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Evidence Based Practices in Early Intervention for Young Children with Autism Spectrum Disorder

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and Val Postal
EITA Educational Consultants

Fall 2014

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Agenda

- **Rationale and ASD intro**
- What is Evidence Based Practice?
- ASD – Defined via DSM 5
- How do we ID children w ASD at earliest age?
 - Supporting families
 - Planning for Intervention
- How do we apply EBP within a Part C context?
 - Coaching caregivers to support their child's development
 - Empirical evidence - treatment packages and practices
 - EBP sample and illustration
- Put it all together – let's practice

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Rationale & ASD Intro

- **Current prevalence: 1 in 68** (1.47%) – (conservative)
 - 5x more boys (1:42) vs girls (1:189)
- **Early ID reliable at 18 months – yet recognizable earlier**
 - If an older **sibling** has ASD, the **recurrence risk** is 2%-18%
 - **10% of ASDs have certain genetic or chromosomal conditions** (e.g., Fragile X)
- 46%-66% have average or above average intellectual ability

www.cdc.gov (Center for Disease Control) – NIH numbers vary, leaning toward high range of CDC rates

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FYI...

Not...

Bio-medical based TX

Specific practices and strategy how tos

Is...

Emphasis on <36 months

Early Intervention Services

Pointing you toward EBP

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Agenda

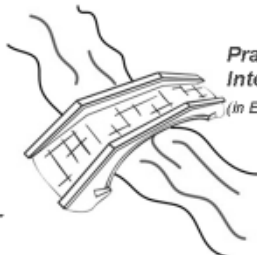
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Bridge the Gap



Practices in Early Intervention
(in EI context – replicable)

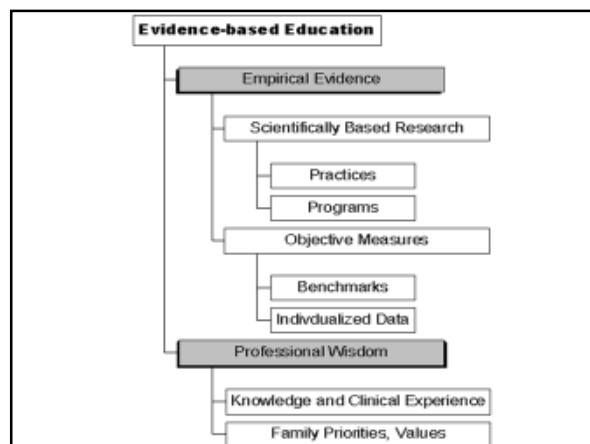
Research-based Practices

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Early Intervention Services



Functional skills for participation
Supporting families



Professional wisdom helps us...

- adapt to local circumstances
- operate intelligently where research evidence is absent or incomplete.

Empirical evidence helps us...

- resolve competing approaches
- generate cumulative knowledge
- avoid fad, fancy, and personal bias

- Grover Whitehurst

Empirical Evidence

All evidence is NOT created equal
more on this later

Recommended Practices from Research Reviews or Synthesis

Early Childhood Intervention for young children w ASD
National Research Council, NPDCI/FPG, Research Institutions
e.g., Earlier the better, focus on soc-communication, behavioral principles

Early childhood special education
DEC recommended Practices
E.g., family centered, explicit instruction, individualized plans

Early childhood education & mental health
Zero to Three, NAEYC, etc
E.g., secure attachments, routines, literacy exposure

General child growth & development
Amer Academy of Pediatrics, National Institute of Health
E.g., screen time, sleep, nutrition, movement

Resources

ASD and Young Children – Sampling of Resources
Early Identification and Understanding Autism

First Signs (Autism)
Early Identification of Autism
<http://www.firstsigns.org/index.html>

