combined evidence
  - One RCT or high quality quasi-experimental design
  - At least three high quality single subject designs

Review of Literature

- Began by looking at outcomes that related to the core features of autism
  - Social
  - Communication
  - Repetitive and problem behavior
  - Adaptive behavior
  - Academic skills
- Identified and grouped interventions that addressed these skills
- Looked for similar interventions across skill domains and age levels

Frank and Ernest

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Focused-Interventions Identified

- Behavioral intervention practices
  - Prompting
  - Time delay
  - Reinforcement
  - Task Analysis and Chaining

Behavioral Interventions to Decrease Interfering Behaviors

- Positive behavior support
  - Functional Behavior Assessment
  - Antecedent-based interventions
  - Response interruption/redirection
  - Differential reinforcement of alternative behavior
  - Extinction
  - Functional Communication Training

Focused Interventions

- Discrete trial training
- Naturalistic intervention
- Pivotal response training
- Self-management

Focused Interventions

- Visual supports
- Individualized work systems
- Video modeling
- Computer-assisted instruction
- VOCA

Focused Interventions

- Social skills training
- Peer mediated intervention
- Social Narratives
- Picture exchange communication system ™ (PECS)

Evidence-Based Practices	Academics & Cognition			Behavior			Communication			Play			Social			Transition		
	EC	EL	MH	EC	EL	MH	EC	EL	MH	EC	EL	MH	EC	EL	MH	EC	EL	MH
1. Antecedent-based Interventions																		
2. Computer Assisted Instruction																		
3. Differential Reinforcement																		
4. Discrete Trial Training																		
5. Extinction																		
6. Functional Behavioral Assessment																		
7. Functional Communication Training																		
8. Naturalistic Interventions																		
9. Parent Implemented Interventions																		
10. Peer Mediated Instruction/Intervention																		
11. Picture Exchange Com. System																		
12. Pivotal Response Training																		
13. Prompting																		
14. Reinforcement																		
15. Response Interruption & Redirection																		
16. Self-Management																		
17. Social Narratives																		
18. Social Skills Groups																		
19. Speech Generating Devices (VOCA)																		
20. Structured Work Systems																		
21. Task analysis																		
22. Time delay																		
23. Video Modeling																		
24. Visual Supports																		

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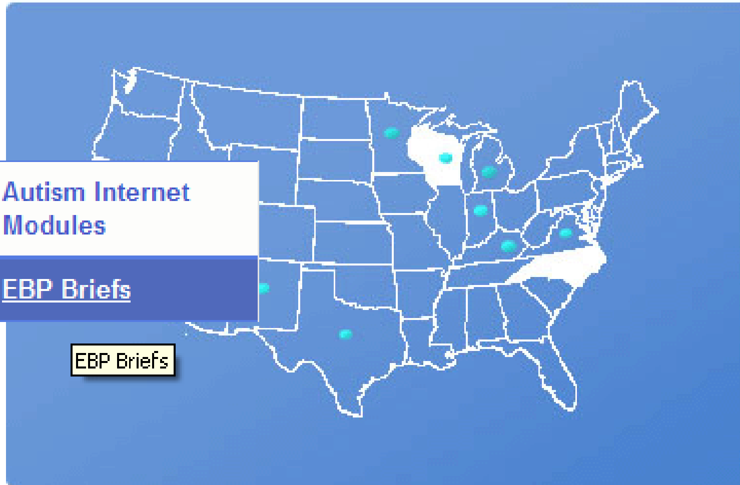
SEARCH GO

A multi-university center to promote the use of evidence-based practice for children and adolescents with autism spectrum disorders

- Home
- About the Center »
- Evidence-Based Practices »
  - Autism Internet Modules
  - EBP Briefs
- Additional Resources »
- State Application »



Each year, three states are selected through a competitive application process for a two-year partnership with the Professional Development Center.

Learn more about the application process >>

State Partners Login

User name:

Password:

Log In

Need login help?

The National Professional Development Center on Autism Spectrum Disorders is a multi-university center to promote the use of evidence-based practice for children and adolescents with autism spectrum disorders. The Center operates through three sites that include the FPG Child Development Institute at the University of North Carolina at Chapel Hill, the M.I.N.D. Institute at University of California at Davis Medical School, and the Waisman Center at the University of Wisconsin at Madison. Each year, three states are selected through a competitive application process for a two-year partnership with the Professional Development Center. The Center works in coordination with each state's Department of Education, Part C agency, and University Center for Excellence in Developmental Disabilities to provide professional development to teachers and practitioners who serve individuals from birth through twenty-two years with autism spectrum disorders.

