

Submission to the Australian Government's Early Years Strategy



Introduction

AEIOU Foundation welcomes the opportunity to provide a submission to the Early Years Strategy consultation process to help shape the Australian Government's vision for the future of our nation's children and their families. We strongly believe in the basic premise mentioned in the discussion paper's foreword – that every child deserves the opportunity for the best start to life; a chance to achieve their goals and dreams.

AEIOU is proud to make a submission that gives voice to, and advocate on behalf of, a specific cohort of children whose development in early years is critical in helping them lead their best lives into the future: autistic children aged 2-6 with complex needs. A strong start in the early years for this cohort, using evidence-based and specialised services like AEIOU's, will greatly increase the likelihood of successful outcomes for these children throughout their lives.

This submission responds to the guiding questions suggested in the discussion paper and draws on AEIOU's vast expertise and experience in the field of autism-specific early intervention for children with high disability support needs.

About AEIOU Foundation

AEIOU Foundation is one of Australia's largest providers of autism-specific early intervention for children under six years of age. Operating 11 centres across regional and southeast Queensland, South Australia, and the ACT, AEIOU supports around 300 children each year.

For more than 18 years, we have supported and equipped thousands of children to develop the foundational life skills required to independently increase their social, educational, and economic participation in the community.

Children are supported by an expert transdisciplinary team of clinicians and educators, who share the responsibility of assessing, planning, delivering, and evaluating each child's individual plan. Teams are comprised of speech pathologists, occupational therapists, behaviour analysts, teachers, early childhood educators, early intervention specialists and allied health assistants.

The National Disability Insurance Scheme (NDIS) accredited service integrates evidence-based therapy, the early years learning framework (EYLF) and care in a holistic, naturalistic setting. Children who are typically unable to access mainstream settings are engaged to actively participate in both therapy and approved learning frameworks to achieve their individual goals through quality learning and developmental opportunities.

Our mission is to enhance the lives of children with autism and their families, through evidence-based, successful early intervention programs and practical support.

Our research

AEIOU's commitment to bettering outcomes for children in their early years is highlighted by our significant investments in conducting research on the impact of early intervention services for autistic children.

The findings of this research, which have been appended to this submission (see Appendix 1), unequivocally demonstrate that early intervention not only facilitates notable developmental progress for autistic children, but also yields impressive returns on investment. The data presented

in this research substantiates the life-changing impact early intervention services can have on autistic children.

For this reason, we believe the Early Years Strategy should formally recognise the importance of early intervention for autistic children, as a part of wider Australian Government commitment to ensuring the National Disability Insurance Scheme ongoing viability and funding of autism for people with complex needs.

Response to consultation questions

What vision should our nation have for Australia's youngest children?

A key aspect of our vision for Australian children should be ensuring that they have access to basic human rights, including the right to childcare regardless of their individual abilities. To achieve this, we need to recognise that mainstream childcare environments may not always be the best fit for children with additional needs. It is therefore crucial that families have the choice to access specialist support providers, and that funding follows the child throughout their early years journey.

It is important to address the lack of funding for children with additional needs in specialist environments like AEIOU, as they are currently discriminated upon by being excluded from mainstream care and underfunded for a specialist environment.

To ensure the best possible start to life for the next generation of Australians, the following must also be considered:

- Providing a wide range of accessible services that cater to the diverse interests, needs, cultures, and challenges of children in this age group.
- Offering early childhood education and care, as well as specialist early intervention, to all those who require it.
- Providing integrated therapy and co-located services, where teams work collaboratively around the child.
- Promoting interdisciplinary collaboration among professionals and families to ensure an inclusive and high-quality start to life.

What mix of outcomes are the most important to include in the Strategy?

It is crucial that the Early Years Strategy includes a focus on accepting and educating about the diversity of childhood experiences, including but not limited to disability, mental health, and neurodiversity. By doing so, we can create a more inclusive and understanding community that values the unique experience of all individuals.

