INFORMATION BRIEF

Preschoolers with Autism: Comparing Early Interventions in Nova Scotia and New Brunswick

Autism spectrum disorder (ASD) diagnoses have increased dramatically, with a current Canadian prevalence estimate of 1.5%. The severity and lifelong impact of ASD have enormous social and economic implications. The provision of diagnosis and delivery of treatment represent major challenges for publicly funded health, education and social services in Canada. Many provincial governments invest considerable resources in children with ASD. Yet, what is being offered is not currently yielding effective and equitable outcomes for all families. Governments need to invest in processes that support diagnostic accuracy and ensure access to timely specialized early intensive behavioural intervention (EIBI).

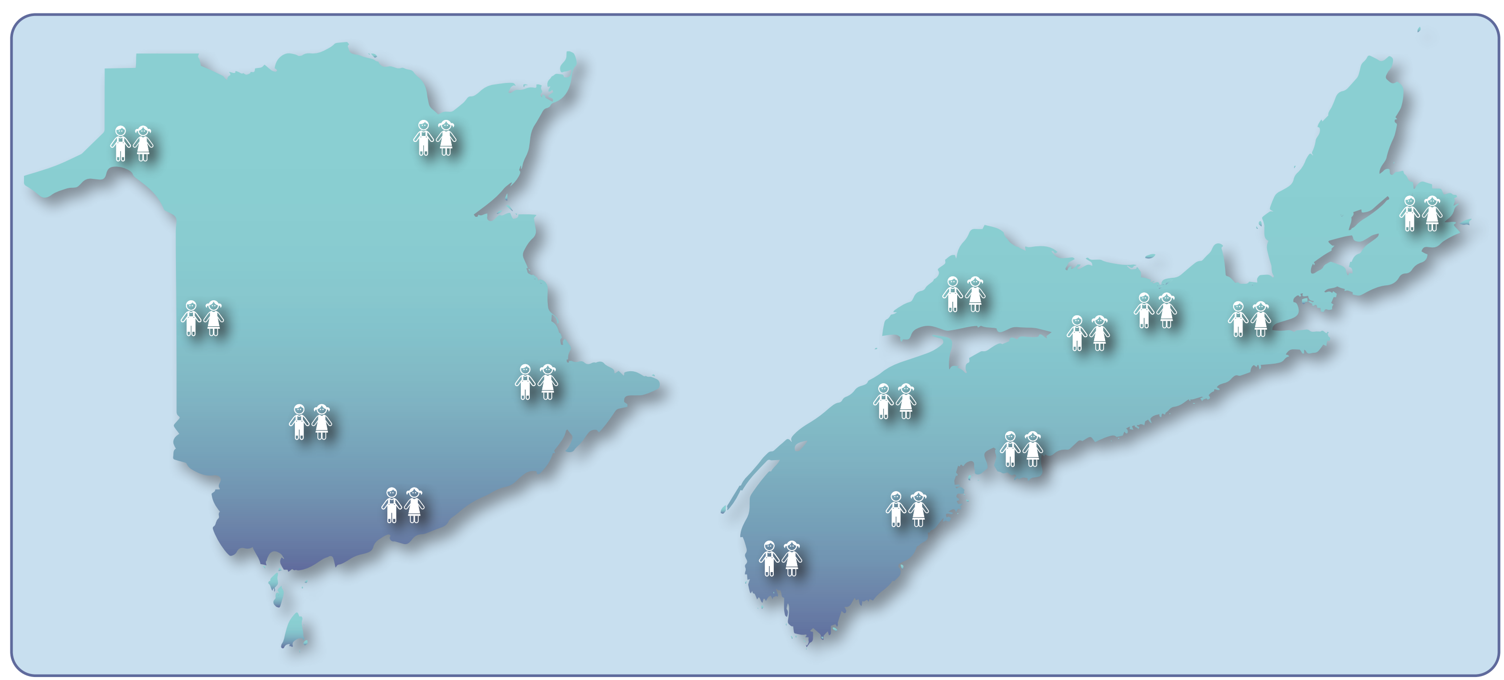
- What are the implications of different approaches to diagnosis and intervention?
- Which interventions yield the best outcomes?
- Do provincial programs benefit all children with ASD equally?