NEWS AND EVENTS

- New CoP Discussion Forum
- PRT online module now available

Resources on NPDC's EBP

- EBP Briefs (http://autismpdc.fpg.unc.edu)
  - Overview
  - Evidence Base
  - Steps for Implementing
  - Implementation Checklist
  - Sample Data Collection Forms (optional)

Sample Implementation Checklist

Implementation Checklist for Naturalistic Intervention

	Observation	1	2	3	4	5	6	7	8
	Date								
	Observer's Initials								
Step 1. Identifying a Target Act		**Score****							
1. Teachers/practitioners select a specific target act/skill to be the focus of intervention that:									
a. focuses on prelinguistic or linguistic communication and/or									
b. social skills.									
2. Teachers/practitioners confirm that the target act is in the learner's IEP or IFSP.									
Step 2. Collecting Baseline Data									
1. Prior to intervention, teachers/ practitioners determine the learner's current use of the target skill.									
2. Teachers/practitioners take data on the target skills a minimum of three times in more than one environment.									

***Scoring Key: 2 = implemented; 1 = partially implemented; 0 = did not implement; NA = not applicable*

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Resources on NPDC's EBP

- Online Modules (Collaboration with OCALI)
  - Posted on AIM Website (www.autisminternetmodules.org)
  - Narrative content with video examples of practices being implemented
  - Includes downloadable EBP brief components
  - Pre/ Post knowledge assessment
  - Case study examples
  - Learning activities, Discussion questions

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Implementation Model

Assessment → Implementation → Outcomes

Program Quality (APERS)

Learner Goals and Present Levels (IEP)

Family/Learner Strengths, Interests, and History

Team member Experience and Knowledge

Selection and Implementation of Evidence Based Practices

Program Quality (APERS)

Learner Progress (GAS)

Evaluation of Comprehensive Treatment Models for Individuals with ASD

Odom, Boyd, Hall, & Hume (2010)

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Evaluation Purpose

- Provide information upon which to make decisions
  - School districts to make decisions about adoption of a model
  - Families choose a model for their children
- Systematic review of "model features"
- Critical evaluation

Comprehensive Treatment Strategies

- Multiple components (e.g., child-focused instruction, family-focused support)
- Broad scope (i.e., they address development domains representing the core features of ASD)
- Intensity (i.e., they often occur over an entire instructional day or in multiple settings such as a school/clinic and home)
- Longevity (i.e., they may occur over months or even years).
- Replication in the US

Evaluation of all CTMs

- Located all articles in publicly available locations (e.g., journals, book chapters, computer searches, public presentations, etc.)
- Searched websites for information
- Interviewed every CTM developer
- CTM developers send additional materials for our review
  - Some not publicly available

Comprehensive Treatment Models

- Applied Behavioral Analysis: Clinical or Home
  - Autism partnerships
  - CARD
  - Lovaas Institute
  - Pivotal Response Treatment
- Applied Behavior Analysis-Classroom Based
  - Alpine Learning Group
  - Eden
  - Douglas Developmental Disabilities Center

Comprehensive Treatment Models (cont.)

- Applied Behavior Analysis-Classroom Based (cont.)
  - Institute for Child Development-SUNY Binghamton
  - Lancaster-Lebanon 13
  - May Institute
  - Princeton Child Development Institute
  - Pyramid Model
  - River Street
  - STAR (OR)
  - Summit Academy

Comprehensive Treatment Models (cont.)

- Applied Behavior Analysis-Classroom Based (cont.)
  - Therapeutic Pathways
  - Valley
- Applied Behavior Analysis: Inclusive Settings
  - Children's Toddler Project
  - LEAP
  - Project DATA
  - Walden Model

Comprehensive Treatment Models (cont.)

- Developmental and Relationship-Based Models
  - Denver model
  - Developmental, Individualized, Relationship (DIR or Floortime)
  - Hanen Method
  - Relationship Development Intervention (RDI)
  - Responsive Teaching
  - SCERTS
  - Son Rise

Comprehensive Treatment Models (cont.)

