


## Evidence-Based Practice

From Homes and Schools to a Regional Service Delivery Model: Identification & management of challenging behaviors

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FOUNDATIONS  
 BEHAVIORAL HEALTH  
*Healing Kids with Success*

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## Today's Goals

- 1. To quickly grasp what Evidence-Based Practice (EBP) is and can do
- 2. To see how EBP, when considered with other factors, can help identify
  - Relevant & effective treatments for individuals with ASD
  - Which new services will have the greatest impact on the population of individuals with ASD.
- 3. To identify when and how training, research, and policy can help to create these new services
- We illustrate these principles by proposing a research-based and integrated network of service, training, research, and policy at the local, regional and state level, for addressing problem behaviors

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## WHY SCIENCE & TECHNOLOGY?

### Why do we need EBP?

- Extraordinary and unfounded claims of success re Autism are made every day
- Science can inform decisions about individual treatment
  - Maximize selection of effective treatments
  - Minimize selection of ineffective treatments.
  - Avoid harmful treatments.
  - Align treatment options within an individual across disciplines.

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## WHY SCIENCE & TECHNOLOGY?

### Why do we need EBP?

- EBP can also help drive systems changes
  - Set training priorities
  - Identify levels of support
  - Help to set policy

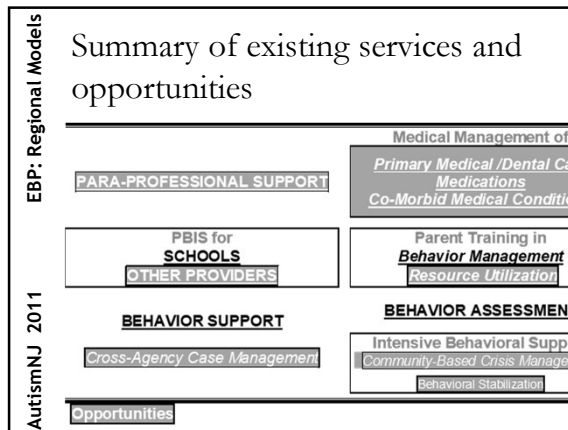
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## The case for improving behavior support

- Tremendous opportunity to develop a regional or statewide approach
  - Existing services are effective for some families and some behavior problems
- BUT there are
  - Evidence based practices for addressing most problems
  - Clear gaps in services across regions/groups
  - Ways of leveraging existing resources /expertise
  - Examples of effective programs in other states

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**FOR THE INDIVIDUAL**  
Parent should determine...

- **Is this a critical target?** Will improvement in the targeted skill or behavior increase opportunities to learn important skills in critical setting ?
- **Is there an EBP?** Is there an Evidence-Based Practice for addressing the targeted skill or behavior?
- **Is the EBP relevant to my child** given the characteristics of the individual(s) referenced by the supporting outcome research?
- **Can we achieve treatment fidelity?** Can we implement the intervention as reliably and as intensively as described in the EBP?
- **Is this cost-effective?**

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**DEFINING EBP**  
What are Evidence-Based Practices?

1. Practices resulting in outcomes that are
  - Clinically / educationally significant AND
  - Superior to that obtained otherwise
2. That specifies (a) methods used, (b) treatment target, and (c) who will benefit
3. That is demonstrated via a series of outcome studies that are at least well-controlled and peer-reviewed, if not independently replicated

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**DEFINING EBP**  
New Standards for Outcome studies

- Recent reviews with overlapping criteria
  - National Autism Center (2009)
  - National Professional Development Center for Autism at UNC (2010)
  - Reichow, Doehring, Cicchetti, & Volkmar, (2010)
- All of these
  - Accept that group designs AND single subject designs are acceptable
  - Focus on specific methods, and try to identify for which skills these are effective

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**DEFINING EBP**  
Limits to definitions of EBP

- Most reviews describe broad targets in broad populations
  - How to improve social skills in persons with ASD
- Option 1: For EBPs with at least 8-10 adequate outcome studies, identify more specific, individualized goals using narrow patterns of evidence – i.e., PECS
  - Consistent evidence: It can be mastered relatively quickly, improvements are correlated with complexity of speech and other social-communicative behavior...
- Option 2: Choose methods based on child characteristics
  - To increase Joint Attention, use RPMT when JA is already established, and PECS when it is not

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**FOR THE INDIVIDUAL**  
Identify critical and relevant targets

- Ensure that this is relevant
  - Good match between your child's characteristics and study participants
- Aim for functional outcomes
  - A specific, immediate, and significant improvement in multiple environments
- Consider quality of life
  - Will this help your child access typical community settings and activities?
  - Will this improve family life?