Additionally, promoting emotional regulation and healthy choices, such as through nutritional education, is a critical aspect of early childhood development. Such skills and knowledge should be included and implemented in a holistic manner through early childhood education and care (ECEC) services. Instilling these values in early years will ensure children are better equipped to lead healthier lives as they grow.

It is also important to consider school starting age as a factor for outcomes of children transitioning between play-based early learning programs and formal education. The discussion paper has indicated a nation-wide approach to school starting age, with standard enrolment in formal schooling set to be age five. This is in direct contrast to the evidence base that indicates future learning outcomes are improved with children starting school at age 6.

There has been a worldwide trend in delaying the start to formal education to 6 and even 7 years, with all research and evidence indicating that there are improvements for long-term emotional regulation, attending skills, learning outcomes and social development. Evidence and research trends are also proving that children who commence formal schooling at age 5 have an increased risk of mental health issues and behavioural challenges.

What specific areas/policy priorities should be included in the Strategy and why?

The development of identity in early childhood is important and should be a priority in the Early Years Strategy. It should make clear that identity formation goes beyond just personal preferences of likes and dislikes, but also involves understanding a child's emotional state and providing intervention strategies when required.

Children's agency and child-led activities are often misunderstood or misinterpreted in ECEC services. The strategy should note that in ECEC settings, more attention and consideration should be given to promoting and supporting children's agency and child-led activities.

A policy priority that should be included in the strategy relates to the funding of specialised care. Current NDIS policy does not fund specialised care but does support therapeutic care. Children who do not succeed in early childhood education are excluded from childcare and often left without support. Policy in this area should be reviewed to ensure funding is available to these children, who are often forgotten.

What could the Commonwealth do to improve outcomes for children—particularly those who are born or raised in more vulnerable and/or disadvantaged circumstances?

There are several steps the Commonwealth could take to ensure those born or raised in vulnerable and/or disadvantaged circumstances have improved outcomes on par with their peers.

It should be a requirement that all teaching degrees and diplomas include practical modules on supporting those with diverse learning needs, such as those with learning difficulties, developmental disorders, and mental health diagnoses.

A particular focus is needed in autism, with one child in every two classrooms (1:70) having a diagnosis of autism. Teachers are likely to have many autistic students in their career and would require strategies and ongoing professional development to ensure they can provide such students with adequate care and education.

Additionally, there should be increased funding from both federal and state governments for community-based programs that are not dependent on National Disability Insurance Scheme (NDIS) funding. This will allow all children who require support to access services, while children who require further intervention could then go through the process of seeking a NDIS plan as required. As indicated by our research (see Appendix 1), providing early support can help children catch up to their peers and improve their access to future education.

Further, for those families that have a child with additional learning needs, more education and guidance should be given to ensure they are aware of the pathways of support that are available to them and their children. This is especially heightened in situations where families are in disadvantaged or vulnerable circumstances. Education to health (e.g., General Practitioners) and early years providers is essential in this space.

What areas do you think the Commonwealth could focus on to improve coordination and collaboration in developing policies for children and families?

Empowering parents with the knowledge and skill to support their children is particularly important. Statistics show that children that do not attend ECEC services are limited to the exposure and learning opportunities of the fundamental skills for school entry.

“Community for Service and Services for Community” can be the best approach to address this problem. Children who do not attend ECEC services could have been attending different community services. The Commonwealth should work with these community organisations and services to ensure they complement each other for the quality life of children.

What principles should be included in the Strategy?

A key principle that should be included in the strategy is the importance of collaboration between the local community and ECEC services in supporting young children. It is crucial to ensure different services and agencies that operate in local communities work together to provide the best possible support for children and their families.

A service-lead approach would be the most effective way to coordinate support and resources for children and families, working in partnership with other services and the wider community.

Are there gaps in existing frameworks or other research or evidence that need to be considered for the development of the Strategy?

The public health model highlights that both health and education services should be universally available to children. However, flaws exist in the system as it does not provide the variety and diversity of support needed for children with additional needs. Children with additional needs may require specialised support services that are not necessarily supported in the universal system.

