**Presenters**

**Karrie Steving** serves as Children’s System of Care Administrator for Mercy Maricopa Integrated Care (Mercy Maricopa), the Regional Behavioral Health Authority in Maricopa County.

**Dr. Ramiro Guillen** serves as Chief Medical Officer for Southwest Behavioral and Health Services.

**Dr. Bryan Davey** serves as Chief Executive Officer (CEO) for Touchstone Health Services in Phoenix, Arizona.

**Lindsey Zieder** serves as Children’s System of Care Special Projects Lead for Mercy Maricopa Integrated Care (Mercy Maricopa), the Regional Behavioral Health Authority in Maricopa County.
Session Objectives

Objective 1: Participants will be able to outline the evidenced based practices used to treat and improve whole-health outcomes for members with Autism Spectrum Disorder.

Objective 2: Participants will be able to outline multi-systemic approaches for promoting coordination of care and consistency for youth/adults and families, while keeping the member and family at the center of the team.

Objective 3: Participants will be able to discuss mechanisms for engaging families, multi-system/inter-disciplinary service providers, including the Arizona Department of Education to provide integrated physical and behavioral health services.
Identified Need

• Enhance the whole-health outcomes for the Autism Spectrum Disorder population within our community.

• Efficiency and effectiveness of managing the coordination of services across systems, which include:
  - Diagnostic screening
  - Evidenced based practices
  - Collaborative with the Division of Developmental Disabilities, Primary Care and the Arizona Department of Education.

• Promote stability and permanency for youth and families
  - Incorporating comprehensive assessments
  - Early childhood screening tools
  - Oversight of developmental milestones and functional limitations
National Data

- Autism Spectrum Disorder (ASD) is a biologically based neurodevelopmental disorder. It is defined as delayed social communication skills, social interactions, and restricted, repetitive behaviors (RRB).

- Prevalence 1 in 68 (CDC, 2014).

- Early Intervention can considerably improve long-term development and social behaviors.

- 5x ASD is almost five times more common among males versus females.

- Autism is one of the fastest growing developmental disorders in the United States.


National Data

- About 1 in 6 Children have developmental disabilities.

- ASD is estimated to affect more than 3 million individuals in the United States.

- Variation linked to socio-economic status and culture.

- Approximately 50,000 individuals with autism spectrum disorder (ASD) turn 18 each year in the United States.

- Staggering rates on unemployment, lack of vocational training and/or college.
National Data

Emotional & Behavioral Difficulties in Children with Autism

A parent-reported survey (2003-04) in School-aged Children (4-17 years)

CDC surveys (NHIS & NSCH)
National Practices – Core Components

As described by the Division of Adolescent and School Health of the Centers for Disease Control and Prevention, best practices for members with ASD include:

(1) Early intervention services: birth to 3 years of age
(2) Behavior and communication approaches
(3) Relationship-based approaches
(4) Dietary approaches
(5) Medication
(6) Complimentary and alternative medicine
Response to the Community Need

Key Elements

- Serve as the ‘hub’
- Drive holistic outcomes
- Advanced coordination of care
- Educate the community
- Specialized services
- Family and member advocacy
Request for Information

- November 2, 2016: Mercy Maricopa Integrated Care and Mercy Care Plan issued a Request for Information (RFI)

- December 16, 2016: 9 responses were received

- Multi-disciplinary team came together to design the Autism Disorder Spectrum Centers of Excellence Model, in collaboration with the Division of Developmental Disabilities (DDD)

<table>
<thead>
<tr>
<th>Collaborative Efforts</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s System of Care</td>
<td>Physical Health Medical Director</td>
</tr>
<tr>
<td>Integration</td>
<td>DDD Liaison</td>
</tr>
<tr>
<td>Cultural Competency</td>
<td>Utilization Management</td>
</tr>
<tr>
<td>Adult System of Care</td>
<td>DDD</td>
</tr>
<tr>
<td>DDD Liaison</td>
<td>General Mental Health/Substance Abuse</td>
</tr>
<tr>
<td></td>
<td>Representative</td>
</tr>
<tr>
<td>Office of Individual and Family</td>
<td>Physical Health Manager</td>
</tr>
<tr>
<td>Affairs</td>
<td></td>
</tr>
<tr>
<td>Integration Officer</td>
<td></td>
</tr>
</tbody>
</table>
Autism Spectrum Disorder
Centers of Excellence

Touchstone Health Services

Southwest Behavioral Health Services
Southwest Behavioral & Health Services
Prevalence and early signs

- Autism Spectrum Disorder (ASD) is a biologically based neurodevelopmental disorder. It is defined as delayed social communication skills, social interactions, and restricted, repetitive behaviors (RRB).