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**FOR THE INDIVIDUAL**  
Replicable results

- There must be an associated program of training
  - At least a training manual with supporting materials
  - Ideally these help document fidelity
- You must have professionals designated and available to be trained and to intervene
  - Additional training & prerequisite skills
  - Ongoing coaching, consultation, & fidelity checks
- To replicate treatment intensity, you must know how the intervention is delivered
  - How often is treatment delivered?
  - What kinds of staff are needed?
  - Specialized materials and settings

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**FOR THE INDIVIDUAL**  
Establishing cost-effectiveness

- The investment of money and time in training and implementation will not come at the expense of other important and effective interventions
- We can collect data to clearly document progress
- The response to the intervention will be evident within 2-4 weeks of implementation
- Resources are or can be in place to support training and intervention

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**EXAMPLES OF EBPs**  
Functional Behavioral Assessment

- Plenty of scientific evidence that plans informed by FBA effectively reduce a wide range of problem behaviors
  - FBA is now a standard when problem behaviors result in disciplinary action in schools
  - And training in FBA is now widely available
  - Applicable to full range of populations and targets
  - Standard: All behavior plans must address the function(s) of the behavior as established through systematic data
- Limitations
  - FBA is not as standardized as other assessment processes, so people may gather too little, or too much data
  - Multiple functions or establishing operations quickly complicate the assessment

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**EXAMPLES OF EBPs**  
Differential reinforcement

- Plenty of studies demonstrating its effectiveness for a range of behavior problems, especially when
  - Used together with other antecedent interventions
  - The skill reinforced is functionally equivalent to the behavior it replaces
  - Can be implemented effectively by parents, with the right training and support
  - Applicable to full range of populations and targets
  - Standard: All behavior plans should strongly consider turning first to DR, at least as part of the package
- Limitations: Lack of consistency can undermine the best of plans

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**EXAMPLES OF EBPs**  
Functional Communication Training

- Plenty of studies demonstrating its effectiveness for a range of behavior problems, especially
  - Among children fundamental communication deficits
  - Because FCT usually offers a direct replacement for problem behavior, it can be very powerful
  - Standard: For children unable to express basic wants and needs, communication training should be prioritized in behavior planning
- Challenge: Teaching communication skills can be very intensive, especially for more challenged persons who require we create many communication opportunities

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**EXAMPLES OF EBPs**  
Errorless Learning

- A number of studies demonstrate the effectiveness of various teaching strategies such as prompting, etc
  - By increasing success, these can prevent the occurrence of behaviors related to demands and task difficulty

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**EXAMPLES OF EBPs** Relative ineffectiveness of reactive strategies

- Reactive strategies (e.g., response cost, over-correction, contingent work, etc) lack the clear and consistent support of antecedent / pro-active strategies
  - May only be effective when used in conjunction with other interventions OR under very specific conditions

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**EXAMPLES OF EBPs**  
Using EBP to drive treatment

- Unless you can quickly show that another technique yields better results, you should always turn to EBP first
- EBP: Prioritize ABA-based, positive & proactive interventions informed by functional assessment for reducing challenging behavior before, for example...
  - Relying solely on Medication
  - Using sensory integration
  - Using Alternative/complementary interventions (e.g., GFCF diets)

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**FOR THE INDIVIDUAL**  
General Model

<b>Target</b>	Critical Target	
<b>Treat- ment</b>	EBPs	Relevant to Child
	Low-Cost	Replicable Results

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**FOR THE INDIVIDUAL Opportunity:**  
Core PBIS for other settings

- Community-based caregivers
  - Early intervention/ residential /Childcare /respite providers, paraprofessional support
- Core EBPs that can be implemented with relatively little training
  - ↓ Reactive strategies, ↑ Differential reinforcement, ↑ Errorless learning
- Relevant to majority if children and problem behaviors

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**FOR THE INDIVIDUAL Opportunity:**  
Core PBIS for other settings

<b>Target</b>	✓✓✓ Critical Target
<b>Treat- ment</b>	✓✓✓ EBPs      ✓✓✓ Relevant to child
	✓✓ Low-Cost      ?? Replicable Results

