Who’s Screening for Autism Spectrum Disorders? 
The Role Allied Health & Education Professionals Play in Early Detection & Intervention

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Atlanta, GA
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Who IS screening for autism spectrum disorders....

are YOU?
Who IS screening for autism spectrum disorders....

Why should you?
Why Focus on Early Identification?

✓ The prevalence of Autism Spectrum Disorders (ASD) is estimated at 1 in 88 children aged 8 years (CDC, 2012).

✓ Even with increased prevalence and awareness, many children are not getting an ASD diagnosis until years after symptoms appear

- Time gap
- Age of diagnosis
Why Focus on Early Identification?

- Gap between symptoms and diagnosis
  - Mean age of first parental concern is 18-19 months
  - Mean age of autism diagnosis in USA is 34-61 months
- The gap between diagnosis and treatment is 1-2 years
- Importance of early intervention – time lost

Mandell et al., 2005

Rogers, S. (2011) ASHA, San Diego, CA
Why Early ID?!
Words of a parent who has two children diagnosed with autism.....
Screening Practices of Physicians

- 8% of licensed pediatricians routinely screened for ASD (Survey conducted in Maryland & Delaware, 2004)

- No evidence found regarding use of ASD-specific screening tools

It recommended that pediatricians and primary care physicians (PCPs) engage in the following screening practices:

- Conduct an ASD surveillance during every well-child visit
- Screen for ASD at 18 and 24 months
- Screen when parents and caregivers raise a concern
- Use ASD-specific screening tools
Benefits of Early Identification

- Targeted early intervention
- Support and education for families
- Genetic counseling for families
- Improved access & delivery of care
Barriers to Conducting ASD Screenings

Common barriers reported by physicians for not conducting routine screenings for ASD:

- Lack of time
- Not confident in identifying signs of ASD
- Not familiar with ASD-specific screening tools
- Rely primarily on clinical observations
- Expense of screening tools
- Lack of treatment options
Potential Challenges with ASD Screenings

- Complex disorder with an extremely heterogeneous phenotype
- Changes in the understanding and diagnostic criteria of ASD
- Different levels and methods of physician education
Based on studies published in 2005 & 2006, it appeared that the screening and diagnostic practices of pediatricians had not changed since the publication of the AAP practice guidelines in 2001.

No published studies were found to indicate if the screening and diagnostic practices of pediatricians and PCPs had changed since the publication of the revised AAP guidelines in 2007.
To identify the screening practices of pediatricians and PCPs in following AAP guidelines specifically related to ASD in....
Current Study Sample: 1,500 pediatricians and PCPs

481 surveys received (Response rate = 32%)

Response rate for each state:

- Kansas: 39% (n = 197)
- Iowa: 31% (n = 154)
- Oklahoma: 26% (n = 130)

396 surveys included for analysis

223 were pediatricians and 173 were PCPs

Equal number of female and male physicians (n = 198)
✓ 76% (301) were between the ages of 35 and 64 years

✓ 25% (97) were in clinical practice for more than 26 years post residency and 21% (82) were in clinical practice for less than 5 years post residency

✓ 73% (290) worked in either a large or small group practice

✓ 87% (346) held MD credential
Demographic differences among respondents

Distribution of pediatricians and PCPs by age group and gender

Pediatricians, $\chi^2(4, n = 223) = 34.05, p < .001.$

PCPs, $\chi^2(4, n = 173) = 24.59, p < .001.$
Demographic differences among respondents

Distribution of pediatricians and PCPs by years in practice post residency and gender

Pediatricians, $\chi^2(5, n = 223) = 30.58, p < .001.$

PCPs, $\chi^2(5, n = 170) = 21.23, p = .001.$
ASD screening practices of pediatricians and PCPs

- 66 (17%) physicians screened routinely for ASD in accordance with AAP guidelines.
  - 60 were pediatricians and 6 were PCPs
- 228 (58%) physicians routinely screened children for ASD.
- The percent of pediatricians who routinely screened for ASD in each state were:
  - Kansas: 80%
  - Oklahoma: 79%
  - Iowa: 81%
ASD screening practices of pediatricians and PCPs

Pediatricians were more likely to routinely screen for ASD and PCPs were more likely not to screen for ASD, \( \chi^2(2, \ n = 396) = 105.94, \ p < .001 \).
ASD screening practices of pediatricians and PCPs

There was no significant difference in the screening practices of pediatricians and PCPs across three states.
Pediatricians were more likely to routinely screen for ASD and PCPs were more likely not to screen for ASD in all three states.
Pediatricians were more likely to be aware of AAP guidelines to conduct routine ASD screenings, $\chi^2(1, n = 343) = 29.55, p < .001$. 
Differences in ASD screening practices based on demographics

Female physicians were more likely to conduct routine ASD screenings and male physicians were more likely not to conduct routine ASD screenings, \( \chi^2(2, n = 396) = 10.75, p = .005 \).
Differences in ASD screening practices based on demographics

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of gender.
Differences in ASD screening practices based on demographics

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of their age.