- Prevalence 1 in 68 (CDC, 2014)

- More common in males than females

- Symptoms visible as early as 12 months in some

- Variation linked to Social Economic Status and culture
## Features of Autism

<table>
<thead>
<tr>
<th><strong>CORE Features</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impaired Social-Emotional Competence</strong></td>
</tr>
<tr>
<td><strong>I. Non-verbal communication (NVC)</strong></td>
</tr>
<tr>
<td>- Eye contact (joint-attention)</td>
</tr>
<tr>
<td>- Receptive and Expressive emotional NVC (facial expression, verbal tone, touch)</td>
</tr>
<tr>
<td><strong>II. Verbal communication</strong></td>
</tr>
<tr>
<td>- Level of verbal communication</td>
</tr>
<tr>
<td>- Atypical style of speech (pedantic, professorial)</td>
</tr>
<tr>
<td><strong>III. Emotional processing</strong></td>
</tr>
<tr>
<td>- Emotional awareness, recognition</td>
</tr>
<tr>
<td>- Emotional expression (verbal &amp; non-verbal)</td>
</tr>
<tr>
<td>- Empathy (ToM)</td>
</tr>
<tr>
<td><strong>IV. Social (inter-personal) processing</strong></td>
</tr>
<tr>
<td>- Social motivation &amp; awareness</td>
</tr>
<tr>
<td>- Sharing (activities, affect, back &amp; forth conversations)</td>
</tr>
<tr>
<td>- Contextual understanding (social adaptability)</td>
</tr>
<tr>
<td><strong>V. Abstracting ability</strong></td>
</tr>
<tr>
<td>- Black &amp; white/concrete/literal thinking</td>
</tr>
<tr>
<td>- Tolerance for ambiguity</td>
</tr>
<tr>
<td><strong>VI. Introspective/Introceptive ability</strong></td>
</tr>
<tr>
<td>(self awareness of cognitions, emotions, &amp; physiological state)</td>
</tr>
<tr>
<td>- Psychological mindedness</td>
</tr>
<tr>
<td><strong>VII. Executive Control</strong></td>
</tr>
<tr>
<td>(moderation of emotions, motivations, interests)</td>
</tr>
<tr>
<td>- All or none approach (lack moderation)</td>
</tr>
<tr>
<td>- Abnormal intensity of interests</td>
</tr>
</tbody>
</table>

| **Restricted/Repetitive Behaviors (RRBs)** |
| **VIII. Cognitive/Behavioral Rigidity** |
| - Routines (routine-bound) |
| - Rituals (verbal & motor) |
| - Resistance to change (transitional difficulties) |
| - Rigid pattern of thinking (rule-bound/highly opinionated) |
| - Lack spontaneity/tolerance for unstructured time |
| - Social inflexibility |
| **IX. Repetitive patterns** |
| - Speech (delayed echolalia, scripting, idiosyncratic phrases) |
| - Motor mannerisms (flapping, clapping, rocking, swaying) |
| - Interests (non-progressive, non-social) |
| **X. Atypical Salience** |
| - Interests (odd/idiosyncratic) |
| - Social-emotional stimuli |
| - Atypical fears |
| **XI. Sensory Dysregulation** |
| - Atypical sensory perceptions/responses |

### ASSOCIATED Features
- Intellectual disability
- Novelty averse behaviors
- Poor motor co-ordination
Psychopathology associated with ASD in psychiatrically referred populations

**Lifetime Psychiatric Comorbidity**

**Youth**
- Attention-deficit/Hyperactivity Disorder
  - ASD
  - NON-ASD
- Oppositional Defiant Disorder
  - ASD
  - NON-ASD
- Conduct Disorder
  - ASD
  - NON-ASD
- Multiple (≥2) Anxiety Disorders
  - ASD
  - NON-ASD
- Major Depression
  - ASD
  - NON-ASD
- Bipolar I Disorder
  - ASD
  - NON-ASD
- Psychosis
  - ASD
  - NON-ASD
- Substance Use Disorders
  - ASD
  - NON-ASD