- Other Idiosyncratic Models
  - Higashi-Dairy Living Therapy Model
  - Miller Method
  - TEACCH Model

Evaluated Six Features of the Programs

- Operationalization
- Fidelity of Implementation
- Replication
- Outcomes reported
- Quality of the research methodology
- Supplemental research on focused intervention features of the CTM

Rating	Operationalization	Fidelity of Treatment Measurement	Replication at Remote Sites	Outcome Data Presented	Average Quality Rating From Outcome Data*	Additional Studies on Related Focused Interventions***
5	Written document(s) that describe procedures for the treatment and content in enough detail to replicate the model.	Robust psychometric data have been collected on treatment fidelity measures. This would include evaluating reliability (e.g., internal consistency, test-retest), inter-rater agreement and validity (e.g. construct/content, convergent) of the instrument.	Model replicated at two or more remote locations (i.e., not the original model development site) by two or more investigators who were not part of the original model development team**.	Two or more *experimental* referred journal articles analyzing efficacy of the project	4.49–5.0	21+ studies conducted on focused interventions that are components of the comprehensive treatment model
4	Written document(s) in which procedures are well specified <u>and</u> content is described but content is poorly specified.	Preliminary psychometric data have been collected on treatment fidelity measure. This would include the basic elements of reliability (i.e., inter-rater)	Model replicated at one remote location by one or more investigators who were not part of the model development team	One *experimental* referred journal article analyzing efficacy of the project	3.50–4.49	16-20 studies conducted on focused interventions that are components of the comprehensive treatment model

3	Written document(s) in which content is clearly specified <u>and</u> procedures are described but poorly specified.	Formal or standardized treatment fidelity measure exists (e.g., checklists outlining model components) in a form that would allow the model implementer or other outside observer to evaluate implementation of essential model components, but no psychometric data have been collected on instrument	Model replicated by original model developers at two or more remote locations	A book chapter in a book edited by someone other than the model developer describing outcome data or a journal article providing descriptive data about child outcome for the project	2.50–3.49	11-15 studies conducted on focused interventions that are components of the comprehensive treatment model
2	Some written documentation provided that describes procedures <u>and</u> content but neither procedures nor content sufficiently specified.	Formal measure only exists for some but not all essential model components	Model replicated by original model developers at one remote location	A book written by model developer(s) with section or chapter on outcome study	1.50–2.49	7-10 studies conducted on focused interventions that are components of the comprehensive treatment model

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1	Some written documentation provided that describes EITHER procedures OR content but is not sufficiently specified.	No formal or codified measure of treatment fidelity exists or only informal measures are used		A chapter in a book edited by model developer describing outcome data	0.50–1.49	3-6 studies conducted on focused interventions that are components of the comprehensive treatment model
0	Only general description of the model is available.	No formal or informal measure of treatment fidelity exists	No information about model replication at other remote locations provided	No outcome data published or outcome data published only in report form by model developer	0.00"0.49	Less than three studies conducted on focused interventions that are components of the comprehensive treatment model

Review by Two Evaluators

- All trained on two CTMs, up to an 80% criteria
- Primary evaluator constructed the portfolio and completed evaluation
- Secondary evaluator completed second review of each portfolio
- When disagreements occurred, resolved through discussion
- Inter-rater agreement was 83% (exact agreement)

Program	Operation-alization	Fidelity	Replication	Outcome Data	Quality	Additional Studies
Alpine	3	3	5	3	N/A	2
Autism Partnerships	5	3	5	0	N/A	1
CARD	5	4	4	3	N/A	2
Children's Toddler	2	3	1	5	3	2
DATA	3	1	5	3	N/A	2
Denver	5	4	5	5	2	0
DIR	5	3	5	4	2	0
Douglass	5	2	0	5	3	5
Eden	3	2	0	0	N/A	0
Hanen	2	3	1	3	N/A	2
Higashi	2	0	2	3	N/A	0
Institute for Child. Dev.	3	2	0	3	N/A	0
Lancaster	2	0	0	0	N/A	0
LEAP	4	5	5	4	2	5
Lovaas Institute	5	4	5	5	3	5
May Institute	5	4	5	4	2	5
Miller	3	1	5	4	0	1
PCDI	5	4	5	4	2	5
PRT	4	3	5	2	N/A	5
Pyramid	2	3	4	3	N/A	5
Responsive Teaching	3	3	0	5	3	0
RDI	5	3	0	4	2	0
SCERTS	5	0	0	0	N/A	4
Son Rise	3	0	0	2	N/A	0
STAR	5	3	5	4	2	0
Summit	3	4	0	0	N/A	0
TEACCH	3	3	5	5	2	2
Therapeutic Pathways	5	4	3	4	3	0
Valley	3	3	5	0	N/A	0
Walden	4	3	4	3	N/A	2