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**FOR THE INDIVIDUAL Opportunity:**  
Primary Medical / Dental Care

- All children need regular care
  - Common childhood complaints can exacerbate behavior problems
- Some low-cost solutions
  - Adaptations to schedule/environment
  - Tips for interacting with patients
  - Opportunities to practice prior to visit

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**FOR THE INDIVIDUAL Opportunity:**  
Primary Medical / Dental Care

<b>Target</b>	✓✓ Critical Target
<b>Treat- ment</b>	? EBPs      ✓ Relevant to child
	✓✓✓ Low-Cost      ? Replicable Results

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**FOR THE SYSTEM**  
Leaders should also determine...

- **Is this a prevalent target?** In what proportion of the population will it occur?
- **Is this a high impact target?** Will failure significantly change the trajectory of services and outcomes?
- **Are there potential barriers to growth?**
  - Persistent gaps in services?
  - Costly interventions?
  - Little Service / Training Capacity
  - Intense and/or specialized intervention?
  - Involvement of multiple agencies and settings?

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**FOR THE SYSTEM**  
High Impact Targets

- Same criteria as before, but also consider resulting societal costs associated with
  - Residential placement, especially that beginning in childhood
  - Incarceration
  - Hospitalization
  - Placement in specialized school or workplace

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**FOR THE SYSTEM** *PA 2011 Needs Assessment*  
High Impact Targets

- Hospital admissions for behavior problems in the previous year increase significantly in adolescence

**Unwanted Outcomes**

Age Group	ER Visit (%)	Hospital Admission (%)	Police Contact (%)
Pre Elementary	~5	~2	~1
Elementary	~8	~5	~4
Middle/High	~10	~12	~15
Adult	~15	~18	~25

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**FOR THE SYSTEM** *PA 2011 Needs Assessment*  
High Impact Targets

- Problem behaviors also impede access to other critical services
  - Behavior challenges prevented 1 in 5 individuals with autism from accessing primary care and dental care.
- This may contribute to other issues families face
  - Respondents reported significant impacts on their work

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**FOR THE SYSTEM** *PA 2011 Needs Assessment*  
High Impact Targets

**Workforce participation changes resulting from having a child with ASD**

Change	Respondent (%)	Spouse (%)
stopped work outside home	~28	~5
decreased work hours	~25	~10
lost promotion	~12	~5
fired	~5	~2
none	~30	~48

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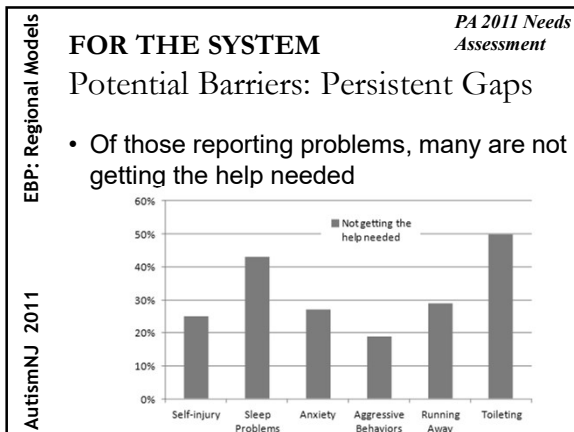
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**FOR THE SYSTEM** *PA 2011 Needs Assessment*  
Prevalent Targets

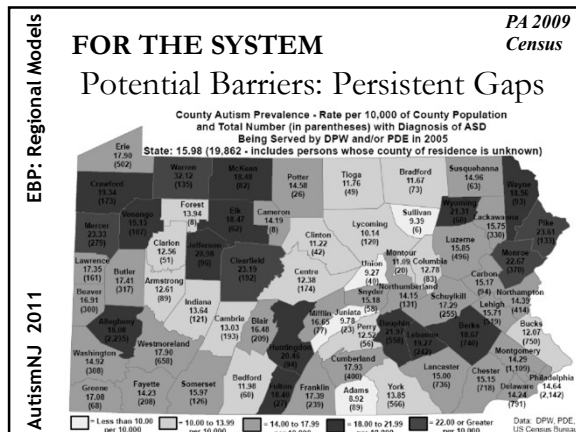
- Do the behavior or skill deficits occur in most people with ASD?