**Adults**
- Attention-deficit/Hyperactivity Disorder
  - ASD
  - NON-ASD
- Oppositional Defiant Disorder
  - ASD
  - NON-ASD
- Conduct Disorder
  - ASD
  - NON-ASD
- Multiple (≥2) Anxiety Disorders
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  - NON-ASD
- Major Depression
  - ASD
  - NON-ASD
- Bipolar I Disorder
  - ASD
  - NON-ASD
- Psychosis
  - ASD
  - NON-ASD
- Substance Use Disorders
  - ASD
  - NON-ASD

Statistical Significance: ***p≤0.001

Anxiety disorders in psychiatrically referred adults with ASD

Lifetime Psychiatric Comorbidity: Anxiety Disorders

- Multiple Anxiety Disorders
- Separation Anxiety Disorder
- Specific Phobia
- Agoraphobia
- Social Phobia
- Panic Disorder
- Generalized Anxiety Disorder
- Obsessive-compulsive Disorder
- Post Traumatic Stress Disorder

Statistical Significance: *p≤0.05, **p≤0.01, ***p≤0.001

JOSHI ET AL., 2013
Substance use disorders in psychiatrically referred adults with ASD

Lifetime Psychiatric Comorbidity: Substance Use Disorders

Statistical Significance: *p≤0.05, **p≤0.01, ***p≤0.001

JOSHI ET AL., 2013
Comorbidity associated with ASD

Comorbidity in US population-based sample of ASD
(Medical records of children 8 years old reviewed by trained clinicians)

- Medical Diagnosis: 4%
- Neurologic Diagnosis: 16%
- Intellectual Disability: 18.5%
- Learning Disorder: 6.5%
- ADHD: 21%
- Other Psychiatric Disorders: 21%

Targeting psychopharmacologic treatment

- Sleep Disruption
- Depression
- Anxiety
- Social Communication Deficits
- Repetitive Behaviors
- Language Impairment
- Intellectual Disability

- ADHD
  - Hyperactivity
  - Impulsivity
  - Inattention

- Irritability
  - Aggression
  - Self-Injurious Behavior
  - Tantrums

MC DOUGLE ET AL., 2016
# Selected ASD Level 1 and Level 2 screening tools

<table>
<thead>
<tr>
<th>Screening Test</th>
<th>Age</th>
<th>Format</th>
<th>Time to complete mn</th>
<th>Sensitivity/Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCHAT-R</td>
<td>16-36 m</td>
<td>Questionnaire</td>
<td>5-10</td>
<td>0.92/0.83 PPV: 98% DD; 54% ASD</td>
</tr>
<tr>
<td>CAST</td>
<td>4-11 y</td>
<td>Questionnaire</td>
<td>10</td>
<td>0.88/0.97</td>
</tr>
<tr>
<td><strong>Level 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCQ</td>
<td>4 y &amp; up</td>
<td>Questionnaires</td>
<td>10 each</td>
<td>0.85/0.96</td>
</tr>
<tr>
<td>CARS-2</td>
<td>2 y &amp; up</td>
<td>Observation</td>
<td>15-20</td>
<td>Agreement with DSM 5: 84%</td>
</tr>
<tr>
<td>SRS-2</td>
<td>3 y &amp; up</td>
<td>Questionnaires</td>
<td>15-20</td>
<td>Agreement ADI-R: 0.75-0.91</td>
</tr>
<tr>
<td>GARS-3</td>
<td>3-22 y</td>
<td>Questionnaires</td>
<td>10</td>
<td>GARS-2: 0.65/0.81 GARS-3: 0.97/0.97 (ProED)</td>
</tr>
</tbody>
</table>
# ASD Level 2 interactive screening tests & other useful tools

<table>
<thead>
<tr>
<th>Screening test</th>
<th>Age</th>
<th>Format</th>
<th>Time to complete in mn</th>
<th>Sensitivity/Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 2 Interactive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RITA-T</td>
<td>18-36m</td>
<td>Interactive Training needed</td>
<td>10</td>
<td>1/0.84</td>
</tr>
<tr>
<td>STAT</td>
<td>24-36m</td>
<td>Interactive Training needed</td>
<td>20</td>
<td>0.92/0.85</td>
</tr>
</tbody>
</table>