Diversity of offerings can also be restricted. For example, if specialist early childhood services or educational facilities like special schools are unavailable to a child (due to location, number of existing enrolments etc), they are forced to attend unsuitable mainstream alternatives.

Without access to specialised services children with additional needs may not receive the support they need to thrive and develop.

Appendix 1 – Summary of AEIOU Research data
(source: presentation to NDIA, February 2020).

NDIA pre-reading AEIOU Foundation February 2022



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*Report prepared by AEIOU Foundation’s Research and Assessment team. The content of this report is **confidential** and intended only for those attending the February 22, 2023, briefing with the AEIOU Foundation. It is not permitted to share any part of this report with any third party.*



Executive summary

AEIOU Foundation is a specialist provider of autism-specific early intervention for children with high support needs who are aged from 2-6 years. Established in 2005, AEIOU operates 11 centres, enrolling up to 300 children each year in Queensland, South Australia, and Canberra.

The service is highly individualised and designed to meet the needs of children with profound needs (i.e., level 2 or 3 autism (APA, 2013)) with an average age of diagnosis of 35.27 months (just over 2 ½ years). These children typically experience pronounced complexities during infancy and early childhood. AEIOU serves this niche cohort of children and families to build capacity, enable community participation, and support a more successful transition to school (including mainstream and special school environments).

AEIOU conducts a range of standardised clinical assessments, enabling benchmarking of how well a child performs on a set of tasks and compared with a group of children the same age. Recently, historical data has been digitised, and AEIOU uses this, along with up to the minute clinical assessment data. The data warehouse contains longitudinal data from close to 800 autistic children who received early intervention (EI) at AEIOU and has the potential to be of national or international significance.

This paper will discuss gains seen in this cohort as a result of AEIOU's specialist service and how AEIOU uses this data to inform service fidelity, including but not limited to how the amount and duration of early intervention is determined. Analyses demonstrate a significant improvement in age-adjusted early learning skills (language, perceptual abilities, cognitive ability and motor development) where children enter AEIOU with less than half of the expected early learning skills of a typically developing peer and exit service (after one or two years depending on EI requirements) with a significant increase in early learning skills, on a trajectory above what would be expected of a typically developing child, despite being profoundly autistic.

This is also the first look at the latest cost-benefit modelling, and how AEIOU's unique service benefits the community, including direct cost savings to the NDIS over the lifetime of these children. Modelling demonstrated a substantial economic benefit that equates to approximately \$297,000 per child in service. The cost-benefit analysis found that for every \$1 invested in delivering intensive Early Intervention at AEIOU, a societal return of \$6.16 is derived. It is noteworthy that of this total, \$4.58 is direct cost saving to the NDIS.

AEIOU has long held an interest and commitment to research, and founded an advisory board comprised of specialist researchers in the fields of child development, therapy and education and intervention. The Autism Research and Innovation Committee (ARIC) was established in 2010 and meets monthly to assess internal and external research priorities. It is a knowledge hub for information sharing.

Reflective of this commitment, AEIOU has assessed each child upon intake, 12-monthly and on exit. However, until recently, this has been a manual process, largely due to available resources. In 2022, philanthropic funding was awarded to AEIOU, enabling sophisticated data linkage. This investment means AEIOU can now, for the first time, examine and probe the historic and real time data. The potential is limitless.

Background

Autism spectrum disorder (ASD), whilst heterogenous in its prognosis, often impacts a child's social and cognitive development. Children with ASD are likely to experience deficits in social and communication domains, cognitive and motor skills; and often present with restricted and repetitive behaviors (APA, 2013; Dale et al., 2022; Elliott et al., 2021). These deficits create disadvantages for autistic children and individuals in their ability to benefit from educational settings, and in areas of daily living and independence (Trembath et al., 2019).

Changes to the diagnostic criteria for autism in the DSM-5 (2013) where autism diagnoses were collapsed under one umbrella term, Autism Spectrum Disorder (ASD), means the range and severity of symptoms, and therefore requirements for support, vary widely. The cohort at AEIOU comprises primarily of children with very high support needs – profoundly autistic children diagnosed as level 2 or 3 autism (APA, 2013) with an average age of diagnosis of 35.27 months (just over 2 ½ years).