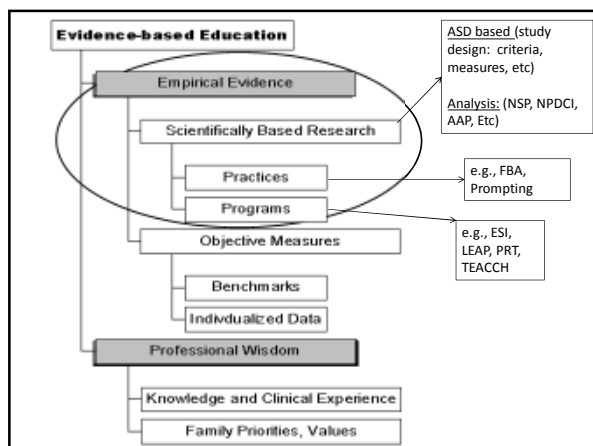
Centers for Disease Control and Prevention – Autism page (Screening and Diagnosis link)
<http://www.cdc.gov/ncbddd/autism/index.html>

AAP Autism Resources page
<http://www.aap.org/en-us/about-the-aap/committees-councils-sections/committees/children-with-disabilities/Pages/Autism.aspx>
or search online for AAP & Autism

Early Identification Module – National Professional Development Center on Autism
<http://www.npdc.org/autism/early-identification-and-module>

Autism Neighborhood – for families of and persons w ASD <http://www.autismneighborhood.org/>

Autism Navigator – Unit 1 [General Early Childhood EBP document links](#)

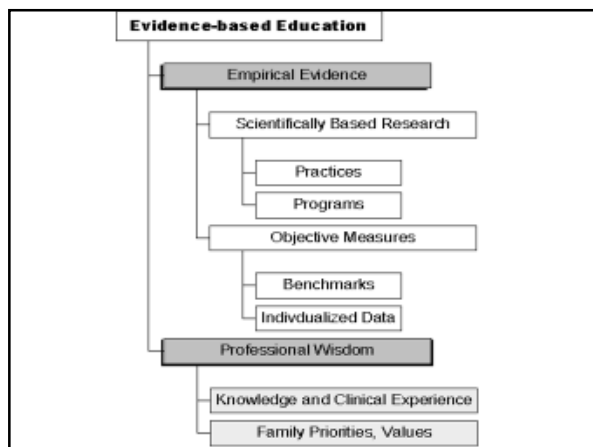


Common Program Elements Model Programs for Young Children with ASD

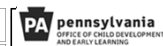
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 - ❖ Sufficiency of support for adults
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Evidence Based Practice



EBP Includes Family Priorities & Values

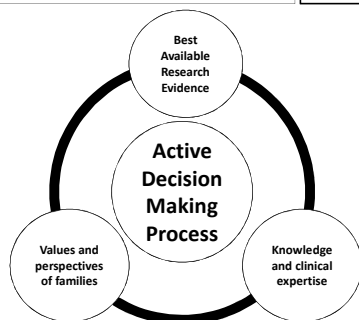
Video
Autism Navigator - #25 Unit 4

Reflection:

- **How was the family experience with first and second child different?**
- **Does that influence child outcomes? Why?**

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Defining Evidence Based Practice



Source: Autism Navigator

Agenda



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Common Program Elements Model Programs for Young Children with ASD

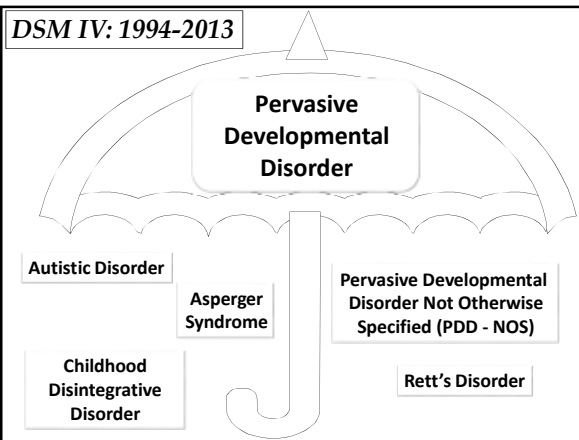
Earlier is better

Curriculum emphasizes skill development in ASD core deficit areas (i.e., Social Communication)