Category	Proportion Reporting Problems (%)
Self-injury	~22
Sleep Problems	~32
Anxiety	~55
Aggression	~45
Running Away	~15
Toileting	~25

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**FOR THE SYSTEM**

Potential Barriers: Cost

- Capture the resulting societal costs
  - Residential placement beginning before adulthood;
  - Residential placement in adulthood, unrealized potential to live and work independently in adulthood; incarceration
  - Criminal prosecution, or hospitalization in childhood;
  - Placement in specialized school or workplace

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**FOR THE SYSTEM** Potential Barriers: Service/Training Capacity

- Existing mandates to
  - Provide service and associated training
  - At least fund service and associated training
- Pool of existing or available professionals
  - To deliver services
  - To receive training

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**FOR THE SYSTEM**

Potential Barriers: Other Factors

- Non-Specialized training and services are easier to grow
  - Programs to train trainers are available, or funding is available to support their development
  - Networks to support ongoing coordination / development of trainers is available
  - Pool of available experts / trainers

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**FOR THE SYSTEM**

Potential Barriers: Other Factors

- Initiatives within a single-agency/setting are easier to grow
- Most behavior problems require multiple agencies, professionals, and settings
  - Consider programs that coordinate services and/or funding, especially with caregiver involvement
  - A State-level inter-agency plan or team can develop/implement strategy and oversight
  - State level networks of professionals also increase collaboration and training

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**FOR THE SYSTEM**  
General model

<b>Target</b>	Prevalent	High Impact
<b>Treat-ment</b>	EBPs	Replicable Results
<b>Potential Barriers</b>	Persistent Gaps	Cost
	Little Service Capacity	Little Training Capacity
	Intensive & Specialized needs	Multiple agents & settings

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**FOR THE SYSTEM** Opportunity:  
Management of co-morbid conditions

- Seizures, Sleep, GI Disorders, Anxiety
  - Very prevalent
  - Increasing number of EBPs
  - ATNs developing algorithms to simplify training
- Impact person and family by exacerbating behaviors
- Can focus primarily on Primary Care, and perhaps involve PNPs

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**FOR THE SYSTEM** Opportunity:  
Management of co-morbid conditions

<b>Target</b>	✓✓Prevalent	✓✓High Impact
<b>Treat-ment</b>	✓✓EBPs	✓? Replicable Results
<b>Potential Barriers</b>	✓✓Persistent Gaps	✓Cost
	✓Little Service Capacity	✓✓Little Training Capacity
	✓Intensive & Specialized Needs	✓Multiple Agents & settings

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**FOR THE SYSTEM** Opportunity: Parent Training in Resource utilization

- All or almost all parents are
  - Eligible for AND confused by community supports
  - And so fail to fully utilize existing resources
- Many different agencies can contribute to training
  - Low cost workshops / web resources

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**FOR THE SYSTEM** Opportunity: Parent Training in Resource utilization

<b>Target</b>	✓✓✓Prevalent	✓✓High Impact
<b>Treat-ment</b>	? EBPs	? Replicable Results
<b>Potential Barriers</b>	✓✓✓Persistent Gaps	✓ Cost
	✓✓ Little Service Capacity	✓ Little Training Capacity
	X Specialized & Intensive Needs	✓✓ Multiple Agents & Settings

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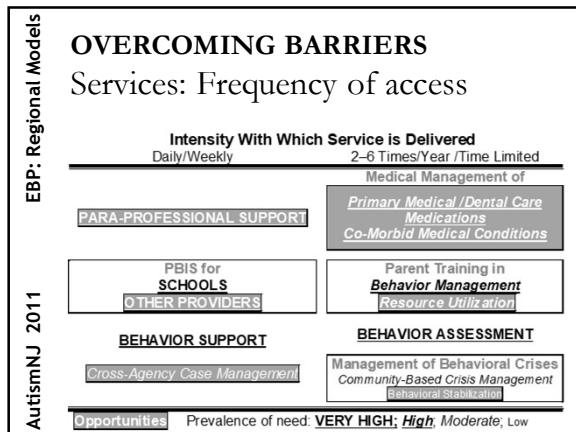
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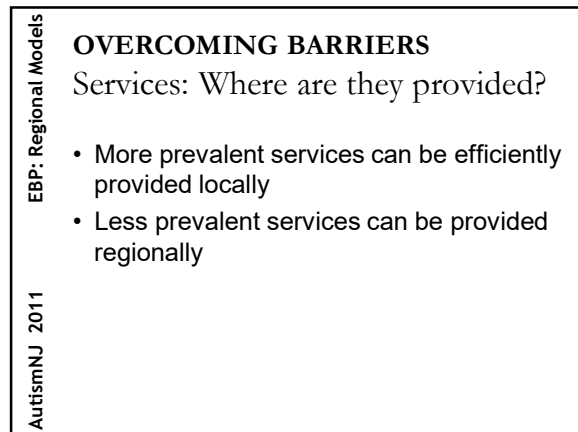
**OVERCOMING BARRIERS**  
Strategies for scaling up capacity