Errors in Table

- PRT
  - 4 for Outcome Data
  - 2 for Quality of Research
- Alpine
  - 5 for Operationalization

The Green CTMs

- Denver Model
- LEAP
- Lovaas Institute
- May Institute
- Princeton Child Development Institute
- PRT

Emerging Evidence

- Autism Partnerships
- Alpine
- CARD
- Children's Toddler Program
- Douglass Developmental Center
- Responsive Teaching
- SCERTS
- STAR
- TEACCH

Conclusions

- Strongest feature of CTM literature is operationalization
- Fidelity documented but not in rigorous manner
- Efficacy and effectiveness studies are limited but growing
  - Difficulty for classroom-based models
  - Generational issues
- Models are evolving

NPDC on ASD

For more information, contact us at

http://autismpdc.fpg.unc.edu

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Comparison of Approaches

Similarities

- Included literature up to 2007
- Required a diagnosis of ASD
- Ages birth - 22
- Applied rigorous criteria to reviews
- Positive effects were demonstrated

Differences

- NPDC
  - Focused interventions
  - Listed separately
  - Included parent-implemented
- NSP
  - Treatments -included intervention strategies or intervention classes
  - Clustered into packages
  - Included joint attention interventions

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Overlap Between Evidence-Based Practices Identified by the National Professional Development Center (NPDC) on ASD and the National Standards Project (NSP)

Evidence-Based Practices Identified by the National Professional Development Center (NPDC) on ASD	Established Treatments Identified by the National Standards Project (NSP)										
	Antecedent Package	Behavioral Package	Story-based Intervention Package	Modeling	Naturalistic Teaching Strategies	Peer Training Package	Pivotal Response Treatment	Schedules	Self-Management	Comprehensive Behavioral Treatment for Young Children	Joint Attention Intervention
Prompting	X			X						The NPDC on ASD did not review comprehensive treatment models. Components of The Comprehensive Behavioral Treatment of Young Children overlap with many NPDC-identified practices.	The NPDC on ASD considers joint attention to be an outcome rather than an intervention. Components of joint attention interventions overlap with many NPDC-identified practices.
Antecedent-Based Intervention	X										
Time delay	X										
Reinforcement		X									
Task analysis		X									
Discrete Trial Training		X									
Functional Behavior Analysis		X									
Functional Communication Training		X									
Response Interruption/Redirection		X									
Differential Reinforcement		X									
Social Narratives			X								
Video Modeling				X							
Naturalistic Interventions					X						
Peer Mediated Intervention						X					
Pivotal Response Training							X				
Visual Supports								X			
Structured Work Systems								X			
Self-Management									X		
Parent Implemented Intervention	The NSP did not consider parent-implemented intervention as a category of evidence-based practice. However, 24 of the studies reviewed by the NSP under other intervention categories involve parents implementing the intervention.										
Social Skills Training Groups	Social Skills Training Groups (Social Skills Package) was identified as an emerging practice by the NSP.										
Speech Generating Devices	Speech Generating Devices (Augmentative and Alternative Communication Device) was identified as an emerging practice by the NSP.										
Computer Aided Instruction	Computer Aided Instruction (Technology-based Treatment) was identified as an emerging practice by the NSP.										
Picture Exchange Communication	Picture Exchange Communication System was identified as an emerging practice by the NSP.										
Extinction	Extinction (Reductive Package) was identified as an emerging practice by the NSP.										

Take Home Messages

- Very little difference between the major analyses of the treatment literature
- Small differences due to procedural variation – which is completely consistent with the broader efforts in evidence-based practice

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Take Home Messages

- The next logical step is to make certain that professionals have access to training on the treatments that have generally been shown to be effective through systematic reviews

- Given educators/interventionists are the professionals most likely to come in contact with and provide services to children with ASD, high quality training of these professionals is absolutely essential

What is Next?

- NPDC on ASD is revisiting the literature now
  - Expansion to cover 20 years (1990-2010)
  - Two part screening process
  - External and internal reviewers who achieve 80% IOA during and after training
  - Other criteria to remain similar to original review

What is Next?

- National Standards Project
  - Expand to adult population and children at risk for developing an ASD
  - Update results since the end of the 2007 literature search
  - Continue to work with expert panel representing a range of professions

Questions and Discussion

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