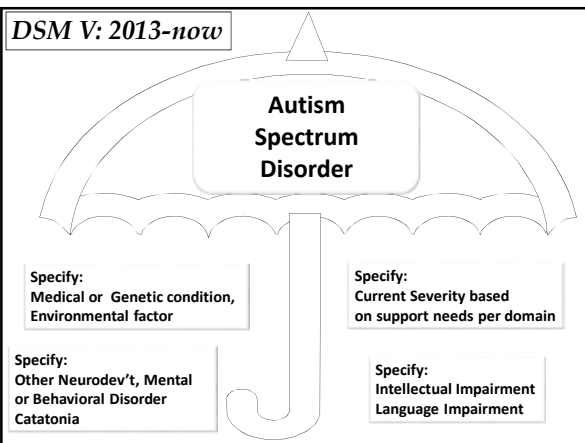
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DSM IV: 1994-2013



DSM V: 2013-now



DSM 5

Autism Spectrum Disorder

**Social Interaction
Communication**

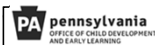
I/T
SOF

Behaviors and Interests
includes Sensory Processing and Regulation

- Evident in early developmental period, but may become manifest when social demands exceed capacity.
- Impairment in current functioning.

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Early Soc-Communication



Examples...

Shares Attention

- Notices, looks, shifts gaze

Shares Emotion

- Variety, seeks comfort, smiles, responds to other's emotion

Reciprocity

- Initiates and responds, persists

Social Imitation

Symbol Use

- Play, meaningful sounds/words, gesture

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Current Severity



Based on support needs


Separately Rated: 1) Soc-Comm
2) RRBs

Requiring:

- **Level 3 Very Substantial Support**
- **Level 2 Substantial Support**
- **Level 1 Support**

Implications: EI outcomes?

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Let's practice

Diagnostic criteria in <36 months?

Tools:

Pre-screening tools

- Developmental milestones lists (Soc-comm foci)
- Red Flag lists


Screening tools (validated)


Screening tools are validated to identify children who are at risk and require further evaluation.

Diagnostic Evaluation

ADOS – Toddler version

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When does ASD begin?	
<hr/>	
<u>Early Experience ASD</u>	
<ul style="list-style-type: none">• Predispositions to orient to and engage w people are absent or impaired.• Object preference (rather than faces & human interactions)	

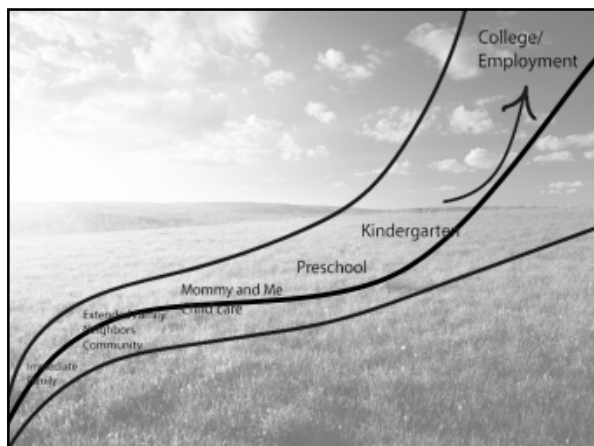
Why EI?	 pennsylvania OFFICE OF CHILD DEVELOPMENT AND EARLY LEARNING
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"Autism creates autism."
(Ami Klin)


What is meant by this statement?
With a partner

What experiences are shaping learning?
What is happening to the developing brain?
Can EI change this trajectory?

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Earlier is Better



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Effective EI
+
"Earlier is better"

Experiences shape learning.
Rapid brain development in early childhood
Effective EI can have meaningful impact

"Autism creates autism" A. Klin

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ASD Screening Guidelines



- Amer. Academy of Pediatrics
- Always screen for ASD at
 - 18 Months
 - 24 months
- Guidelines include decision flow chart

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Diagnostic criteria in <36 months?

Presence of Red Flags

- Checklists of behaviors that indicate need for further assessment

Absence of Social-communication milestones

- Checklists of behaviors that describe typical development

Tools:**Pre-screening tools**

Developmental milestones lists (w Soc-comm foci)

Red Flag lists

Screening tools (validated)

Screening tools are validated to identify children who are at risk and require further evaluation.

Diagnostic Evaluation

ADOS – Toddler version

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Let's practice again

Diagnostic criteria in <36 months?

