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Funding for this project was provided by Congressionally Directed Funding through the US Department of Health and Human Services, Health Resources and Services Administration Grant Award #H13MC19069

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## Autism Facts

- Autism prevalence is estimated at 1 in 110 in the U.S.
- 1 in 70 children with autism in the nation are boys.
- In ND, current prevalence rates are 1 in 168 school-aged children.
- The number of ND school-age children served under the autism umbrella have increased fivefold in the last 10 years.
- 75.8% of ND students with autism receive services through the 8 largest special education units.
- 24.2% of remaining ND students with autism live in remote/frontier areas with limited access to trained professionals.
- Estimated lifetime cost of autism is \$3.2 million per individual, which means it will cost ND \$1.4 billion in health care services, and lost productivity each year.

## Red Flags for Autism Spectrum Disorders

-  6 months - No big smiles, joyful facial expressions
-  9 months - No reciprocal sharing of sounds, smiles, or facial expressions
-  12 months - No babbling, reciprocal sharing of gestures (pointing reaching, waving)
-  15 months - no words
-  24 months - No two word meaningful phrases without imitation or repetition
-  Any age - Any loss of speech, babbling or social skills



## GPAST Overview

The Great Plains Autism Spectrum Disorders Treatment Program (GPAST) supports infrastructure development and technology innovations for service delivery to rural families of children with autism in North Dakota.

GPAST provides training, research, and diagnostics to North Dakota children and youth suspected of having or diagnosed with Autism Spectrum Disorders (ASD). GPAST services are currently being provided through community based screenings and diagnostic clinics, as well as a variety of research studies.

### Goal 1:

North Dakota will increase its personnel capacity to deliver diagnostic and follow-up services to rural children and youth with ASD and their families.

#### **Diagnostic Clinics**

GPAST has hosted autism diagnostic clinics a variety of communities in ND. GPAST staff worked closely with local teams of professionals to identify potential children for assessment, deliver diagnostic services, and conduct follow-up activities. Diagnostic assessments included both onsite personnel and staff who participated via telehealth technology.

#### Process:

- Identify community and site with videoconferencing capability
- Conduct screening activities with local teams
- Identify children requiring full assessments
- Schedule clinic day
- Secure diagnostic team
- Conduct assessments both onsite and via distance
- Conference with family and local team immediately following assessments
- Provide diagnostic impressions and recommendations for interventions
- Conduct follow-up activities on an individual basis

Continued efforts in using telehealth technology to involve distance professionals are needed. Thus far, GPAST staff have connected a psychologist, nurse, and pediatrician via distance technology; saving schools and families travel time and expenses. GPAST staff are interested in connecting other professional disciplines in the future.

### Goal 2:

ND will have an effective telehealth system protocol for delivery of services to rural children and youth with ASD and their families.

GPAST is currently conducting a variety of research projects in the state of ND for individuals with ASD; as well as evaluating the reliability and validity of ASD assessment and diagnosis using telemedicine. We also provide other assistive technology model demonstration projects, which are smaller versions of full research projects designed to introduce cutting edge technologies to individuals with ASD.



## Model Demonstration Projects

#### **Video Self Modeling**

Research supports the efficacy of using video self modeling (VSM) as a technique to improve social skills in children with ASD. GPAST staff worked with families in implementing VSM in their home and social settings. Use of VSM was initially pilot tested on young children ages 5-7 years. GPAST staff would like to include adolescents with ASD in future studies paired with social mentors to not only gain skills during video review but to also practice those skills in real life.

#### **iPod/iPad Model Demos**

Applications used on Apple iPods or iPads may provide a full-featured communication solution for people who have difficulty speaking, or for individuals with other communication or social weaknesses. Parents appreciate these tools because they are easy to program and make their children fit in with their peers. These tools can be used for children with ASD, cerebral palsy, down syndrome, developmental disabilities, Lou Gehrig's Disease, traumatic brain injury, aphasia, apraxia, and more.

#### **Pulse Smart Pens**

The Pulse Smart Pen records and links audio to what you write, so you never miss a word. GPAST staff have demonstrated the Smart Pen with a 15-year old male diagnosed with Asperger's for use during preparation for finals week at school.

#### **The Transporters DVD**

*The Transporters* is designed to be used with children aged 2-8 years to teach emotion recognition. It consists of short videos and quizzes. *The Transporters* Research into the effectiveness of the series was conducted on children between 4 and 8 years old. *The Transporters* research showed that in all tasks in which the children were tested, most caught up with their typically developing peers. The results suggest that *The Transporters* DVD is an effective way to teach emotion recognition to children with ASD and that the learning generalizes to new faces and new situations.

### Goal 3:

ND will have an improved infrastructure for developing research, training, and intervention systems for children and youth with ASD and their families.

GPAST utilizes a variety of methods to increase public awareness regarding ASD including:

- Providing ASD presentations and training for families and professionals in their local communities
- Hosting ASD training events on the Minot State University Campus
- Disseminating information through our GPAST website ([www.ndcpd.org/autism](http://www.ndcpd.org/autism)), brochures, and posters
- Developing a North Dakota specific ASD Resource Website

GPAST will improve the North Dakota infrastructure by including parents and professionals in many of our strategies through our Autism Advisory Council, incorporating the State Plan for Autism into our GPAST work plan, and attending the State Autism Task Force meetings.

## Training

Possible training topics include, but are not limited to:

- Red Flags of Autism
- General Overview of ASD
- Evidence-Based Practice
- Use of Technology to Provide Services
- Positive Behavior Supports
- Applied Behavior Analysis
- Lifespan Supports
- Structuring the Environment
- The Rage Cycle and Crisis Intervention Planning
- Social Stories & Powercards
- Theory of Mind