The PATI study is the first large-scale comparative study of ASD services within Canada. It is the first study of its kind to directly involve government representatives as formal research partners.

The Preschool Autism Treatment Impact (PATI) study found that:

- Prolonged wait lists in Nova Scotia meant that children started treatment when they were older, making them more developmentally disadvantaged, with more intractable symptoms.
- Children in New Brunswick received almost double the treatment hours in one year as children in Nova Scotia.
- The average child in both provinces gained skills at the same pace but reached different outcomes.

Data for the PATI study were collected between 2013 and 2017, from 6 agencies in New Brunswick and 9 regional teams in Nova Scotia



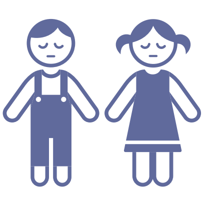
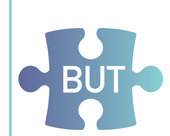
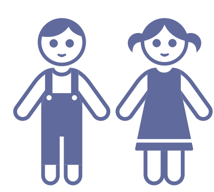
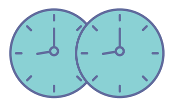
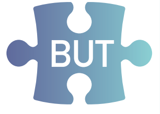
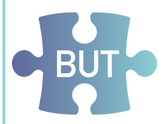
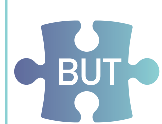
Similar Provinces, Different Approaches

The Preschool Autism Treatment Impact (PATI) study compared public diagnostic services and program delivery models for over 600 children with ASD in New Brunswick (NB) and Nova Scotia (NS) between 2013 and 2017. Although the two provinces are demographically similar, significant variations were found.

	New Brunswick	Nova Scotia
Diagnostic approach	Physicians and psychologists using DSM[1] criteria; No provincially mandated ASD-specific training or guidelines	Regional teams using provincial guidelines; specific training in ASD diagnosis
Average time from diagnosis to start of treatment	4 months	13.5 months
Child characteristics	• More children per capita enrolled than in Nova Scotia • Average age: 3.5 years • Higher adaptive skills • Less severe ASD symptoms	• Fewer children per capita enrolled than in New Brunswick • Average age: 4.5 years • Lower adaptive skills • More severe ASD symptoms
Intervention model[2]	Comprehensive EIBI • Targets communication, academic, social, self-help and behavioural skills • Parental involvement is encouraged but not mandatory	Pivotal Response Treatment and Positive Behaviour Support • Primary target is social-communication skills • Includes parent-coaching component
Treatment Duration	• Intervention services are offered from diagnosis until school entry • Approximately 1000 hours per year	• Only one year of intervention services is offered • Approximately 550 hours in total

[1]Diagnostic and Statistical Manual of Mental Disorders. [2]Both intervention models (Comprehensive EIBI and Pivotal Response Treatment) use the principles of Applied Behaviour Analysis (ABA). Both models have been established as effective for children with ASD.

PATI Study Results

What We Know		What We Don't Know
NS children were typically more severely affected and were older at the beginning of treatment. They continued to lag behind their NB peers after one year. 		What would the outcomes be if children in both provinces were diagnosed at the same age, using the same diagnostic approach? 
NB children received almost double the treatment hours in one year as NS children. 		What would the results be if children in both provinces received the same number of treatment hours?
The average rate of progress over the first year of treatment was the same in both provinces. That is, the average child in both NB and NS gained skills at the same pace but reached different outcomes.		Would the rate of progress differ if these treatment options were delivered to children with similar profiles?
Children in both provinces achieved similar gains in adaptive functioning and reductions in challenging behavior after one year of treatment. NB children continued to receive treatment until they entered school.		What if researchers followed these children throughout their school years to learn more about outcomes over time?

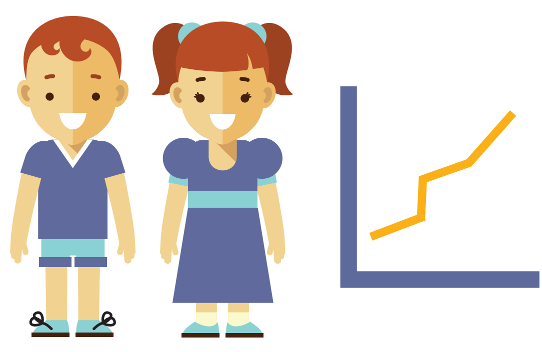
The New Brunswick Story

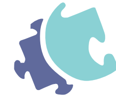
In New Brunswick, more children were diagnosed earlier and the children starting treatment were less severely affected.