Tools:**Pre-screening tools**

Developmental milestones lists (Soc-comm foci)

Red Flag lists

Early Symptoms

Regressive type ASD

<http://autismpdc.fpg.unc.edu/content/video-early-onset>

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How early can we identify Autism?

Early ID (DX) reliable at 18 months.

- Earlier ID possible – validated tools TBD (soon)
- Regressive Type ASD – typically evident by 24 months

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Early/Infancy

**Currently**

- **Red Flags early in life – refer/evaluate**
 - Behavioral signs

Future – possibilities or promising leads

- Emerging technologies/quantifiable signs?
 - Eye tracking
 - Face vs object preference?
 - Gaze shifts speed differences?
 - Facial recognition?
 - Early object exploration
 - Physiological Measures
 - Head circumference growth rate by age 2 (not all ASD)?
 - Amygdala enlargement? (not all ASDs)
 - Genetic markers?
 - Other?

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PA Data

**Documented ASD Diagnosis****4 years, 11 months**

- Autistic Disorder: 3 years, 7 months
 - ASD/PDD: 4 years, 11 months
- Asperger Disorder: 5 years, 10 months

Parent first concerns**16 – 36 months**

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CDC/ADDN Network County 2008 – Philadelphia

Screening is not Diagnosis

Screening Positive = Evaluate
Don't wait

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Early Signs - Evaluation

Diagnostic Evaluation

ADOS Toddler version

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Range of Tools for **Early ID**

Tools w Early Social-Communication Foci

- Checklists
- ASD informational or video descriptions
- Screening for ASD risk
- Screening for Social-Communication risk

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Early Signs - Tools

Checklists w Social Communication focus

- Milestones charts (CDC, First Signs, AAP)
- 16 gestures by 16 months (to be posted in Anavigator)

Red flags for ASD

- **First Signs Red Flags (6-24 mo)**
- **SORF checklist (12-36 mo)** (*soon to have scoring for use as a screening tool*)
- **First Signs Video Glossary**

ASD Described

- Many resources online (NIH, CDC, First Signs, Autism Neighborhood)

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Early Signs - Tools

Screening for ASD – toddlers & preschoolers

- **MCHAT R or MCHAT R/F (16-30 mo best - to 48 mo ok)**
- **POSI** (16-36 mo best – 18-48 mo ok)
- **STAT** (level 2 screen - 24-36 mo)
- **SCQ** (ages 4 yr+ - requires mental age 2 yr)

Coming soon...

- **SORF** (*in development for 12-36mo*)
- **ESAC** (*Piloting – online screen for 12-36 mo*)

Screening for Social Communication delays

- **CSBS-DP Checklist (6-24 mo)**

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Early Signs - Tools

Screening for Social Communication delays

- **CSBS-DP Checklist (6-24 mo)**

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Resources



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Centers for Disease Control and Prevention – Autism page (Screening and Diagnosis link)
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or search online for AAP & Autism

Early Identification Module – National Professional Development Center on Autism
<http://autismnrc.org/early-identification-module>

Autism Neighborhood – for families of and persons w/ ASD <http://autismneighborhood.org/>

Autism Navigator – Unit 1 [General Early Childhood EBP document links](#)

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Administration



- Explain
 - e.g., “this tool asks questions about social communication in young children”
 - E.g., “This tool will help us talk about your concerns”
 - Ensure conversation includes child strengths
- Sensitive to Family experience
 - May bring up new concerns
 - May evoke strong emotions
 - Avoid “fail” or “pass” language
 - Screening tells us to proceed to more evaluation (not Dx)
- Time/Space – comfort
- Check for understanding
 - listen/ask for examples
- Be prepared for follow up

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Language & Culture



Implications

- Translations of MCHAT
 - POSI* and M-CHAT
 - Checklists/red flags
 - proceed with caution – read*
- Social Communication reporting
 - Interpreters
 - Use of video examples (1st signs video library)?
 - Social Communication norms per family culture
- Early ID later for certain groups, yet prevalence not different for different groups

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Summary: Early ID of ASD



- Families can seek evaluation and services sooner – Earlier is best
- Crucial period of early child brain and behavioral development is optimized
- It's never too late to start supports