### Other useful assessment tools

<table>
<thead>
<tr>
<th>Test</th>
<th>Age</th>
<th>Format</th>
<th>Time to complete</th>
<th>Sensitivity/Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vineland Adaptive Behavior Scales</td>
<td>Birth &amp; up</td>
<td>Survey Rating</td>
<td>25-60</td>
<td>Adaptive behavior, &amp; communication, social</td>
</tr>
<tr>
<td>Vanderbilt</td>
<td>School age</td>
<td>Questionnaires</td>
<td>5-10</td>
<td>Measure of ADHD, ODD</td>
</tr>
</tbody>
</table>

**RITA-T: Rapid Interactive Screening Test in Toddlers; STAT: Screening Tool for Autism in Toddlers and Young Children**
The four A’s

- **Approach**: Conveying a tone of partnership through multidirectional communication.
- **Attitudes**: Fostering family and professional engagement through involvement in treatment across settings, continuity of care across environments.
- **Atmosphere**: Successful goal attainment: Healthy social-emotional-behavioral development; Positive outcomes for individuals with ASD.

Touchstone Health Services

866.207.3882
TOUCHSTONEHS.ORG
PHOENIX   MESA   AVONDALE   TUCSON
Evidence-based practices

Those who fall in love with practice without science are like a sailor who enters a ship without a helm or a compass, and who never can be certain whither he is going.

(Leonardo da Vinci)

“Without data you’re just another person with an opinion”

- W. Edwards Deming
Evidence-based practices

- Applied Behavior Analysis (ABA) Therapy
- Characteristics of Early Intensive Behavioral Intervention in ASD
- Early Intensive Behavior Intervention (EIBI)
- Efficacy of Early Intensive Behavioral Intervention (EIBI)
- DIR/Floor Time®
- TEACCH: Treatment and Education of Autistic and Related Communication – Handicapped Children
- TEACCH” A “Culture of Autism”
- TEACCH: A Meta-Analysis
- TEACCH Method for Social Skills Training
Evidence-based practices


**Comparison of NPDC and NSP Practices**

<table>
<thead>
<tr>
<th>Evidence-Based Practices Identified by the National Professional Development Center (NPDC) on ASD</th>
<th>Established Treatments Identified by the National Standards Project (NSP)</th>
<th>Comprehensive Behavioral Treatment for Young Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antecedent-based Intervention</td>
<td>X</td>
<td>Language training did not emerge as a focused intervention by the NPDC on ASD. Components of Language Training overlap with NPDC identified practices that may support language production, such as modeling, prompting, and reinforcement.</td>
</tr>
<tr>
<td>Differential Reinforcement</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Discrete Trial Training</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Extinction</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Modeling</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Prompting</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Reinforcement</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Response Interruption/Redirect</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Scripting</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Task Analysis</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Video Modeling</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Time Delay</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Cognitive Behavioral Intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Naturalistic Intervention</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Parent Implemented Intervention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peer-mediated Instruction &amp; Intervention</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Pivotal Response Training</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Self-management</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Social Narratives</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Social Skills Training</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Visual Supports</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Exercise</td>
<td>Exercise was identified as an emerging practice by the NSP.</td>
<td></td>
</tr>
<tr>
<td>Functional Behavior Assessment</td>
<td>The NSP did not consider Functional Behavior Assessment as a category of evidence-based practice.</td>
<td></td>
</tr>
<tr>
<td>Functional Communication Training</td>
<td>Functional Communication Training was identified as an emerging practice by the NSP.</td>
<td></td>
</tr>
<tr>
<td>Picture Exchange Communication System</td>
<td>Picture Exchange Communication System was identified as an emerging practice by the NSP.</td>
<td></td>
</tr>
<tr>
<td>Structured Play Groups</td>
<td>The NSP did not consider Structured Play Groups as a category of evidence-based practice.</td>
<td></td>
</tr>
<tr>
<td>Technology-aided Instruction &amp; Intervention</td>
<td>Technology-aided Instruction and Intervention was identified as an emerging practice by the NSP.</td>
<td></td>
</tr>
</tbody>
</table>
The following interventions have been identified as falling into the Established level of evidence:
- Behavioral Interventions
- Cognitive Behavioral Intervention Package
- Comprehensive Behavioral Treatment for Young Children
- Language Training (Production)
- Modeling
- Natural Teaching Strategies
- Parent Training
- Peer Training Package
- Pivotal Response Training
- Schedules
- Scripting
- Self-Management
- Social Skills Package
- Story-based Intervention