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of their age.
Differences in ASD screening practices based on demographics

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of their credential.
Differences in ASD screening practices based on demographics

ASD screening practices of physicians by professional role and practice setting

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of their practice setting.
Differences in ASD screening practices based on demographics

ASD screening practices of physicians by professional role and years in clinical practice post residency

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of the years in clinical practice post residency.
Differences in ASD screening practices based on demographics

Pediatricians were more likely to conduct routine ASD screenings and PCPs were more likely not to conduct routine ASD screenings regardless of their practice community.
Differences in ASD screening practices based on demographics

Direct logistic regression was run to determine the effects of the demographic characteristics of the respondents on their ASD screening practices:

- Professional role was the only predictor of the ASD screening practices of the respondents
- Pediatricians were 12.5 times more likely to screen for ASD using ASD-specific screening tools than PCPs
Screening tools reported to be used to conduct ASD screenings (in the order of frequency reported) were:

- Modified – Checklist for Autism in Toddlers (M-CHAT)
- Checklist for Autism in Toddlers (CHAT)
- Childhood Autism Rating Scale (CARS)
- Autism Behavior Checklist (ABC)
- Screening Tool for Autism in Two-Year-Olds (STAT)
Follow-up procedures for a child who received a positive screening for ASD were:

- Referral to early intervention program
- Referral to ASD specialist
- Referral to speech and language services
- Monitor symptoms and follow-up
- Do a comprehensive ASD evaluation
Barriers to conduct routine ASD screenings

Common barriers identified by the physicians for not routinely screening for ASD were:

- Lack of familiarity with screening tools
- Referral to specialists
- Lack of time to perform screening
- Lack of sufficient training
- Relying only on clinical observations
Pediatricians were more likely to diagnose children with ASD and PCPs were more likely not to diagnose children with ASD, $\chi^2(1, n = 395) = 42.02, p < .001$. 

Pediatricians were more likely to diagnose ASD/PDD than PCPs.
Do pediatricians and PCPs feel confident to identify the early warning signs of ASD?

Mean and standard deviations of the knowledge variables by screening practices

<table>
<thead>
<tr>
<th>Knowledge Variables</th>
<th>Screen for ASD</th>
<th>Do not screen for ASD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability to recognize early warning signs</td>
<td>3.73 (0.83)</td>
<td>2.85 (1.09)</td>
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<tr>
<td>Knowledge of diagnostic criteria</td>
<td>3.45 (0.86)</td>
<td>2.43 (1.05)</td>
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<tr>
<td>Knowledge of empirically supported interventions</td>
<td>3.29 (0.88)</td>
<td>2.30 (1.10)</td>
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<tr>
<td>Knowledge of local referral resources</td>
<td>3.86 (0.76)</td>
<td>3.20 (1.22)</td>
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</table>
Recommendations suggested by the physicians that would help them feel more confident and be better prepared to screen, diagnose, and treat children with ASD were:

- Mandatory developmental or behavioral pediatrics rotation
- Exposure and hands on training with screening tools
- Training on all areas of ASD
- Training on the ASD screening process
- Include ASD training in the curriculum
Support documenting the need for other qualified health & education professionals to take responsibility for conducting timely ASD-specific screenings has been provided.

Surveyed allied health care professionals in Kansas to determine:

1. the amount of pre-professional education accrued in the area of ASD,
2. the presence or absence of pre-professional instruction to screen for ASD,
3. the amount of continuing medical education (CME) or continuing education (CE) received in the area of ASD,
4. their professional responsibility to screen children for ASD, and
5. if and/or how they would like to receive continuing education information in the area of ASD.
Allied health care professionals in Kansas included:

- Physician Assistants (PAs) \( n = 26 \)
- Physical Therapists (PTs) \( n = 68 \)
- Occupational Therapists (OTs) \( n = 55 \)
- Speech-Language Pathologists (SLPs) \( n = 62 \)
## Receipt of Pre-Professional Education on Characteristics of ASD by Professional Role

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<thead>
<tr>
<th>Professional Role</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Physician Assistants</td>
<td>11.5%</td>
<td>88.5%</td>
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<tr>
<td>Physical Therapists</td>
<td>16.2%</td>
<td>83.8%</td>
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<tr>
<td>Occupational Therapists</td>
<td>21.8%</td>
<td>78.2%</td>
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<tr>
<td>Speech-Language Pathologists</td>
<td>11.7%</td>
<td>82.3%</td>
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### Number of Years in the Field