C. Rice, PhD - CDC

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Common Program Elements Model Programs for Young Children with ASD

- ❖ **Curriculum emphasizes skill development in ASD core deficit areas**
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 - ❖ **Family Involvement**
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Scope and Sequence



Scope: What is to be taught

Child: Focus on Core ASD Deficits
Adult: Content & Strategies

Sequence: Sequence of what you teach

Child & Adult:
Systematic approach
Scaffolding

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Comprehensive Curricula for ASD

*Typically Includes*

- Skill Assessment in Core ASD "deficit" areas
- Program Planning Guide
- Intervention Guide
 - Teaching strategies & practices
 - For professionals & sometimes for caregivers

Often includes

- Progress Monitoring Tools
- Fidelity Checklists

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Sample Curricula for ASD



- Social Communication Emotional-Regulation Transactional Supports (SCERTS)* (PS)
- Teaching Social Communication to Y. Child. w Autism* ^
- Autism Navigator EI Provider Course ^*
- Early Social Interaction Project (ESI)* ^
- Early Start Denver Model ^

VB-MAPP Competent Learner Model
 • Infant/Toddler population?

*explicit caregiver skills to support outcomes
 ^with parent coaching resources

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Theories for Early Intervention



Traditional behavioral



Contemporary behavioral



Developmental

From Autism Navigator Unit 4

Teaching Social Communication to Children w ASD

© 2010 The Guilford Press



Direct Teaching Techniques

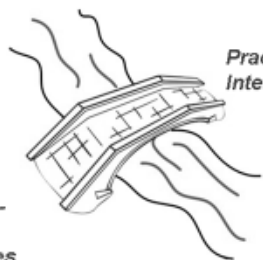
Interactive Teaching Techniques
 Playful Obstruction
 Balanced Turns
 Communicative Temptations

Interactive Teaching Techniques
 Follow Your Child's Lead
 Imitate Your Child
 Animation
 Modeling and Expanding Language

What's happening?
Do you use curricula?

Practices in Early Intervention

Research-based Practices



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Let's Take a look



Curricula Examples

- Autism Navigator Tools (ESI)
 - Program planning & implementation tools
 - Isaac slide 55 unit 4
- Teaching Social Communication (Ingersoll/Dvortcsak)

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Putting it all together

Activity

Pink handout

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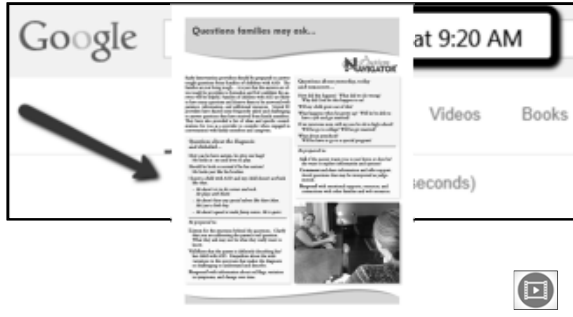

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After diagnosis




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
Supporting Families

- Stages like grief, denial, anger/depression, prior to reaching acceptance
- Not linear stages – e.g. birthdays
- Don't wait to offer support!
- Emotions serve a function


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"Acceptance is hard for some of us. It is not a straight line, but a process, and a very bumpy road. Some of us have to accept this over and over, because we continue to creep back into denial where life feels safe, if only in that moment. If that's where we are that day, be gentle with our broken souls, for we are mourning the loss of our preconceived notions of motherhood and trying desperately to adjust to the new normal of our difficult, but rewarding, lives with our amazing children."

<http://adrianyfanom.wordpress.com/2013/05/14/what-we-told-them-part-one/>

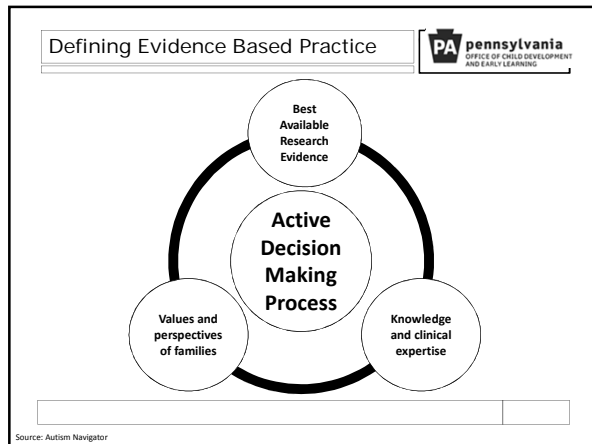

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Common Program Elements Model Programs for Young Children with ASD

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National Research Council, Dawson, et al



What parents want you to know

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"They're not broken."