- When you lack service or training capacity, how should you grow
- Coordinate services, training, research, & policy at the local, regional, and state level
  - Recognize that services, training, research, and policy each grow in different ways
- Balance growth by considering
  - Prevalence of need
  - Intensity and specialization of services
  - Intensity and specialization of training

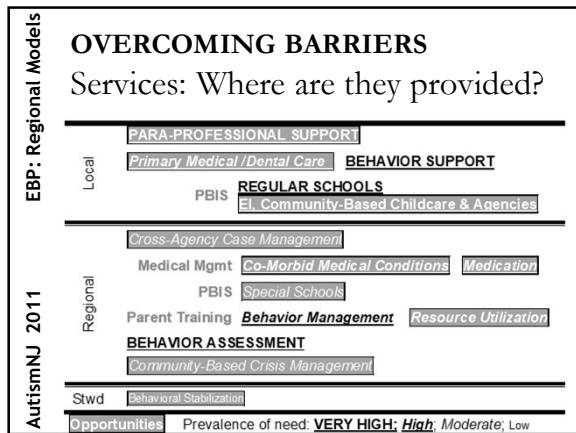
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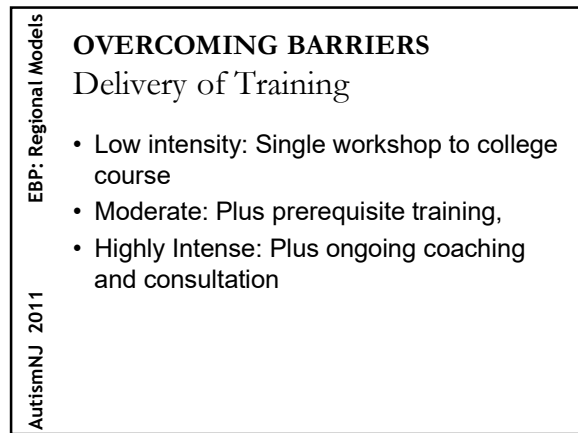
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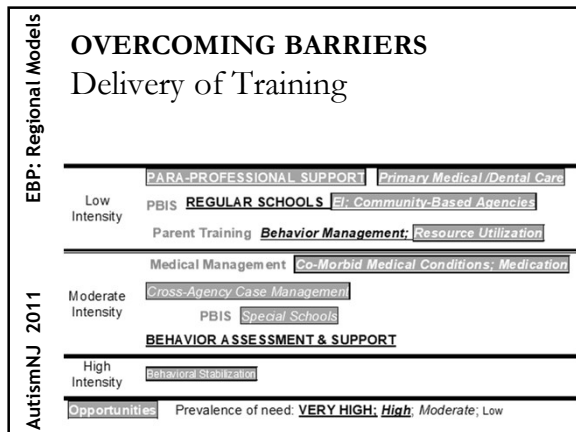
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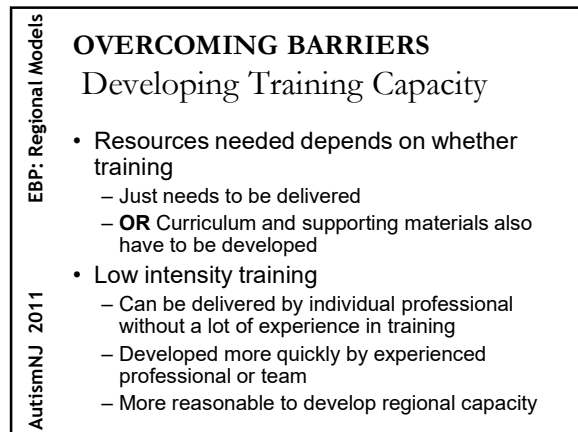
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**OVERCOMING BARRIERS**  
Developing Training Capacity