Diagnoses are made by a physician or psychologist using DSM criteria. There is no provincially mandated ASD-specific training or guidelines. Waitlists are shorter but the diagnostic bar is set lower.

Reaching more children may be seen as a desirable outcome. On the other hand, risk of over-diagnosis may result in allocation of resources for some children who may not require this intensive treatment program.

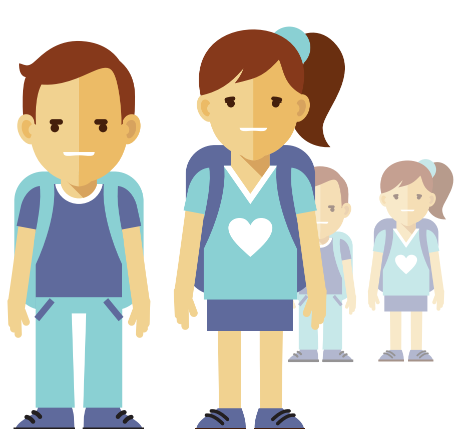
On average, children are younger and have higher adaptive skills and less severe ASD symptoms. This may maximize their potential to benefit from treatment.





The Nova Scotia Story

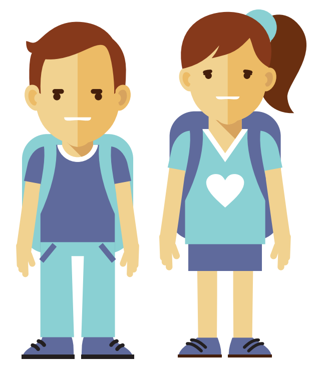
In Nova Scotia, fewer children were diagnosed later and the children starting treatment were more severely affected.



Diagnoses are made by designated regional ASD teams following provincial diagnostic guidelines. Wait lists are longer but the diagnostic bar is set higher.

A higher diagnostic bar means a smaller chance that children without ASD access treatment. Treating fewer children requires fewer resources.

On average, children are older and more severely affected when starting treatment, making treatment more challenging. This may reduce their potential to benefit from treatment.



Understanding the Consequences of ASD Policy Choices

Governments achieve the best results when the implications of policy decisions are assessed. The PATI study suggests that the characteristics of the children being treated reflect, in part, the diagnostic systems that have been chosen. In Nova Scotia the rigorous diagnostic system allows for identification of children who need ASD-specific interventions, but longer waitlists create delays, perhaps resulting in further impairment. New Brunswick's more open approach yields a greater risk of over-diagnosing ASD, with associated cost implications. Lessons can be learned from both approaches. The need for accurate diagnosis should be balanced with ensuring that all children receive both timely diagnosis and appropriate intervention.

	Evidence From PATI	Lessons Learned	Next Steps
Does more intervention produce better results?	The rate of progress over the first year of treatment was the same in NS and NB, despite NB children receiving almost double the treatment hours.	Increasing treatment hours will not necessarily produce better outcomes for all children. Models that incorporate parent training may maximize government resources.	Encourage research-policy collaborations to investigate what treatment approaches and intensity are needed to yield the best long-term outcomes for individual children and families. Provide the least intensive program needed to adequately address each child's unique skills and challenges.
Are all children succeeding equally?	Greater progress was observed for children whose abilities were in the average or greater range before treatment began. Children in both provinces who were more severely affected showed less progress.	Not all children and families benefit equally from any given treatment approach. Current treatments are more effective for children with less severe impairment.	Autism is a spectrum disorder. A spectrum of treatment options, based on evidence, should be offered. Provide specialized interventions for children whose functioning is the most impaired and whose long-term needs will be greatest.
What do parents think?	Overall, parents in both provinces were very satisfied with treatment. Slightly higher levels of satisfaction in NS seemed to be linked to parent coaching.	Parents gained confidence in their own skills when they were taught practical strategies to help their children succeed.	Involve parents early by providing direct coaching in a parent-mediated treatment model. Increase long-term supports for families of more severely affected children, whose gains will be slower and whose outcomes may be less optimal.

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