"Where my child is today does not dictate where he will be 5, 10, 15 years from now."

"Presume competence."

"Try to make learning fun. Remember these are very young children. Figure out the child's interests and use them to engage their interest. Give hugs and high fives."

"The child knows more than you think he/she does, is more aware than you think he/she is, and is most likely soaking up everything... and will remember."

What parents want you to know

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"That I know my child better than they ever will. Please listen to the parents."

"Compassion means a LOT to us as parents, and so does celebrating the victories, no matter how 'small.'"

"I wish that early intervention professionals were sensitive to the overwhelming demands that newly diagnosed parents face, it's an unbelievably difficult time. I wish someone told me that it does get better!"

"Every child you work with is someone's entire world."

What parents want you to know

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"Be human. The best EI professionals we had were warm, engaging, and undaunted. If they didn't have an answer, they admitted it and sought help from others in their organization."

"We can never repay you for your work or belief in our kids, but we will pay it forward with other parents new to the spectrum. It's a circle. When you empower the parents you create a mechanism for long term growth and hope. Thank you."

"That for every drop we know, there is an OCEAN we don't – so keep an open mind. Really observe. Listen to parents' observations. Our understanding tomorrow may be vastly different from today."

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You make a difference!

What parents want you to know

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"...EI is needed just as much for the parents as it is for the children, be sure to teach us too!"

Family choices respected



- Parents need
 - to know about autism
 - evidence based info about treatments
 - knowledge of services and agencies to access
 - to know how to negotiate and advocate for their child

Families may have different ideas of how to proceed

How do you support families?



- Either right after diagnosis or beyond
- What you bring to the relationship

**“...what’s possible,
especially at one and two
and three years-old is
ANYTHING.”**

Competence and confidence



The experiences afforded a parent to strengthen existing and build new parenting capacity must also influence or change a parent’s sense of confidence and competence if the parent is to sustain engagement in parenting behavior

- A *sense of competence* refers to the (self-efficacy) belief that one’s behavior will have the expected effect or outcome
- A *sense of confidence* refers to the (self-efficacy) belief that one has the capacity to perform a task competently

Carol Trivette’s training in PA, 2014

Competence and confidence



- Practice new skills in a safe environment
- Structure of routines support parent and child learning
- Repetition allows parent to become competent, then confident

Learning in Natural Environments

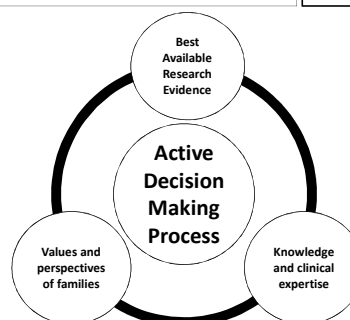


- Children learn by doing
- Everyday activities offer many opportunities
- IDEA Part C regulations
- Using what the family needs and wants to do is a natural outcome for child
 - Goal is to support their participation, interaction and independence

Evidence-Based Practices



Defining Evidence Based Practice



Source: Autism Navigator

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Programs for Young Children with ASD

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Research Reviews or Synthesis

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National Research Council, NPDCI/FPG, Research Institutions
e.g., Earlier the better, focus on soc-communication, behavioral principles

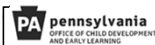
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DEC recommended Practices
E.g., family centered, explicit instruction, individualized plans

Early childhood education & mental health
Zero to Three, NAEYC, etc
E.g., secure attachments, routines, literacy exposure

General child growth & development
Amer Academy of Pediatrics, National Institute of Health
E.g., screen time, sleep, nutrition, movement

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Process Used to Identify EBP