- High intensity training
  - Probably requires a training program / team of very experienced professionals to develop AND to deliver
  - More difficult to develop regional capacity
- Greatest limits to growth: Lack of
  - EBPs; Curricula, Trainers, Training programs
  - Greatest for more specialized services

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**OVERCOMING BARRIERS**  
Opportunity: Medication Management

- Biggest opportunity
  - Prevalent need, low-cost intervention, single agency, availability of primary care practitioners
- Biggest challenge
  - Limited EBPs for specific medication
  - Training infrastructure: how do you efficiently get info to PCPs?
  - How to help them with more complex cases?

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**OVERCOMING BARRIERS**  
Opportunity: Medication Management

<b>Target</b>	✓✓✓ Prevalent	✓✓ High Impact
<b>Treatment</b>	✓ EBPs	✓ Replicable Results
<b>Potential Barriers</b>	✓ Persistent Gaps ✓ Little Service Capacity ? Specialized & Intensive Needs	✓ Cost ✓ Little Training Capacity X Multiple Agencies & Settings

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**OVERCOMING BARRIERS**  
Opportunity: Behavioral Stabilization

- Biggest opportunity
  - EBPs, High impact intervention, Persistent gaps
  - Do not need to develop many programs & time-limited need permits regional/state level service
  - Can we build on existing system for training / service in behavior support?
- Biggest challenge
  - Infrequent need, costly program, highly specialized, multi-agency coordination, Question re service and training capacity

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**OVERCOMING BARRIERS**  
Opportunity: Behavioral Stabilization

<b>Target</b>	✓ Prevalent	✓✓✓ High Impact
<b>Treatment</b>	✓✓✓ EBPs	✓✓ Replicable Results
<b>Potential Barriers</b>	✓✓✓ Persistent Gaps ✓✓ Little Service Capacity ✓✓ Intensive & Specialized Needs	✓✓ Cost ✓ Little Training Capacity ✓ Multiple Agents & Settings

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**OVERCOMING BARRIERS**  
Opportunity: Case Coordination

- Biggest opportunity
  - Leads to very inefficient and ineffective utilization of behavior support services across settings
  - Case management service itself is relatively low cost, and can be done at the regional level with intermittent meetings and frequent phone calls
  - Moderately frequent need justifies increase in services and training
  - Though not an EBP there are example of programs (Family Focus Positive Behavior Support)
- Biggest challenge
  - Identifying lead agency
  - Can you blend/braid resources and not just coordinate services?

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**OVERCOMING BARRIERS**  
Opportunity: Case Coordination

<b>Target</b>	✓✓✓ Prevalent	✓✓ High Impact
<b>Treatment</b>	? EBPs	? Replicable Results
<b>Potential Barriers</b>	✓✓ Persistent Gaps	✓ Cost
	✓✓ Little Service Capacity	✓✓ Little Training Capacity
	✓ Specialized & Intensive Needs	✓✓ Multiple Agencies & Settings

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**OVERCOMING BARRIERS**  
Research & policy

- Policy initiatives at the state and the national level are needed to develop resources needed to efficiently scale up services through training
  - Specialized training programs to scale up services will likely develop only with state and federal support.
  - Policies and programs to increase services must include specific plans to engage local and regional providers in the adoption of new practices

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**OVERCOMING BARRIERS** Other strategies for scaling up capacity

- Make service delivery the priority and outcome
  - Training, research, & policy do not directly determine outcomes; Impact almost always mediated by the availability and quality of services.
  - Training mediates the impact of research on services
- Consider policy changes likely to affect services directly
  - Needs assessment to track gaps
  - Making funding available for services and training
  - Setting standards for core practices.
- Recognize that training, research, and policy can also improve advocacy.

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**OVERCOMING BARRIERS**  
Research & Policy: Key opportunities

- Research
  - Needs assessments- general & breakdown for most negative outcomes
  - EBPs that can be translated into individualized goals
- Policy
  - Standards for care and training
- Service Roadmaps
  - Who needs what kinds of service when, and where can you find these?

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**OVERCOMING BARRIERS**  
Other opportunities and barriers?

- Models of blended funding
- Traditionally underserved populations
- Recognizing caregivers as first line of intervention
- Partnering with other concerned groups
  - ID
  - Other treatments

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