Early intervention is considered *best practice* for improving and supporting positive outcomes for autistic individuals. Early intervention generally involves programs and techniques to improve skills within practical, social, cognitive, and academic domains (Rivard et al., 2019). The benefits of early intervention for ASD are well documented (Lovaas, 1987; Dawson et al., 2010; Tonge et al., 2014; Estes et al., 2015) and supported by recent literature which aligns with early studies indicating that early intervention provides positive outcomes for autistic children.

About AEIOU Foundation

AEIOU, established in 2005, delivers an integrated service, where children are supported in a naturalistic environment, with a consistent team of therapists and highly trained early educators and teachers. These teams comprise speech and language pathologists, occupational therapists, behaviour analysts and therapists and other Allied Health Assistants.

Outside of scheduled therapy sessions, children work through a specialised curriculum in a naturalistic teaching environment. The teaching curriculum is adapted from a variety of peer-reviewed and research-based assessments and curriculums, including those specified for children with ASD and is unique to AEIOU. The long daycare aspect of the service ensures children with autism maintain access to supportive, high-quality early education and care opportunities, including but not limited to supporting prep-readiness. More than a convenience, it ensures a holistic approach to education, care and therapy needs for a child and their family.

Children are engaged, respected, and included in an environment catering to their unique needs. Parents and carers also receive formal and informal support, with a focus on building capacity for the family unit.

Clinical Assessment

As part of each child's placement at AEIOU, standardised assessments are conducted at intake, at 12, 24, and 36 months, and upon exit (if exiting prior to 12-monthly assessment). These include a combination of parent questionnaires and examiner administered individual assessments. Assessments are conducted for the purpose of measuring progress over time,

informing the AEIOU curriculum, and to provide supporting information to access NDIS funding.

Standardised clinical assessments enable us to benchmark how well a child performs on a set of tasks as compared with a group of children the same age. Parent questionnaires involve families completing a range of measures of their child’s functioning. Individual standardised assessments are completed in-person with the child by a trained Assessment Coordinator, or with a speech pathologist. These standardised assessments provide information about children’s cognitive functioning, communication, and their autism symptoms. A full list of assessments and questionnaires can be seen in *Appendix 1*.

Assessment on entry to AEIOU show average early learning skills (as measured by the *Mullen Scale of Early Learning*) are less than half of what is expected by a typically developing preschooler.

In line with an evidence-based, data driven approach to delivering therapy, AEIOU uses clinical assessment of developmental skills to determine the amount and duration of Early Intervention (EI) required. This has led to the formation of two distinct cohorts within our service – 1. children with a higher relative level of age-adjusted skills who respond to therapy quickly and are ready to be transitioned to their next educational setting within a year and, 2. Children who enter AEIOU with a lower level of age-adjusted skills and require two or more years of intensive EI to be ready to transition to their next setting.

Digital Data Portal

Operating since 2005 and now supporting over 300 autistic children, aged between 2-6, and their families each year; AEIOU is one of the largest early intervention providers in Australia. As seen in *Table 1 (see over)*, data from almost 800 autistic children who consented to participate in research, inclusive of five specific data points (longitudinal design), has been collected to date and is available on our online data warehouse.

Table 1. Sample sizes and basic demographic information of the child files contained in the data warehouse. Each file contains up to five data points each with a suite of clinical assessment, qualitative and demographic data.

Measure	N	%
Total Files in Data Portal	785	100
Sex		
Male	593	80
Female	148	20
Indigenous Australians		
Australian Aboriginal	43	7.1
Australian South Sea Islander	1	0.2
Torres Strait Islander	3	0.5
Not Indigenous	548	90.4
Prefer not to answer	11	1.8
Culturally and Linguistically Diverse		
Yes	223	28.4
No	430	54.8
Did not answer	132	16.8

The data was brought online in late 2022; a specialist research team and AEIOU's research partners at well-known educational institutions are continuing to probe the data. Recognising the longitudinal nature of this database and the volume of information collected at each timepoint, we are presented with unique and exciting opportunities in this field of research and EI application. Of note, we have a cohort of 47 autistic First Nations children, which will be a key priority for future research.