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<thead>
<tr>
<th>Number of Years in the Field</th>
<th>Physician Assistants</th>
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<th>Occupational Therapists</th>
<th>Speech-Language Pathologists</th>
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<td>5</td>
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<td>6 to 10</td>
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<td>21 or more</td>
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### Number of Responses

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<th>Number of Responses</th>
<th>Physician Assistants</th>
<th>Physical Therapists</th>
<th>Occupational Therapists</th>
<th>Speech-Language Pathologists</th>
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<tr>
<td>21 or more</td>
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Receipt of Pre-Professional Education to Screen for ASD

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<tr>
<th>Across Professional Role</th>
<th>Number of Responses</th>
</tr>
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<tbody>
<tr>
<td>Yes</td>
<td>17.5%</td>
</tr>
<tr>
<td>No</td>
<td>82.5%</td>
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</table>

<table>
<thead>
<tr>
<th>Within Professional Role</th>
<th>Number of Responses</th>
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</thead>
<tbody>
<tr>
<td>PA</td>
<td>88.5%</td>
</tr>
<tr>
<td>PT</td>
<td>16.2%</td>
</tr>
<tr>
<td>OT</td>
<td>21.8%</td>
</tr>
<tr>
<td>SLP</td>
<td>11.7%</td>
</tr>
</tbody>
</table>

Physician Assistants: Yes 88.5%, No 11.5%
Speech-Language Pathologists: Yes 83.8%, No 16.2%
Physical Therapists: Yes 78.2%, No 21.8%
Occupational Therapists: Yes 43%, No 57%

Receipt of Pre-Professional Education to Screen for ASD
✓ A higher frequency of SLPs and OTs reported accessing CMEs/CEs on topics related to ASD when compared to PTs and PAs.

✓ For those professionals who reported receiving pre-professional education on characteristics of ASD, a higher frequency of SLPs and OTs reported receiving additional CMEs/CEs than did PTs and PAs.

✓ For those professionals who had not received pre-professional education on characteristics of ASD, a higher frequency of SLPs and OTs reported accessing additional CMEs/CEs than did PTs and PAs.
A higher frequency of SLPs and OTs indicated their work sites provided diagnostic evaluations for ASD.

All participants indicated a preference for a one-day workshop whether it be held on or off site to help them be better prepared to screen for ASD.
This survey confirmed the need for pre-professional and CME/CE that addresses the characteristics and assessment needs of young children among health care and education professionals.

It is time for qualified professionals to begin taking action to support the early identification of ASD in young children.
Professionals who work with young children should be prepared to administer ASD-specific screenings; thus, enabling the receiving diagnostician the opportunity to provide families with an appropriate and well-timed diagnosis.

Improved collaboration among allied health care providers, educational professionals, and the medical community would afford families, who are concerned about their child’s development, the opportunity for a more favorable developmental outcome.
Why a Community Screening/Diagnostic Team & Why at Wichita State University?

✓ Our community needed this!
✓ Interdisciplinary team members available at WSU
✓ Pre-professional training
✓ Opportunities to develop community connections
✓ Research opportunities
### Developing the Interdisciplinary Team

| Establish teams: | Coordinate with local community screening agency – Screen for Success (RUI/USD #259): **Add: Level I Screenings for ASD** | Meet with WSU faculty/staff  
**Interdisciplinary**  
**Pre-professional training** |
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<tbody>
<tr>
<td>• AM/PM assessment team (1X/mo – each team)</td>
<td>Evaluate, modify, &amp; keep working Community OTs &amp; PTs jointed team</td>
<td>Secure partnership w/ local developmental pediatricians</td>
</tr>
</tbody>
</table>
| Visit with & observe other community screening teams | Coordinate w/ Kansas Instructional Support Network (KISN)  
| Initiative Level I screenings & diagnostic assessments | Coordinate with local community screening agency | Set up training for all participants w/ KISN & KU Med Staff |

- **Interdisciplinary**
- **Pre-professional training**
*Developmental Pediatrician

Referral Sources:

– **Screen for Success** (Community Screening Team)
  *(referral will include Level 1 ASD-Screen)*

– **Wichita Public Schools** (Little Early Childhood Program – 3-5 years)

– Other area school districts

– Physicians / Clinical Psychologists

– Self-referred (family members)
Screening Tools

Level 1 Screening Tools:

- Can be used with all children
- Specifically designed to differentiate children (at risk for ASD & typically developing)
- Autism M-CHAT
- Toddler Screening Tool
- M-CHAT Follow Up Interview

https://m-chat.org/
http://www.autismspeaks.org/what-autism/diagnosis/m-chat
Pervasive Developmental Disorders Screening Test – II (PDDST-II) (Siegel, 2004)
**Childhood Autism Rating Scale-2 (CARS-2)**
(Schopler, E., Van Bourgondien, M.E. Wellman, G. & Love, S.)