- Identified outcomes related to the core features of autism
- Reviewed literature related to these outcomes as well as the key words autism, ASD, and autism spectrum, limited by age (birth – 21)
- Identified and grouped teaching interventions that addressed these outcomes/domains
- Determined criteria and whether an evidence base supported the practices


Meta Analysis



- Statistical technique for combining the findings from independent studies
- Used to assess the clinical effectiveness of interventions by combining data from research trials
- Provides a precise estimate of treatment effect-weighing the size of study results
- Validity of MA depends on the quality of the systematic review on which it is based

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Bridge the Gap



Practices in Early Intervention
(in EI context – replicable)

Research-based Practices

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Implementation Science

- the study of methods that influence the integration of evidence-based interventions into practice settings.
 - (a) what kinds of interventions are most efficacious (and for whom)
 - (b) what variables moderate and mediate treatment gains and improved outcomes
 - (c) the degree of both short-term and long-term improvements that can reasonably be expected.

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First: Do No Harm



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Unsubstantiated Practices

- Antifungal treatment
- Aquatic therapy
- Auditory Integration Therapy
- *Chelation Removal of Toxic Metals
- Cranio-sacral and chiropractic therapy
- Dietary interventions
- Transcranial Direct Current Stimulation
- *Hyperbaric oxygen therapy
- Medicinal marijuana
- Neuro-immune dysfunction and antiviral therapy
- Sensory gym
- Traditional and indigenous healing
- Stem cell therapy
- Facilitated Communication

(Seri & Lyons, 2011)

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ASD Evidence Based Practices

- Tested in high quality research designs and found to be efficacious
- Comprehensive Treatment Models** - conceptually organized packages of practices and components, designed to address a broad array of skills and abilities of C w/ASD &F
- Focused Interventions**- individual instructive practices or strategies that teachers or practitioners use to teach specific educational targets-skills and concepts- to C w/ASD.

Comprehensive Treatment Models



- **LEAP** –Learning Experiences and Alternative Programs (preschool)
- **TEACCH** (preschool)
- **Early Denver** (Toddlers)
- **PRT**-Pivotal Response Training (Toddlers/preschool)
- **ESI** -Early Social Interaction – (*Autism Navigator*)
- Other

Considerations



- Not possible to determine which elements of the package are responsible for progress
- Branding- need a well written manual specifying the content (curricula) and teaching process to be used.
- Branding-increase expense
- Geography-usually done in lab settings limiting availability to specific communities
- Culture- majority of studies do not include diverse participant groups

Research in EBP Seeks to:



- Determine which teaching approaches appear most effective for teaching specific skills given certain profiles of child and contextual characteristics.
- Autism is a spectrum disorder.
- If you have seen one child with autism....

Implementation in EI



Each IFSP/IEP is a research study

Evidence

Subject - Unit of study/child and family

Methods - Evidence based practices/strategies

Results - Measurement of outcomes/goals-progress monitoring

Discussion - Limitations and generalization

Infant/Toddler EBP



- Antecedent-based Interventions
- Functional Behavioral Analysis
- Modeling
- Naturalistic intervention
- Parent –mediated Implemented Intervention
- Pivotal Response Training
- Prompting
- Reinforcement
- Social Skills Training
- Video Modeling

ASD Established Treatments



0-2

- Behavioral
- Comprehensive Behavioral Treatment for Young Children (CBTYC)
- Joint Attention
- Naturalistic Teaching Strategies (NTS)

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- Antecedent
- Behavioral
- CBTYC
- Joint Attention
- Modeling
- NTS
- Peer Training
- Pivotal Response Training (PRT)
- Schedules
- Self-management

(Odom, Cox, Shaw, Kucharczyk, 2014, Evidence-Based Early Identification and Intervention for Infants and Toddlers with ASD and Their Families, *CFE Conference presentation*)

(National Standards Project, 2009)

Behavior Based Interventions



- We use behavioral practices- not packages of interventions generally- when we are working and playing with kids and coaching families to support their child's development.
 - reinforcement,
 - prompting,
 - modeling, etc.
- Be aware that EBP are not something that only BCBAs or specialists in ABA do.
- We use those strategies Important to know why we apply a strategy for a particular child when working on an outcome.