The focus of initial analyses reported in this paper is the *Mullen Scale of Early Learning* (Mullen), as this provides an overview of early learning skills (language, perceptual abilities, cognitive ability, and motor development) and is widely used in ASD research.

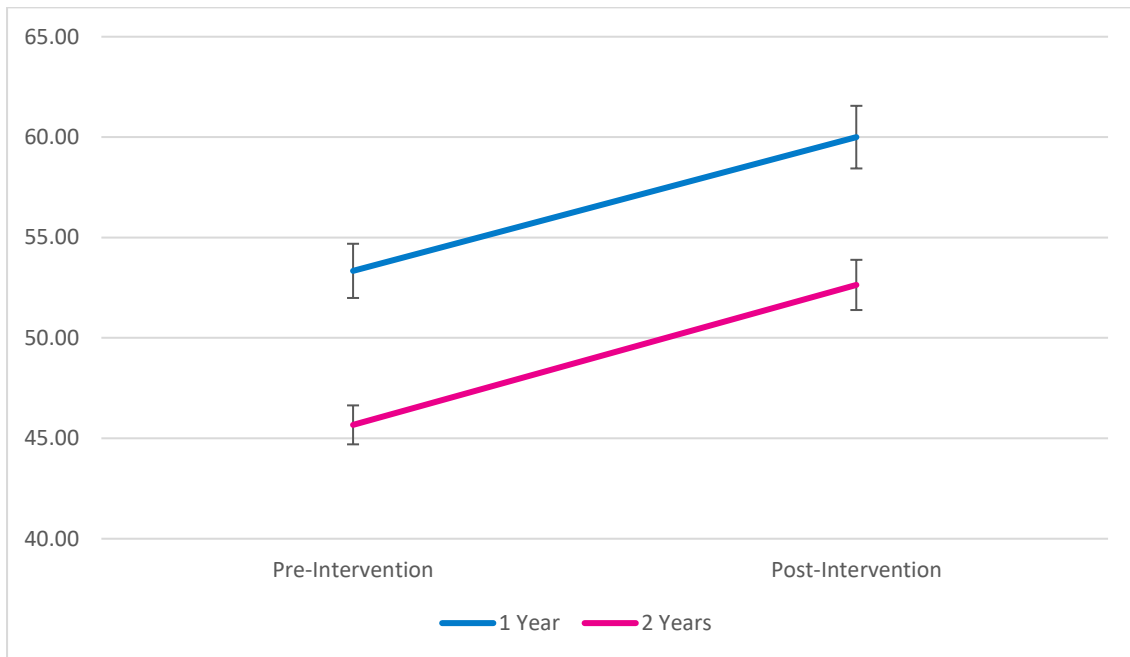
First Findings

In the absence of a control group, it is important to account for any age-related changes that occur in early learning skills and separate the effects of EI to gains that occur naturally with aging. Mullen Developmental quotients (DQ's) are age-adjusted scores that benchmark how a child performs on a set of tasks as compared with a group of children the same age. A typically developing child would have a score of 100 that would remain stable over time.

Figure 1 shows the Mullen DQ's for our one- (n = 471) and two-year (n = 232) cohorts pre and post Early Intervention. Data was excluded for 82 participants with reason for exclusion being: only one time point of data; data collected +/-3 months from the 12- or 24-month mark; surpassed the upper age limit (68 months) for calculation of Mullen scores.

A linear mixed effects model was run with to determine whether there was a significant between-subjects effect of group and within-subjects effect of Mullen DQ's. Results demonstrated a significant difference between one- and two-year cohorts' pre-intervention, where the two-year cohort had 7.97-point lower Mullen DQ's than the one-year cohort on entry to AEIOU ($p < 0.001$). There was also a significant increase in Mullen DQ's pre- and post- EI for both the one-year ($M = 6.66, SE = 0.65, p < 0.001$) and two-year ($M = 6.97, SE = 0.66, p < 0.001$) cohorts.

