

# MANAGING AUTISTIC SPECTRUM DISORDER (ASD) WITH TECHNOLOGY

MAY 2018 TECH BRIEF FOR HEALTH CARE TALENT NETWORK



## Communication Technology for ASD

April was National Autism Awareness Month. From the workforce perspective, the most important thing to be aware of is that the prevalence of children being diagnosed with autistic spectrum disorders is growing. According to the Center for Disease Control, nowhere is ASD more pervasive than in New Jersey.

Autism involves difficulties in communication and social interaction, along with restrictive or self-injurious behaviors. Roughly 25% of those with ADS have no spoken language at all. Executive function limitations can make organization and coping difficult. On this side of the spectrum, ADS is highly disabling.

Autism is not linked to intelligence. So, on the other end of the spectrum, ADS or Asperger's Syndrome can be a beneficial form of neurodiversity. Dr. Temple Grandin used her abilities to improve the care of livestock. Dr. Stephen M. Shore considers autism his superpower.

In between, there are hundreds of thousands of children and adults in NJ who need varying levels of support for communication and behavior. Current treatment to manage autism is education and therapy. Therapy for autism is often complicated by coexistent issues like hyperactivity, dyslexia, mutism or aggressive tendencies and cognitive/mental conditions requiring medication such as epilepsy, obsession or anxiety.

Most autistic citizens enjoy interaction technology; even the highly disabled can communicate through touch screens. Furthermore, there is emerging AI technology in behavioral and mental health care. Currently in NJ services are provided by small, private companies using government funds. Certifications are not required; training is on-the-job. There have been minor scandals. This is a growing area ripe for disruptive change.

## Labor Force Takeaway

NJ's Industry Valued Credentials do not include training to support/treat developmental disabilities. Albeit, entry level positions care for those with ASD are paraprofessional and pay just \$12/hour or \$18K/year. Understandably, turnover is high. There is no direct career path leading to a special education teacher or health care professional.

Given the comfort autistic students have with machines, opportunities to utilize AI and communication tech with this population will expand. Sensors that can detect stress before a melt-down are being developed. The cost savings of technology vs. labor can potentially offer a new career path in this growing field.

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# Developmental Disabilities Need Specialists

Most ASD care providers are private businesses. Private schools use [municipal funds](#) allotted to the student. Health insurance and private funds pay for therapies such as physical (PT), occupational (OT), speech and equine. When a child ages out of their education at 21, NJ has [a few](#) day programs in NJ to help adults maintain self-caring abilities. Day programs are funded by NJ's Department of Developmental Disabilities at roughly of \$45/day for high functioning, up to \$97/day for less well functioning. NJ expects an increase in day programs to lead to employment.

While there is no cure for autism, there are [therapies](#) that help children recover [behaviorally](#). The two that are best known are [adaptive behavior analysis](#) (ABA) and [DIR/Floortime](#) where DIR stands for Developmental, Individual-Difference, Relationship-Based. New Jersey private schools catering to the ASD community generally subscribe to one methodology or the other. The inclusion of technology in the curriculum is largely incidental.

The percentage of children identified as [having ASD is 2.5%](#) in parts of New Jersey. ASD is more prevalent in boys than girls; albeit girls are often very good at masking. White children are more likely to be identified with ASD than are African American or Hispanic children.

For families there are certified [travel destinations](#). [Sesame Place](#) in Pennsylvania is the closest to New Jersey. Many others are beach resorts. There is every reason to encourage Jersey shore towns to consider certification as sensory-friendly, given how many families in the state have a member on the spectrum.

A day program for adults, [Green Vision](#) (GVI), offers [technology and supported employment](#) making it so popular that it is franchising across the state. Data from GVI shows that despite conventional wisdom to the contrary, [job skills can improve](#) for this population well after the end of direct therapeutic intervention. Green Vision provides a career pathway that is highly entrepreneurial.

Certifications for behaviorists working with children include [DIR/Floortime](#), [Board Certified Behavior Analyst®](#), [Certified Autism Specialist™](#), [Certified Cognitive Coach](#), and [Certified Autism Travel Professional!](#). There does not appear to be a special certification for professionals working with the adult population. Green Vision hires employees with experience teaching in a school for autistic students, and then does its own training. Training is also part of the franchising agreement.

Transitioning to work in an era that is moving towards an understanding of neurodiversity is becoming a possibility for more citizens with ASD. That said, most work places are not equipped to handle behavioral issues or to provide a quiet-room. Technology to aid with communication is [currently available](#). Technology to [predict and manage behavior](#) is under development. One pilot program is starting in [Canada](#). In the US, it will likely be used for prevention of suicide in the [veteran](#) population.

New Jersey has an unusually high rate of autism; both the number of diagnoses and the severity of cases is growing. The cost of caring for autistic citizens is high ([6x](#) above average). Costs will increasingly fall on the state. Many families do not have the money or the ability to provide extra medical and educational care. That's the bad news. The good news is that NJ could become a center of excellence for treating and managing ASD. Under the auspices of the HCTN and the RHT TN, NJ could develop the best practices and encourage medical travel and tourism.