- **Standard (SF)**
- **High Functioning (HF)**
- **Questionnaire for Parents or Caregivers (CARS2-QPC)**

* *suggested questionnaire for CARS-2 (SF)*
Diagnostic Tools

Autism Diagnostic Observation Schedule - 2

• **Modules 1 through 4:** Catherine Lord, Ph.D., Michael Rutter, M.D., FRS, Pamela C. DiLavore, Ph.D., Susan Risi, Ph.D., Katherine Gotham, Ph.D., and Somer L. Bishop, Ph.D.

• **Toddler Module:** Catherine Lord, Ph.D., Rhiannon J. Luyster, Ph.D., Katherine Gotham, Ph.D., and Whitney Guthrie, B.A.
**Developed Interdisciplinary Teams**

- AM Team: Education (SPED Early Ed), PT, OT, SLP, Aud., Psy.
- PM Team: Education (SPED & Early Ed), PT, OT, SLP, Aud., DH, Psy.

**Coordinated Assessment Schedules with Physician**

- Collect case history & other available testing information
- Contact family & expand/confirm case history information

**Team Meetings to Review Case File, Establish Team Roles & Responsibilities & Determine Assessment Protocol**

- CARS-ST Interview
- ADOS-2 (determine module)
- Other Screenings (gross/fine motor, oral, audiology, cognition)
Assessment Day - #1 (Wednesday)

- Room set up, roles/responsibilities, materials
- Additional file review

Communication & Cognitive Assessment

- Communication Assessment tools selected based on case history / parent report / other testing information
- Cognitive Assessment (e.g., PTONI)

Discuss initial results with family
Assessment Day - #2 (Friday)
- Room set up, roles/responsibilities, materials
- Additional file review

Assessment
- CARS-ST
- ADOS -2 (using appropriate module)
- Additional screenings (child and family) while others score

Score and Discuss Results
- CARS-ST & ADOS-2 - discuss observations
- Groups come together to discuss results
Family Feedback (Family, Faculty, 1-2 students, ARNP)
- Discuss results (from Assessment Days 1 & 2)
- Provide recommendations and resources
- Respond to questions and concerns

Family Transition to Developmental Pediatrician’s Office with ARNP
- Physician Assessment and possible diagnosis
- Concurrently, WSU-CP: AIDT Team write report & fax to physician’s office

Follow Up with Physician and Family as Appropriate
- Finalize report and distribute appropriately
- Follow up with physician
- Follow up with family as needed/appropriate
Spinning – after snack - ADOS
<table>
<thead>
<tr>
<th>Client</th>
<th>Gender</th>
<th>Age</th>
<th>Race</th>
<th>City</th>
<th>Diagnosis</th>
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<tr>
<td>G1</td>
<td>M</td>
<td>3:10</td>
<td>Caucasian</td>
<td>Wichita</td>
<td>Autism</td>
</tr>
<tr>
<td>J1</td>
<td>M</td>
<td>2:10</td>
<td>African American</td>
<td>Wichita</td>
<td>Delayed Milestones</td>
</tr>
<tr>
<td>M</td>
<td>M</td>
<td>1:8</td>
<td>Syrian</td>
<td>Wichita</td>
<td>Autism &amp; Global Developmental Delay</td>
</tr>
<tr>
<td>G2</td>
<td>M</td>
<td>2:0</td>
<td>Caucasian</td>
<td>Iola</td>
<td>Autism &amp; Global Developmental Delay</td>
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<tr>
<td>I</td>
<td>M</td>
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<tr>
<td>P</td>
<td>M</td>
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<tr>
<td>J2</td>
<td>M</td>
<td>3:1</td>
<td>Caucasian</td>
<td>Haysville</td>
<td>Autism Spectrum Disorder</td>
</tr>
</tbody>
</table>
Going it alone can be frustrating....
Engaging in Interprofessional Collaboration is better….

….although it can be challenging at times!
“T. and I want you to know how amazing you and your team are. You all worked so well with G., it was a joy to watch. Thank you for making a scary day into a pleasure. We will never forget the kindness and professionalism extended to us.”
Take Home Message

✓ When possible, get involved with early screenings for children suspected to present with signs & symptoms of ASD.
✓ Collaborate with other qualified professionals to screen, assess, and refer.
✓ Involve families in the early screening and assessment process.
✓ Begin intervention EARLY!!
Thank You for the Work You Do with Children and Families Challenged with ASD!
Please note: **References** for this presentation will be provided upon request.

Please e-mail me at trisha.self@wichita.edu

*Thank you.*