Figure 1. Mullen Developmental Quotient scores for one- and two-year children pre-intervention (on entry to AEIOU) and Post-Intervention (following completion of one or two years of early intervention).



A spearman correlation was conducted to assess the correlation between Developmental Quotients at intake (prior to commencing EI) and at 12 months into intervention for the 1 year cohort and at intake and 24 months for the 2-year cohort. A Line of Best Fit was calculated and graphed for each cohort and refers to the line through the scatter plot of data points that best expresses the relationship between those points.

For both the 1-year and 2-year cohorts, the results showed a strong positive correlation with a correlation coefficient (rho) of 0.93 and 0.78 respectively ($p < 0.001$), as seen in *Figures 2 and 3*.

Figure 2. Spearman Correlation between Mullen DQ's at entry and exit for the one year cohort of children

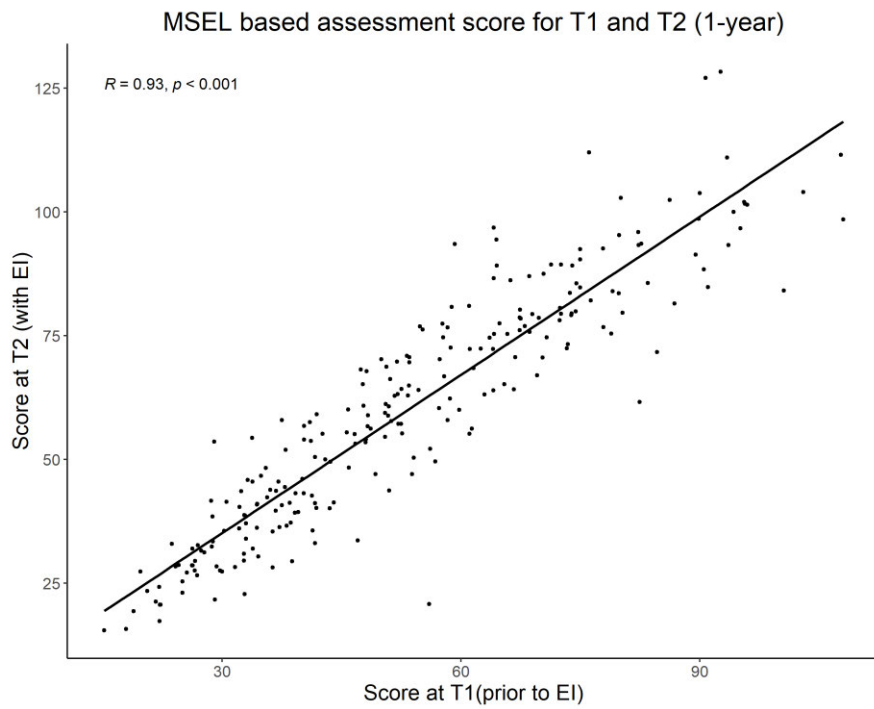
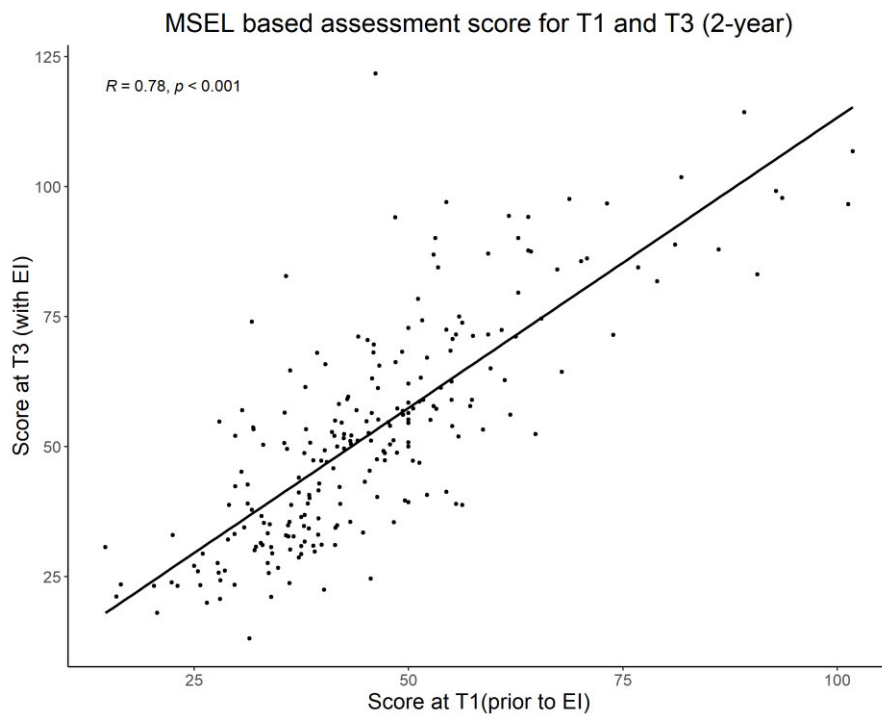