Focused Interventions



- Antecedent-based Interventions
- Functional Behavioral Analysis
- Modeling
- Naturalistic intervention
- Parent –mediated Implemented Intervention
- Pivotal Response Training
- Prompting
- Reinforcement
- Social Skills Training
- Video Modeling

(Idom, Cox, Shaw, Kucharczyk, 2014, Evidence-Based Early Identification and Intervention for Infants and Toddlers with ASD and Their Families. CEC Conference presentation)

Common Program Elements Model Programs for Young Children with ASD

- ❖ **Earlier is better**
- ❖ **Curriculum emphasizes skill development in ASD core deficit areas**
- ❖ **Planned, repeated teaching opportunities w/ Generalization Strategies.**
 - Individualized goals and outcomes
 - On-going monitoring and program improvement
- **Predictability and Routines**
- **Functional Approach to Problem Behaviors**
- **Planning for Transitions**
- ❖ **Family Involvement**
 - ❖ Sufficiency of support for adults
- ❖ **Intensive Intervention/Active Engagement time @ 25 hours/week**

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National Research Council, Dawson, et al

ASD Emerging Practices across ages



- Augmentative and Alternative Communication Devices (AAC)
- Cognitive Behavioral Intervention Package
- Developmental relationship-based Treatment
- Music therapy
- Massage/Touch Therapy
- Exposure Package
- Exercises
- Computer-assisted teaching
- Complementary and Alternative Medicine (CAM)
- Other

(National Standards Project, 2009)

Antecedent-Based Strategies



- Arranging the environment
- Changing the schedule/routine
- Structuring time
- Using highly preferred activities/activities to increase interest level
- Offering choices
- Altering the manner in which instruction is provided
- Enriching the environment so that learners with ASD have access to sensory stimuli that serve the same purpose as the interfering behavior (e.g., object to hold)
- Implementing preactivity interventions (cue the next activity or schedule change)

Video



- Child/mother diaper changing. Many examples of antecedent strategies are displayed.
 - Pictures
 - Schedules
 - Highly preferred activities-
 - Offering choices
 - Object to hold
 - Altering the sequence in which the routine is implemented
- This child is now available for interactions with mom during the routine.

Fidelity



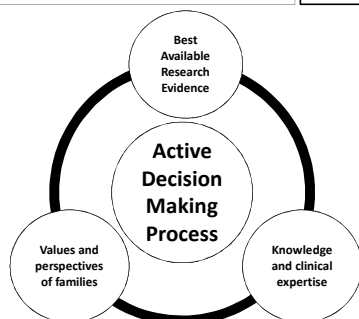
- An EBP is implemented
- Treatment Integrity- degree to which you are correctly implementing the practice
 - How long should you continue the baseline and treatment phases?
 - Is the team including parents able to accurately implement the treatment?
 - What environmental variables influence the effectiveness?
 - Determination of whether the treatment is effective?

Progress Monitoring Ind. Evidence



- Data Collection Systems
 - Baseline—what's happening now?
 - Collect data under similar conditions
 - Methods
 - Frequency –number of times behavior occurs in a period of time
 - Time sampling-record behavior in a small interval of time
 - Duration-how long a behavior lasts
 - Latency-time between instruction and response

Defining Evidence Based Practice



Source: Autism Navigator

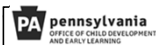
Key Consideration Of EBP



- Behavior based practices - implemented in a variety of ways
- **Fidelity** of implementation
- Intentional teaching is required
- Learning activities must be motivating
- Learning in the natural environment is important

Bottom line- EIs need to have the knowledge and ability to implement the critical ingredients of effective intervention for each child and family

Additional Resources/Training



- www Resource Handout
- Autism Navigator
 - See handout: About the Course
 - Talk to your EI Supervisor in December/January 2014 if interested
- Autism Professional Development in EI
 - Opportunities to be announced

Additional Resources/Training



- Coaching Initiative
 - For Home-Based in Infant/Toddler EI
- ABA training (upcoming)
 - Behavior practices and principles with a focus on teaching skills – young children

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**Thank you
for your participation.**

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