The following interventions have been identified as falling into the Emerging level of evidence:
- Augmentative and Alternative Communication Devices
- Developmental Relationship-based Treatment
- Exercise
- Exposure Package
- Functional Communication Training
- Imitation-based Intervention
- Initiation Training
- Language Training (Production & Understanding)
- Massage Therapy
- Multi-component Package
- Music Therapy
- Picture Exchange Communication System
- Reductive Package
- Sign Instruction
- Social Communication Intervention
- Structured Teaching
- Technology-based Intervention
- Theory of Mind Training

The following interventions have been identified as falling into the Unestablished level of evidence:
- Animal-assisted Therapy
- Auditory Integration Training
- Concept Mapping
- DIR/Floor Time
- Facilitated Communication
- Gluten-free/Casein-free diet
- Movement-based Intervention
- SENSE Theatre Intervention
- Sensory Intervention Package
- Shock Therapy
- Social Behavioral Learning Strategy
- Social Cognition Intervention
- Social Thinking Intervention
Member-Centered Practices

Primary responsibility of the Care Coordinator

Communication

- Continuous between Care Coordinator in Accessible Language
- Communication between Providers
  - Internal Database
  - Develop a Process for Communication with Multi-Systemic Partners
- Members and Providers Participate in CFT
Member-centered practices

- Integrates Community Resources
- Engages in Networking Opportunities
- Supports and Facilitates Transitions
- Continuous Patient Communication
- Patient-centered Training
- Provides Coaching to Families and Providers
- Provides Case Management
- Continuous Patient Communication

Care Coordination
THS Professionals:
- Psychiatrists
- Psychiatric Family Nurse Practitioners
- Doctor of Osteopathic Medicine (DO)
- Medical Assistants (MA)
- Board Certified Behavior Analyst® (BCBA)
- Registered Behavior Technician® (RBT)
- Licensed Associate Counselor (LAC)
- Licensed Associate Marriage and Family Therapist (LAMFT)
- Licensed Behavior Analyst (LBA)
- Licensed Clinical Social Worker (LCSW)
- Licensed Independent Substance Abuse Counselor (LISAC)
- Licensed Marriage and Family Therapist (LMFT)
- Licensed Master Social Worker (LMSW)
- Licensed Professional Counselor (LPC)

Coming Soon:
Primary health care
- Medical assessment
- Screening for co-morbidities
- EPSDT assessments
Employment
Diet and nutrition
Speech Language Communication

Psychiatry Services

Infant Early Childhood Program

Intensive Outpatient Programs

Direct Service Providers

Outside Agencies & Programs

MMWIA: Whatever It Takes

Behavior Analytic Programs:
FCAP
Language & Learning Center
FBAs
Severe & Complex Cases

Respite Services
Family & provider engagement

Collaboration
- ACEs can not provide all services
- Need for partnerships
  - Medical
  - Behavioral
  - Educational
  - Community

Education
Touchstone Health Services
ACE Trainer
- Direct training for:
  - Families
  - Agencies
  - Stakeholders
- Understanding the system and rights
- Services available in the system
- Evidence-based practices
THS ACE Trainings: Technical support for the whole community

- Applied Behavior Analysis
- Chronic stressors experienced by caregivers and family members of persons with ASD
- Early intervention for children with ASD
- Effective discipline practices
- Effective teaching practices
- Introduction to ASD
- Positive behavior supports (PBS) for classrooms and schools
- Writing measurable treatment/IEP/CFT/ISP goals and objectives
- Nationally recognized best practices outlined in:
4 Years-old
Limited language
New Diagnosis of ASD
Gastrointestinal issues
Recently removed from her home after abuse allegations
Recently started biting her arm, breaking the skin

Meet with ACE Team Lead
External Referrals
Reassess/Discharge

Internal THS Referrals

Gastrointestinal Specialist

Treatment Plan

Language and Learning Center
Functional Behavioral Assessment
Trauma Informed Care

First 7 Days of Care
Next 21 Days of Care
Continuing Care
Thank you