Figure 3. Spearman Correlation between Mullen DQ's at entry and exit for the two year cohort of children



Together these findings demonstrate significant improvement in early learning skills, above what could be attributed to age-related development. The mean DQ (Developmental Quotients) increases demonstrated pre- and post- EI show that our service is effective on a group level, and is concurrent with literature demonstrating increased Mullen scores following intensive EI (Eapen et al., 2013). The strong correlation between scores of individual children demonstrates that EI is effective in increasing the early learning skills, not just on a group level, but for the vast majority of autistic children that remain in our service.

The trajectory of Mullen scores for autistic children without intensive EI is not linear, where one study suggests without intervention, approximately 24% of autistic children regress in their verbal skills (Landa, et. al., 2012). Compared to our data, regression rates are substantially lower, at just 1.15%.

Cost benefit – an economic review

In recent years, AEIOU has remodelled its service, and advocated strongly on behalf of integrated, intensive supports. To be confident clinical outcomes have a long-term value for the individual and the community, both in terms of participation and economic savings, AEIOU engaged a specialist economic consultancy to investigate the data available at AEIOU in direct correlation to NDIS expenditure. In short: is the AEIOU model of benefit to the individual, to society, and how does it contribute to the sustainability of the NDIS?

The report, currently undergoing a peer review process, where the categorisation, mapping and reporting can be viewed in total will be shared with key stakeholders.

In terms of methodology, the consultants categorised all children into severity levels based on entry assessment at AEIOU and mapped the NDIS expenditure to the trajectory of children with the same difficulties and severity level, and cross referenced this to the gains children made annually at AEIOU centres. Noting, the report describes two distinct cohorts enrolled at AEIOU, including those who remain in service for twelve months and successfully transition to a mainstream environment, and those who benefit from two or more years at AEIOU before transitioning to their next learning environment, whether that be mainstream or special education.

When reviewing the report note the levels referenced are related to abilities as per Mullen scale. When mapping this against NDIS data, the evidence is there are significant savings in lifetime expenditure for core supports followed by quality of life, capacity building in addition to other areas.

The summary of findings showed substantial economic benefits attributable to intensive EI programs equating to approximately \$297,000 per child in service over the child's lifetime.

The report also found for every \$1 invested in delivering intensive Early Intervention at AEIOU, a societal return of \$6.16 is derived, and from that total, a direct cost saving to the NDIS of \$4.58 (Synergies, 2023).

Discussion

AEIOU has responded to the needs of Queensland, and later interstate families, providing a unique service that brings together elements of service that support the family as a whole. Our service is informed using evidence-based practices – now the data reported above is the evidence to demonstrate our curriculum and individual programs are effective and worthy of investment and future research.

While AEIOU's 'exclusive' service model has received interest from the sector, our cohort is unique, with complex needs. AEIOU is committed to supporting children who are typically excluded or not succeeding in mainstream settings by engaging them and supporting them in a way which benefits their early development, access to education and care, and supports family capacity.

Our goal is always to respect the individual child and their unique qualities and simply provide the scaffolding and support required to overcome the disabling aspects of autism, which impact their safety, that of others, and their ability to participate in their families, community, and education.

There are a number of challenges facing children with autism who have complex needs, but it is typically difficult for these children to receive funded plans to attend AEIOU's service, requiring significant advocacy and support from specialist staff within the organisation.

It is also widely recognised there are a myriad of challenges the NDIS faces in sustainably administering the scheme across Australia. However, no other research body, or study, has yet captured an adequate representation of this cohort of children, either historically or in real-time format.

AEIOU is committed to a transparent, accountable relationship with the NDIS and NDIA. It is our hope that this data, which is unmatched anywhere else, may support future discussion and collaboration with the NDIA and NDIS, and a greater understanding regarding the needs and potential of this cohort of children, improved market stewardship, and most importantly, the evolving evidence regarding what comprises good, or best practice, early childhood early intervention.

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Appendix 1. Standardised and non-Standardised assessment data collected in the Data Warehouse

Name	Type / source	Collection Points	Summary
Autism Diagnostic Observation Schedule-2 (ADOS-2)	Standardised Assessment	Taken on intake only	The ADOS-2 is a well-established diagnostic instrument that consists of four modules to be administered based on the participants level of chronological age, as well as expressive language ability (Lord et al., 2012). It is a standardised, play-based assessment designed to identify ASD symptoms.
Vineland Adaptive Behaviour Scales- Third Edition (VABS-3).	Standardised Assessment	Intake, 12 monthly and exit	A measure of personal and social skills needed for everyday life. It provides specific information in the areas of communication, daily living skills, motor skills, and social skills. As well as maladaptive behaviours both internalising behaviours, externalising behaviours, and more critical behaviours.
Mullen Scales of Early Learning.	Standardised Assessment	Intake, 12 monthly and exit	The Mullen Scales of Early Learning is a standardized comprehensive developmental assessment tool for children aged 0–68 months (Mullen, 1995). It is an individually administered assessment of thinking and reasoning that assesses skills that fall within four areas: Visual Reception, Fine Motor, Receptive Language, and Expressive Language.
Preschool Language Scale – Fifth Edition (PLS–5) (conducted by speech pathologist).	Standardised Assessment	Intake, 12 monthly and exit	The PLS–5 is a standardised measure of children’s understanding and use of language and communication for children from birth to seven years of age. It consists of two standardised scales: Auditory Comprehension and Expressive Communication. The assessment is conducted by Speech Pathologists and in a clinical setting, scores are used to determine whether a language delay is present, or more complex speech disorders. It also helps to determine whether a child will benefit from a

			particular speech and language therapy (Hsiao et al., 2021).
Curriculum Data	Little Steps	Data is live, but data capture assessed at 12 week intervals	Details of learning through our specialised curriculum
Challenging Behaviours	Little Steps	Data is live, but data capture assessed at 12 week intervals	Instances of challenging behaviours are recorded in the Little Steps App including timing of tantrums and recording of instances such as, biting, hitting or property destruction.
Demographic Questionnaire	Questionnaire	Intake, 12 monthly and exit	Asks caregivers detailed information about their and their child's family and medical history.
Parent Stress Index - Short Form	Questionnaire	Intake, 12 monthly and exit	Asks caregivers questions about levels of stress or challenges currently experienced when parenting their child. The PSI-SF is a combination of important characteristics of the child, and the parent's perception (Abidin, 1995).
Autism Family Experience Questionnaire	Questionnaire	Intake, 12 monthly and exit	Measures the intervention priorities of parents of children with ASD and assesses the impact of interventions on family experience and quality of life (Leadbitter, et al. 2017).
Attendance	QickKids	Daily	Attendance data to determine average service attendance. Some children attend service part-time which needs to be considered.